

POOR LEGIBILITY

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MEMORANDUM

To: Micheal Ardito
Project Officer for Hawaii Superfund Programs

From: Tanya Cowperthwaite
Hawai'i Department of Health

Subject: Completed Work

Attached is the following completed:

PA: // PA Review: // SI: /X/ ESI: //

Other:

Site Name: Factory Street Lead Site

Latitude: 21 19'34.0" N

Longitude: 157 52'15.3" W

EPA ID#: HI0000049775

City, County: Honolulu

State Recommendation:
(for reviews only)

For EPA Use Only

EPA Further Action Determination:

NFA

*SI - 1 Complete
SI Start Date 2/17/95*

Lead Agency:

Hawaii DOH (S)

Sign-off Date:

9/25/96

Initials of Site Assessment Manager:

MCA

Document Screening Coordinator:

M

Chief, Planing and Assessment:

Carolyn J. Douglas for Betty Curran

FINAL EPA File Copy

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region IX, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), has tasked Hawaii State Department of Health (DOH) to conduct a site inspection (SI) of the Factory Street Lead Site (FSL) in Honolulu, State of Hawaii.

The FSL site was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on November 10, 1993 (HI0000049775). The site was entered into CERCLIS based on the result of a public lead screening conducted by DOH's Lead Program, which identified children having lead levels in their blood which exceeded the Center for Disease Control's (CDC) blood lead threshold level of concern of 10 micrograms per deciliter (ug/dl).

A preliminary assessment (PA) of the FSL site was completed for the EPA by DOH on May 25, 1995. The purpose of the PA was to review existing information on the site and its environs to assess the threat(s), if any, posed to public health, welfare, or the environment, and to determine if further action under CERCLA/SARA is warranted.

After reviewing the PA, the EPA decided that further investigation of the FSL site would be necessary to more completely evaluate the site using the EPA Hazard Ranking System (HRS) criteria. The HRS assesses the relative threat associated with actual or potential releases of hazardous substances at the site. The HRS has been adopted by the EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL identifies sites at which the EPA may conduct remedial response actions. This report summarizes the results of the SI of the FSL site.

1.1 Apparent Problem

- Two children residing at 2003 Factory Street, Apartment H, were found to have high levels of lead in their blood (above 20 ug/dl). (Lewin, 1993)
- Soil samples collected within a four block radius from 2003 Factory Street indicate the presence of lead ranging from 168 parts per million (ppm) to 342,000 ppm (composite samples) and 336 ppm to 323,000 ppm (grab samples). (Brewer, 1993)
- Soil samples collected from four hot spots along 2003 Factory Street have shown concentrations of total lead varying from 23,700 ppm to 121,000 ppm or 2.3% to 12.1% total lead. (ELP, 1993)

2.0 SITE DESCRIPTION

2.1 Site Location

The FSL site is located at 2003 North King Street, City and County of Honolulu, the Island of Oahu, Hawaii. The geographic coordinates for the site are 21°19'34.0" N latitude and 157°52'15.3" W longitude. The location of the site is shown in Figure 2-1.

2.2 Site Description

The site occupies approximately 51.75 square feet in a residential area with a few small businesses mixed in the area. There are low level (2-3 stories) apartment buildings and single family homes on the site. St. Anthony School and Mokauea Mini Park are located on site. Farrington High School, Kalakaua Intermediate School, Kalihi Kai Elementary School, St. John School, Kalihi Waena Elementary School, and Fern Elementary School are all located within 1/2 to one mile of the site.

Currently, the specific area where high lead levels ("hot spots") were found have been paved with asphalt. The cap appears to be in good condition.

2.3 Operational History

Historically, the site has been used for residential purposes. There have been small businesses and industrial shops mixed in with the residences. The areas where hot spots have been found are on a property owned by Mr. Merton S.C. Lau, who acquired the property on December 24, 1986. There are three commercial tenants that have been identified as having managed, used, stored, and may have disposed of spent chemicals in the area. Dr. Joseph M. Yamamoto and Dr. Joseph H. Yamamoto owned and operated a dental office. Grace Bautista and Romeo Ramolete owned and operated a sign printing shop. Vivial Yamamoto and Sarah Saito owned Kalihi Fishing Supply. (Lau, 1993)

A witness who resided in the area alleged that between 1955 and 1966 ash containing lead was dumped and spread out on the site. The witness would scavenge through the piles of ash to salvage large chunks of lead to smelt into fishing weights. The potential source of the lead may have been lead electrodes extracted from old/disabled automotive batteries, drained and discarded. (Ahina, 1993)

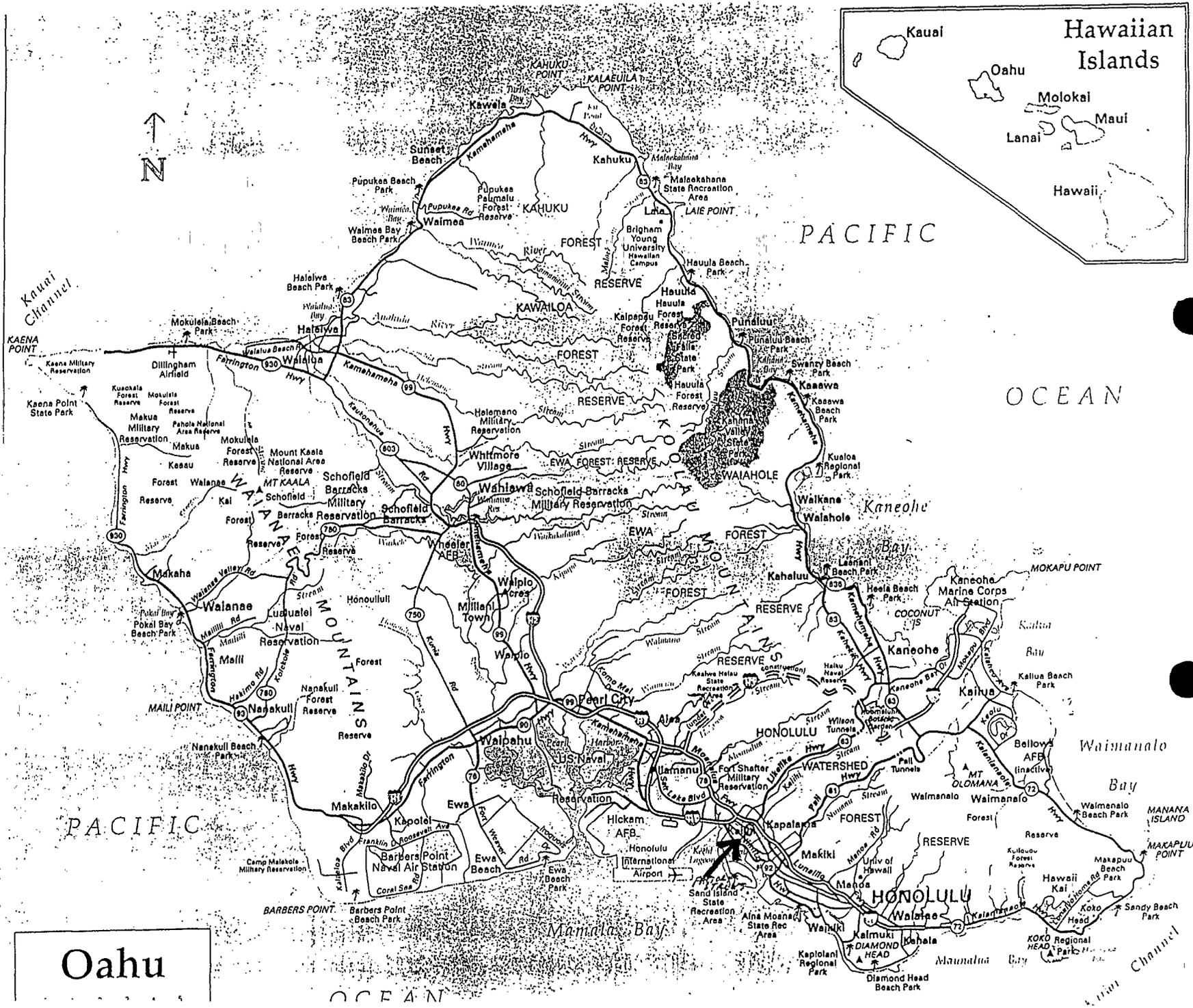


Figure 1. SITE LOCATION

2003 North King Street Sampling Plan / Locations and Results

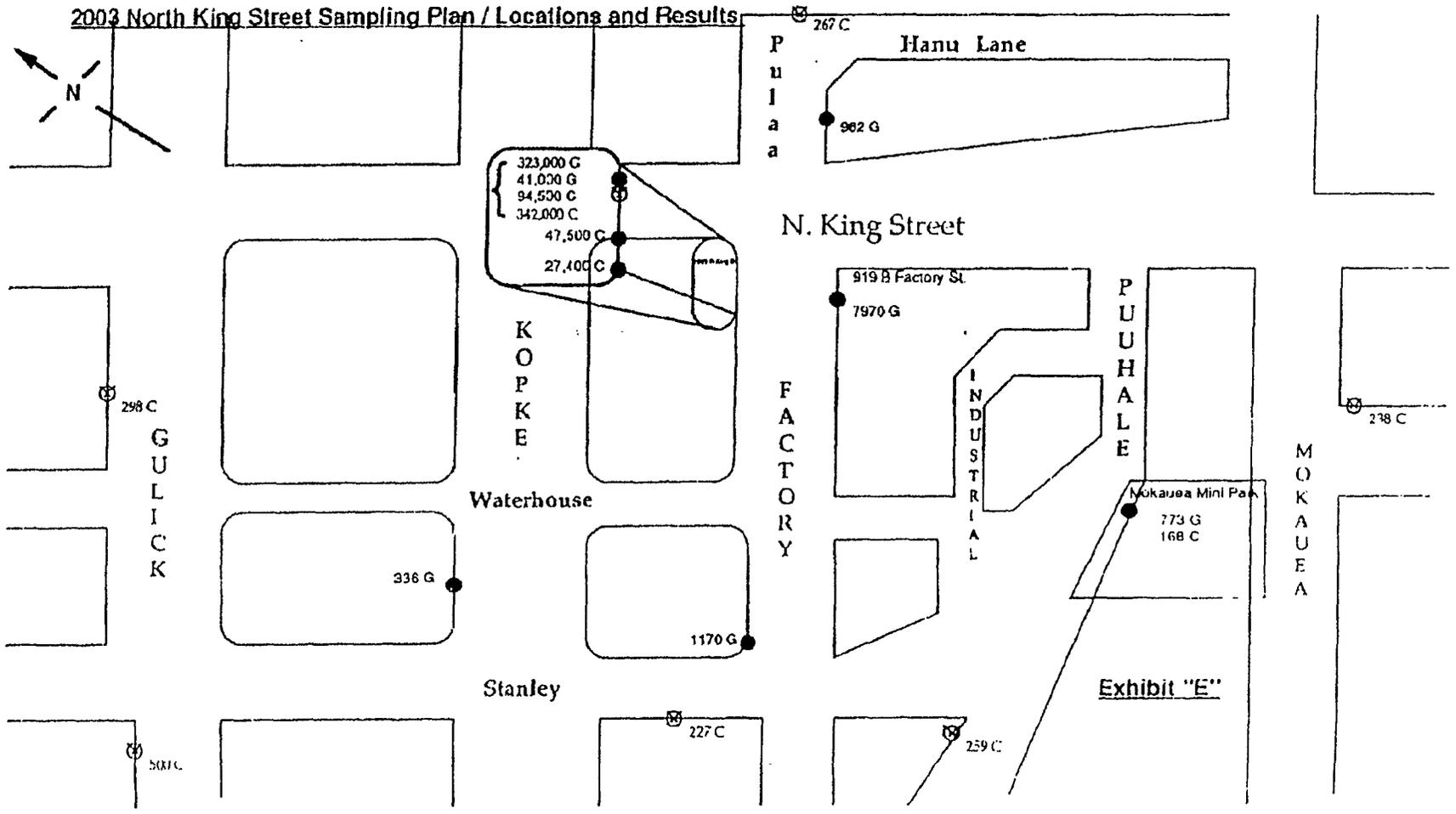


Figure 2. Site Layout.

2.4 Regulatory Involvement

2.4.1 United States Environmental Protection Agency

The Factory Street Lead site is not listed in the Resource Conservation and Recovery Information System (RCRIS) database, as of July 14, 1995 as a hazardous waste generator.

EPA was notified by the DOH of the lead found on the site. DOH requested EPA's assistance in conducting an integrated site assessment on the site on 2/11/94. The EPA Technical Assistance Team (TAT) conducted sampling on the site on 02/22/95 - 02/28/95. The sampling event is discussed further in section 3.2.

2.4.2 Hawaii State Department of Health

On April 28, 1993 the Department of Health (DOH) conducted lead sampling at 2003 North King Street facility based upon a notification by a physician that during a routine medical exam, two children were identified as having elevated lead levels in blood.

Analytical results of soil samples taken around the apartments where the children frequently played indicated up to 323,000 ppm of lead. This level exceeded the risk based preliminary assessment goal of 400 ppm established by the EPA.

Subsequent soil sampling conducted on June 8, July 8, and July 15, 1993 from the facility and down gradient from the facility indicated the presence of lead varying from 336 ppm to 342,000 ppm.

On July 23, 1993, a Hawaii State "Letter of Interest" was issued to Mr. Merton S.C. Lau under the authority of Chapter 128D, Hawaii Revised Statutes. This letter notified Mr. Lau that there has been a release of a hazardous substances on his property and provided him with the opportunity to undertake appropriate response actions to mitigate the hazards. The letter also confirms the State of Hawaii's interest in the characterization and remediation of the site. (DOH, July, 23, 1993) Mr. Lau refused to sign the letter pending an attorney's review and consequently necessitated the issuance of an enforceable order by the Director of the DOH.

On August 24, 1993, Mr. Lau was served the Director of Health's Order which prompted the immediate removal of lead contaminated soils from the hot spot areas to stabilize the site and minimize direct exposure (DOH, August 24, 1993) The hot spot areas are shown in Figure 3.

On August 30, 1993, as required by the DOH, Mr. Lau submitted a work plan and health and safety plan for emergency soil removal activities (Lau, August 10 and 31, 1993).

On September 24, 1993, a letter was sent to Mr. Lau indicating that he has fully complied with the DOH Director's order after Mr. Lau paved the hot spot areas (Armann, 1993).

3.0 INVESTIGATIVE EFFORTS

3.1 Previous Sampling and Analysis

3.1.1 Soil Sampling

Hawaii State Department of Health conducted several sampling events at the Factory Street Lead site. The first sampling was conducted on April 28, 1993. Four samples were collected at 2003 N. King Street Apartment H. These samples were taken in response to a report from a medical doctor about high levels of lead found in two children. The samples were taken of paint chips on the bedroom wall (#1), paint chips on bedroom stud bolts (#2), dust vacuum cleaner bag (#3), and soil outside the gutter area (#4). Samples were taken by William Perry and analyzed by Brewer Environmental Industries, Inc. using method 6010.

**TABLE 1
LEAD SAMPLING CONDUCTED ON 4/28/93**

SAMPLE ID#	Time Sampled	Total Lead mg/kg	Detection Limit mg/kg
#1 paint chips/bedroom wall	10:06 am	BDL	24.4
#2 paint chips/bedroom stud bolts	10:10 am	304	28.2
#3 dust vacuum cleaner bag	10:18 am	6400	10.0
#4 soil outside gutter area	10:37 am	323,000	10.0

BDL -Below detection limits

Another sampling event was conducted by DOH on June 8, 1993. Samples were collected by William Perry and analyzed by Brewer Environmental. Soil was the media sampled and analyzed using method 6010 with a reporting limit of 10.0 mg/kg. The results are shown in Table 2.

**TABLE 2
LEAD SAMPLING CONDUCTED ON 6/8/93**

SAMPLE ID#	Time Sampled	Total Lead (mg/kg)
Mokauea St. Mini Park	11:39 am	773
2003 N. King St. Apts.	12:04 am	41,000
919 B. Factory St.	12:11 am	7970
Factory & Stanley St. "800"	12:21 am	1170
814 Kopke St. (by pole)	12:31 am	336
1011 Pulaa St. (by 3 mail bxs.)	12:40 am	982

Another sampling event was conducted on July 8 and 15, 1993 to further characterize the site. Soil was the media sampled and analyzed using method 6010 with a reporting limit of 10.0 mg/kg. One swipe sample of paint chips and dust was collected on the July sampling. Elizabeth Galvez and Dave Cook were the samplers and Brewer Environmental Industries, Inc. analyzed the samples. Results are shown in Tables 3 and 4.

**TABLE 3
LEAD SAMPLING CONDUCTED ON 7/8/93**

SAMPLE ID#	Time Sampled	Total Lead Result (mg/kg)
#1 2003 N. King St. (composite)	12:58 pm	27,400
#2 2003 N. King St. (composite)	13:00 pm	47,500
#3 2003 N. King St. (composite)	13:04 pm	94,500
#4 2003 N. King St. (swipe) paint chips/dust	13:20 pm	1240
#5 Mokauea Mini Park (composite)	13:33 pm	168

**TABLE 4
LEAD SAMPLING CONDUCTED ON 7/15/93**

SAMPLE ID#	Time Sampled	Total Lead Result (mg/kg)
804 Gulick (composite)	09:55 am	298
754 Gulick (composite)	10:04 am	500
2005 Stanley St. (composite)	10:11 am	227
744 Puuhale St. (composite)	10:17 am	259
841 Mokauea St. (composite)	10:27 am	238
2000 Hani + Pulaa (composite)	10:41 am	267
2003 N. King Street (composite)	10:47 am	342,000

Sampling was conducted again on August 27, 1993 by William Perry. Soil was the medium sampled and analyzed using method EPA 6010. The results of the sampling event are shown on Table 5.

**TABLE 5
LEAD SAMPLING CONDUCTED ON 8/27/93**

SAMPLE ID# and Depth	LEAD (ppm)
1-6" (composite)	121,000
1-12" (composite)	28,700
1-18" (composite)	17,900
1-D-6" (composite)	36,800
2-6" (composite)	20,700
2-D-6" (composite)	23,700
3-6" (composite)	11,400
3-D-6" (composite)	14,200
4-6" (composite)	75,800
4-D-6" (composite)	51,100

1st number in the sample ID# is the sample area.
 Sample ID# numbers with "D" in them are duplicates.
 Last number in the sample ID# is the depth.

3.2 EPA Sponsored Sampling

EPA-sponsored sampling has been conducted at the Factory Street Lead site. This sampling was conducted as part of an EPA integrated site assessment to determine the extent of contamination.

**TABLE 6
SAMPLES COLLECTED BY EPA ON 02/22/95-02/28/95**

SAMPLE ID	XRF RESULT Pb - ppm ND = <60	CLP ID	CLP RESULT Pb - ppm ND = <7.1
PU-1032-1-0"	150		
PU-1032-2-1"	ND		
PU-1032-3-2"	ND		
KSBK-1	ND		
KSBK-5	75		
KSBK-6	115	SYE949	207

KSBK-7	126		
FS-915-8-0"	188		
FS-915-9-1"	124		
FS-915-10-2"	106		
WA-2003-11-0"	ND		
WA-2003-12-1"	ND		
WA-2003-13-2"	ND	SYE950	ND
FS-806-14-0"	320		
FS-806-15-4"	369		
FS-919B-16-3"	679		
FS-919B-17-1"	ND		
FS-919B-18-2"	ND		
NK-2003-19-3"	289		
NK-2003-20-1"	ND		
NK-2003-21-4"	ND		
NK-2003-22-1"	ND		
NK-2003-23-2"	ND		
FS-910-24-0"	289		
FS-910-25-2"	ND		
FS-904-26-0"	449		
FS-904-27-1"	ND		
FS-904-28-2"	ND		
FS-922-29-3"	74		
FS-922-30-1"	ND	SYE951	172
FS-922-31-2"	ND		
FS-922-32-3"	ND		
NK-2003-33-3"	18570		
NK-2003-34-1"	12850	SYE952	37400
NK-2003-35-2"	72		
NK-2003-36-3"	200		
NK-2003-37-4"	ND	SYE953	308
NK-2003-38-5"	ND		
NK-2003-39-3"	90		
FS-922-40-4"	ND	SYE954	27
FS-922-41-1"	619		

FS-922-42-2"	111		
FS-922-43-3"	ND		
FS-922-44-3"	ND		
FS-922-45-1"	ND		
FS-922-46-2"	ND		
FS-922-47-3"	ND		
FS-922-48-4"	ND		
FS-922-49-3"	96		
FS-922-50-1"	ND		
FS-922-51-2"	ND		
FS-922-52-3"	ND		
HA 1927 53 SC	351		
KA-1020-54-SC	ND		
NK-1955-55-SC	883		
FS-915-56-SC	554		
FS-902-57-SC	902		
IN-902-58-SC	325		
WA-2016-59-SC	336		
KO-757-60-SC	511		
PA-774-61-SC	951		
NK-1955-62-3"	23780	SYE955	117000
NK-1955-63-1"	521		
NK-1955-64-2"	216		
NK-2003-65-3"	585		
NK-2003-66-2"	13850		
NK-2003-67-1"	223		
NK-2003-68-2"	361		
FS-922-69-3"	6980		
FS-922-70-1"	3130	SYE956	4710
FS-922-71-2"	1231	SYE957	14900
FS-922-72-1"	263		
FS-922-73-2"	ND		
FS-922-74-3"	175		
FS-922-75-1"	263		
FS-922-76-2"	ND		

FS-CTR-77-3"	10690		
FS-CTR-78-1"	421	SYE958	1820
FS-CTR-79-2"	93		
FS-CTR-80-3"	1281		
FS-CTR-81-1"	ND		
FS-922-82-2"	1120		
FS-922-83-1"	60		
FS-CTR-84-4"	ND		
NK-1995-85-2"	1118		
NK-1955-86-1"	ND		

The results of this sampling found no significant amounts of lead in unpaved areas. The areas of high lead levels are paved over. The report is included in the reference section (Ecology and Environment) which includes maps showing the locations of the samples.

4.0 HAZARD RANKING SYSTEM FACTORS

4.1 Sources of Contamination

- Lead-contaminated soils in hot spot areas throughout the site are the source of contamination.

4.2 Groundwater Pathway

Factory Street Lead Site is located above the upper and lower Kalihi aquifers. The upper aquifer is encountered at a depth of 9 feet below ground surface (ft bgs) beneath the site. The aquifer is not used for drinking water but is considered ecologically important. (Mink, 1990) The lower aquifer, at a depth of 128 ft bgs, is used for drinking water. There are approximately three drinking water wells within one mile of the site. The wells serve approximately 68,685 people. (DLNR, 1987)

4.3 Surface Water Pathway

The topography of the site drains into Kalihi Stream, which drains into Keehi Lagoon. The stream is approximately 2000 feet to the south. There are no drinking water intakes within 15 miles downstream of the site. Kalihi Stream, a State designated area for protection of aquatic life, and Keehi Lagoon, a commercial fishery (DOT) as well as habitat for two endangered species (UH Environmental Center, 1989), are located within 4 miles downstream of the site.

4.4 Soil and Air Exposure Pathway

The soil in this area has been covered with asphalt. The asphalt cap has eliminated the route of exposure. There is no risk of exposure by soil or air. Between 3,000 to 10,000 people reside within one mile of the site. St. Anthony School and Mokauea Mini Park are located within the site. Numerous schools are located within a 1/2 to 1 mile radius of the site.

5.0 EMERGENCY RESPONSE CONSIDERATIONS

National Contingency Plan [40 CFR 300.415 (b) (2)] authorizes the EPA to consider emergency response actions at those sites that pose an imminent threat to human health or the environment. For the following reasons, a referral to Region IX's Emergency Response Section does not appear to be necessary:

- Lead contaminated soils have been covered with asphalt.

6.0 SUMMARY

The Factory Street Lead site is located at 2003 North King Street, City and County of Honolulu, the Island of Oahu, Hawaii. The geographic coordinates for the site are 21°19'34.0" N latitude and 157°52' 15.3" W longitude. The site occupies approximately 51,750 square feet in a residential area with a few small businesses mixed in the area.

Historically, the site has been used for residential purposes. There have been small businesses and industrial shops mixed in with the residences. The areas where high lead levels or "hot spots" have been found are on property owned by Mr. Merton S.C. Lau, who acquired the property on December 24, 1986. There are three commercial tenants that have been identified as having managed, used, stored, and may have disposed of spent chemicals in the area. A witness who resided in the area indicated that between 1955 and 1966 ash containing lead was dumped and spread out on the site. The potential source of the lead may have been lead electrodes extracted from old/disabled automotive batteries, drained and discarded.

Currently, the area where high lead levels were found has been paved with asphalt. The cap appears to be in good condition. There are low level (2-3 stories) apartment buildings and single family homes on the site.

The Factory Street Lead site is not listed in the Resource Conservation and Recovery Information System (RCRIS) database, as of July 14, 1995 as a hazardous waste generator.

The EPA conducted sampling on the site on 02/22/95 - 02/28/95. The sampling event found that the soils in the surrounding areas were not heavily contaminated with lead. The heavily contaminated soils are covered with cement.

Based on the results of the sampling at 2003 North King Street, the Hawaii State Department of Health (DOH) a Hawaii State "Letter of Interest" was issued to Mr. Merton S.C. Lau under the authority of Chapter 128D, Hawaii Revised Statutes. This letter notified Mr. Lau that there has been a release of a hazardous substances on his property and provided him with the opportunity to undertake appropriate response actions to mitigate the hazards. Mr. Lau refused to sign the letter pending an attorney's review and consequently necessitated the issuance of an enforceable order by the Director of the DOH on August 24, 1993. On August 30, 1993, as required by the DOH, Mr. Lau submitted a work plan and health and safety plan for emergency soil removal activities. On September 24, 1993, a letter was sent to Mr. Lau indicating that he has fully complied with the DOH Director's order after Mr. Lau paved the hot spot areas.

Factory Street Lead Site is located above the upper and lower Kalihi aquifers. The upper aquifer is encountered at a depth of 9 feet below ground surface (ft bgs) beneath the site and is considered ecologically important. The lower aquifer, at a depth of 128 ft bgs, is used for drinking water. There are approximately three drinking water wells within one mile of the site serving approximately 68,685 people.

The topography of the site drains into Kalihi Stream, which drains into Keehi Lagoon. The stream is approximately 2000 feet to the south. There are no drinking water intakes within 15 miles downstream of the site. Kalihi Stream, a State designated area for protection of aquatic life, and Keehi Lagoon, a commercial fishery as well as habitat for two endangered species, are located within 4 miles downstream of the site.

The soil in this area has been covered with cement. The cement cap has eliminated the route of exposure. This means there is no risk of exposure by soil or air. Between 3,000 to 10,000 people reside within one mile of the site. St. Anthony School and Mokauea Mini Park are located within the site. Numerous schools are located within a 1/2 to 1 mile radius of the site.

The following pertinent Hazard Ranking System factors are associated with the site:

- Soil contaminated with the highest amounts of lead have been removed. The remaining areas of high contamination have been paved over. This eliminates the surface water, air, and soil exposure pathways.
- Lead is highly immobile and is not likely to migrate to groundwater, especially since the site has been capped.

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IX

Site Name: Factory Street Lead Site EPA ID#: HI0000049775

Alias Site Names: _____

City: Honolulu County or Parish: Honolulu State: Hawaii

Refer to Report Dated: April 1996 Report type: Site inspection
Report developed by: Tanya Cowperthwaite

DECISION:

1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

1a. Site does not qualify for further remedial site assessment under CERCLA (Site Evaluation Accomplished - SEA)

1b. Site may qualify for further action, but is deferred to: RCRA NRC

2. Further Assessment Needed Under CERCLA:

2a. (optional) Priority: Higher Lower

2b. Activity Type: PA SI

ESI

HRS evaluation

Other: _____

DISCUSSION/RATIONALE:

The results of the sampling found no significant amounts of lead in unpaved areas. The areas of high lead levels are paved over with asphalt or cement.

Report Reviewed and Approved, and Site Decision Made by:

Michael Ardito

Signature:

Michael Ardito

Date:

9/25/96

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



LAWRENCE MIKE
DIRECTOR OF HEALTH

**STATE OF HAWAII
DEPARTMENT OF HEALTH**

P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
HEER OFFICE

September 24, 1996

To: Mike Ardito, Site Assessment Manager
EPA Region IX

From: Laura Young *ly*
Hazard Evaluation and Emergency Response Office

Subject: Factory Street Lead Site References

In Appendix A of the Factory Street Lead Site SI reference 6 refers to a copy of the 1987 version of the Department of Land and Natural Resources, Ground Water Index. This document is not available and a copy cannot be submitted for this SI. However, a copy of the 1992 index is available and a copy of the cover is attached.

In addition, reference 9 cites a Keehi Lagoon Harbor Master document that states that Keehi Lagoon is a commercial fishery. This document is also not available. I have attached a copy of a document that provides similar information and should be included in the Factory Street Lead Site SI in place of reference 9.

If you have any questions, please call me at (808) 586-7575.

1

COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GROUND WATER
INDEX AND SUMMARY

July 14, 1992

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



CHAIRPERSON
MICHAEL D. WILSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY
GILBERT S. COLOMA-AGARAN

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

September 8, 1995

Ms. Tonya Cowperthwaite
Hazard Evaluation and Emergency Response Office
Department of Health
919 Ala Moana Blvd., Rm. 206
Honolulu, HI 96814

Dear Ms. Cowperthwaite:

Your request for updated calendar year 1994 commercial marine landing data was compiled by the Statistical Unit.

The attached statistical tables contain landing data of marine life caught by commercial fishermen within inshore (2 nautical miles) and offshore (20 nautical miles) fishing areas around the Main Hawaiian Islands. The areas may be referenced from the attached fisheries chart.

If you have any questions concerning the tables, please contact Reginald Kokubun of the Statistical Unit at 587-0098.

Sincerely,

A handwritten signature in cursive script, appearing to read "Eric".

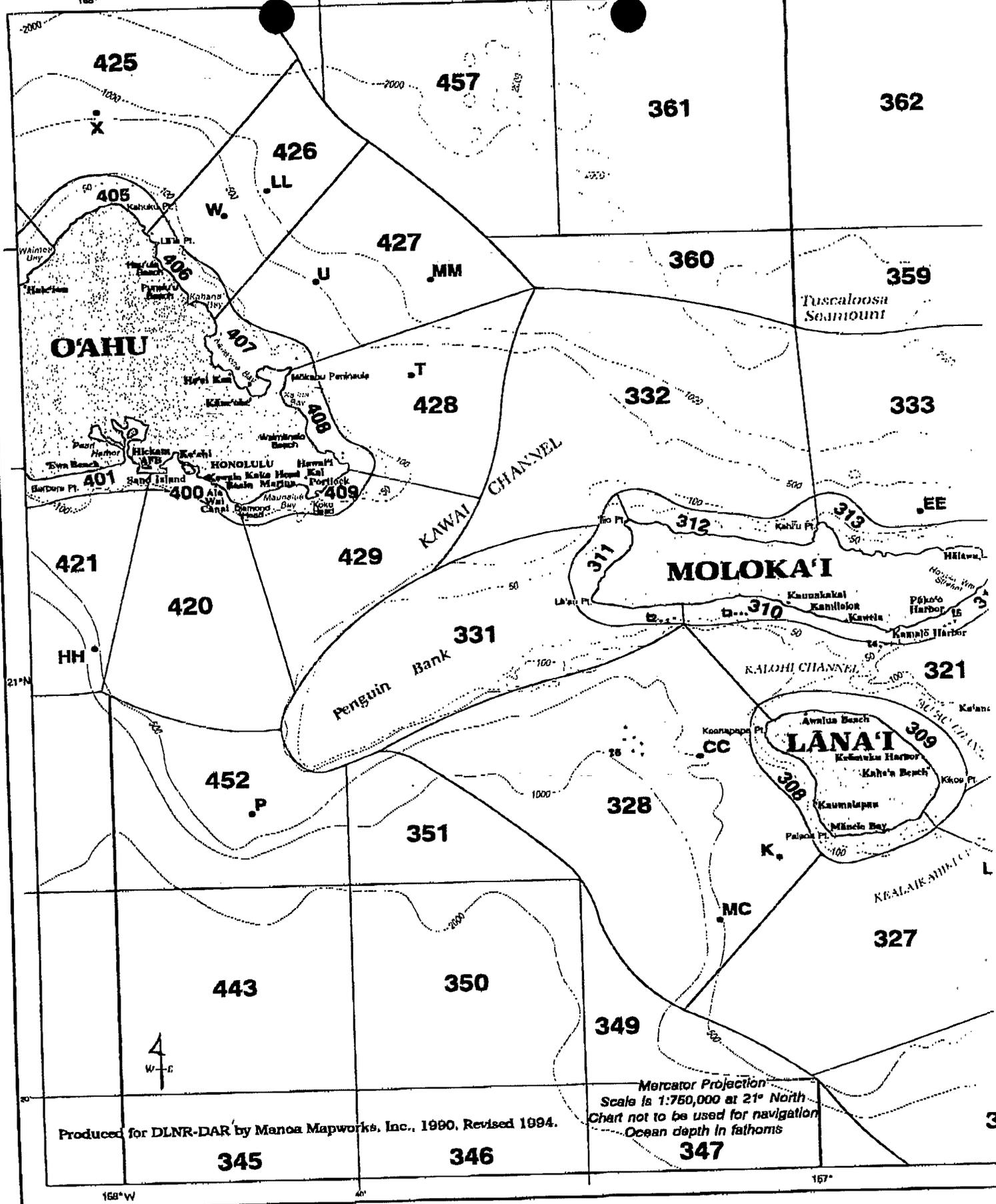
ERIC W. ONIZUKA, Program Manager
Commercial Fisheries and Aquaculture

Attach.

**Commercial Marine Landings, Area Fished by Island
Calendar Year 1994**

Island	Region	Area	Pounds Caught	Pounds Sold	Value (\$)
OAHU	INSHORE	400	25,275	24,229	38,115
		401	92,552	85,864	177,419
		402	15,232	14,383	35,046
		403	75,282	70,548	169,261
		404	98,404	93,241	194,587
		405	38,300	36,381	63,692
		406	9,005	8,437	16,090
		407	27,085	24,747	46,883
		408	18,759	18,212	32,558
	409	19,606	18,341	37,691	
	OFFSHORE	420	67,674	65,870	139,398
		421	128,686	111,983	203,367
		422	136,511	125,055	215,189
		423	425,283	377,529	821,310
		424	71,145	66,006	126,459
		425	139,777	134,330	273,020
		426	90,229	84,570	180,284
		427	191,435	181,710	354,209
		428	98,238	92,438	205,634
		429	49,782	47,810	104,577
TOTAL			1,818,220	1,881,764	3,434,787

Source: Division of Aquatic Resources, DLNR, State of Hawaii



Produced for DLNR-DAR by Manoa Mapworks, Inc., 1990, Revised 1994.

Mercator Projection
Scale is 1:750,000 at 21° North
Chart not to be used for navigation
Ocean depth in fathoms

APPENDIX A

References

- ✓ 1) Ahina, Ronald, 1993. Telephone conversation recorded on Contact Report by Steven Armann, State of Hawaii Department of Health, August 26, 1993.
- ✓ 2) Armann, Steve, 1993. Letter about compliance with Director's order to Merton Lau. October 12, 1993.
- ✓ 3) Brewer Environmental Report, 1993. Laboratory Analysis Report, Job Number 0112 dated May 13, 1993; Job Number 0375 dated June 17, 1993; Job Number 0581 dated July 12, 1993; Job Number 0635 dated July 19, 1993.
- ✓ 4) Department of Health (DOH), 1993. Letter of interest to Merton Lau. July 23, 1993.
- ✓ 5) Department of Health (DOH), 1993. Order served to Merton Lau. August 24, 1993.
- ✓ 6) Department of Land and Natural Resources (DLNR), 1987. State of Hawaii, Division of Water and Land Development, Ground Water Index, Oahu Code, August 13, 1987.
- ✓ 7) Ecology and Environment, Inc., Draft of report on sampling conducted at Factory Street Lead Site on 2/22/95-2/28/95.
- ✓ 8) Environmental Laboratory of the Pacific (ELP), Laboratory Report, ELP Project No. 5144, September 1, 1993.
- ✓ 9) Hawaii Department of Transportation (DOT), Harbors Division, Harbor Master of Keehi Lagoon.
- ✓ 10) Lau, Merton S.C., 1993. Work plan for Factory street. August 10, 1993.
- ✓ 11) Lau, Merton S.C., 1993. Emergency Removal Plan. August 30, 1993.
- ✓ 12) Lau, Merton S.C., 1993. Letter to William Perry, State of Hawaii Department of Health, regarding history of owners and tenants of 2003 North King Street. October 12, 1993.

- ✓ 13) Lewin, John, C., 1993. State of Hawaii Department of Health, Letter to The Honorable Representative Emilio Alcon, Hawaii House of Representatives, regarding lead problem found at 2003 North King Street, September 7, 1993.
- ✓ 14) Mink, John F. and Lau, L. Stephen, 1990. "Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawaii." Water Resources Research Center, University of Hawaii at Manoa, Technical Report No. 179, February 1990, revised.
- ✓ 15) UH Environmental Center, 1989. "Ecologically Sensitive Wetlands on Oahu: Groundwater Protection Strategy for Hawaii." Technical Report No. 184, December 1989.

Appendix B
Photographic Documentation



Cap of Factory Street Site



Cap of Factory Street Site

Photographic Documentation
Factory Street Lead Site 11/17/95



Cap of Factory Street Site

TRANSMITTAL LIST FOR SI REPORT

Site: Factory Street Lead Site
EPA ID # HI000049775

Mr. Merton Lau
1164 Bishop Street
Honolulu, Hawaii 96813-2810

Factory Street Lead Site HI000049775

APPENDIX C
CONTACT LOG

Site: Factory Street Lead Site
EPA ID: HI000049775

Name	Affiliation	Phone	Date
Ronald Ahina	Historical info	(808)879-9953	8/26/93

Reference #2

JOHN WAIHEE
GOVERNOR OF HAWAII



JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
HEER OFFICE

October 12, 1993

Merton S. C. Lau
1184 Bishop Street, Suite 1111
Honolulu, Hawaii 906813-5190

MCNFA/WP

Subject: COMPLIANCE WITH DIRECTORS ORDER, HAWAII STATE
DEPARTMENT OF HEALTH

Dear Mr. Lau:

On September 12, 1993, the Office of Hazard Evaluation and Emergency Response confirmed your full compliance with Director of Health Order to Protect Public Health, Docket No. SF 93-2, signed August 24, 1993.

Your interim response actions (soil removal and capping) to abate lead contaminated soils located at 2003 Factory Street, Honolulu, Hawaii, is acceptable. As such, we concur with the recommendation that no further action is required at this time with exception of soil treatment and final disposal. However, you should realize that the capping operation only mitigated present exposures and that future developmental plans in this area must take into account the residual contamination.

Should you have any questions please contact Mr. William Perry at (808) 586-4249.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Armann".

STEVEN ARMANN, Acting Manager
Hazard Evaluation and
Emergency Response Office

cc: Bruce Anderson, Ph.D. , Deputy Director
Kathy Ho, Deputy Attorney General

Reference 3.



BREWER
ENVIRONMENTAL
INDUSTRIES, INC.

LABORATORY ANALYSIS REPORT
Environmental Laboratories Division

CLIENT: HAWAII STATE DEPT. OF HEALTH
HAZARD EVALUATION & EMERGENCY
RESPONSE OFFICE
5 WATERFRONT PLAZA, SUITE 250C
500 ALA MOANA BLVD
HONOLULU, HAWAII 96813

ATTN: BILL PERRY
JOB NUMBER: 0112
DATE: MAY 13, 1993

SAMPLE LOCATION: 2003 N. KING STREET
JOB #930428

Date/Time Sampled: 04/28/93 @ as noted
Date/Time Received: 05/03/93 @ 0805

Matrix: PAINT CHIPS/DUST/
SOIL
METHOD #: 6010

SAMPLE ID#	TIME SAMPLED	TOTAL LEAD RESULT mg/kg	REPORTING LIMIT mg/kg	ANALYSIS DATE
#1 PAINT CHIPS BEDROOM WALL	1006	BRL	24.4	05/07/93
#2 PAINT CHIPS BEDROOM STUD BOLTS	1010	304	28.2	05/07/93
#3 DUST VACUUM CLEANER BAG	1018	6400	10.0	05/07/93
#4 SOIL OUTSIDE GUTTER AREA	1037	* <u>323000</u>	10.0	05/11/93

Exhibit "A"

BRL - BELOW REPORTING LIMITS

BREWER ENVIRONMENTAL LABORATORIES
PO BOX 557
HAWAII, HI 96781
PHONE (808) 904-5622
FAX (808) 904-5309

Approved by *Dr. [Signature]*

Reference 3

REC'D JUN 29 1993



BREWER
ENVIRONMENTAL
INDUSTRIES, INC.
A C BREWER COMPANY

LABORATORY ANALYSIS REPORT
Environmental Laboratories Division

CLIENT: STATE DEPT. OF HEALTH HEER OFFICE
5 WATERFRONT PLAZA SUITE 250
500 ALI MOANA BLVD
HONOLULU, HAWAII 96813

ATTN: BILL PERRY

JOB NUMBER: 0375

DATE: JUNE 17, 1993

SAMPLE LOCATION: DOH
LEAD PROGRAM

Date/Time Sampled: 06/08/93 @ as noted
Date/Time Received: 06/09/93 @ 0745
DATE ANALYZED: 06/16/93

Matrix: SOIL
METHOD #: 6010

SAMPLE ID#	TIME SAMPLED	TOTAL LEAD RESULT mg/kg	REPORTING LIMIT mg/kg
MOKAUEA ST MINI PARK	1139	773 .	10.0
x 2003 N. KING ST. APTS.	1204	41000	10.0
919 B FACTORY ST	1211	7970	10.0
FACTORY & STANLEY ST "800"	1221	1170	10.0
814 KOPKE ST (BY POLE)	1231	336	10.0
1011 PULAA ST (BY 3 MAIL BXS.)	1240	982	10.0

Exhibit "B"

BREWER ENVIRONMENTAL LABORATORIES
PO BOX 552
PAPAIANU HI 96761
PHONE (808) 964-5522
FAX (808) 964-5522

Approved by H. J. [Signature]
[Signature]

Reference 3:



BREWER
ENVIRONMENTAL
INDUSTRIES, INC.
A BREWER COMPANY

LABORATORY ANALYSIS REPORT
Environmental Laboratories Division

CLIENT: DEPARTMENT OF HEALTH
HAZARD EVALUATION AND EMERGENCY
RESPONSE
5 WATERFRONT PLAZA, SUITE 250C
500 ALA MOANA BLVD
HONOLULU, HAWAII 96813

ATTN: BILL PERRY
JOB NUMBER: 0581
DATE: JULY 12, 1993

SAMPLE LOCATION: N/A N. KING ST. APTS.
JOB #920708

Date/Time Sampled: 07/08/93 @ as noted
Date/Time Received: 07/09/93 @ 0745
DATE ANALYZED: 07/12/93

Matrix: SOIL/PAINT DUST
METHOD #: 601C

SAMPLE ID#	TIME SAMPLED	TOTAL LEAD RESULT mg/kg	REPORTING LIMIT mg/kg
#1 2003 N. KING (SOIL) (COMPOSITE)	1258	27400	10.0
#2 2003 N. KING ST. (SOIL) (COMPOSITE)	1300	47500	10.0
#3 2003 N. KING ST (SOIL) (COMPOSITE)	1304	94500	10.0
#4 2003 N. KING ST (SWIPE) PAINT CHIPS/DUST (TOTAL)	1320	1240	10.0
#5 HOKAUEA MINI PARK (COMPOSITE)	1333	168	10.0

Exhibit "C"

BREWER ENVIRONMENTAL LABORATORIES
PO BOX 552
HALEKULI HI 96715
PHONE: (808) 964-5102
FAX (808) 964-5102

Approved by: _____

TOTAL P.01

Reference 3



BREWER
ENVIRONMENTAL
INDUSTRIES, INC.
A C BREWER COMPANY

LABORATORY ANALYSIS REPORT
Environmental Laboratories Division

CLIENT: DEPARTMENT OF HEALTH
HAZARD EVALUATION AND EMERGENCY
RESPONSE OFFICE
5 WATERFRONT PLAZA, SUITE 250
500 ALA MOANA BLVD
HONOLULU, HAWAII 96813

ATTN: BILL PERRY
JOB NUMBER: 0635
DATE: JULY 19, 1993

SAMPLE LOCATION: N. KING STREET
JOB #930715

Date/Time Sampled: 07/15/93 @ as noted
Date/Time Received: 07/16/93 @ 0745
DATE ANALYZED: 07/16/93

Matrix: SOIL
METHOD #: 6010

SAMPLE ID#	TIME SAMPLED	TOTAL LEAD RESULT mg/kg	REPORTING LIMIT mg/kg
804 GULICK (COMPOSITE)	0955	298	10.0
754 GULICK (COMPOSITE)	1004	500	10.0
2005 STANLEY ST (COMPOSITE)	1011	227	10.0
744 PUHALE ST (COMPOSITE)	1017	259	10.0
841 KOKAUEA ST (COMPOSITE)	1027	238	10.0
2000 HANI + PULAA (COMPOSITE)	1041	267	10.0
2003 N. KING STREET (COMPOSITE)	1047	342000	10.0

Exhibit "D"

BREWER ENVIRONMENTAL LABORATORIES
PO BOX 550
PAPAHAOU, HI 96701
PHONE (808) 566-5322
FAX (808) 526-5328

Approved by: _____

TOTAL P.01



JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
HEER OFFICE

* NOTICE OF INTEREST IN A RELEASE OR THREATENED RELEASE OF *
HAZARDOUS SUBSTANCES

Name: MERTON LAU
Address: 1164 BISHOP STREET, SUITE 1111 HONOLULU, HI 96813
Date/time: JULY 23, 1993, 1435
Location (facility) at or from which release has occurred or is threatened to occur:
("LEAD IN SOIL") 2003 N. KING STREET, HONOLULU, HI. 96811

You are hereby notified that a release or threat of a release of a hazardous substance, as defined in section 128D-1, Hawaii Revised Statutes (hereafter also referred to as HRS), has occurred or is threatened to occur at the above described facility of which you are believed to be the owner or operator and that pursuant to chapter 128D, HRS, the Director of Health of the State of Hawaii has an interest in the release or threatened release.

Pursuant to chapter 128D, HRS, the Director may take a number of actions which include issuing an order directing you to take appropriate response measures concerning the release. Failure to obey such an order may subject you to fines and penalties and an obligation to repay the State for any expenditure of its funds if the State is required to provide the response measures.

However, if before such an order is issued you demonstrate to the satisfaction of the Director of Health or his designee a willingness and the ability to undertake appropriate response measures and actually undertake such response measures within a reasonable period of time, the activity of the State will be limited to monitoring the progress of your actions and providing guidance as necessary.

You are also advised that if the Director determines that your response actions are, in whole or in part, unsatisfactory, a notice of improper action will be issued.

You are further notified that the Director of Health has designated William C. Perry of the staff of the Office of Hazard Evaluation and Emergency Response (HEER) of the Department of Health as the State On-Scene Coordinator (SOSC). The SOSC may be contacted at the Office of Hazard Evaluation and Emergency Response, Hawaii Department of Health, 5 Waterfront Plaza, 500 Ala Moana Blvd, Suite 250C, Honolulu, Hi 96813, Phone: (808) 586-4249.

Done at Honolulu, Hawaii this 23rd day of JULY.

William C. Perry
(State On-scene Coordinator)

Received and Acknowledged :

Name (Please print) Date: _____ Time: _____

Signature Witness

Note: Did not sign, refer for legal review first.



DEPARTMENT OF HEALTH
STATE OF HAWAII

In the matter of:	)	Docket No. SF 93-2
)	
Merton S.C. Lau	)	DIRECTOR'S DETERMINATION OF
2003 N. King Street	)	IMMINENT AND SUBSTANTIAL
Honolulu, HI 96819	)	ENDANGERMENT TO PUBLIC HEALTH,
	)	WELFARE, OR THE ENVIRONMENT
Respondent	)	BECAUSE OF ACTUAL OR
	)	THREATENED RELEASE OF
	)	HAZARDOUS SUBSTANCES; ORDER TO
	)	PROTECT PUBLIC HEALTH,
	)	WELFARE, AND THE ENVIRONMENT;
	)	CERTIFICATE OF SERVICE
)	
)	
)	

I.

DIRECTOR'S DETERMINATION OF IMMINENT AND SUBSTANTIAL
ENDANGERMENT TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT
BECAUSE OF ACTUAL OR THREATENED RELEASE OF HAZARDOUS SUBSTANCES

Section 128D-4(a) (2), Hawaii Revised Statutes (HRS), provides that the Director of Health, State of Hawaii, upon determining that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance, may issue without a hearing such orders as may be necessary to protect the public health, welfare, and the environment. Based upon investigations and evaluations made by the Department of Health in this matter in response to complaints and notification received by he Department, the Director of Health makes and issues the following findings of fact, conclusions of law, determinations, and order.

A. Findings of Fact

Respondent, Merton S. C. Lau, Owns and Operates the apartment building located at 2003 North King Street, Honolulu, Hawaii (hereinafter "facility"). The facility is approximately 11,337 square feet (Tax Map Key : Zone 1, Section 2, Plat 11, parcel # 1) in size, and is bordered on the south by an inoperable "Aloha" gasoline service station, small businesses and independent residences, and to the north by an apartment building (approximately 25 units). To the east of the facility is North King Street and to the south are independent residences.

"Lead" is a naturally occurring bluish-gray metal found in small amounts originally from the earths crust. It has no characteristic taste or smell and is not miscible in water. Lead is commonly found in the manufacturing of batteries, as gasoline additives, solders, pipes, and paints. The amount of lead added to products has been drastically reduced in recent years because of the adverse health and environmental harm it causes to humans and animals. Most of the lead dispersed through the environment is due to human activities, vehicle emissions, industrial processes and burning solid waste. Lead is present at various amounts in air, soil, and water. It clings or binds to soil and does not migrate readily. Usually an acidic transporter (rainwater) is needed to break fine particles free and move lead in a flow.

Humans are exposed to low levels of lead usually through inhalation, ingestion and absorption during normal daily

routines. Breathing in dusts or swallowing dirt are usually how humans become exposed to lead. Children, especially preschool age, are frequently exposed to lead because of playing habits. They tend to ingest lead contaminated soils, dusts, non food items, paint chips, by placing their hands, toys, and many things into their mouths. Lead behaves the same once it enters the body no matter what the route of exposure. It travels in the blood and targets "soft tissues," (such as the liver, kidneys, lungs, brain, spleen, muscles and heart). Usually after several weeks most of the lead moves into bones and teeth. The human body is incapable of changing lead into any other chemical. Once lead is taken in and distributed throughout human organs any unretained lead is excreted through urine or feces. In children, approximately 73% of lead is stored in their teeth or bones the rest remains in their blood and organs. The Center for Disease Control considers "Lead Poisoning" in children to exist if the amount of lead is at least twenty-five (25) micrograms per deciliter ($\mu\text{g}/\text{dl}$) in blood. Lead levels in blood higher than 25 $\mu\text{g}/\text{dl}$ suggests that adverse and damaging health affects may occur.

On April 28, 1993, the Department of Health conducted lead sampling at the respondent's facility. Mrs. Eunice Fernandez and her two daughters ages one (1) and two (2) were residing in apartment "H" at the facility. During a routine medical exam of the children, elevated levels of lead were detected. The one (1) year old had a blood lead level of 33 $\mu\text{g}/\text{dl}$ and the two (2) year old had a blood lead level of 22 $\mu\text{g}/\text{dl}$. These levels are high

enough to cause the Department of Health to conduct further medical and environmental investigations.

Mrs. Pat Heu, PhD of the departments' Health and Human Services Branch was notified of the elevated blood levels by the family physician. Family interviews were completed by the Health and Human Services Branch, including residential lead sampling conducted by the HEER Office. Wall paint chips, vacuum cleaner bag dust, and drinking water samples were obtained from apartment "H" in an attempt to locate a lead source. Samples were also taken from soils around the apartments where the children frequently played. Analytical results indicated three hundred and twenty three thousand (323,000) parts per million (ppm) of lead in soil. This level is extremely high and exceeds the protective level of four hundred (400) ppm established by the Department of Health. See Exhibit "A" and "E".

On June 8, July 8 and July 15, 1993 samples were taken from the facility. Laboratory analysis of the soil samples taken adjacent to the 2003 North King Street apartment building revealed lead levels of 41,000 ppm, 94,500 ppm, and 342,000 ppm. Extremely high levels of lead were also detected down gradient from the facility, south to Waterfront Street, at 47,500 ppm and 27,400 ppm. These levels are above the departments clean up goals of 400 ppm. See Exhibits "B", "C", "D" and "E".

During HEER investigation, three (3) suspect and potentially contributing sources of lead were observed which may have contaminated the facility soils. First, Located on, attached, and positioned vertically, was a rainwater drain pipe, to the

south wall. Rainwater which accumulated on the facilities roof passes down through the downspout and spills into the soils before shedding over the street. The drain pipe was constructed from cast metal pipe made up of three sections which were held together by (poured) lead. Pieces of lead solder were observed in the soil near this source. Second, the exterior south wall paint indicated a "lead" base was used. Third, an automotive 12 volt battery was observed upside down, top covers off, and empty of its liquid contents (electrolyte).

A preliminary risk assessment was conducted by Barbara Brooks, PhD, to evaluate the potential adverse health effects from exposure to the lead contaminated soil at the respondent's facility. A linear pharmacokinetic model was used to predict the blood lead levels in children associated with exposure to the lead contaminated soil. Recent research has indicated that blood lead levels in the range of 10 to 15 $\mu\text{g}/\text{dl}$ are associated with serious health effects. Currently the Environmental Protection Agency and the Hawaii Department of Health are using a blood lead level of 10 $\mu\text{g}/\text{dl}$ as the threshold level of concern.

Results of the preliminary health risk assessment indicated that exposure to the elevated soil lead levels at the respondent's facility would result in dangerously high blood lead levels in children. The model predicts that exposure to the detected lead levels found in the contaminated soil would cause elevated levels of lead in the blood. Therefore exposure to the soil at the respondent's facility constitutes an extreme health hazard.

B. Conclusion of Law

Respondent is an "owner" or "operator" as defined by section 128D-1, HRS.

Lead is a "hazardous substances" as defined by section 128D-1, HRS and 40 C.F.R. Section 300.5.

The spilling, leaking, pouring, emitting, discharging, or escaping of lead (a hazardous substance) by the respondent constitutes a "release" as defined by section 128D-1, HRS and 40 C.F.R. section 300.5.

The physical concentration of lead originating from the buildings downspout drain pipe and exterior paint constitute a "threat of release" as defined by section 128D-1, HRS and 40 C.F.R. section 300.5.

Respondent has "released or threatened a release of hazardous substances" lead as defined by section 128D-1, H.R.S. and 40 C.F.R. section 300.5.

Respondent's facility presents an "imminent and substantial endangerment to public health, welfare, or the environment" (release) within the meaning of Chapter 128D, HRS, because of an observed release of a hazardous substance that has already taken place at or from Respondents' facility and the potential for further releases, exists.

This order is consistent with the National Contingency Plan, 40 C.F.R. part 300, which pursuant to section 128D-7(e), HRS, serves as the state contingency plan until a state contingency plan is adopted.

This Order is necessary to protect the public health,

welfare and the environment.

Based upon the foregoing Findings of Fact and Conclusions of Law, the Director of Health makes the following determinations:

C. Determinations

The actual or threatened release of a hazardous substance from or at Respondent's facility may present an imminent and substantial endangerment to the public health, welfare, or the environment. In order to prevent the immediate and significant risk of harm to human health, welfare or the environment, it is necessary that response actions by the Respondents be taken to contain and prevent the past and future release of hazardous substances, pollutants, or contaminants from Respondents' facility.

II.

ORDER

Based upon the foregoing Findings of Fact, Conclusions of Law, and Determinations, the Director of Health orders the Respondent to implement the following response actions under the direction of the HEER State On-Scene Coordinator (OSCs).

A. No later than 48 hours or two (2) working day's from the date of receipt of this Order, Respondent shall develop, complete and submit to the Department of Health, HEER Office, a "Letter of Intent" describing the emergency response action to be instituted by the respondent to stabilize and control the hazardous substance lead contaminated soils at Respondent's facility.

B. No later than one (1) week from date of receipt of this Order, Respondent shall develop, complete, and submit a detailed, written, site safety and health plan to the Department of Health, HEER Office, for its review and approval.

C. No later than one (1) week from the date of receipt of this order, Respondent shall develop, complete, and submit a detailed, written emergency removal work plan to the Department of Health, HEER Office for its review and approval.

D. No later than ten (10) days from the date of approval of the site safety health plan and workplan, Respondents shall implement the plan including effectuation of the physical isolation, segregation and/or relocation of (lead contaminated) hazardous substances at the facility.

E. Within two (2) days of receipt of written comments from the Department of Health, if any, on any plan or submittal by the Respondent, Respondent shall modify and re-submit such plans in accordance with the comments of the Department of Health.

F. No later than fourteen (14) days after the completion of the emergency removal operation, Respondent shall submit a final report containing all response, disposal or removal action data, analytical data, and any as-built designs, complimented by finalized drawings, to the HEER office of the Department of Health.

G. Respondent shall implement all plans approved by the Department of Health. Such plans shall be considered incorporated into this order and enforceable under the terms of this order.

Respondent shall comply with all applicable federal, state and local laws and regulations in carrying out the terms of this order, including laws relating to the removal of hazardous substances. The Director of Health, hereby designates William C. Perry as the State On-Scene Coordinator (OSC) for purposes of overseeing Respondents' compliance with this Order.

Communications with the OSC can be directed to:

William C. Perry (OSC)
Hazard Evaluation and Emergency Response Office
Hawaii State Department of Health
Five Waterfront Plaza, Suite 250C
500 Ala Moana Boulevard
Honolulu, Hawaii 969813
Phone: (808) 586-4249

All submittals and notifications to the Director required by this order or any approved proposal under this order shall be made to the Director through the OSC. The Respondent shall allow inspection of Respondent's facility by the OSC and other representatives of the Department of Health. Nothing in this order limits any access rights that the Department of Health or other agencies may have pursuant to law. If the Director determines that actions or circumstances, related or unrelated to this Order, present a substantial endangerment to human health, welfare or the environment, the Director may order the Respondent to halt further implementation of this Order until the endangerment is abated.

Modifications

Any modification of this Order must be in writing and signed by the Director of Health. A conference does not alter the

effective date of this Order. This Order shall apply to and is binding upon the Respondent, its officers, directors, agents, employees, contractors, successors, and assigns.

Notice of the Director of Health's
Authority to Undertake Response Actions

Pursuant to section 128D-4(a), HRS, the Director of Health may take over any or all of the above-described response actions at the facility or undertake such other response actions, upon determining that the Respondent is not taking appropriate actions and that it is necessary for the State to act in order to protect the public health, welfare, or the environment. Under section 128D-5(a), HRS, Respondents are liable for the costs of any such response actions undertaken by the Director of Health.

Notice of Possible Civil and Punitive Penalties

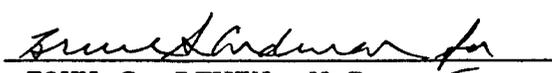
Pursuant to sections 128D-8(a) and (b), HRS, any person who is liable for a release, or threat of a release, of hazardous substances, and who fails, without sufficient cause, to properly provide removal or remedial action pursuant to an administrative order issued by the Director, may be liable to the department for punitive damages up to three times the amount of any costs incurred by the environmental response revolving fund pursuant to section 128D-8, HRS, as a result of the failure to perform the actions specified in the order. The Director is authorized to commence a civil action against any such person to recover the punitive damages, which shall be in addition to any costs recovered from such a person pursuant to section 128D-5, HRS.

In addition to liability for costs incurred by the State for the investigation, assessment, containment, and removal of a release or a threat of a release of hazardous substances, any person who willfully, knowingly, or recklessly violates or fails or refuses to comply with any provision of Chapter 128D, HRS, or any order issued, or rule adopted under this chapter, shall be subject to a civil penalty not to exceed \$50,000 for each separate violation. Each day a violation continues shall constitute a separate violation. The Director is authorized to commence a civil action in the appropriate circuit court to recover such penalties.

Notice of Intent to Comply

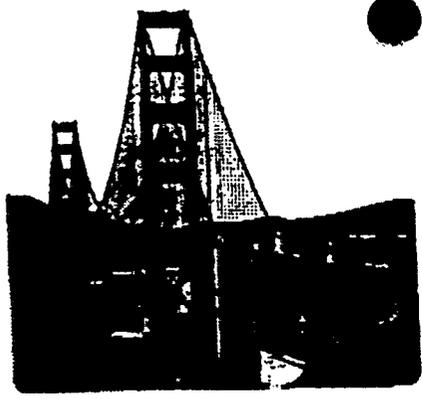
No later than twenty-four (24) hours of receipt of this Order the Respondent shall orally inform the OSC of their intent to comply with the terms of this Order. The oral notice shall be confirmed within two (2) days by written notice to the OSC. Failure of the respondent to notify the OSC of their intent to fully comply with this Order will be construed as a refusal to comply. Notice of the issuance of this Order has been forwarded to the U.S. Environmental Protection Agency. Notwithstanding any conference requested pursuant to the provisions of this Order, this Order is effective immediately on the date of signature by the Director of Health.

DATED: Honolulu, Hawaii, AUG 24 1993
STATE OF HAWAII
DEPARTMENT OF HEALTH


JOHN C. LEWIN, M.D.
Director of Health

Reference 7

FAX TRANSMITTAL FORM



Ecology and environment, inc.
International Specialists in the Environment

160 Spear Street • Suite 1400 • San Francisco • California • 94105

Phone 415-777-2811

Fax 415-543-5739

To Tanya Cowperthwaite Fax No. 808/586-7537

Company HEER

From John Whitaker (EPA Technical Assistance Team)

Date 11-14-95 Time _____ No. of pages 13
(incl. cover sheet)

Factory Street XRF and lab data with maps
and review of XRF data.

Tables and figures are in draft form only at this
time pending review.

Table 1
Factory Street Lead Site
Analytical Results

DRAFT

SAMPLE ID	SAMPLE NUMBER	STREET ADDRESS	SAMPLE TYPE	SAMPLE DEPTH	SAMPLE COLLECTION DATE	XRF RESULT	
						Pb - ppm ND = < 90	CLP RESULT Pb - ppm ND = < 7.1
FD-1003-1-1	1	1003 FINE STREET	Grab	0' - 6"	2/22/95	129	
FD-1003-2-1	2	1003 FINE STREET	Grab	1' - 1' 6"	2/22/95	ND	
FD-1003-3-1	3	1003 FINE STREET	Grab	2' - 2' 6"	2/22/95	ND	
KRAK-4	4	Kalhi Stream	Stream sediment	surface	2/22/95	ND	
KBEK-5	5	Kalhi Stream	Stream sediment	surface	2/22/95	75	
KSKK-6	6	Kalhi Stream	Stream sediment	surface	2/22/95	115	207
KBEK-7	7	Kalhi Stream	Stream sediment	surface	2/22/95	125	
FS-915-8-1	8	915 Factory Street	Grab	0' - 6"	2/22/95	189	
FS-915-9-1	9	915 Factory Street	Grab	1' - 1' 6"	2/22/95	124	
FS-915-10-1	10	915 Factory Street	Grab	2' - 2' 6"	2/22/95	108	
WA-2003-11-1	11	2003 Waterhouse St	Grab	0' - 6"	2/22/95	ND	
WA-2003-12-1	12	2005 Waterhouse St	Grab	1' - 1' 6"	2/22/95	ND	
WA-2003-13-2	13	2003 Waterhouse St	Grab	2' - 2' 6"	2/22/95	ND	ND
FS-904-14-1	14	904 Factory St	Grab	0' - 6"	2/22/95	323	
FS-904-15-1	15	904 Factory St	Grab	1' - 1' 6"	2/22/95	359	
FS-919B-16-1	16	919B Factory St	Grab	0' - 6"	2/23/95	579	
FS-919B-17-1	17	919B Factory St	Grab	1' - 1' 6"	2/23/95	ND	
FS-919B-18-2	18	919B Factory St	Grab	2' - 2' 6"	2/23/95	ND	
NK-2003-19-1	19	2003 North King St	Grab	0' - 6"	2/23/95	359	
NK-2003-20-1	20	2003 North King St	Grab	1' - 1' 6"	2/23/95	ND	
NK-2003-21-1	21	2003 North King St	Grab	2' - 2' 6"	2/23/95	ND	
NK-2003-22-1	22	2003 North King St	Grab	3' - 3' 6"	2/23/95	ND	
NK-2003-22-2	23	2003 North King St	Grab	4' - 4' 6"	2/23/95	ND	
FS-904-24-1	24	904 Factory St	Grab	0' - 6"	2/23/95	289	
FS-904-25-1	25	904 Factory St	Grab	1' - 1' 6"	2/23/95	ND	
FS-904-26-1	26	904 Factory St	Grab	2' - 2' 6"	2/23/95	449	
FS-904-27-1	27	904 Factory St	Grab	3' - 3' 6"	2/23/95	ND	
FS-904-28-1	28	904 Factory St	Grab	4' - 4' 6"	2/23/95	ND	
FS-922-29-1	29	922 Factory St	Grab	0' - 6"	2/24/95	74	
FS-922-30-1	30	922 Factory St	Grab	1' - 1' 6"	2/24/95	ND	175
FS-922-31-1	31	922 Factory St	Grab	2' - 2' 6"	2/24/95	ND	
FS-922-32-1	32	922 Factory St	Grab	3' - 3' 6"	2/24/95	ND	
NK-2003-33-1	33	2003 North King St	Grab	0' - 6"	2/24/95	18570	
NK-2003-34-1	34	2003 North King St	Grab	1' - 1' 6"	2/24/95	12850	37400
NK-2003-35-1	35	2003 North King St	Grab	2' - 2' 6"	2/24/95	72	
NK-2003-36-1	36	2003 North King St	Grab	3' - 3' 6"	2/24/95	200	
NK-2003-37-1	37	2003 North King St	Grab	4' - 4' 6"	2/24/95	ND	305
NK-2003-38-1	38	2003 North King St	Grab	5' - 5' 6"	2/24/95	ND	
NK-2003-39-1	39	2003 North King St	Grab	6' - 6' 6"	2/24/95	ND	
FS-922-40-1	40	922 Factory St	Grab	0' - 6"	2/24/95	ND	27
FS-922-41-1	41	922 Factory St	Grab	1' - 1' 6"	2/24/95	619	
FS-922-42-1	42	922 Factory St	Grab	2' - 2' 6"	2/24/95	111	
FS-922-43-1	43	922 Factory St	Grab	3' - 3' 6"	2/24/95	ND	

Table 1
Factory Street Lead Site
Analytical Results

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SAMPLE ID	SAMPLE NUMBER	STREET ADDRESS	SAMPLE TYPE	SAMPLE DEPTH	SAMPLE COLLECTION DATE	XRF RESULT	
						Pb - ppm ND = < 60	Pb - ppm ND = < 7.1
FS-922-45-1	45	922 Factory St	Grab	3' - 6"	2/27/95	ND	
FS-922-45-1	46	922 Factory St	Grab	1' - 1' 6"	2/27/95	ND	
FS-922-45-2	47	922 Factory St	Grab	2' - 2' 6"	2/27/95	ND	
FS-922-45-3	48	922 Factory St	Grab	3' - 3' 6"	2/27/95	ND	
FS-922-45-4	49	922 Factory St	Grab	4' - 4' 6"	2/27/95	ND	
FO-922-46-3"	40	922 Factory St	Grab	3' - 6"	2/27/95	26	
FS-922-50-1'	50	922 Factory St	Grab	1' - 1' 6"	2/27/95	ND	
FS-922-51-2'	51	922 Factory St	Grab	2' - 2' 6"	2/27/95	ND	
FS-922-52-3'	52	922 Factory St	Grab	3' - 3' 6"	2/27/95	ND	
HA-1927-53-SC	53	1927 Hunt Lane	surface composite	surface	2/27/95	361	
HA-1090-54-SC	54	1090 Hunt Lane	surface composite	surface	2/27/95	ND	
HC-1865-55-SC	55	1865 North King St	surface composite	surface	2/27/95	863	
FS-915-56-SC	56	915 Factory St	surface composite	surface	2/27/95	524	
FS-902-57-SC	57	902 Factory St	surface composite	surface	2/27/95	972	
IN-902-58-SC	58	902 Industrial Road	surface composite	surface	2/27/95	325	
VA-2018-59-SC	59	2018 Warehouse St	surface composite	surface	2/27/95	336	
KO-767-60-SC	60	767 Kopke St	surface composite	surface	2/27/95	511	
PA-774-61-SC	61	774 Purnell Road	surface composite	surface	2/27/95	621	
NK-1955-62-3"	62	1955 North King St	Grab	3' - 6"	2/27/95	23780	117000
NK-1955-63-1'	63	1955 North King St	Grab	1' - 1' 6"	2/27/95	521	
NK-1955-64-2'	64	1955 North King St	Grab	2' - 2' 6"	2/27/95	218	
NK-2003-65-3"	65	2003 North King St	Grab	3' - 6"	2/27/95	565	
NK-2003-65-4"	66	2003 North King St	Grab	4' - 6"	2/27/95	10050	
NK-2003-67-1'	67	2003 North King St	Grab	1' - 1' 6"	2/27/95	263	
NK-2003-68-2'	68	2003 North King St	Grab	2' - 2' 6"	2/27/95	361	
FS-922-69-3"	69	922 Factory St	Grab	3' - 6"	2/27/95	6680	
FS-922-70-1'	70	922 Factory St	Grab	1' - 1' 6"	2/27/95	3130	4710
FS-922-71-2'	71	922 Factory St	Grab	2' - 2' 6"	2/28/95	1261	14900
FS-922-72-1'	72	922 Factory St	Grab	1' - 1' 6"	2/28/95	263	
FS-922-73-2'	73	922 Factory St	Grab	2' - 2' 6"	2/28/95	ND	
FS-922-74-3"	74	922 Factory St	Grab	3' - 6"	2/28/95	175	
FS-922-75-1'	75	922 Factory St	Grab	1' - 1' 6"	2/28/95	263	
FS-922-76-2'	76	922 Factory St	Grab	2' - 2' 6"	2/28/95	ND	
FS-CTR-77-3"	77	Center of Factory St	Grab	3' - 6"	2/28/95	10900	
FS-CTR-78-1'	78	Center of Factory St	Grab	1' - 1' 6"	2/28/95	421	1680
FS-CTR-79-2'	79	Center of Factory St	Grab	2' - 2' 6"	2/28/95	85	
FS-CTR-80-3"	80	Center of Factory St	Grab	3' - 6"	2/28/95	1261	
FS-CTR-81-1'	81	Center of Factory St	Grab	1' - 1' 6"	2/28/95	ND	
FS-922-82-2'	82	922 Factory St	Grab	2' - 2' 6"	2/28/95	1172	
FS-922-83-1'	83	922 Factory St	Grab	1' - 1' 6"	2/28/95	67	
FS-CTR-84-4"	84	Center of Factory St	Grab	4' - 6"	2/28/95		
NK-1955-85-2'	85	1955 North King St	Grab	2' - 6"	2/28/95	1115	
NK-1955-86-1'	86	1955 North King St	Grab	1' - 1' 6"	2/28/95	ND	

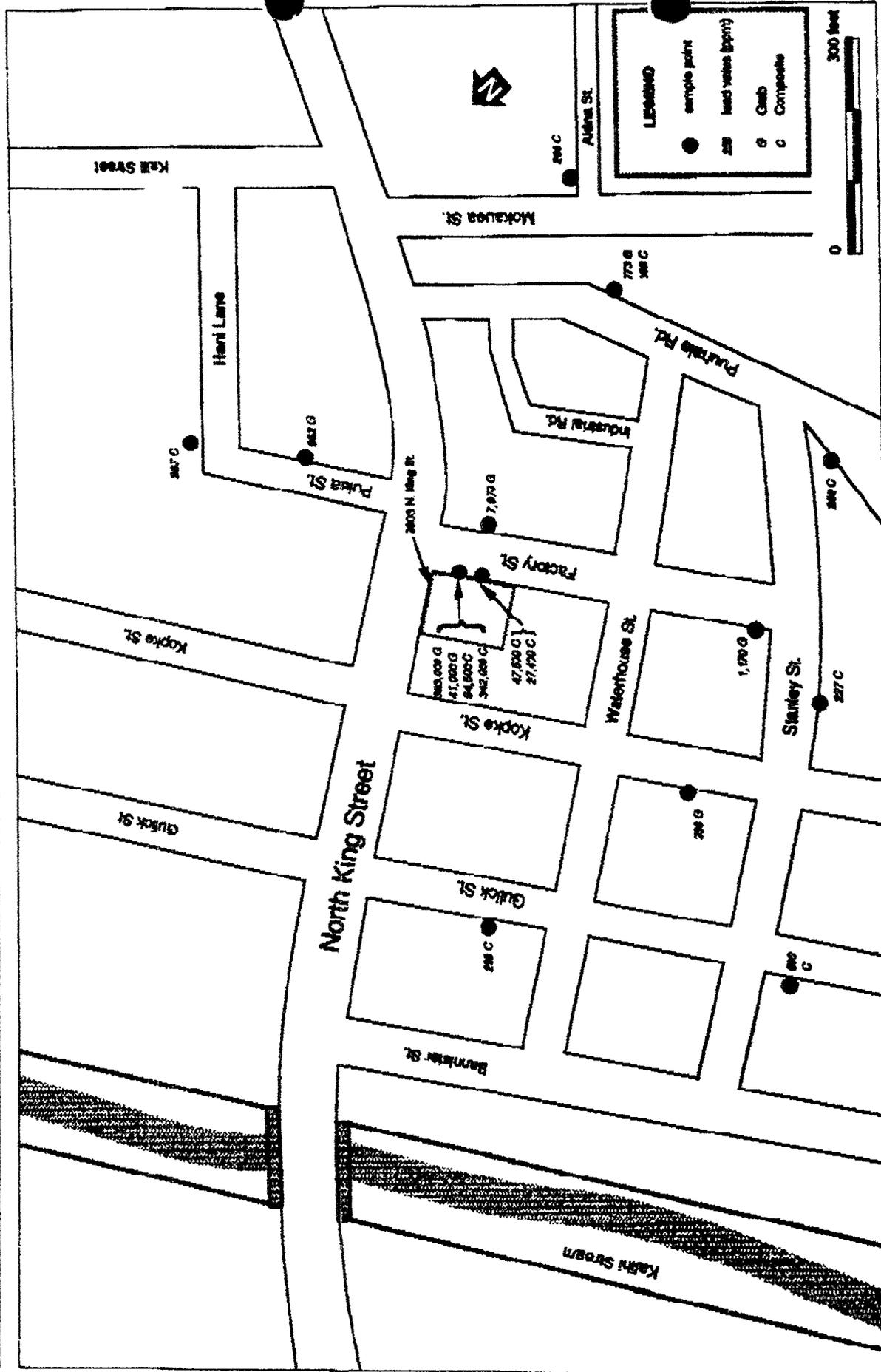
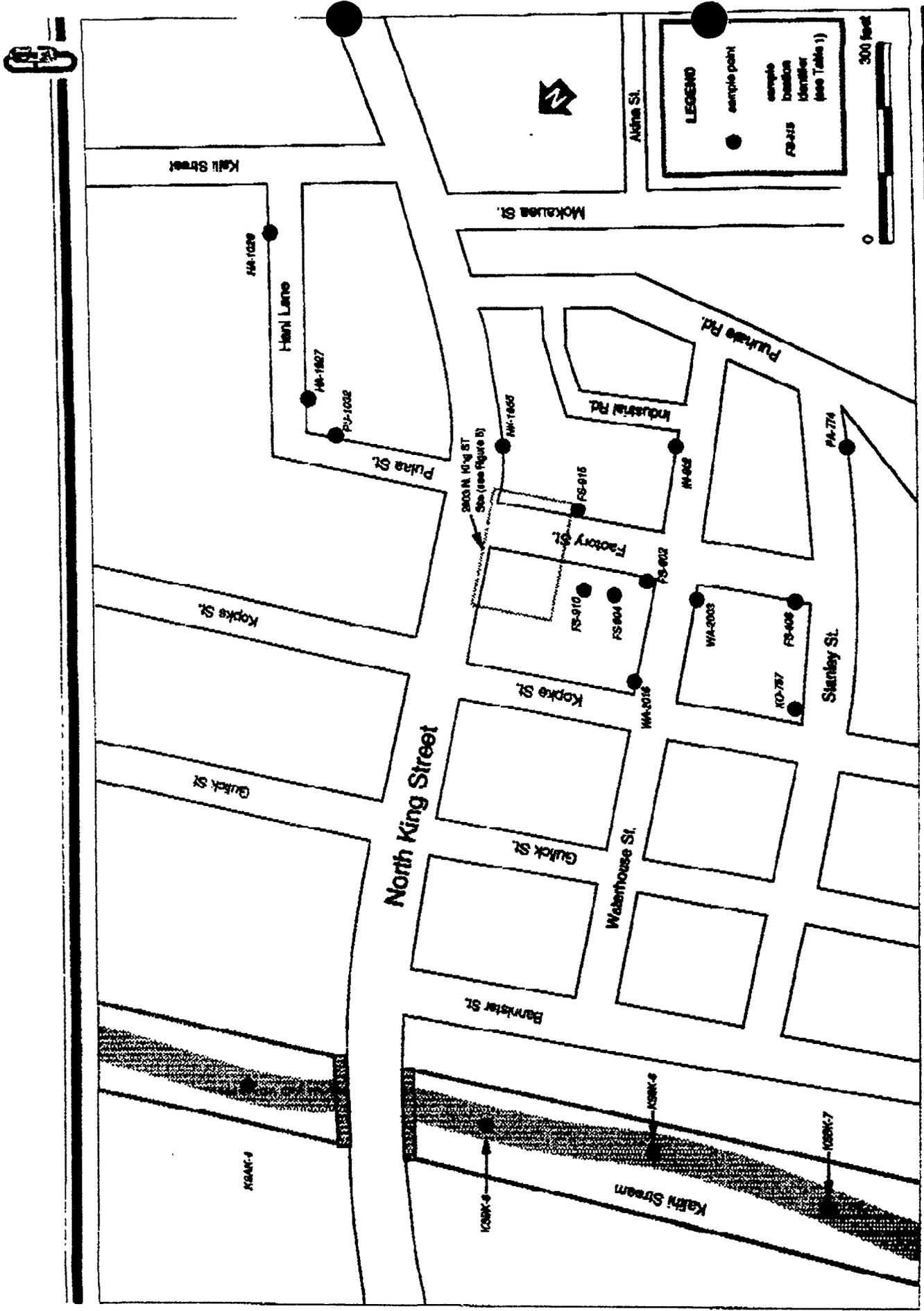


Figure 2
HEER SAMPLE LOCATION MAP
 Factory Street Lead Site
 Honolulu, Hawaii

ecology and environment, inc.

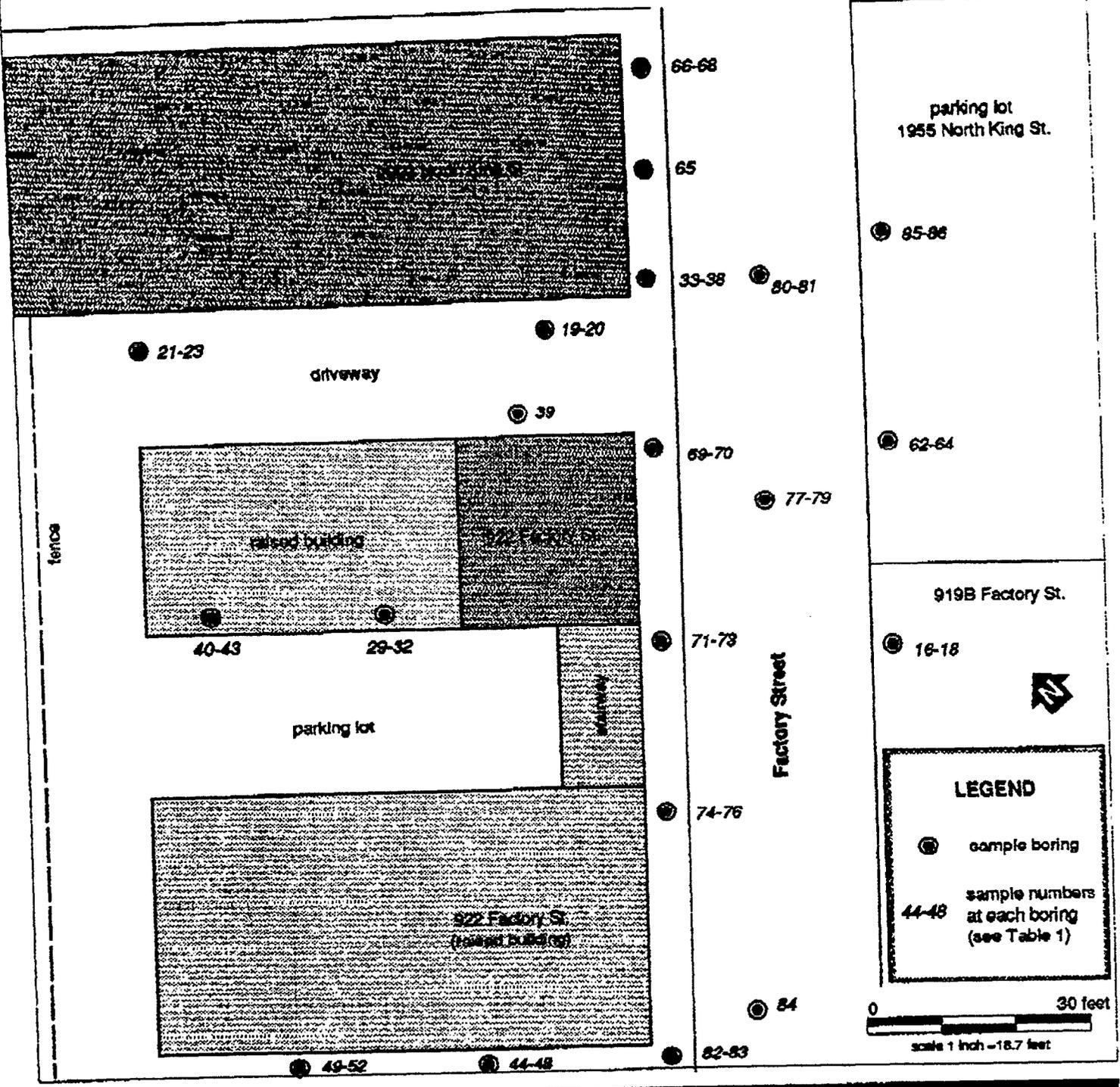
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Figure 3
TAT OFF-SITE SAMPLE LOCATION MAP
 Factory Street Lead Site
 Honolulu, Hawaii

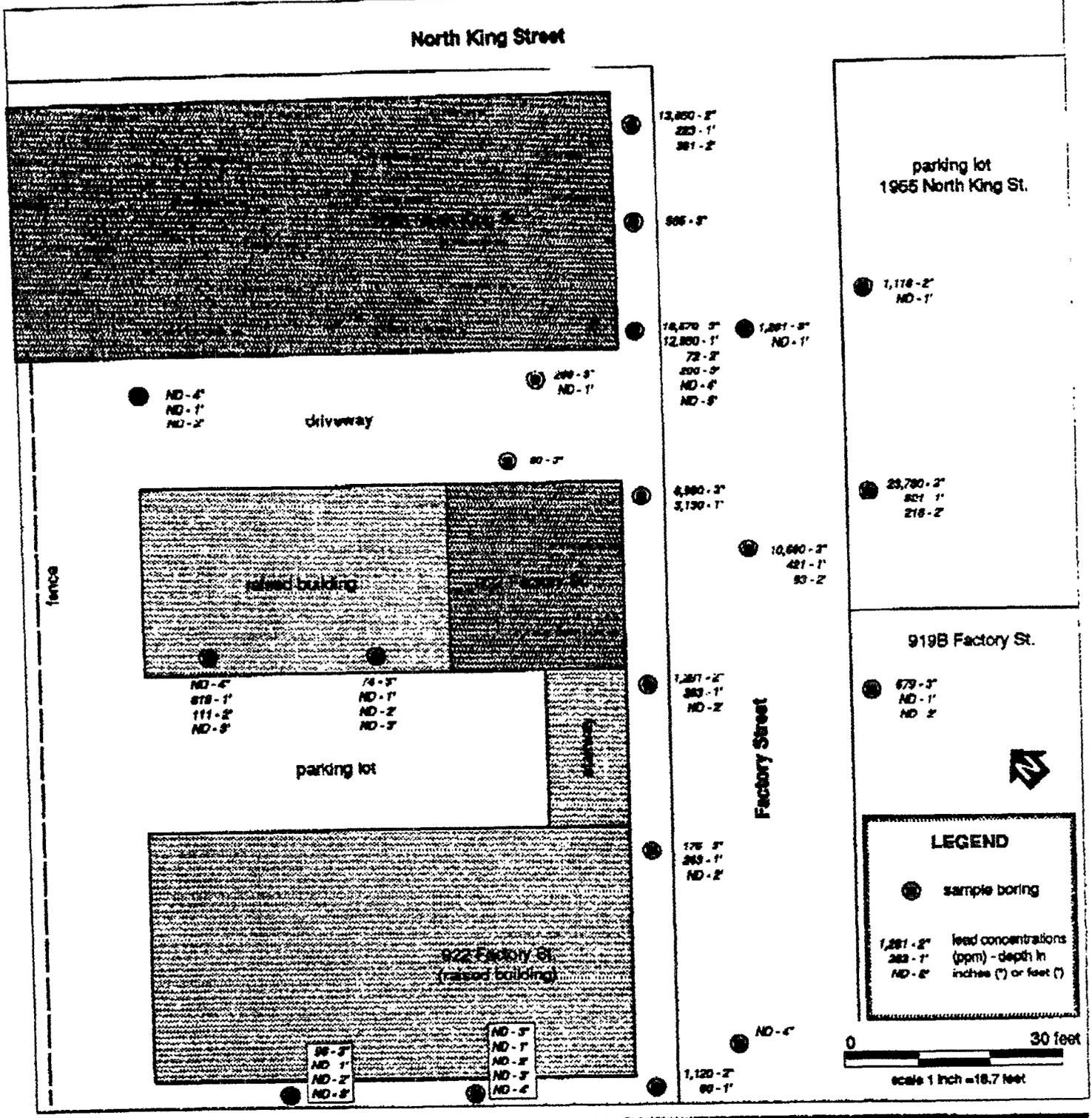
North King Street



ecology and environment, inc.

Figure 5
**TAT SOIL ON-SITE BORING LOCATIONS AND
 SAMPLE NUMBERS**
 Factory Street Lead Site
 Honolulu, Hawaii

DRAFT



ecology and environment, inc.

Figure 6
TAT ON-SITE SOIL SAMPLE LEAD CONCENTRATIONS
 Factory Street Lead Site
 Honolulu, Hawaii

DRAFT

Memorandum

DRAFT

To: John Whitaker

From: Keith Kuerzel

Date: 9/28/95

Subject: XRF Data Review for Factory Street Lead Site

PAN: EHI0073SBA

At the Factory Street Lead Site in Honolulu, HI the Spectrace 9000 field portable X-Ray Fluorescence (XRF) instrument was utilized between 2/22/95 and 3/1/95 to screen 86 soil samples for lead (Table 1). Over ten percent of the samples screened with the XRF were submitted for confirmatory analysis to the EPA Region IX laboratory in Richmond, California following all Contract Laboratory Program (CLP) protocols for sample handling and documentation. The samples were analyzed by Inductively Coupled Plasma (ICP), EPA method 6010 for lead only (report attached).

All XRF instrument performance criteria were checked daily and met the established performance requirements. Blanks, low-level standards, action level standards, and performance standards were all run daily. Action level check standards were analyzed after every ten samples and met the instrument performance requirements. All blanks, low level standards, and performance standards were within the plus or minus 50% expected concentrations.

The XRF data meet the TAT requirements for screening data. This data set correlated favorably with the CLP definitive data generated by the EPA lab with an r-value of .97 and thus meets Screening Plus 10% Definitive Data criteria. The instrument detection limit established for the site, based on a soil matrix blank, was 60mg/kg (ppm). Two false negative XRF results were exposed by the CLP data; SYE951 and SYE953. A blind field duplicate sample was submitted to test sample homogeneity and the two results were 14,900 and 19,000 a 28% difference which indicates a potential for matrix related error.

In Table 2 and in Chart 1 it is apparent that the XRF response was considerably lower than the ICP response to lead in the samples. The slope of the linear regression plot is 4.51, outside of the recommended slope value of >0.5 to <2.0. The TAT believes that this is related to matrix interferences of the soils collected. The samples were dense, saturated clays which made homogenization difficult if not impossible and high moisture content is a documented interference for XRF analysis. When the samples were dried in an oven and reanalyzed there was no appreciable increase in instrument response but this could be related to a number of interrelated matrix, sample handling, and analyte factors. The data is accepted by the TAT because of the high r-value (.97) which shows that the XRF and CLP data are directly related and can be converted using the linear equation of the line expressed as;

$$\text{ICP Result} = (4.51) \text{XRF Result} + (-1176).$$

Table 1
Factory Street Lead Site
Analytical Results

SAMPLE ID	XRF RESULT	CLP ID	CLP RESULT
	Pb - ppm		Pb - ppm
	ND = < 60		ND = < 7.1
PU-1032-1-0'	150		
PU-1032-2-1'	ND		
PU-1032-3-2'	ND		
KSAK-1	ND		
KSBK-5	75		
KSBK-6	115	SYE949	207
KSBK-7	126		
FS-915-8-0'	188		
FS-915-9-1'	124		
FS-915-10-2'	106		
WA-2003-11-0'	ND		
WA-2003-12-1'	ND		
WA-2003-13-2'	ND	SYE950	ND
FS-806-14-0'	320		
FS-806-15-4"	369		
FS-919B-16-3"	679		
FS-919B-17-1'	ND		
FS-919B-18-2'	ND		
NK-2003-19-3"	289		
NK-2003-20-1'	ND		
NK-2003-21-4"	ND		
NK-2003-22-1'	ND		
NK-2003-23-2'	ND		
FS-910-24-0'	289		
FS-910-25-2'	ND		
FS-904-26-0'	449		
FS-904-27-1'	ND		
FS-904-28-2'	ND		
FS-922-29-3"	74		
FS-922-30-1'	ND	SYE951	172
FS-922-31-2'	ND		
FS-922-32-3'	ND		
NK-2003-33-3"	18570		
NK-2003-34-1'	12850	SYE952	37400
NK-2003-35-2'	72		
NK 2003 36 3'	200		
NK-2003-37-4'	ND	SYE953	308
NK-2003-38-5'	ND		
NK-2003-39-3"	90		
FS-922-40-4"	ND	SYE954	27
FS-922-41-1'	619		
FS-922-42-2'	111		
FS-922-43-3'	ND		
FS-922-44-3"	ND		

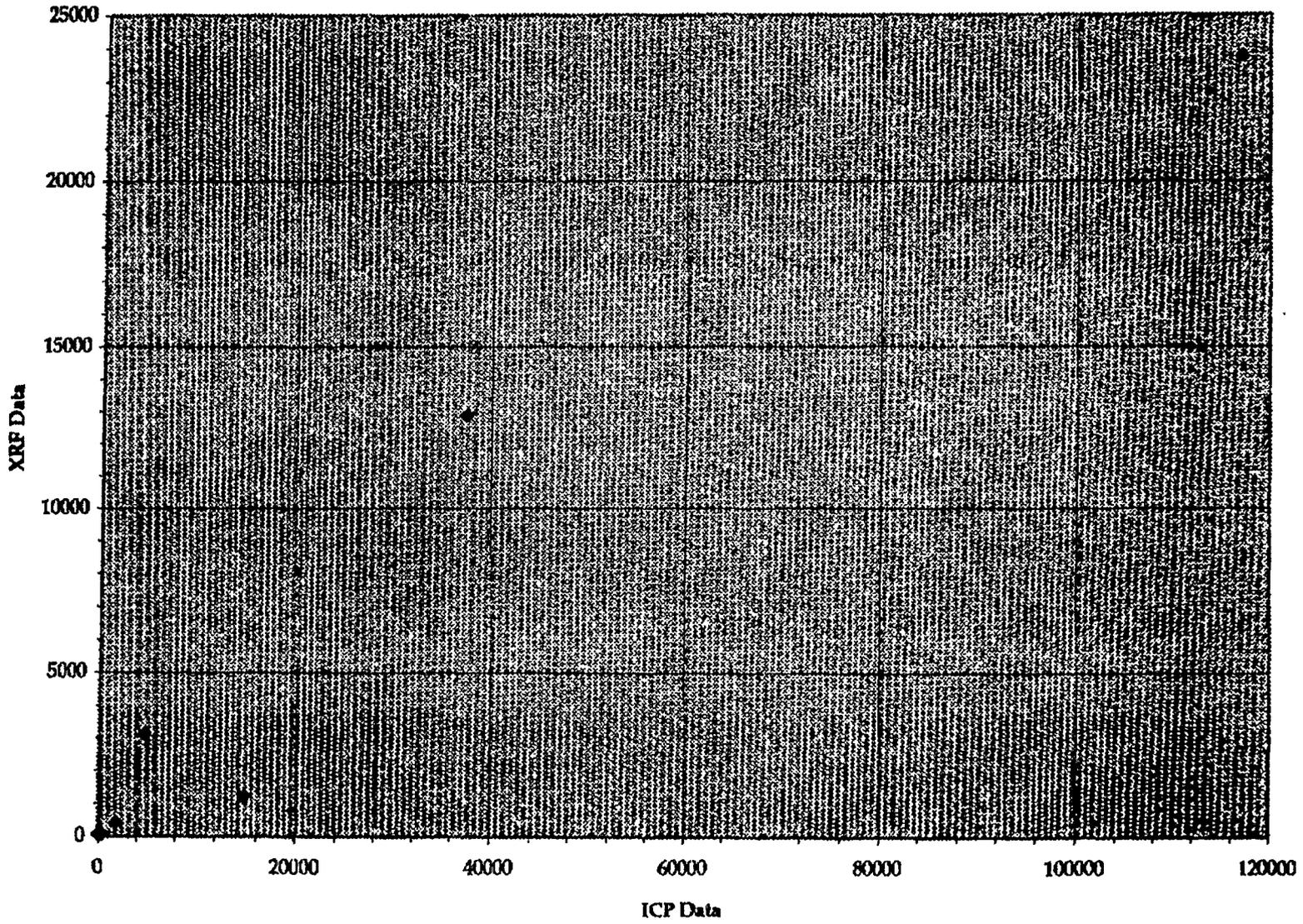
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Table 1
 Factory Street Lead Site
 Analytical Results

SAMPLE ID	XRF RESULT	CLP ID	CLP RESULT
	Pb - ppm		Pb - ppm
	ND = < 60		ND = < 7.1
FS-922-45-1'	ND		
FS-922-46-2'	ND		
FS-922-47-3'	ND		
FS-922-48-4'	ND		
FS-922-49-3"	96		
FS-922-50-1'	ND		
FS-922-51-2'	ND		
FS-922-52-3'	ND		
HA-1927-53-SC	351		
KA-1020-54-SC	ND		
NK-1955-55-SC	883		
FS-915-56-SC	554		
FS-902-57-SC	902		
IN-902-58-SC	325		
WA-2016-59-SC	336		
KO-757-60-SC	511		
PA-774-61-SC	951		
NK-1955-62-3"	23780	SYE955	117000
NK-1955-63-1'	521		
NK-1955-64-2'	216		
NK-2003-65-3"	585		
NK-2003-66-2"	13850		
NK-2003-67-1'	223		
NK-2003-68-2'	361		
FS-922-69-3"	6980		
FS-922-70-1'	3130	SYE956	4710
FS-922-71-2"	1231	SYE957	14900
FS-922-72-1'	263		
FS-922-73-2'	ND		
FS-922-74-3"	175		
FS-922-75-1'	263		
FS-922-76-2'	ND		
FS-CTR-77-3"	10690		
FS-CTR-78-1'	421	SYE958	1820
FS-CTR-79-2'	93		
FS-CTR-80-3"	1281		
FS-CTR-81-1'	ND		
FS-922-82-2"	1120		
FS-922-83-1'	60		
FS-CTR-84-4"	ND		
NK-1955-85-2"	1118		
NK-1955-86-1'	ND		

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Chart 1
Factory Street Lead Site
Linear Regression Plot



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E.L. Pacific

Environmental Laboratory
of the Pacific

Reference 8

A Full Service Laboratory for the Environmental Professional
930 Mapunapuna Street, Suite 100 • Honolulu, Hawaii 96819
Telephone: (808) 833-5663 Facsimile: (808) 833-7399

Laboratory Report

Client: Department of Health
5 Waterfront Plaza, 500 Ala Moana Blvd., Suite 2506
Honolulu, HI 96813
Attention: William Perry

Page: 1 of 3
ELP Project No.: 5144
Report Date: 01-Sep-93

Client Job No.: 930827

Sample Description: Samples from 2003 N. King Street.
Sample Matrix: Soil

Date Collected: 27-Aug-93
Date Received: 31-Aug-93

Client ID:	1-6"	1-12"	1-18"
Matrix:	soil	soil	soil
Lab ID:	083193-03	083193-04	083193-05

Date	Analysis	Method	Units	MRL	Results	Results	Results	Results
31-Aug-93	<u>Total Metals</u> Metals Digestion	EPA 3050						
01-Sep-93	Lead	EPA 6010	mg/Kg (ppm)	20	ND	121,000	28,700	17,900

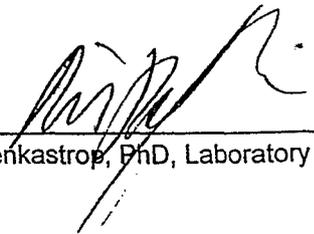
Client ID:	1-D-6"	2-6"	2-D-6"
Matrix:	soil	soil	soil
Lab ID:	083193-06	083193-07	083193-08

Date	Analysis	Method	Units	MRL	Results	Results	Results
31-Aug-93	<u>Total Metals</u> Metals Digestion	EPA 3050					
01-Sep-93	Lead	EPA 6010	mg/Kg (ppm)	20	36,800	20,700	23,700

Client ID:	3-6"	3-D-6"	4-6"	4-D-6"
Matrix:	soil	soil	soil	soil
Lab ID:	083193-09	083193-10	083193-11	083193-12

Date	Analysis	Method	Units	MRL	Results	Results	Results	Results
31-Aug-93	<u>Total Metals</u> Metals Digestion	EPA 3050						
01-Sep-93	Lead	EPA 6010	mg/Kg (ppm)	20	11,400	14,200	75,800	51,100

Approved by: 
Janet Jones, Laboratory Manager

Approved by: 
Dirk Koeppenkastrop, PhD, Laboratory Director

Quality Control Data

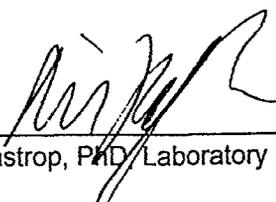
SPIKES

<u>Lab ID:</u>	LCS1	LCS2	MS	MSD	
<u>Units:</u>	%R	%R	RPD	%R	%R
			RPD		RPD

<u>Lab ID</u>	<u>Analysis</u>	<u>Method</u>	<u>Results</u>	<u>Results</u>	<u>Results</u>	<u>Results</u>	<u>Results</u>	<u>Results</u>
	<u>Total Metals</u>							
083193-12	Lead	EPA 6010	89	89	0	*	*	*

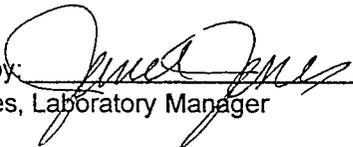
*Native analyte greater than 4 times the spike added, therefore recovery not calculable.

Approved by: 
 Janet Jones, Laboratory Manager

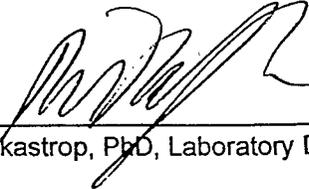
Approved by: 
 Dirk Koeppenkastrop, PhD, Laboratory Director

Definitions

D	Duplicate
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MRL	Method Reporting Limit
NA	Not Applicable
ND	Not Detected
NR	Not Requested
OS	Original Sample
%R	Percent Recovery
PDS	Post Digestion Spike
RPD	Relative Percent Difference

Approved by: 

Janet Jones, Laboratory Manager

Approved by: 

Dirk Koeppenkastrop, PhD, Laboratory Director

Office of Hazard Evaluation
and Emergency Response
August 10, 1993
Page 2

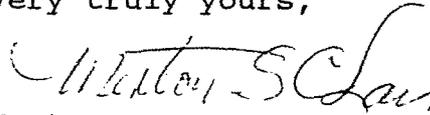
3. Excavated soils will be contained in DOT-approved containers and stockpiled on-site prior to disposal.
4. Excavated soils will be tested for hazardous waste characteristics and disposed of accordingly.
5. To minimize potential exposure to contaminants at the work area, the excavation will be backfilled with crushed gravel, compacted to standards, and covered with asphaltic concrete.

Also, we propose to re-paint the building wall where you detected concentrations of lead.

Kindly review the above proposed scope of work and provide me with your comments.

We hope to hear from you in the near future and look forward to working with the Department of Health in addressing the situation.

Very truly yours,



Merton S. C. Lau

MSCL:js

MERTON S. C. LAU
1164 Bishop Street, Suite 1111
Honolulu, Hawaii 96813
Telephone (808) 548-5190
FAX (808) 524-4455

August 30, 1993

William C. Perry (OSC)
Hazard Evaluation
& Emergency Response Office
Hawaii Department of Health
5 Waterfront Plaza, Suite 250C
500 Ala Moana Blvd.
Honolulu, HI 96813

FAX 586-4370

RE: 2003 No. King Street/Lead Contaminated Soil
Emergency Removal Plan

Dear Mr. Perry:

Pursuant to the Order issued by the Director of Health on August 24, 1993, we submit herewith our Emergency Removal Plan.

1. Contractor or workers to convene at job site at 8:30 a.m.
2. Perform lead removal and containment and control on ewa side of the 2003 No. King Street property and on the adjacent parcel of dirt on kokohead side of Factory Street.
3. I have contracted 2 individuals to be dressed in Level C and outfitted with the following equipment:

TYVEK suits, gloves, over boots, and air purifying respirators.
4. After dressing and wearing the proper equipment, we intend to work the soil by applying a small quantity of water (damping) in order to hinder the possibility of dust exposure.

5. Work schedule:

8:30 a.m. to 9:30 a.m.

Proceed with work at Area 1. Excavate down to 6" to 12" below surface and place excavated soil into containers on site, obtain verification sample (composite) at base of excavation, and from the can, cover excavated area with the existing plastic sheet.

6. Move makai to Area 2 and repeat the procedure used for Area 1.

Move makai to Area 3 and repeat the procedure used for Area 1.

Move across Factory Street to Area 4 on kokohead side of Factory Street and repeat the procedure used for Area 1.

7. Proceed to Area 1, backfill with new material, compact, and pave with 2 1/2" of asphalt concrete.

Proceed to Area 2, and repeat asphalt concrete paving activities as in Area 1.

Proceed to Area 3 and repeat asphalt concrete paving activities as in Area 1.

Move across Factory street to Area 4 and repeat the asphalt concrete paving activities as in Area 1.

8. In the event the test results show that the contamination levels are significantly high, we will then be willing to re-excavate if upon review of verification analytical sampling information, the HEER office deems it to be a danger to the environment.

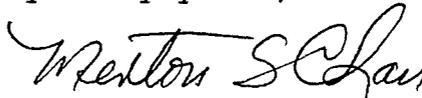
9. Disposal plan - Build a screen, place soil in screen and wash it so that the lead would go to the bottom of the screen. Then consolidate the contaminated material to be used in a concrete mixture for cement blocks.

10. Final Report: Submit a Final Report containing all response, disposal or removal action data, analytical data and, any as-built designs, complimented by finalized drawings.

I am willing to enter into a monitoring program by taking water samples from the drain pipe during rainfall and having the sample analyzed for lead.

I will be willing to go down gradient and obtain one soil sample for analysis to show that lead is not migrating offsite.

Very truly yours,



Merton S. C. Lau

MSCL:js

Reference 12

MERTON S. C. LAU
1164 BISHOP STREET, SUITE 1111
HONOLULU, HAWAII 96813-2810
TELEPHONE (808) 548-5190

October 12, 1993 at 6:45 a.m.

FAX TRANSMITTAL MEMO TO: William Perry (OSC)
HEER Office
Hawaii Department of Health

FAX No. 586-4370

FROM: Merton Lau
FAX 524-4455

RE: 2003 No. King street
History of Owners and Tenants

REMARKS:

I have researched the ownership and tenancies of subject property. The ownership history is as follows:

1. December 24, 1986 property was purchased by Merton S. C. Lau as a result of a Court ordered partition action.
2. August 28, 1959: James H. Yamamoto
Beverly F. Tanemura
Joseph M. Yamamoto
Shigeo Yamamoto
3. June 22, 1956: Hirouemon Yamamoto and
wife, Toki Yamamoto

The commercial tenants occupying subject building since I took possession on 12/24/86 are listed by address because there exists five (5) different commercial spaces.

2003: Dr. Joseph M. Yamamoto and
2007: son, Dr. Joseph H. Yamamoto from 12/24/86 to
3/1/88 (dental office)

Memo to Bill Parry
October 12, 1993
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2003: After 3/1/88, tenants were as follows:

1. Grace Bautista and Romeo Ramoleta (sign painting)
2. Fred Williams, Etevise Williams and Edna Williams (travel agency)
3. Karen Ngo (pawn shop)

2007: After 3/1/88, tenants were as follows:

1. Virginia Ganac and Alexander Macalma (garment manufacturing)
2. Duong Trieu Ly (dress shop)
3. Van Chi Dang (luggage)
4. Raymond Wong (grocery store)
5. Diana Cantu & Larry Tran (grocery store)

2011: After 12/24/86, tenants were all operating a Korean style barbecue restaurant as follows:

1. In Wan Choi and Jung Hee Choi
2. Han Gu Kim and Hui Ok Kim
3. Jung Ja and Albert Izuka
4. Sun Ah and Sang Wook Kim
5. Michu Conlee
6. So Cha and Richard Hashimoto
7. Sun Ah and Sang Wook Kim and Jeanne Sol Kim
8. Samuel K. Chong and Kathy S. Chong

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2013:

1. from 12/24/86 to 7/1/87 Vivian Yamamoto and Sarah Saito (Kalihi Fishing Supply)
2. Norma Tanele & Anna Bower (florist)
3. Jack Dalton (key shop)

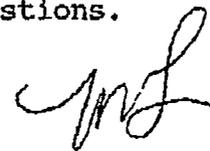
2015: After 12/24/86:

1. Han Gu Kim and Hui Ok Kim (grocery store)
2. Victoria Rumbawa (grocery store)
3. Luzviminda B. Oliveira and Louis R. Oliveira, Jr. (grocery store)

Based on the above owners and/or tenants, it is my opinion that the possible sources for causing a release would be the following:

1. Dr. Joseph M. Yamamoto and Dr. Joseph H. Yamamoto - dental office
2. Grace Bautista and Romeo Ramolote - sign painting
3. Vivian Yamamoto and Sarah Saito - fishing supply store

Please call me at 548-5190 if there are any questions.



ML:js

Total number of page(s) being faxed: 3, including cover memo.
If you have not received the entire page(s) as noted, please call me at 548-5190.

Reference 13

JOHN WAIHEE
GOVERNOR OF HAWAII



JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

September 7, 1993

In reply, please refer to:
File:

The Honorable Representative Emilio Alcon
House of Representatives
State Office Tower, Room 1303
Honolulu, Hawaii 96813

Dear Representative Alcon:

This is in response to your inquiry regarding the lead problem found at 2003 North King Street. The historical account of the facts are as follows:

<u>Date</u>	<u>Action</u>
4/28/93	Hazardous Evaluation and Emergency Response (HEER) and Maternal Child Health, Human Services Branch, Community Lead Program conduct lead sampling at 2033 North King St. Apartments, including family interviews. Samples of wall paint, vacuum cleaner bag dust, and drinking water from Apt. H, (Fernandez residence) taken to identify source. Soil samples around the apartment also taken.
	Dr. Myra Valin, Pediatrician of Mrs. E. Fernandez's two daughters notified Dr. P. Heu of Department of Health (DOH), Human Services Branch of high lead levels in the children just prior to visit.
4/29/93	Community Lead Program and Drinking Water Personnel made joint home visit for assessment. Teaching and counseling on managing the environment to decrease lead exposure to children was also provided to the family and their Hana Like case worker.
4/30/93	Blood lead levels of children retested.
5/7/93	Notification of water samples result negative.
5/13/93	Soil sample from 4/28/93 analysis returned as positive.

<u>Date</u>	<u>Action</u>
5/17/93	High lead level found in soil sample and vacuum cleaner dust. HEER reports further testing needed to adequately assess source of lead.
5/21/93	Pediatrician told of environmental results by Dr. Pat Heu. With confirmation of blood lead results, Pediatrician advised moving out of the building. Blood lead levels of children retested.
6/1/93	Family relocated. DOH continues to monitor the blood lead results and provides consultation to the Pediatrician and to Hana Like who works closely with the family.
6/8/93	Further verification sampling conducted. Six (6) additional soil samples obtained from within two city blocks radius from previous soil sampling location.
6/17/93	Results returned.
7/7/93	Meeting between the Community Lead Program and HEER to discuss continued high lead level in soil and options for consideration. Subsequent meetings held to plan for door to door campaign and clinic efforts.
7/8/93	Soil and paint samples from five (5) sites taken.
7/12/93	Sample analysis returned.
7/15/93	Seven (7) soil and composite samples taken.
7/16/93	Blood lead levels of children retested.
7/19/93	Analysis of samples returned.
8/10/93	Response from Mr. Lau regarding the mitigation of the lead contaminated soil.
8/23/93	Press release on high levels of lead and door to door campaign announced from August 25-28, 1993.
8/24/93	Emergency Response Order issued (see attached)
8/26/93	Phone call from citizen saying that he remembers a fishing supply store dumping lead ash between 1955-1966 in the area.

The Honorable Representative Emilio Alcon
September 7, 1993
Page 3

Date

Action

8/27/93

Four (4) sites samples taken, each of different levels and at different times.

Much effort and time from our two programs in Community Lead and Hazard Evaluation and Emergency Response has been taken to resolve this public health problem. Problems such as these require epidemiology study and analysis.

I hope this historical perspective on the problem meets your expectations. If you wish to review in more detail the entire process of the analysis, we would be happy to show it to you.

Very truly yours,



J JOHN C. LEWIN, M.D.
Director of Health

Technical Report No. 179

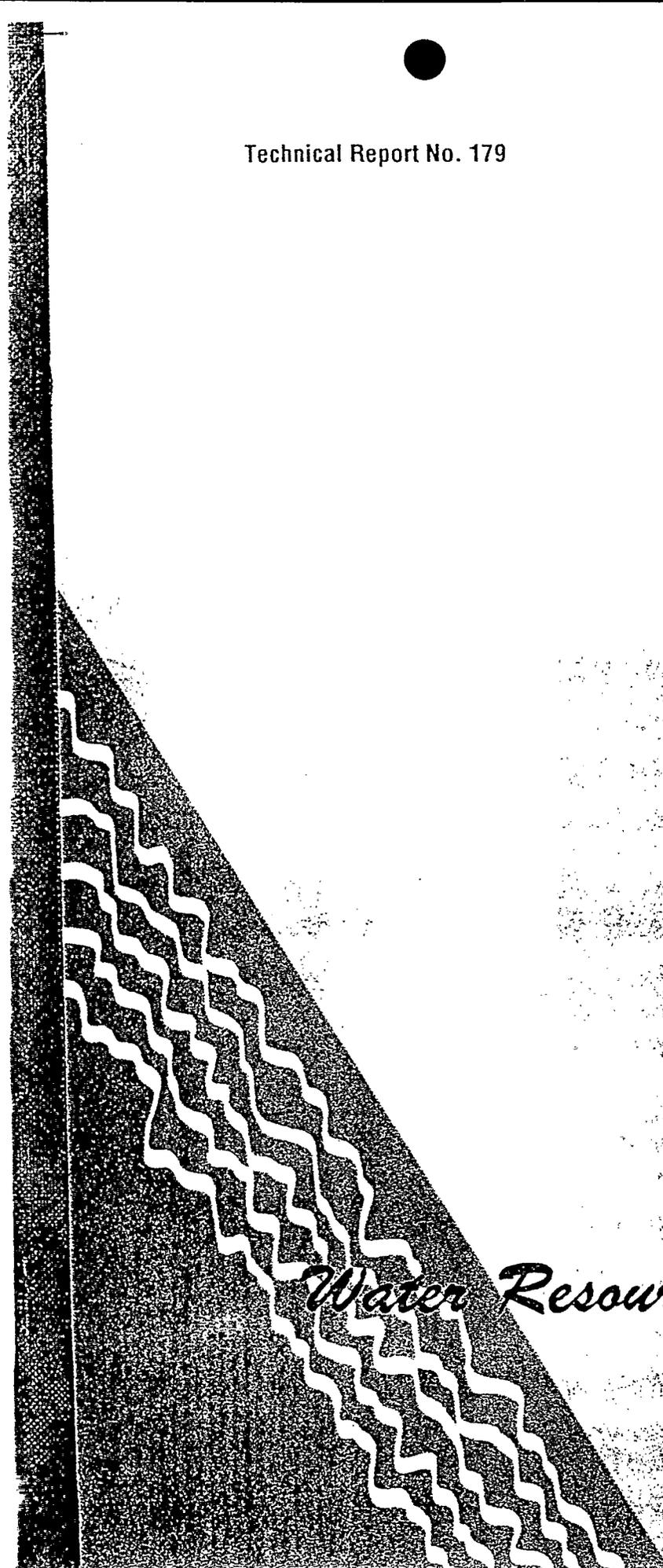
AQUIFER IDENTIFICATION AND CLASSIFICATION
FOR O'AHU: GROUNDWATER PROTECTION
STRATEGY FOR HAWAII

John F. Mink
L. Stephen Lau

February 1990
Revised

Water Resources Research Center

University of Hawaii at Manoa
Honolulu, Hawaii 96822



**AQUIFER IDENTIFICATION AND CLASSIFICATION FOR O'AHU:
Groundwater Protection Strategy for Hawai'i**

John F. Mink
L. Stephen Lau

Technical Report No. 179

November 1987
(Rev. 1990)

Project Completion Report
for
Identification of Class I: Special Groundwaters
Highly Vulnerable to Contamination, Oahu
Project No.: T-763
Principal Investigator: L. Stephen Lau
Project Period: 1 June 1986-30 November 1987
Funding Agency: Department of Health, State of Hawaii

**WATER RESOURCES RESEARCH CENTER
UNIVERSITY OF HAWAII AT MANOA
Honolulu, Hawaii 96822**

subsurface. Another example is the State regulation that controls underground injection. A "no pass" line sets off regions in which direct injection of wastewater is prohibited.

Between these two lines—the Conservation District and the injection line—falls most of each island's land area. The unregulated areas are largely underlaid by unconfined aquifers that are potentially vulnerable to contamination. Urbanization and agriculture dominate land use. Manifestly, a strategy must be devised to prevent contamination by activities that range from dry cleaning to chemically based agriculture.

The aquifer classification scheme and contamination indices provided in this study are consistent with the U.S. EPA (1984) Groundwater Protection Guidelines. They are also consistent with and complementary to Hawaii State water quality regulations for protecting surface water. In Hawai'i, surface water is classified by ecosystem and associated water quality. In the strategy for groundwater, the resources are classified by hydrogeology and water quality.

INAPPLICABILITY OF DRASTIC RATING SYSTEM OF POLLUTION POTENTIAL IN HAWAI'I

Except in aquifers covered and confined by caprock, virtually all groundwater in O'ahu is accessible to contamination accompanying infiltration. In the Status Codes listed in Table 1, most Aquifer Types are rated as highly vulnerable to contamination.

Evaluating contamination vulnerability by using the DRASTIC approach suggested by EPA is not very useful for the aquifers of O'ahu, or the other islands of the state. DRASTIC is an acronym for a list of physical characteristics that describe a hydrogeological setting. These characteristics are D, depth to water; R, recharge; A, aquifer media; S, soil media; T, topography; I, infiltration in the vadose zone; and C, aquifer conductivity. Two sets of relative weights are assigned to each characteristic: one for areas where agriculture is the dominant land use; the other for mixed usage. The relative weights are as follows:

	Agriculture	Other
D	5	5
R	4	4
A	3	3
S	5	2
T	3	1
I	4	5
C	2	3

Weighting choices are inevitably subject to considerable arbitrariness.

To compute the pollution potential, each DRASTIC factor is divided into a range scale of 1 to 10, in which 1 assigns the least importance to the factor and 10 the most. Thus, the

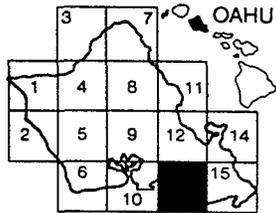
TABLE 1. AQUIFER AND STATUS CODES FOR O'AHU, HAWAII

Is.	Aquifer Sector	Aquifer System	Aquifer Type	Aquifer Code	Status Code	Quadrangle No.
3	01 Honolulu	01 Palolo	116	30101116	23321	13
			121	30101121	11113	
			111	30101111	11111	13
			212	30101212	11111	13, 15
		02 Nuuanu	116	30102116	13321	13
			121	30102121	11113	
			111	30102111	21111	13
			212	30102212	11111	13
		→ 03 Kalihi	116	30103116	13321	13
			121	30103121	11113	
			111	30103111	11111	13
			215	30103215	11111	12, 13
	04 Moanalua	116	30104116	23321	10, 13	
		121	30104121	11113		
		111	30104111	11111	10, 12, 13	
		212	30104212	21111	12, 13	
	05 Waialae	116	30105116	23421	13, 15	
		121	30105121	21113		
		111	30105111	11111	13, 15	
		212	30105212	21111	13, 15	
	02 Pearl Harbor	01 Waimalu	116	30201116	12211	9, 10
			121	30201121	12212	
			111	30201111	11111	9, 10, 12
			212	30201212	21111	9, 12
02 Waiawa		116	30202116	12211	9, 10	
		121	30202121	12212		
		111	30202111	11111	8, 9	
		212	30202212	21111	8, 9, 11, 12	
03 Waipahu		116	30203116	12211	5, 6, 9, 10	
		121	30203121	12212		
		111	30203111	11111	5, 6, 9	
04 Ewa		116	30204116	13321	6	
	121	30204121	13213			
	111	30204111	11111	5, 6		
	212	30204212	21111	5		
05 Kunia	111	30205111	21112	5		
	212	30205212	21111	5		
03 Waianae	01 Nanakuli	116	30301116	23421	2, 5	
		122	30301122	23423		
		112	30301112	23321	5, 6	
		212	30301212	21121	5	

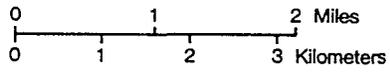


Base Map: USGS (1:24,000 series, rev. 1983).

HONOLULU, OAHU
O-13
1987
Rev. 1990



- Sector
- Aquifer System
- Aquifer Type
- 30104111 Aquifer Code
- (11111) Status Code



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Figure 1.13. Aquifer classification map, Honolulu, O'ahu, Hawai'i

DRAFT

ECOLOGICALLY SENSITIVE WETLANDS
ON O'AHU:

Groundwater Protection Strategy for Hawai'i

Jacquelin N. Miller
Steven S. Armann
Sonia S.C. Chan-Hui
Roseanne Sakamoto
Joanna Chiang

Technical Report No. 184

December 1989

Project Completion Report
for
Identification of Class I: Special Groundwaters
Highly Vulnerable to Contamination, O'ahu (Part 2)

Project No.: T-763

Principal Investigator: L. Stephen Lau

Project Period: 1 June 1986 to 30 November 1987

Funding Agency: Department of Health, State of Hawaii

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