

**REPORT TO THE  
TWENTY-FIRST LEGISLATURE  
STATE OF HAWAII**

**2001**

**IN COMPLIANCE WITH HAWAII REVISED STATUTES  
CHAPTERS 128D AND 128E  
ON THE ACTIVITIES OF THE DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH ADMINISTRATION  
OFFICE OF HAZARD EVALUATION AND EMERGENCY  
RESPONSE  
AND USE OF THE ENVIRONMENTAL RESPONSE REVOLVING  
FUND**

**PREPARED BY:  
DEPARTMENT OF HEALTH  
STATE OF HAWAII**

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Appendix A DOH Release Notification Log 2000

Appendix B State Site List 2000

## GLOSSARY

AFB	Air Force Base
AGI	Airport Group International
AOC	Area of Concern
ARARs	Applicable Relevant and Appropriate Requirements
AST	Above Ground Storage Tank
ATSDR	Agency for Toxic Substances and Disease Registry
AVGAS	Aviation Gas
BETX	Benzene, Toluene, Ethyl Benzene, Xylene
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
CA	Cooperative Agreement
CAB	Clean Air Branch
CCA	Copper Chromium Arsenate
CDC	Center for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIC	Clean Islands Council
CIP	Campbell Industrial Park
CLEAN	Campbell Local Emergency Action Network
COC	Contaminant of Concern
CSM	Conceptual Site Model
CWB	Clean Water Branch
DAGS	Department of Accounting and General Services
DERP	Defense Environmental Restoration Program
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
DOD	Department of Defense
DOH	Department of Health
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
DSMOA	Department of Defense/State Memorandum of Agreement
EA	Environmental Assessment
EE/CA	Engineering Evaluation/Cost Analysis
EGIS	Environmental Geographic Information System
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
EPO	Environmental Planning Office
ERO	Environmental Resources Office
ERRF	Environmental Response Revolving Fund
ESI	Expanded site inspection
FS	Feasibility study
FSA	Fuel Storage Annexes

GIS	Geographic Information System
H <sub>2</sub> S	Hydrogen sulfide
HAR	Hawaii Administrative Rules
HARC	Hawaii Agriculture Research Center
HAZMAT	Hazardous Material (also a Unit in the Fire Department)
HCCPD	Hexachlorocyclopentadiene
HCDA	Hawaii Community Development Authority
HEER	Office of Hazard Evaluation and Emergency Response
HEPCRA	Hawaii Emergency Planning and Community Right-to-Know Act
HERL	Hawaii Environmental Response Law
HIARNG	Hawaii Air National Guard
HPD	Hawaii Fire Department
HRS	Hawaii Revised Statutes
HSERC	Hawaii State Emergency Response Commission
HSPA	Hawaiian Sugar Planter's Association
ICE	Crystal Methamphetamine
IRP	Installation Restoration Project
ISST	Initial Site Screening Team
IT	Industrial Technology
LEPC	Local Emergency Planning Committee's
MOA	Memorandum of Agreement
MCL	Maximum Contaminant Level
MOGAS	Motor gas
MSO	Marine Safety Office, U.S. Coast Guard
NAS	Naval Air Station
NCTAMS	Naval Computer and Telecommunications Area Master Station
NEESA	Naval Energy and Environmental Support Activity
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NPDES	National pollution discharge and elimination system
NPL	National Priority List
NRTF	Naval Radio Transmitting Facility
NRDA	Natural Resource Damage Assessment
OEQC	Hawaii State Office of Environmental Quality Control
OPA 90	The Oil Pollution Act of 1990
OSWM	Office of Solid Waste Management
OWSG	An Oiled Wildlife Steering Group
PA	Preliminary Assessment
PAHs	Polyaromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethylene also known as PERC
PCP	Pentachlorophenol
PENCO	Pacific Environmental Corporation
PGV	Puna Geothermal Venture

POL	Petroleum Oil and Lubricant
PRGs	Preliminary Remediation Goals
PRP	Potential Responsible Party
QA/QC	Quality Assurance/Quality Control
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RPM	State Remedial Project Manager
SDAR	Site Discovery Assessment and Remediation Section
SDWB	Safe Drinking Water Branch
SERC	State Emergency Response Commission
SHWB	Solid and Hazardous Waste Branch
SI	Site Investigation
SITE	Superfund Innovative Technology Evaluation
SOSC	State On-Scene Coordinator
SPA	State Program Approval
SPCC	Spill Prevention Control and Countermeasures
SVOC	Semi-volatile organic compounds
SWTR	Surface Water Treatment Requirements
TAMC	Tripler Army Medical Center
TCE	Trichloroethylene
TBCs	To Be Considered Requirements
TPH	Total Petroleum Hydrocarbon
TSCA	Toxic Substance Control Act
UIC	Underground Injection Control
VOC	Volatile Organic Compound
VRP	Voluntary Response Program
WWTP	Wastewater treatment plant

**HAZARD EVALUATION AND EMERGENCY RESPONSE (HEER) OFFICE**  
**FISCAL YEAR 2000 ACTIVITIES**  
**(7/1/99 - 6/30/00)**

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**EXECUTIVE SUMMARY**

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This report complies with Chapters 128D and 128E, HRS, that require the Department of Health (DOH) to prepare an annual report for the State Legislature. In addition, this report provides an overview of the function and activities of the Hazard Evaluation and Emergency Response (HEER) Office during Fiscal Year (FY) 2000.

Annual Report Requirements

Chapter 128D, HRS, Environmental Response Law, requires the DOH to include/address the following:

1. Budget to implement remedial action plans requiring funding by the Environmental Response Revolving Fund.
2. Identify sites eligible for remedial action under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), including a statement as to any appropriation that may be necessary to pay the State's share of the plan.
3. The Department shall publish and revise, at least annually, a listing of the sites subject to Chapter 128D and any de minis settlements made under this chapter.

These requirements are addressed in the HEER OFFICE BUDGET AND EXPENDITURES, (Section 4.0) and STATE PRIORITY CLEANUP SITES, (Section 3.0), sections of this report, and in the Appendices A and B: Department of Health Release Notification Log and Department of Health State Site List, respectively.

Chapter 128E, HRS, Hawaii Emergency Planning and Community Right-To-Know Act (HEPCRA), requires the DOH to report the amount of Tier II filing fees collected for use by the local emergency planning committees (LEPC) and deposited into the Environmental Response Revolving Fund (ERRF) during FY 2000, the amount collected to date for FY 2001, and the amount to be collected in FY 2002.

During FY 2000 the HEER Office collected \$69,700 in fees for the latter half of the 1998 and the first half of the 1999 calendar year reporting periods, and deposited them into the Environmental Response Revolving Fund (ERRF).

Fees for reporting year 1999 totaled \$64,400. Calendar year 2000 HEPCRA Tier II filing fees are not due until March 1, 2001, with the bulk generally submitted during February. Similarly, collection of HEPCRA fees for the calendar year 2001 are not due until March 1, 2002. Collections during fiscal years 2001 and 2002 should be consistent with the \$69,700 received during FY 2000.

### Overview of HEER Function and Activities

In general, the function of the HEER Office is to plan for and respond to hazardous substance, pollutant, contaminant and oil releases to the environment. The HEER Office evaluates actual or potential impacts such releases may have on the public, environment and natural resources and mitigates them as needed. The HEER Office is staffed with professionals able to assess chemical risks, evaluate the extent of chemical contamination, formulate response plans, oversee remediation, and actually conduct response activities. In addition, the HEER Office coordinates statewide planning activities to prepare for and respond to chemical and oil spills in the environment.

During FY 2000, the HEER Office received 465 notifications of chemical or oil spills, and 79 required a site visit by an OSC or off-scene coordination. This is a 16% decrease below the 567 spill notifications reported in FY 1999. Notable among the spill responses are the following:

- Maui oil tanker truck overturning
- Brewer Environmental Industry, Campbell Industrial Park, acid spill
- Kaneohe Marine Corps Air Station, JP5 fuel spill
- The Gas Company, Campbell Industrial Park, 16-inch main line leak
- Fishing vessel Swordman I grounding at Pearl and Hermes Atoll
- CHEVRON Jet-A fuel pipeline leak, Honolulu Harbor



During FY 2000, the HEER Office concentrated on improving its programs and enhancing its capacities in the following priority areas:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to contaminated sites.
- Develop and improve usage of the Voluntary Response Program (VRP) and Brownfields programs.
- Improve office operations.
- Develop a Hawaii Chemical Accident Release Prevention Program.

During FY 2000, the HEER Office implemented the following legislation passed by the 1999 Legislature:

On July 2, 1999, the Governor approved Act 192 SLH 1999, which required the Department of Health to conduct soil sampling in Village Park and the West Loch Fairways in an effort to determine if persistent agricultural pesticides are present in the soil at levels that could be harmful. The results showed:

- The soils in the study area did not contain elevated levels of chemicals that could be attributed to agricultural or military activities. No area-wide chemical contamination was found.
- Several metals – arsenic, chromium, lead and copper – were present in almost all soil samples. The concentrations of these metals in most samples were consistent with levels typically found to be naturally occurring in volcanic soils. Two composite samples showed elevated arsenic concentrations, which are consistent with levels found where residential pesticides have been used or treated lumber has been present.
- There is no apparent association between the chemicals present in the soil and the reported health problems in Village Park and West Loch Fairways.

On July 2, 1999, the Governor approved Act 211 SLH 1999, which allows the Department of Health to establish a permanent exempt position for an ecological risk assessor for the purpose of assessing ecological risks and damages. The funds for this position come from the Environmental Response Revolving Fund established in section 128D-2. The duties of the ecological risk assessor must bear a rational nexus to the intent and purpose of 128D.

- The HEER Office completed a mini-reorganization to incorporate the ecological risk assessment function into the office.
- The position was subsequently established.

In addition, the following legislation was passed by the 2000 Legislature for implementation in FY 2001:

On June 19, 2000, the Governor approved Act 245 SLH 2000, which expanded the usage of the Environmental Response Revolving Fund to support environmental protection and natural resource protection programs, including but not limited to energy conservation and alternative energy development, and to address concerns related to air quality, global warming, clean water, polluted runoff, and solid and hazardous waste.

Senate Concurrent Resolution (S.C.R.) No. 129

Requesting a study of unplanned releases of emissions by facilities at Campbell Industrial Park, a study of above ground chemical storage tanks, and a study of the Department of Health environmental hotlines.

Senate Concurrent Resolution (S.C.R.) No. 204

Requesting the Department of Health to conduct follow-up soil tests at Village Park and West Loch Fairways.

During FY 2001, the HEER Office will continue to build its capacity to order, enforce and oversee cleanups of contaminated sites and recover costs wherever possible. In addition, it will encourage greater utilization of incentive programs such as the VRP and Brownfields programs to return contaminated properties to productive economic use. Finally, the HEER Office will work to develop and implement a comprehensive Hawaii Chemical Accident Release Prevention Program. These activities will continue to be the priorities of the HEER Office's fiscal years 2000/2001 Operating Plan:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to contaminated sites.
- Develop and improve usage of the VRP and Brownfields programs.
- Improve office operations.
- Develop a Hawaii Chemical Accident Release Prevention Program.

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## **1.0 THE HEER OFFICE**

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The HEER Office operates under various environmental authorities. The primary state enabling legislation is Chapter 128D, HRS, "Environmental Response Law" or commonly referred to as Hawaii's Environmental Response Law (HERL) and Chapter 128E, HRS, "Hawaii Emergency Planning and Community Right-to-Know Act" (HEPCRA). Chapter 128D, HRS, is modeled after the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Chapter 128E, HRS, is modeled after the federal Emergency Planning and Community Right-To-Know Act (EPCRA). Unlike CERCLA, HERL defines hazardous substances to include oil. Due to this fact, the HEER Office becomes involved in oil spill planning, preparedness and response activities under the Oil Pollution Act of 1990 (OPA 90). The following is a list of the legal authorities under which the HEER Office operates:

### **1.1 Legal Authorities**

#### State Laws/Rules (Hawaii Revised Statutes - HRS)

- Chapter 128D, HRS, "Hawaii's Environmental Response Law" (HERL)
  - Title 11, Chapter 451, Hawaii Administrative Rules (HAR), "State Contingency Plan."
- Chapter 128E, HRS, "Hawaii Emergency Planning and Community Right-to-Know Act" (HEPCRA).
- Chapter 321, HRS, "Department of Health"
  - Title 11, Chapter 5, HAR, "Environmentally-Related Illness and Injury Reporting"

#### Federal Laws

- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR, Part 300, "National Contingency Plan."
- CERCLA, Title III, "Emergency Planning and Community Right-to-Know Act," 40 CFR, Part 302, "National Contingency Plan."
- The Oil Pollution Act of 1990 (OPA 90), 40 CFR, Part 300, "National Contingency Plan."

## **1.2 Program Mission and Objectives**

### **Mission**

To protect human health, public welfare and the environment, and to provide state leadership, support and partnership in preventing, planning for, responding to, eliminating, and enforcing environmental laws related to releases or threats of releases of hazardous substances, pollutants or contaminants including oil.

Specific program actions are:

1. Prepare for and respond in a timely and effective manner to releases of hazardous substances and oil into the environment.
2. Prepare and respond to all media related (air, land and water) releases during non-routine state working hours (off-hours).
3. Locate, investigate, and assist in the cleanup of lands with prior releases of hazardous substances, pollutants or contaminants.
4. Prevent harmful releases of oil and hazardous substances into the environment.
5. Evaluate the risks associated with releases of chemicals into the environment and other environmental risks to public health and the ecosystem.

### **Objectives**

The following are our objectives:

#### **Objective A: Environmental Release Response:**

- A-1: Improve the preparedness of federal, state and local entities to respond to releases of petroleum and hazardous materials into the environment utilizing risk-based management principles and effective partnerships.

A-2: Integrate the Department of Health's response and cleanup programs utilizing risk-based management principles and effective partnerships.

A-3: Enhance and improve capabilities to identify and assess hazardous substance and petroleum-contaminated sites.

A-4: Enhance and improve capabilities to clean up hazardous and petroleum waste sites.

**Objective B: Prevention of Environmental Contamination**

B-1: Implement an oil spill prevention program in Hawaii.

B-2: Implement a Pipeline Safety Program.

B-3: Implement a Clean Air Act (CAA) Section 112(r) Risk Management Program.

B-4: Implement a HEPCRA Inspection Program.

**Objective C: Statewide Risk Assessment Support**

C-1: Maintain an ongoing core of qualified environmental technical experts.

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## **2.0 FY 2000 ACTIVITY**

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### **2.1 FY 2000 HEER Office Priorities**

During FY 2000, the HEER Office concentrated on improving its various programs with a priority on development of the Remediation Program. The FY 2000 Operating Plan priorities were:

- Improve enforcement of Chapters 128D and 128E, HRS.
- Improve emergency response preparedness.
- Improve oversight and response to contaminated sites.
- Develop and improve usage of the Voluntary Response Program (VRP) and Brownfields Program.
- Improve office operations.
- Develop a Hawaii Chemical Accident Release Prevention Program.

### **FY 2000 Notable Accomplishments by Priorities**

#### ***Improved enforcement of Chapters 128D and 128E, HRS***

##### **Legal Support/Enforcement**

A Deputy Attorney General continued to regularly spend two days each week working on HEER Office matters. During this time, consultations were scheduled and time was spent with the HEER Office staff to discuss the various cases in development. The Deputy Attorney also assisted in program development. The Deputy Attorney General advised and counseled the staff with regard to subpoenas, orders, contracts, agreements, memorandums of agreement (MOAs), settlements, lawsuits, cost recovery, access issues, records review, natural resource damage assessments, rehabilitation and recovery and other development issues. Some of the major outcomes resulting from this assistance were:

In FY 2000, cost recovery efforts resulted in the collections of approximately \$77,566.32 and Natural Resource Damage Assessment (NRDA) collection efforts resulted in the collection of \$8977.95

Del Monte	\$ 817.02
Chevron Waiiau	1,299.22
Brewer Environmental - Barbers Point	74,850.08
Century Aviation	<u>600.00</u>
<b>Subtotal:</b>	<b>\$ 77,566.32</b>
Tesoro Oil Spill Response (NRDA)	<u>8977.95</u>
<b>TOTAL:</b>	<b>\$86,544.27</b>

The Deputy Attorney General in FY 2000 also supported the HEER Office's efforts on issues concerning closure of federal facilities, transfer of closed federal facilities to other state agencies, Brownfields, voluntary response actions, and the cleanup of sites on the State List.

Finally, the Deputy Attorney General provided support in the negotiations on the clean up of Honolulu Harbor. This effort included coordinating approximately eight responsible parties and twenty-five potentially responsible parties, including the major oil companies that are operating or were operating in the State.

**Improve emergency response preparedness.**

Pollution Exercise Participation

DOH played an active role in designing, planning, and conducting a wide range of oil and hazardous materials (HAZMAT) training exercises. Two Emergency Support Function 10 (ESF10) or HAZMAT exercises were held. CHEVRON, TESORO, TOSCO and HECO conducted tabletop and deployment exercises. These exercises were designed to test the formation and responding

capability of the Incident Command System.

DOH, in partnership with the U.S. Coast Guard, EPA and industry, held regular training and workshops on response operations throughout the year. Many of these exercises tested the agencies' capability to respond to oil spills in various situations.

#### Campbell Local Emergency Action Network (CLEAN)

CLEAN was developed in 1997 by businesses in the James Campbell Industrial Park (CIP) to address emergency planning issues, including public health and safety, for the CIP and surrounding community. The DOH HEER Office has participated in this effort and is highly supportive of their activities. An Emergency Management Plan for the CIP currently in use provides guidance and information to emergency response personnel, local residents, and businesses based on local conditions and specific CIP hazards.

Community involvement has been present throughout the planning process. A special task force has been working to improve the overall effectiveness of the warning/notification system, to achieve increased public awareness and protection in and around CIP, and to provide public education on appropriate responses to the warning/notification in the event of an emergency. This has resulted in CLEAN procuring Sentinel Alert Radios for CIP and public facilities, including schools in the area to enhance notification of a chemical release. With the support of a \$10,000 EPA Region 9 Grant, CLEAN presented four training seminars for local Emergency Coordinators on the Clean Air Act 112(r) Risk Management Plan requirements. Again this year, the CLEAN organization was active in community outreach and participated in the Makakilo Emergency Preparedness Fair.

#### Airborne Dispersant Deliver System (ADDS)

In April 1999, Governor Cayetano signed a Memorandum of Agreement (MOA) with Rear Admiral J.J. McClelland, Commander of the Coast Guard's Fourteenth District and with the Clean Islands Council (oil industry spill response co-op). Under the MOA, the Coast Guard will use one of its four C-130 aircraft at Barbers Point Air Station to fly the State owned Airborne Dispersant Delivery System (ADDA) to a spill site for usage. The Clean Island Council



will maintain the ADDS and train personnel for immediate use of the system in the event of an oil spill. This new oil spill response capability will allow the State and the Coast Guard to utilize chemical dispersant to fight offshore oil spills. The ability to use chemical dispersant will greatly enhance the State's oil spill response capability for combating oil spills in the Hawaiian Northwest Island chain and other locations distant from Honolulu. It is critical that this capability exist immediately after an oil spill occurs to be most effective in keeping the oil from reaching Hawaii's beaches. Dependency on mainland aircraft would delay operations for several days. The State is purchasing the ADDS with funds from the Environmental Response Revolving Fund. This partnership is an insurance against the devastating impact that a large oil spill could have on Hawaii.

### **Improve oversight and response to contaminated sites.**

#### **Response Contracts.**

The Hawaii Environmental Response Law (HERL), Chapter 128D of the Hawaii Revised Statutes, mandates that the Department of Health (DOH) undertake response actions whenever any hazardous substances, pollutants and contaminants including oil are released or there is a substantial threat of such a release into the environment that may present a substantial threat to the public health, welfare, or to the environment. To implement the requirements of the HERL, the DOH, Hazard Evaluation and Emergency Response (HEER) Office solicited the qualifications of several environmental companies. After an exhaustive evaluation, two companies were selected in 1998. A time-critical emergency environmental response contract was awarded to the Pacific Environmental Corporation (PENCO) and the non-emergency environmental response contract was awarded to Ogden Environmental and Emergency Services Company Incorporated. In FY 2000 both contracts were extended and both companies provided response services for the HEER Office.

#### **Initial Site Screening Team - ISST**

The Initial Site Screening Team, composed of members of the Site Discovery, Assessment and Remediation (SDAR) Section, just went through its third year of operation. It screens and prioritizes

the contaminated sites, which are reported to the HEER Office in order to prioritize the remediation workload. Every site that comes to the ISST is screened and assigned a priority of high, medium, low, or no further action (NFA).

Potentially Responsible Parties (PRPs) of the release sites are notified by letter of the priority ranking of their sites. Sites which are eligible for further investigation under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) are assigned to personnel in the Preliminary Assessment/Site Investigation (PA/SI) group. Sites that are ineligible under CERCLA and ranked medium or high priority by the ISST may be assigned to a State Remedial Project Manager (RPM). Low priority sites generally do not have site managers assigned to them at this time.

During FY 2000, the ISST completed the screening of 35 sites with the following prioritizations: 2 high priority sites; 10 medium priority sites; 11 low priority sites; and 12 no further action (NFA) sites.

### **Develop and expand the Brownfields and Voluntary Response Program (VRP)**

#### **Brownfields Program**

“Brownfields” is defined by the Environmental Protection Agency (EPA) and the State of Hawaii as a “vacant or under-used industrial or commercial site where redevelopment is complicated by actual or perceived contamination.” Since 1994, the EPA has been the catalyst on the mainland to involve federal, state and municipal agencies, property owners, developers, environmental consultants, the banking and insurance industries, and community action organizations in recycling many of America’s inner city properties to productive use.

Since 1997, EPA has funded Hawaii’s program development of the Voluntary Response Program and Brownfields environmental site assessment projects. During FY 2000, Hawaii’s Brownfields program was jump-started utilizing EPA funding.

The Department of Business, Economic Development and Tourism (DBEDT) and the State Department of Health applied for and were

awarded a Brownfields Pilot Assessment grant of \$200,000 by EPA. This project will develop an inventory of potential Brownfields sites that are owned by state and county agencies, including some redevelopment agencies. Stakeholder agencies and community organizations will be involved in prioritizing these sites to identify the top three to five sites which will receive some type of environmental site assessment and the top twenty-five sites which could receive assessments in the future. This grant is administered and coordinated by DBEDT, and DOH provides technical capability and the site assessment work.

In addition, a number of targeted site assessments have been completed or initiated:

- University of Hawaii, Hilo – Pacific Aquaculture and Coastal Resources Center, Hilo, Hawaii: A phase I environmental site assessment (ESA) was completed, clearing the way for financing and development of the center in Keaukaha, next to the bulk storage fuel terminal at Hilo Harbor.
- Kakaako Unit 8 – location of the United Fishing Agency and other fish brokerages on Ahui Street, Honolulu, Oahu: A phase II site investigation, involving field sampling, was designed and approved for implementation in FY 2001. This site will be part of the Fisherman's Wharf redevelopment by the Hawaii Community Development Authority.
- Molokai Community Service Council (MCSC)– location of the former Molokai Electric power plant in Kaunakakai, Molokai: A phase I and phase II site investigation will be initiated in FY 2001 opening the way for MCSC to obtain federal and Enterprise Community and redevelopment funding for a community business incubator and recreation center.

#### Voluntary Response Program (VRP)

Hawaii's version of the voluntary cleanup program, called the Voluntary Response Program, was established by statute in 1997 (Chapter 128D, Part II, HRS). The purpose of this program is to encourage the voluntary cleanup of contaminated properties and to enhance its economic value. The law gives the Department of Health authority to grant prospective purchasers or developers an exemption from future liability related to the contamination that is

cleaned up under the program. Current or past property owners can participate in this program, although exemptions from liability are only provided to future purchasers. Completion of the voluntary action is accompanied by a Letter of Completion issued by the Department of Health, which is recorded as a covenant on the property deed.

The number of VRP sites was increased from five to seven projects, with more applications expected as the economic outlook improves within the State. The first Letter of Completion (LOC) was issued to Home Depot in September 1999. This LOC is conditional since Home Depot is required to continue monitoring contaminant levels in the ground water and soil gas, report results to the Department, and take additional actions if needed to protect its employees and the public.

Following is a brief summary of the projects:

- Home Depot, Iwilei, Oahu – 8.9-acre site of the former Dole Pineapple Cannery: All action completed except for continued monitoring of ground water and soil gas. Conditional Letter of Completion issued.
- 1230 Kapiolani Boulevard, Oahu – 6.2-acre site owned by Evershine X, a limited partnership, on the corner of Kapiolani Boulevard and Piikoi Street: Expanded site characterization plan being developed by consultant for DOH approval.
- A&B Properties, Inc. industrial subdivision, next to former Oahu Sugar Mill, Waipahu, Oahu – 40-acre site: Remedial investigation continuing.
- 819 Moowaa Street, Kapalama, Oahu – 1.5 acres owned by Ross Trusts: Remedial investigation complete; no further action needed; DOH issued Response Action Memorandum; DOH to issue Letter of Completion.
- 825 Kapiolani Boulevard, Oahu – 0.9-acre site owned by Chuei Shokoh, Inc. next to Flamingo Restaurant: Consultant preparing confirmation sampling plan and risk assessment.
- 283 Waiehu Beach Road, Wailuku, Maui – 11,250 square foot site owned by Eugene Yee, formerly used by Maui Terminix

International as a pest control operation base yard and office:  
Consultant preparing conceptual work plan.

- Damon Estate's 120 Sand Island Access Road site – A 3-acre site formerly used by Flynn-Learner as a recycling and scrap metal facility: Attorneys negotiating agreement for scope of work and schedule.

### **Improve office operations.**

#### Office Management

The HEER Office hired a permanent office manager in April of 1999 after nearly two years of temporary management. This has allowed the section supervisors to concentrate on their respective areas of responsibility.

#### Data Management

The HEER Office received budget authorization from the 1999 Legislature to fund a data management position from the Environmental Response Revolving Fund (ERRF). The Data Manager position was created and filled in March 2000. The information management activities supported by the Data Manager and Planning Section include:

Replacing or upgrading all of the personal computer (PC) workstations used in the HEER Office to the Windows NT 4.0 operating system. Seventeen new PCs were installed and seven existing PCs were upgraded to accommodate the new operating system. A budget of \$60,000 in federal grant funds was used to make this change.

Installing a Windows NT server on the Environmental Health Administration's Local Area Network (LAN) to act as a primary domain controller and to run virus protection software. The NT operating systems are also protected by uninterruptible power supplies through a combination of hardware and software and safely shuts down the workstations in the event of a power failure.

Maintaining subscriptions for the Lotus Notes software that will be used to develop program applications in the future.

Converting the HEER Office to be standardized on Office 2000 Pro for word processing, spreadsheet, database and presentation software.

Purchasing a projector that displays presentations directly from a laptop for office usage; improved data input devices for personnel usage in the office and field - dictation software, digital camera, a PC tablet and a scanner.

Serving on the Environmental Planning Office-led Data Team. Long-term data handling plans for the Environmental Health Administration require participation on this important team. The Data Team is working to advance data integration and this will position the Office to align with the Environmental Protection Agency's One-Stop Initiative.

Creating and coordinating the efforts of a Physical File/Electronic Records Task Force to begin addressing consistent procedures, data quality, database security, consistency with future needs and documentation. The Task Force has much to do and will continue to meet in FY 2001 to address the numerous information needs of the HEER Office.

Maintaining the HEER Office web pages to provide the public with a description of the HEER activities and offer files for downloading. Files available for downloading include documents published solely by the HEER Office and HEER Office data. The data summarizes releases, sites of interest for characterization and remediation, and information submitted under the Hawaii Emergency Planning and Community Right-to-Know Act (HEPCRA).

Activity monitoring of the web site was performed for the period from July 1999 to June 2000. During July to December, only the home page and a VRP page were posted. A more detailed website with nine html pages became available in January 2000.

Data was available in two formats. The first format is a copy of the full Microsoft Access database that the HEER Office uses to track its files. The other format is simpler and provides tables of data as Microsoft Excel spreadsheets, a form usable by many software packages. The zipped Access file was downloaded\* an average of 18 times a

month. In addition, downloads\* of Releases and Sitelist and HEPCRA tables were made an average of 33, 31, and 20 times a month respectively. On the average each month, 205 documents, including laws, guidance and fact sheets were downloaded\*.

Environmental consultants who are doing property transfer investigations and others make a considerable number of requests for HEER Office information. In order to view public records, requestors must identify the files they wish to see and they do so by browsing the database. In the past, staff responded individually to these requests for documents and the database, creating copies on various media. Having the information available on the web frees up staff time and reduces costs for the requestors.

\* Downloaded indicates that a download was initiated on the file. It does not reflect whether it was successful.

### Geographic Information System (GIS)

A GIS database was initiated in March 1998 by the hydrogeologist of the HEER Office. The following statewide geographical data layers were adopted from the Hawaii State Office of Environmental Quality Control (OEQC) and installed in the HEER Office's GIS database. The HEER Office's hydrogeologist performed updates to several of the data layers.

*Aquifer Systems* - The aquifer layers were modified so that users can easily review the different types of aquifers.

*Groundwater Wells* - Drinking water wells on Oahu were updated based on log data from the Safe Drinking Water Branch. Contaminated wells on Oahu were added to the database.

*Land Use* - Agricultural land use, forest reserve boundaries and coastlines were added to the database.

*Hydraulic Data* - Rainfall distribution, streams and wetlands and a watershed and drainage basin were added to the database.

*Street Maps* - In addition to the OEQC's street map, a detailed street map on Oahu created by City and County was added to the

HEER Office's GIS database. This map allows users to process geo-coding and matching addresses.

The following three geographical data layers were developed further in FY 2000.

1. Gas Stations and Underground Storage Tank facilities
2. Background Concentration Map for Selected Metals
3. Department of Defense Ongoing Remedial Investigation Sites

The HEER Office State Remedial Project Managers (RPMs) are able to utilize the GIS System to obtain information with the help of the Geologist.

During FY 2000 the HEER Office Geologist continued to provide technical support in various areas to the DSMOA program and investigation on the Hawaii State remediation sites including:

Geostatistical Application – A detailed geostatistical analysis was conducted for the Kapalama incinerator site to assess and delineate lead contamination for a proposed remediation action. The study serves as an example how to utilize spatial information and take account of site history and operation activities into the remedial decision making process. The study was presented at *The 10<sup>th</sup> Annual West Coast Conference on contaminated Soils and Groundwater* in San Diego in March and *Pacific Environmental Restoration Conference* in Honolulu in April.

Groundwater Modeling -- Assistance and recommendations on evaluation of groundwater modeling studies were provided for a comprehensive modeling study for a former fuel storage site on an Air Force property. The objective of this study is to predict the fate and transport of the contaminants in the perched groundwater body and migration of the contaminants from the perched groundwater body to the basal aquifer at the Kipapa gulch in central Oahu.

Metal Background Analysis -- Finished draft Supplemental Guidance For Determination of Metal Background Concentration and integrated existing metal background data into a GIS database.



### Document Review

1. Helped RPMs to review the reports on various military installations and state remediation sites.
2. Provided professional support on issues involving geology and groundwater.

### Emergency Planning and Community Right-to-Know Act (EPCRA)

The HEER Office collected \$69,700 in FY 2000 for Tier II reporting fees. As authorized by Act 260, SLH 1997, these fees were deposited into the Environmental Response Revolving Fund. The Department of Health received the budgetary approval from the 1999 legislature to distribute the fees collected to the Local Emergency Planning Committees (LEPCs) for their use in emergency planning.

### Public Inquiries

During the year, the HEER Office received over 400 inquiries from the public regarding health concerns and exposure hazards. These calls are handled by staff in the Hazard Evaluation Section who provide this service to the community.

### **Develop a Hawaii Chemical Accident Release Prevention Program.**

#### Hawaii Pipeline Corrosion Control Coordinating Committee

This Committee was formed under the DOH for administrative purposes for two years in compliance with Act 148, SLH 1997. Act 148 SLH 1997 sunsetted on June 30, 1999; however, pipeline operators continue to meet quarterly to promote pipeline safety. A depository for pipeline maps has been established with future placement into the planned Environmental Geographic Information System (EGIS). The committee acts as a forum for sharing of information and technology. A database has been created to facilitate cathodic protection testing and interference mitigation of pipelines. Training for pipeline operators was provided by the State Department of Transportation's Office of Pipeline Safety.

## Four Counties Used Oil Collection Programs

The HEER Office provided \$175,000 to the DOH's Office of Solid Waste Management (OSWM) to be used by the four counties for their Residential "Do It Yourself" Used Oil collection programs. These funds cover a portion of the cost for the operation of the collection centers on the Neighbor Islands and the provision of "Oil Eater Boxes" to residents on Oahu. Technical guidance on best management practices regarding used motor oil is also provided to recreational boaters and other small generators as part of the OSWM program.

## Clean Air Act (CAA) 112(r) Program

The HEER Office is moving forward to develop the Risk Management Program under the Clean Air Act 112(r) provisions. Steps were taken to fill one EHS IV position that was approved by the 1999 Legislature. This position will be fully engaged in establishing the program, including drafting necessary legislation and identifying covered facilities. Once the program is established, the Office will seek program delegation from EPA. This program stresses prevention and preparedness.

## **2.2 FY 2000 Responses**

During FY 2000, the HEER Office responded to 79 of 465 notifications. The Appendix "A" Release Notification Log, contains a listing of each of these notifications during the year. Many of these notifications were for small spills which were resolved in less than one day.

The HEER Office also has a number of contaminated sites which require significant time and/or resources to resolve. Appendix "B" State Site List contains a listing of these sites along with pertinent information. Sites of particular interest, which were managed by the HEER Office during FY 2000, are listed below. These sites include those at which the HEER Office provided assistance to other state programs:

### **Significant Site Summaries from the Emergency Response Section**

Compressed-Gas Cylinders. There has been a significant decrease in the number of compressed gas cylinders that have been washing ashore. There have been fewer than a dozen incidents this year. This drastic

reduction is most likely due to a change in the ocean currents, keeping the cylinders north of the Hawaiian Islands. In FY 1999, about 49 compressed gas cylinders washed ashore as compared to 47 cylinders in FY 1998, mostly on Hawaii's windward shore. These cylinders varied in sizes and shapes. All were extensively corroded with little or no possibility of identifying the contents. These cylinders were either punctured in place or towed three miles out to sea and then punctured. The majority of cylinders were found on Oahu; Kauai had the second most while Maui and Hawaii had only a few. A mechanism has been established with the U.S. Coast Guard, whereby the HEER Office can cost recover funds used to destroy the cylinders from the National Pollution Funds Center.

TESORO Oil Spill and Natural Resource Damage Assessment (NRDA).

On August 24, 1998, Tesoro Hawaii released approximately 117 barrels of black oil from a ruptured transfer hose offshore at the Barbers Point single-point mooring. Response vessels and contractors responded to the spill and recovered an undetermined amount of oil. The spill appeared to have dissipated with the on-scene weather conditions, breaking down into long sheening ribbons. Airplane flights over the area were unable to locate solid mats of floating oil.

On September 4, 1998, oil was discovered washing up on Kauai's Aliomanu Bay and Anahola beaches. Sample results from the August 24th and September 4th incidences indicated that the oil match was identical and that they came from the same source. HEER SOSC and Tesoro Hawaii conducted cleanup operations. The incident resulted in the closing of beaches and injury to natural resources. The Federal and State Natural Resource Trustees entered into an MOA with Tesoro Hawaii, the responsible party, to conduct a joint damage assessment. A Restoration Plan and Environmental Assessment has been developed with public input and is waiting final signature. Implementation of the plan is planned for spring 2001.

Environmental Crimes Task Force. HEER Office's SOSCs have continued to meet with the Environmental Crimes Task Force which is co-chaired by the Assistant U.S. Attorney, the State Attorney General's Office, and the resident EPA Criminal Investigation Special Agent. The members of the Task Force represent federal and state agencies overseeing environmental programs. Criminal activity of interest usually involves the intentional release of hazardous substances or their storage and transportation in a manner contrary to law in an effort to eliminate disposal costs. The interaction and teamwork between members has started to produce results.

Maui Oil Tanker Truck Overturned, Maui. On July 14, 1999, a tanker truck containing a total capacity of 4,000 gallons of diesel overturned as a result of an accident between a rental van and the tanker truck. The accident caused a chain collision involving four other cars and resulted in backed-up traffic for several hours on Honoapiilani Highway. Appropriate response was conducted but could have been better expedited if the responders had the option of conducting a stinger operation, i.e., being able to drill through the walls of a tanker truck to recover its contents prior to up-righting the tanker truck.

Brewer Acid Spill -- On November 25, 1999, approximately 35 tons of sulfuric acid were released at Brewer Environmental Industry's (BEI) facility in Campbell Industrial Park. The 98% grade sulfuric acid leaked from a bulk storage aboveground tank system. The cause of the release was due to a corroded 3-inch cleanout pipe. Due to the Thanksgiving Day holiday, the spill went without notice until a neighboring facility spotted the problem and notified emergency response agencies. Without this notification, the spilled quantity could have been 197 tons. The emergency response team consisted of local, state, and federal agencies in addition to BEI. Today, BEI continues to conduct cleanup activities subsequent to the spill; HEER and the Environmental Protection Agency are overseeing this cleanup. Also, BEI is planning facility improvements to ensure safer operation of its chemical storage and transfer systems.

Leaking Vikane Cylinder – On October 13, 1999, while fumigating a resident house in Kona, the pest control operator discovered that the 125-pound Vikane cylinder could not be properly closed due to a failure of a safety burst disc on the valve. The Hawaii County Fire HazMat team placed a device on the cylinder to temporarily stop the leak. The faulty cylinder was transported back to the distributing company for storage. The product manufacturer took responsibility for the cylinder and requested that the remaining contents (approximately 100 pounds) be released in an open field. HEER denied the request and recommended that the contents be transferred to another cylinder or used at another fumigation job. Fortunately, a scheduled building fumigation nearby by another pest control operator was able to utilize the balance of the cylinder's contents.

Air Liquide, Anhydrous Hydrogen Bromide Cylinder – On October 13, 1999, Air Liquide, an industrial compress-gas provider and refinery in Campbell Industrial Park, had an incident where a volunteer cleaning an area of their facility came across a compress-gas cylinder with no

markings or labels to identify its contents. The person opened the valve in an attempt to identify the contents and was quickly overcome by the gas. The individual managed to close the valve and call for help; still suffering from the brief exposure, he was transported to a hospital for observation and treatment. HEER assisted in identifying the gas at the request of Honolulu Fire Department's HazMat team. The hospital also needed to know what the victim was exposed to for proper medical treatment. Arrangements were made with a local private laboratory to identify the gas. The gas was identified as anhydrous hydrogen bromide, an acid gas.

Granulated Chlorine Spill (Lanikai) – On March 10, 2000, while putting away a 5-gallon bucket of granulated chlorine salt in a storage cabinet, the shelf broke and the contents of the bucket spilled on the ground. The home caretaker swept the granules into a pile, then sprayed water over the impacted area to react any granules missed. However, as the water was sprayed, water inadvertently dropped on to the swept pile that caused a violent reaction (explosions) and the generation of chlorine gas. Subsequently, the surrounding neighborhood was evacuated, and the caretaker sent to the hospital. HEER responded with its cleanup contractor to cleanup the remaining chlorine granules. After the cleanup was completed, residents were allowed back to their homes.

#### Marine Corps Air Station, Kaneohe, Oahu, Hawaii – JP5 Spill

On April 28, 2000, the HEER Office received a notification report from the State Hospital Dispatcher. During a refueling operation at the end of a flight line on the KMCAS Base, a fuel truck accidentally overturned and released 8,000 to 12,000 gallons of JP5 (oil) into the water.

KMCAS environmental personnel established an Incident Command under Maj. Mark Brenner. Marine Corps water resources strategically deployed three tiers of harbor boom fronting the outfall. Sorbent sweep and pads were placed between the boom(s) and within the mouth of the outfall. An estimated 300 - 500 gallons entered the bay but was dissipating rapidly with the on-scene weather conditions. Unified Command was established under U.S. Marine Corps, U.S. Coast Guard, and Hawaii Department of Health upon arrival of agency representatives. Bayside cleanup continued until completed at approximately 4:30 PM. Response personnel discovered that most of the spilled JP5 was contained within the 2,000 yard storm drain system adjacent to the runways (distance from the discharge point to the outfall). Collection walls (sandbag construction) were erected within the drainage system. Flushing, cleanup and fuel recovery via vacuum truck stingers and sorbent materials continued

throughout the night. At present “Passive Cleanup” operations continue at the collection points which maintain sorbents and are routinely monitored by Marine Corps response personnel. Fuel recovery remains slow and is dependent upon tidal influence, flushing, and daily weather. The amount of recovered fuel is undetermined. KMCAS Environmental intends to continue cleanup as needed and is considering placing a permanent entrainment and capture system (three sided box, no bottom) at the mouth of the outfall.

The Gas Company Pipeline Leak – On May 23, 2000, while conducting routine preventive maintenance monitoring, the company discovered a leak in their 16-inch main line in Campbell Industrial Park. The Gas Company produces synthetic natural gas and distributes it to 33,000 users via a 16-inch underground pipeline that runs from Campbell Industrial Park to Hawaii Kai. The company found the leak and determined to change a section of that pipeline while the pipeline was active. Specialists and the proper equipment were flown in to do the “hot tap”. First, a bypass pipeline was installed, then the bad section of the pipeline was isolated and later replaced. The leak turned out to be a pencil-size hole in an elbow joint. HEER and Oahu Civil Defense worked with The Gas Company on this incident.

Pearl and Hermes Atoll On June 5, 2000, the 77-foot fishing vessel Swordman I ran aground on the reef with an estimated 10,000 gallons of oil onboard. After the owner did not take action to remove the vessel from the reef, the Federal Oil Spill Trust Fund was opened and a contractor was hired to remove the oil. Due to the environmental importance of the atoll it was determined that the small amount of oil and fishing gear remaining onboard the fishing vessel posed a substantial threat to the atoll. The State, Coast Guard and other Federal Trustees were deployed to the Atoll to conduct a reef damage and environmental survey. The salvage vessel American Salvor was contracted to remove the vessel from the reef and sink it offshore. The vessel was successfully pulled from the reef on July 31, 2000, and scuttled in a selected deepwater site. The cost of the operation, over \$1,500, was paid from the Federal Oil Spill Trust Fund.

CHEVRON Jet-A Fuel Pipeline Leak, Oahu. On June 27, 2000, an ongoing oil sheen was observed and reported from Pier 35, Honolulu Harbor. Chevron’s investigation led to the discovery that their 8-inch Jet-A fuel pipeline had two pinhole leaks. Approximately 180 feet of the pipeline was replaced and contaminated soil disposed of appropriately. Extent of contamination is to be delineated, and remediation will ensue, should it be

necessary. This is an example of incidences related to the Honolulu Harbor project, where ongoing releases as well as past releases contribute to contamination in the harbor area.

Tar Balls Washing Ashore, All Islands. The HEER Office occasionally receives reports of tar balls washing up on shores. HEER SOSC and the U.S. Coast Guard assess the situation and conduct cleanup operations, if necessary. On January 27, 1999, and again on June 20, 2000, north and northeastern beaches on the island of Kauai were affected to warrant cleanup. On February 23 and 24, 2000, northern beaches of Oahu were affected, but did not require a cleanup.

Illegal Dumping On All Islands. The HEER Office continually receives reports of 55-gallon drums abandoned on the sides of the road and in remote places. The contents are leaking often and may contain waste petroleum, used cooking oil and grease trap waste, or hazardous wastes. In most cases, HEER emergency response contractors are directed to conduct removal response actions. Illegal dumping and improper disposal continue to be problems in the community.

### **Significant Summary for Oiled Wildlife Response**

Program development for oiled wildlife response continued throughout FY 2000. The purpose of having an Oiled Wildlife Response Program is to provide assistance to wildlife harmed by an oil release. The major participants in the program include: HEER, DLNR, CIC and Coast Guard MSO.

Pollution Incidents addressed by the Oiled Wildlife Coordinator (OWC), included:

- Kaneohe Marine Corps Base Hawaii – 4000 gallons JP5 spill
- Pearl and Hermes Atoll- Fishing vessel Swordman I aground on reef

Spill Drills participated in during the year: 4

Funding of \$42,000 was provided to DLNR in addition to the \$50,000 for the wildlife coordinator for the following projects:

- Four portable water conditioning units
- Evidence collection kits
- Oiled wildlife response training

## **Significant Site Summaries from the Hazard Evaluation Section**

The Hazard Evaluation Section provides public health consultations and technical support to DOH, other government agencies, and the general public. Television interviews with DOH toxicologists demonstrated the useful information provided to the public on high profile health concerns. From the many inquiries received by the section in FY 2000, the following narrative provides the details of some of the most noteworthy health-hazard projects and illustrates a wide range of issues and problems addressed by the Hazard Evaluation Section.

Reorganization of HEER Office-- A mini-reorganization of the HEER office was done to establish the Ecological Risk Assessor authorized by Act 211 SLH 1999. The overall HEER Office functional statement and the Hazard Evaluation Staff functional statement were amended for clarification purposes.

Village Park The HEER Office, in accordance with Act 192 of the 1999 Legislature, conducted the Village Park and West Loch Fairways Soil Sampling Survey and Exposure Assessment (the Study). The purpose of the Study was to determine if persistent agricultural pesticides are present at levels that could be linked to physical and learning disabilities reported in children in the Village Park and West Loch Fairways communities. The Study was completed in December 1999, with the assistance of the State Department of Agriculture and with the public participation of two groups, Life of the Land and Citizens for a Safe Environment. The Study included a soil sample survey, an exposure assessment, and a toxicological evaluation.

The Study determined that no persistent agricultural pesticides are present at levels that can be linked to any unusual cluster of physical and learning disabilities of the types that have been thought to exist in Village Park and West Loch Fairways. The Study's soil sample survey found few agricultural pesticides of any kind. Many of the chemicals previously applied to sugar-cane fields have degraded since agricultural operations ceased in the late 1970's in Village Park and in 1990 in West Loch Fairways. This Study adds to the body of evidence from previous sugar-cane field soil studies conducted by State agencies, the University of Hawaii, and private agencies, which indicate that normal cane-field operations do not leave persistent soil contamination.



Village Park - Fact Sheet. -- An investigation was conducted by the HEER office to address the concerns of some Village Park residents that the residents of Village Park and the nearby communities have a higher than normal level of birth defects, learning disabilities, and other health problems. In order to communicate the results of this investigation to the Village Park residents, a fact sheet was published in June 2000. The findings included on the fact sheet were that the number of students in special education, the incidence of birth defects in Royal Kunia and cancer rates in Village Park and Royal Kunia are generally lower than the State of Hawaii. The overall incidence of birth defects in Village Park was not significantly higher than the State of Hawaii. No area-wide contamination by any pesticide was found in the soil. The higher chemical levels found at specific locations were more than likely the result of household use of pesticides as opposed to area-wide contamination. Traces of pesticides in water were found to be below existing state and federal standards. The investigation did not provide any reason to conclude that the Village Park residents suffer from localized health or environmental problems.

Birth Defects Study --The Hazard Evaluation Section coordinated a study with researchers at the University of Hawaii to evaluate whether the birth defect rates in the Village Park and Royal Kunia communities were higher than that of the whole state. University investigators analyzed the Hawaii Birth Defects Registry, which maintains a database of babies born with moderate to severe birth defects in Hawaii. The UH study concluded that the incidence rate of birth defects in Village Park and Royal Kunia was not higher than the State of Hawaii.

Cancer Study --The Hazard Evaluation section coordinated a study with the UH Cancer Research Center (CRC) to evaluate whether the rate of cancer is higher in Village Park and Royal Kunia compared to the whole state. A UH epidemiologist evaluated data from the Hawaii Tumor Registry from 1990 to 1998. Based on this analysis, UH concluded "there is no evidence of an excess of cancer cases among resident of the Village Park and Royal Kunia communities."

1,2,3-Trichloropropane (TCP) in Drinking Water -- Using groundwater-monitoring data from the Safe Drinking Water Branch, exposures to TCP in drinking water were estimated for the Oahu population. The average exposure was approximately 0.3 parts per billion. Future work will include evaluating the health risks from exposure to TCP using new toxicity data.

Risk Assessment for Contaminated Guava-- A guava puree from a local company was tested for lead and found to contain approximately 400

parts per billion. The Hazard Evaluation section assisted the Food and Drug Branch with assessing the health risks from eating the contaminated guava. Subsequent testing revealed that the guava puree was not contaminated and therefore no action was taken.

VOG Advisory Committee-- HEER Hazard Evaluation section is represented as a member of the VOG Advisory Committee. The discussion of ongoing technical projects and potential new research areas are key areas of interest of the VOG advisory committee.

Fireworks, New Year's Eve, December 31, 1999-- The Hazard Evaluation section worked with the UH School of Public Health to assess the health risk from exposure to fireworks on New Year's Eve. Sampling data showed that particulate levels escalated dramatically during the hours around midnight. Preliminary results from hospitals showed that at least 137 injuries and illnesses were related to fireworks. The Environmental Planning Office prepared a fact sheet discussing the results of the preliminary study.

Wing King Reservoir, Waimanalo-- The Hazard Evaluation section reviewed sampling results from a sediment sample collected from the Wing King Reservoir in Waimanalo. Three compounds were found in the low parts per million ranges. Two of the compounds, naphthalene and phenanthrene were probably petroleum derived and the third compound, benzofuranone, was probably a food additive. It was recommended that prior to dredging, additional sampling should be conducted to confirm these results.

Kona Hospital Medical Waste Incinerator-- The Hazard Evaluation section assisted the Clean Air Branch (CAB) with a risk assessment for the medical waste incinerator at Kona Hospital. The risk assessment indicated that exposure to emissions from the incinerator should not pose a significant health risk.

Wailua Homestead Wells on Kauai – A drinking-water pump leaked mercury into the well. The Hazard Evaluation section prepared a detailed fact sheet on mercury for a concerned public and a Honolulu Advertiser reporter. A risk assessment conducted by the HEER office showed that the mercury level in drinking water was insignificant, and long-term exposure should not cause an adverse health effect. A public meeting was held with concerned citizens to communicate the results of the risk assessment. In addition, the Hazard Evaluation section of the HEER office reviewed the Brewer Environmental Services (BES) report as

requested by the Kauai Department of Water and concluded that elemental mercury had impacted soil at the Wailua Homestead Wells on Kauai. The Site Discovery Assessment and Remediation (SDAR) section of the HEER office then proceeded to follow up on the remediation plan and action.

HECO Kahe Generating Station-- The Hazard Evaluation section of the HEER office assisted SHWB with review of the Corrective Action Report for a sludge drying bed. The analytical results indicated that arsenic, chromium and lead concentrations left in place were acceptable for an industrial setting.

Heptachlor Epoxide in Cucumbers-- Heptachlor epoxide (HE) levels in cucumbers from the Kunia area were found to exceed the federal tolerance limit of 20 parts per billion. The cucumbers were removed from the marketplace. The Hazard Evaluation section evaluated the health risk from eating cucumbers containing HE. A number of health-protective assumptions were used to estimate the exposure to children and adults. The evaluation indicated that even if children or adults consumed the most highly contaminated cucumbers daily during the time they were in the market place that there was an adequate margin of safety. A press conference was held and a press release issued to disseminate the results to the public.

Toxicologist Evaluated Drinking Water Contamination. A member of the Hazard Evaluation section was interviewed on KHVH radio's "The Country Doctor" show about drinking-water contamination by pesticides from pineapple cultivation, which was a concern at Village Park and West Oahu.

Provided Public Health Protective Consultation for Public School Campuses:

1. King Kaumualii Elementary School on Kauai, where vapors of a pesticide, pendimethalin, were release upwind by a pesticide contractor for Lihue Sugar Cane Plantation, and could be detected by students and teachers.
2. Mililani Middle School on Oahu, where new building materials emitted formaldehyde gas which affected one hypersensitive child.

3. Aiea Elementary School on Oahu, where teachers requested a review of the school detergents and cleaning chemicals for potential to cause allergies.
4. Waianae Elementary School on Oahu, where custodial staff had cut an old canec ceiling, thereby littering a classroom with arsenic-contaminated sawdust.
5. Kainalu Elementary School, Kailua, Oahu, where the library's air-conditioning malfunctioned and raised the relative humidity so high that one-fourth of the books had severe mildew. The librarian reported a hay-fever-like cough from all the fungal spores in the air. The books were eventually cleaned with hydrogen peroxide on the toxicologist's advice.
6. An exotic disease called Fifth Disease, which has a similar effect on pregnant women as German measles but cannot be immunized, was reported at two Oahu schools, and concerned teachers were provided with Fact Sheets from the Nebraska and Indiana Departments of Health.

Waahila Ridge, Oahu –The Hazard Evaluation section reviewed the Environmental Impact Statement from the Hawaiian Electric Company for its proposed 138-kilovolt Kamoku-Pukele power line, with a choice of four proposed routes. The eventual route chosen by the Public Utilities Commission will run near the University of Hawaii's Lower Campus Quarry and up Waahila Ridge between Manoa and Palolo Valleys. The Hazard Evaluation section attended the highly vocal meetings of the Manoa and Palolo Neighborhood Boards. The national scientific consensus is that effects of electromagnetic fields from power lines do not provide a conclusive link to cancer or other adverse health effects.

Oahu's Drinking Water – The Honolulu Board of Water Supply was required by Federal law to hold public information meetings for their customers who have contaminants in their drinking water, whether the level of any contaminant is hazardous or not. A member of the Hazard Evaluation section attended all four meetings which were held in various regions of Oahu, in Honolulu, Kaneohe, Kapolei, and Wahiawa.

Waipio Peninsula, Central Oahu Regional Park and Waipahu Incinerator's Landfill – The Hazard Evaluation section worked with the Department's Office of Solid Waste in evaluating the landfill which is heavily

contaminated with lead, cadmium, chromium, arsenic, and mercury and which may affect Pearl Harbor, naval property, a shore line wildlife refuge, or the new Central Oahu Regional Park which will contain many soccer fields. The soccer park's irrigation water was also evaluated, since its source, Waipio Heights Wells II, contains trace levels of pesticides (DBCP, EDB, TCP), which comply with drinking-water standards.

Pearl City Peninsula –The Hazard Evaluation section assisted the Navy in evaluating chlordane-contaminated soil, as an old housing tract was torn down and a new one was built in its place.

Iroquois Point Naval Housing – A family which lived there in 1989-1991, now living in San Diego, was experiencing medical problems in their respective central nervous systems. The wife now has Addison's disease. They inquired about pesticide usage at their Navy house during 1989-1991. The Navy Public Works Center, Environmental Compliance Division, Clean Air and Chemicals Branch, was able to find the pesticide-application record for that specific address. The Hazard Evaluation section found that three of the pesticides were capable of affecting the central nervous system: Malathion, chlorpyrifos, and propoxur.

Lead Contamination Investigated – A substation of the Honolulu Police Department, Waikiki Substation, is in the Royal Hawaiian Shopping Center next to the Royal Hawaiian Shooting Club. The back doors of both suites open into an enclosed hallway, fifteen feet apart. Using Lead Check Swabs, the Hazard Evaluation section detected a strong concentration of lead-containing dust inside the back door of the Police substation, but a laboratory analysis of dust collected from the rest of the suite, including on a pregnant secretary's desk, showed an insignificant level of lead.

Mahalani Street, Wailuku, Maui – a planned extension of Mahalani Street led through an old landfill, which was contaminated, with lead and other hazardous metals. The construction dust might have contaminated nearby suburbs and threatened children's health. The Hazard Evaluation section reviewed various aspects of the project. The street's extension was eventually routed around the landfill at a greater construction cost.

Chemicals in Light Sticks Reviewed -- Kauai beaches were being littered with light sticks from long line fisherman's activities. The Hazard Evaluation section reviewed the chemical ingredients of the light sticks and their plastic tubes for potential threat to human or ecological health. Aside from the litter, there was no other public health threat.

Airline Pesticide Spraying Investigated -- Two questions from airlines were researched by a toxicologist: special disposal of medical waste in the trash bins of Aloha Airlines jets was not required, and Australian-approved pesticides which are required to be sprayed in airliner cabins before landing in Australia were not allowed to be sprayed while the jets were on the ground in Honolulu on American soil. There are no pesticides approved by the U.S. Environmental Protection Agency for use in airline cabins. Therefore, passengers flying to Australia must continue to be sprayed and to inhale pesticides while in the air approaching Australia, with little or no outside-air ventilation or dilution.

Kunia Wells – The Hazard Evaluation section reviewed the scientific evidence on nitrate in drinking water when 6 parts per million of nitrate were discovered in the Kunia Wells on Oahu. This was safely within the drinking water standard which is 10 parts per million. One toxicologist wrote an informational letter to all physicians for the Director of Health's signature.

Pesticides in the Foster Garden Area Investigated -- Foster Gardens in downtown Honolulu is adjacent to high-density residential buildings. In response to a neighbor's concerns, the Hazard Evaluation section found that garden-wide spraying was stopped in 1996, and current pesticide use is minimal – small spot-treating with fungicides or bifenthrin, a mild insecticide.

Nanakuli Landfill Evaluation – An on-going project is the evaluation of P.V.T. Landfill in Nanakuli, which has customarily accepted building and construction waste and is now applying to be allowed to accept soil contaminated with lead or low-level PCBs. This waste soil would ordinarily have to be shipped to the mainland, so a great deal of State and Federal disposal money may be saved. The public that resides near P.V.T. Landfill and the Neighborhood Board is being well informed.

VOG Grant. -- The HEER office received a \$120,000 grant from the Center for Disease Control (CDC) in addition to the \$100,000 grant from the U.S. EPA for the VOG study. The staff at the HEER office continues to oversee the VOG study being conducted by the University of Hawaii's School of Public Health. The VOG study involves an evaluation of health risk issues that may be attributable to volcanic pollution (VOG) exposure on the island of Hawaii. This study is an effort to help asthmatic youngsters lead more healthy lives. The HEER office obtained a Single Project Assurance from the Office for Protection from Research Risks (OPRR) so that the principal investigator subcontractor at the University of

Hawaii's School of Public Health could study human subjects. In May 2000, the HEER office submitted a non-competing continuation application to CDC for a VOG grant amount of \$120,000 for the fiscal year 2000. In addition, the HEER office requested and received a no cost extension approval for the U.S. EPA grant through 12/31/00.

Special Education Enrollment at Kaleiopu'u Elementary School vs. Other Public Schools. -- Some of the residents of the Village Park sub-division in Waipahu, Hawaii expressed concerns that an excess number of children with disabilities or learning disabilities live in the area and that a common environmental etiology may be related to these conditions. To investigate these concerns, the Hazard Evaluation Section analyzed data on special education enrollment status maintained by the Department of Education through the Office of Accountability and School Instructional Support (OASIS). In all four academic years (1996 to 1999), special education enrollment at Kaleiopu'u Elementary School was lower compared to all the public schools in the Leeward District as well as compared to all the public schools in the State of Hawaii. Although there was a steady rise in the percentage of children enrolled in special education at Kaleiopu'u Elementary School, a similar increase was seen throughout the Leeward School District as well as the State of Hawaii.

Paraquat Poisoning in Canine Near St. Louis Heights. -- An assessment was conducted by the Hazard Evaluation Section in response to a request by the Department of Agriculture, Pesticide Branch to evaluate the deaths of seven dogs that had played in a park located near St. Louis Heights. All seven dogs exhibited symptoms of paraquat poisoning. Six of the seven dogs died due to respiratory failure. The cause of death of three of those dogs was confirmed to be due to paraquat poisoning. Two of the dogs that died were not tested for paraquat poisoning. The sixth dog that died was tested but paraquat poisoning was not confirmed.

Reporting of Pesticide and Heavy Metal Poisoning. -- Due to the seriousness of pesticide and heavy metal poisoning and the lack of information regarding the magnitude of the problem in Hawaii, the Department of Health (DOH) has made them reportable conditions. Physicians and laboratory directors are required to report cases or suspected cases of pesticide or heavy metal poisoning. Reminders to report cases or suspected cases of pesticide (i.e. organophosphates and carbamates) or heavy metal poisoning (i.e. lead, cadmium, mercury, and arsenic) were sent to all laboratories in the State of Hawaii. Because of the large number of physicians currently practicing in the State of Hawaii, there is insufficient funding to send reminders to all physicians at this time.

Elevated Blood Lead Levels. -- An investigation of elevated blood lead levels showed that a number of Hawaii residents with elevated lead levels are in occupations where they handle guns on a regular basis. Nine of the ten reported cases were found to be gun instructors. The common factor was that they all worked with guns (i.e. firing or handling of guns). This finding was reported to the Noise, Radiation, and Indoor Air Quality Branch for follow-up and recommendation to include education of the employees and reminders to follow safe practices.

Elevated Blood Mercury Levels. -- The Hazard Evaluation section of the HEER office has been investigating laboratory reports of elevated mercury levels in Hawaii residents in an effort to understand the magnitude of the problem in Hawaii. The elevated blood mercury levels found in Hawaii residents who are fish eaters show that there is likely to be a causal relationship between eating certain fish (i.e. large predatory fish such as Swordfish, and Ahi) and having higher mercury levels. Although there has not been any documented mercury poisoning due to fish consumption in Hawaii, chronic and excessive methyl mercury consumption can produce toxicity of the central nervous system. The elevated blood mercury levels found in the Hawaii residents are not the result of controlled studies. Although no one would recommend doing a test to see if people could get mercury poisoning from eating too much fish, it would be interesting to study the blood levels of Hawaii residents who eat a lot of fish on a regular basis. Regardless of whether such a study takes place, the HEER office will continue to monitor any elevated blood level of mercury.

Presence of Formaldehyde in Showerheads. -- The Hazard Evaluation Section responded to a concern that formaldehyde found in showerheads was a danger to elderly residents. Formaldehyde is ubiquitous to the environment and is a common contaminant of air, food, water, and natural and man-made materials. According to the lab reports that were provided, levels of formaldehyde were found to be negligible in 3 out of 4 samples. The formaldehyde level in the other sample was so low that even ingesting the water directly would not result in toxic levels. It was concluded that the low-level detection of formaldehyde in the water was insignificant compared to the exposure from formaldehyde air pollution generated by automobiles, new furniture, living plants, and cooking.



## **Significant Site Summaries from the Brownfields Program and the Voluntary Cleanup Program**

### **Brownfields Program**

The Department of Business, Economic Development and Tourism (DBEDT) and the State Department of Health, in partnership, applied for and were awarded a Brownfields Pilot Assessment grant of \$200,000 by EPA. This project will develop an inventory of potential Brownfields sites that are owned by state and county agencies, including some redevelopment agencies. Stakeholder agencies and community organizations will be involved in prioritizing these sites to identify the top 3 to 5 sites, which will receive some type of environmental site assessment, and the top 25 sites, which could receive assessments in the future. This grant is administered and coordinated by DBEDT, and the DOH provides technical capability and the site assessment work.

A number of targeted site assessments have been completed or initiated:

- University of Hawaii, Hilo – Pacific Aquaculture and Coastal Resources Center, Hilo, Hawaii: A phase I environmental site assessment (EAS) was completed, clearing the way for financing and development of the center in Keaukaha, next to the bulk storage fuel terminal at Hilo Harbor.
- Kakaako Unit 8 – location of the United Fishing Agency and other fish brokerages on Ahihi Street, Honolulu, Oahu: A phase II site investigation, involving field sampling, was designed and approved for implementation in FY2001. This site will be part of the Fisherman's Wharf redevelopment by the Hawaii Community Development Authority.
- Molokai Community Service Council (MCSC)– location of the former Molokai Electric power plant in Kaunakakai, Molokai: A phase I and phase II site investigation will be initiated. In FY2001 opening the way for MCSC to obtain federal and Enterprise Community and redevelopment funding for a community business incubator and recreation center.

## Voluntary Response Program (VRP)

The number of VRP sites was increased from 5 to 7 projects, with more applications expected as the economic outlook improves within the State. The first Letter of Completion (LOC) was issued to Home Depot in September 1999. This LOC is conditional since Home Depot is required to continue monitoring contaminant levels in the ground water and soil gas, report results to the Department, and take additional actions if needed to protect its employees and the public.

Following is a brief summary of the projects:

- Home Depot, Iwilei, Oahu – 8.9-acre site of the former Dole Pineapple Cannery: All action completed except for continued monitoring of ground water and soil gas. Conditional Letter of Completion issued.
- 1230 Kapiolani Boulevard, Oahu – 6.2-acre site owned by Evershine X, a limited partnership, on the corner of Kapiolani Boulevard and Piikoi Street: Expanded site characterization plan being developed by consultant for DOH approval.
- A&B Properties, Inc. industrial subdivision, next to former Oahu Sugar Mill, Waipahu, Oahu – 40 acre site: Remedial investigation continuing.
- 819 Moowaa Street, Kapalama, Oahu – 1.5-acres owned by Ross Trusts: Remedial investigation complete; no further action needed; DOH issued Response Action Memorandum; DOH to issue Letter of Completion.
- 825 Kapiolani Boulevard, Oahu – 0.9-acre site owned by Chuei Shokoh, Inc. next to Flamingo Restaurant: Consultant preparing confirmation sampling plan and risk assessment.
- 283 Waiehu Beach Road, Wailuku, Maui – 11,250 square foot site owned by Eugene Yee, formerly used by Maui Terminix International as a pest control operation base yard and office: Consultant preparing conceptual work plan.
- Damon Estate's 120 Sand Island Access Road site – A 3-acre site formerly used by Flynn-Learner as a recycling and scrap metal facility: Attorneys negotiating agreement for scope of work and schedule.

## **Significant Site Summaries from the Department of Defense State Memorandum of Agreement (DSMOA)**

### **Army Installations**

Kahuku Training Area. A PA/SI final report was completed for the former transformer sites associated with the former Nike Launch sites at the Kahuku Training Area in February 1996. Polychlorinated biphenyls were detected above the EPA Region IX Preliminary Remedial Goals. Further investigation of the site was performed during FY 1998. However, the nature and extent of contamination have not been confirmed. Additional remediation is planned possibly for FY 2002.

Kipapa Ammo Storage Tunnels. A PA/SI report was completed for the Kipapa Ammunition Storage tunnel in February 1996. Onsite releases of hazardous substances were not observed during this preliminary assessment (PA) nor were records of such releases found in the documents reviewed. Tunnel interiors were not included as part of this investigation and, therefore, site characterization has not been completed. In addition, a monitoring well at the Air Force's Kipapa Fuel Storage Annex adjacent to the Kipapa Ammo Storage Tunnel had trichloroethylene (TCE), a solvent, in the basal groundwater. The source of the TCE and the extent of contamination by TCE are not known at this time. The HEER Office has met with both the Air Force and the Army to encourage their cooperation in the investigation of TCE in the basal groundwater. The Army is evaluating the HEER Office's request.

Pohakuloa Training Area. A site inspection report was reviewed for a vehicle refueling area and the Department of Health concurred with the Army that future remedial activity does not appear to be necessary for this site. The site inspection reports were reviewed for a pesticide storage area, two landfills and a former fire training area and recommended additional characterization of the fire training area for polychlorinated biphenyls (PCBs) and dioxin, testing at Landfill 1 and Landfill 2 for soil gas and methane, and characterization of the soil cover at Landfill 1.

Schofield Barracks. Trichloroethylene (TCE) has been detected in the drinking water wells at Schofield Barracks. The Army has been aerating the water to volatilize the solvent out of the water to protect public health. Additionally, the Army has been investigating the vicinity in order to find the source of the contamination and to eliminate a future threat. To date, no source has been found; therefore, the Army is proposing to treat all the groundwater that is contaminated as the final remedy. Regular monitoring of the wells in the area will continue. Individual Record of Decisions (RODs) have been signed for the remaining sites. Work has been completed in repairing the cracks on the landfill cap. The Army resubmitted a request to the EPA to have the site de-listed from the National Priorities List (NPL), and the site was delisted on August 10, 2000, following EPA's review of the request.

Field Station Kunia. Field Station Kunia is an underground communication facility. The station is located one mile south of Schofield Barracks along Kunia Road. The facility is situated in pineapple fields. The site is secured by fence and camera surveillance. In 1994, a 305,000-gallon concrete underground storage tank was removed. During removal, it was discovered that there was an uncontrolled release of diesel. Some removal of contaminated soil was conducted. Initial investigations failed to properly delineate the full extent of the contamination. In March 2000, the Army conducted further subsurface investigation by drilling fifteen borings. The investigation was to delineate the vertical and horizontal range of the fuel hydrocarbon plume. Borings were drilled to approximately 200 feet below grade. The report is presently being written for this project. The Remedial Investigation Report was completed. The request was reviewed by the DOH and comments sent.

Tripler Army Medical Center Landfill. The Tripler Army Medical Center (TAMC) Landfill is located on the west side of the TAMC installation. The landfill covers about two acres and is about 160 to 200 feet above mean sea level. The landfill was active from 1947 through 1974. Early landfill use was restricted to construction debris from the construction of TAMC. Later, the landfill was used to dispose of incinerated medical waste, laboratory wastes, maintenance waste, food

waste, and construction and landscaping debris. Unspecified waste from Fort Shafter was also disposed in the landfill.

The Army conducted a Preliminary Field Screening Investigation to determine the presence or absence of hazardous substance contamination from the landfill operation. The investigation found polynuclear aromatic hydrocarbons, pesticides, lead and dioxin chemicals in the surface and subsurface soils in the interior of the landfill. Monitoring wells were installed down to the basal groundwater aquifer and analysis results of the water found no chemical contamination.

The Army conducted a remedial investigation (RI) with soil and groundwater sampling. The remedial investigation confirmed the levels of dioxin, PCB and pesticides in the surface soil, subsurface soil and sediment. To address any human health risk posed by the contaminants, the Army will be installing a cap over the landfill and a concrete drainage channel to handle the rainwater runoff from the landfill. The Army is working on the final design of the landfill cap.

### **Navy Installations**

Defense Reutilization and Marketing Office (DRMO) - Manana. The DRMO Manana storage area is a 51-acre parcel of land in Pearl City which is off Waimano Home Road. The DRMO storage area was used for the collection and temporary storage of hazardous waste generated by the Department of Defense, Pacific Rim military facilities. It was also used to store excess equipment and supplies that were turned in for disposal handling. The site investigation found arsenic contamination in the subsurface soil down to four feet. In May 1996, the Navy completed a cleanup action with the removal of the arsenic contaminated soil. The DRMO Manana storage area parcel was transferred to the City and County of Honolulu in June 1996. In FY 1997 the Navy completed plans to install ground water monitoring wells at the site. The wells are planned for installation in FY 2001.

Ewa Junction Fuel Drumming Facility. This Navy facility was constructed in 1943 as a fuel drumming and transportation

terminal and is currently inactive. According to a 1972 Navy report, approximately 315,000 gallons of motor gas (MOGAS) from an underground storage tank was released onto the surface of the ground in March 1971. MOGAS was found in soil and ground water samples obtained from beneath the site. A Phase II Remedial Investigation sampling action was done in FY 2000. Sampling of subsurface soil and groundwater in the off-site area to the south has been completed to determine if any MOGAS contamination traveled off of the site. A draft Phase II Remedial Investigation Report was completed by the Navy which showed the MOGAS contamination in the groundwater has not migrated off the site.

Naval Computer and Telecommunications Area Master Station (NCTAMS). The NCTAMS facility was placed on the National Priorities List (NPL) in May 1994. NCTAMS is composed of two sites, a Naval Radio Transmitting Facility (NRTF) at Lualualei and the main station and a receiver site in Wahiawa. NCTAMS Wahiawa is located on the eastern side of the highest part of the Schofield Plateau and about one mile east of Whitmore Village. The Lualualei Naval Radio Transmitting Facility is located in Lualualei Valley and is contiguous with Naval Magazine Lualualei. Earlier site investigations done at the sites found PCB contamination in the soil around electrical transformers. It was learned that maintenance technicians checking the transformer oil, which contained polychlorinated biphenyls (PCBs), were discarding the oil samples onto the ground around the transformers.

In 1991, the Navy conducted a removal action by excavating the PCB contaminated soil around several of the transformers and sending it to the mainland for proper disposal. This site investigation identified 15 sites which require further investigation at NRTF Lualualei and NCTAMS Wahiawa. The Navy has completed the remedial investigation at the Old Wahiawa Landfill and the Building 6 Disposal Area. The Navy has also completed the removal action at the transformer sites at both NCTAMS facilities by excavating PCB contaminated soil and storing it for treatment. The Navy is now looking for a vendor to accomplish thermal desorption treatment of the PCB contaminated soil.

Naval Station Pearl Harbor - Aiea Laundry. The Aiea Laundry is a laundry facility owned and operated by the Navy which has done dry cleaning since the early 1950's. The facility is located on the corner of Moanalua Road and Kaimakani Street in Aiea. St. Elizabeth Church and School is on the west side of the laundry with Aiea Elementary School to the east. Site investigations have found releases of dry-cleaning solvent (perchloroethylene) and Stoddard solvent from several underground storage tanks and from a drainage swale outside the facility. Solvent and solvent vapors remain in the soil beneath the site. The contaminants include perchloroethylene, trichloroethylene and vinyl chloride, which is a known carcinogen.

A soil vapor extraction system which was operating onsite and removing contaminant vapors, especially vinyl chloride, from the soil has been turned off to pulse the system as the level of contaminant removal has declined significantly. Ground water sampling from recently installed monitoring wells have found diesel fuel in one well and perchloroethylene in three wells on the south side of the site. Diesel fuel is being removed.

The Navy installed three-groundwater monitoring wells offsite and sampling results showed the perchloroethylene contamination in the groundwater has migrated offsite. The Navy has now completed plans to install five more groundwater monitoring wells offsite to determine the extent of the contaminated groundwater.

This is one of a few sites slated for transfer to the Department of Hawaiian Home Lands (DHHL) from the federal government. The HEER Office is working with the DHHL to ensure that all remedial activities are completed to the satisfaction of the State before acceptance.

Pearl City Fuel Annex. The Pearl City Fuel Annex is located on the Pearl City Peninsula and is operated by the Navy's Fleet Industrial Supply Center. The facility consists of five above ground storage tanks for the storage and pumping of bulk aviation fuels. Records indicate that tank and pipeline leaks have occurred in the past with a 10,000-gallon JP-4 (a

jet petroleum fuel), release recorded in December 1980. Soil and groundwater sampling have uncovered arsenic, lead and petroleum hydrocarbon contamination in the soils and petroleum hydrocarbon contamination in the groundwater on the site. The Navy completed the Removal Site Evaluation Report and will determine if a response action needs to be conducted.

Pearl City Peninsula Landfill. The landfill is located on the north shore of Middle Loch and operated from 1965 until 1976. The site is currently capped with a two-foot thick layer of crushed basalt. An Investigation indicated the presence of dioxin, polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), trichloroethylene (TCE), and fuel products. The Navy completed a removal action, which involved repairing large cracks in the landfill cap, covering some black sand that was on the surface of the landfill and capping some asbestos material that was recently discovered on the border of the landfill.

Pearl Harbor Naval Shipyard - Battery Shop Building 394. The Battery Shop is an open-air facility that was used prior to 1990 to clean, disassemble and restore lead-sulfuric acid batteries. An estimated 60,000 gallons of battery acid fluid was discharged into an unlined disposal pit on the site. Lead residues from battery disassembly operations were also disposed in the pit. Site investigations have found high lead contamination in the former pit area and in the surface soil around the battery disassembly area. Lead contamination in the soil was as high as 214,000 parts per million (mg/kg). The Navy conducted further site investigations to determine the extent and concentration of the lead contamination on the site. The Navy is now proposing to conduct removal action by using an in-situ electrokinetic process, which is supposed to remove the lead from the contaminated soil. Bench testing was completed on the lead contaminated soil for the electrokinetic process. The electro kinetic treatment system has been installed and the Navy will be testing the process.

Pearl Harbor Naval Shipyard - Building 8. Building 8 is located in the Naval Shipyard Industrial Area on the East Loch of Pearl Harbor. It served as a power plant, an



equipment test facility and a pipefitting shop. Site investigations revealed that subsurface oil is accumulating within Building 8 sumps and other subsurface structures adjacent to the building. During heavy rainfall events, oil sheens in Pearl Harbor around Dry Dock No. 1 are believed to be caused by oil migrating along the conduits of the Building 8 storm drain system and into Pearl Harbor. An oil plume up to several feet thick has been identified in the ground around Building 8. The Navy has installed an active extraction system to contain and extract the oil from the plume under the site. The system is continuing to work well with 16,167 gallons of oil recovered since July 1997.

Pearl Harbor Naval Shipyard Building 68. Building 68 is an electrical repair shop located in the northeast section of the naval shipyard. From approximately 1950 through 1979, the shop serviced electrical transformers containing PCB dielectric fluid. During this period, PCB dielectric fluid was reportedly disposed into catch basins located adjacent to Building 68. Approximately 50 to 55 gallons of PCB transformer fluid were discharged to these catch basins per year. These catch basins drain into Pearl Harbor. A sampling of sediments in the catch basins found polychlorinated biphenyl (PCB) contamination ranging from 21 mg/kg to 1,130 mg/kg. The Navy conducted a time critical removal action in the catch basin where PCB contaminated sediments were removed and a coating was applied to the interior surface of the catch basin. The Navy is regularly sampling the catch basin sediments to determine if more PCB contamination is entering the catch basin.

Pearl Harbor Naval Shipyard Oscar 2 Pier. The Oscar 2 Pier is located on the western corner of the naval shipyard. The site is adjacent to Building No. 177, a power plant which is no longer in service. Black oil was noted on the northwest shore off of the Oscar 2 Pier. The oil appears to be old residual fuel oil with a tar like viscosity much like the Navy Special Fuel Oil. Two permanent oil extraction wells, installed in the past to collect oil in the ground and prevent it from going into Pearl Harbor, are located near the site. To stop the release of oil presently going into Pearl Harbor, the Navy has decided to install a passive trench recovery system about 150 feet long along the shoreline at the site.

The passive trench recovery system has been installed and is working well. A total of 10,216 gallons of oil has been recovered since February 1998.

Pearl Harbor Naval Station Ford Island Landfill. The Ford Island Landfill is located on the southwestern end of Ford Island. This site was used for burning and disposal of solid wastes from the 1930's through the 1980's. The wastes came from the Naval Air Station on Ford Island and are made up of waste parts and metal scraps. A site investigation revealed contaminant concentrations in the groundwater under the landfill below levels that would pose a threat to Pearl Harbor; however, debris on the surface of the landfill would pose a potential threat to people who may use the landfill in the future for recreation. As a result, a cap was placed over the landfill and was completed in December 1996. Ground water monitoring is being performed quarterly.

Pearl Harbor Sediment's Study. The Navy is conducting a study of the sediments in the Pearl Harbor basin to determine what effect the Navy's operation at Pearl Harbor has had on the harbor itself. The site encompasses the entrance channel to the estuary, West Loch, Middle Loch, East Loch and Southeast Loch. Naval operations conducted adjacent to the site have included fuel storage, handling, transfer and recycling facilities as well as operation, maintenance and support facilities and military landfills.

Past waste handling and disposal methods, although acceptable at the time, may have caused unexpected long-term problems at some locations through the release of toxic and hazardous substances into the soil and ground water at sites surrounding the estuary as well as the estuary itself.

The Navy has developed a sampling and analysis plan for the remedial investigation (RI) of the harbor sediments. The sampling of the sediment and the fish in the harbor was completed in November 1996. Analytical results of sediment and fish and crab tissue have been received. The evaluation of the analytical results of fish and crab tissue showed PCB and pesticide contamination. As a result, the Department of Health issued a fish advisory against eating fish caught in

Pearl Harbor. The Navy is currently accomplishing an ecological risk assessment to determine whether contaminate levels pose a threat to the environment.

Pearl Harbor Subsurface Fuel Investigation. The subsurface fuel investigation site encompasses three areas: Area 1 consists of abandoned underground tanks; Area 2 includes the Public Works Center gas station, the fuel reclamation facility and the diesel purification plant; and Area 3 consists of scattered underground storage tanks and fuel lines in the Halawa Service Station and Hotel Pier area. The types of fuel that are present on the site are diesel, gasoline, JP-5 (a jet petroleum fuel), kerosene, Navy Special Fuel Oil, Bunker C and lubricating oil. Free product plumes have been found in all three areas.

The Navy recently completed a Phase II sampling effort in the RI to better assess the nature and extent of soil and ground water contamination with petroleum fuel. Based on the results of the RI, the Navy is looking toward a removal action of free product plumes to the extent possible. The EPA Superfund Innovative Technology Evaluation (SITE) program is testing three technologies to remove the free product fuel oil. The test programs using vacuum, surfactant and thermal processes to enhance oil extraction have been completed. Results of the tests are forthcoming. The Navy has completed plans to install a trench barrier and passive oil recovery systems to remove the subsurface oil from the Hotel Pier Area, Merry Loch Area and Quarry Loch Area. Installation of the systems is planned for FY 2001.

PWC Transformer Sites. Nine transformer sites are located within the Pearl Harbor area. Previous environmental investigations identified these sites as potential health and/or environmental concerns on the basis of detection of polychlorinated biphenyls (PCBs) in the soil and/or on the concrete pads surrounding the transformers. The Navy has completed removal action plans to excavate the PCB contaminated soil and store it for treatment. The removal action is planned for FY 2001.

Red Hill Oily Waste Disposal Pit. This site was constructed in the early 1940's and is located within the Red Hill fuel tank

farm area. An unlined pit located in the central portion of the site was used for the disposal of oily residues generated during periodic fuel tank cleaning operations and oily waste generated by leaks and drips from fuel piping systems associated with the Red Hill fuel storage tanks. The unlined pit was replaced with a stilling basin made of gunite and asphaltic-concrete in 1972.

The Navy conducted a remedial investigation of the site and found petroleum hydrocarbon and polynuclear aromatic hydrocarbon contamination in the subsurface soils where the old unlined pit was located and under the stilling basin. Petroleum hydrocarbon contamination was also found in the shallow ground water system located under the stilling basin. Based on these results, the Navy conducted removal action which involved removing the stilling basin and the petroleum contaminated soils under the stilling basin and where the old unlined pit was located.

To determine whether the petroleum hydrocarbon contamination did infiltrate into the basal groundwater aquifer, the Navy has installed monitoring wells into the basal aquifer and sampled the basal groundwater. Analytical results have shown no contamination in the basal aquifer. However, soil samples taken on various areas of the site show some high levels of petroleum contamination which the Navy must address.

Naval Air Station (NAS) Barbers Point. In 1993, the Base Closure and Realignment Commission placed NAS Barbers Point on the Base Realignment and Closure (BRAC) list. The base closed on July 2, 2000. The airport has been transferred to the State Department of Transportation. Other parcels are in the process of being transferred or remediated prior to transfer. The Barbers Point BRAC Cleanup Team made up of the Navy, EPA, and the State of Hawaii representatives was formed to make decisions on closure-related environmental efforts to be performed by the Navy. The Governor signed the Community Redevelopment Plan providing an overall reuse strategy for the conversion of the base to civilian use after its closure in 2000. A Restoration Advisory Board (RAB) was established in 1994 to allow for community involvement in the environmental decision-

making process. Cleanup of the sites has been initiated to meet reuse strategy and transfer dates. The Navy has completed a removal action by excavating lead and antimony contaminated soil from the former firing ranges. The Navy has also completed plans to accomplish removal actions at the old Engine Test Cell Area and the Southern Trap and Skeet Range.

### **Marine Corps Installation**

Kaneohe Marine Corps Base. Five areas of concern have been identified on the base and these include a fuel farm sludge disposal area, two landfills, a fire fighting training area, and one old maintenance area. A variety of hazardous substances are present in the five areas of concern. Geographically, the Kaneohe Marine Corps Base is ecologically sensitive because it is surrounded on all sides by water (Kaneohe Bay is to the west, the Pacific Ocean to the north, Kailua Bay to the east, and Nuupia Ponds to the south). Nuupia Ponds is a wildlife refuge where five endangered species reside. One endangered species, the green sea turtle, also uses the Kaneohe Bay. Kaneohe Bay is a popular recreation area for boating, snorkeling, scuba diving, and other water sports.

Quarterly monitoring of groundwater wells are being conducted at the Fire Fighting Training Area. Bio-slurping in the area of the Fuel Farm Sludge Disposal Area began in FY 1997. An Expanded Site Inspection (ESI) was submitted to EPA for review. EPA determined that conditions currently do not warrant placing the site on the National Priorities List (NPL).

However, activation and expansion of the existing bio-slurping system was performed in 1998. Funding was made possible as part of the BRAC Barbers Point construction associated with the Navy's move to Kaneohe Marine Corps Base. Additional information is being gathered to complete the evaluation of the site.

## **Air Force Installations**

Bellows Air Force Station (AFS). The Installation Restoration Program (IRP) at Bellows AFS includes 20 Installation Restoration Program (IRP) sites and 17 Areas of Concern (AOCs). Site investigation, sampling and remediation at Bellows AFS are ongoing. Multiple areas of concern are currently being investigated.

*The Bellows Excess Land* - Several acres of land in Bellows were declared excess and will be deeded to the State of Hawaii and the Navy. Over 1000 acres of land are proposed for transfer to the United States Navy for the Marine Corps in FY03. Seventy-five acres of land were accessed to the Government. These areas are being prioritized for site investigation and remediation.

The UST verification project for the excess land was completed. Removal and closure of verified USTs is underway. Currently, draft closure reports for 28 UST sites on the excess land were submitted and reviewed by the Department of Health. These USTs included the USTs along Inoaole Stream and Waimanalo Stream, USTs at the Fighter Housing and Sub-depot. DOH submitted comments, and comment resolution is underway.

Some data from the Inoaole Stream UST sites became questionable because the laboratory that did the analysis of the soil samples was being investigated by the EPA for data fraud. The laboratory was later prosecuted for forging thousands of analysis results. Air Force has to resample these UST sites.

*Landfills/Dump Sites* - Preliminary work, including a geophysical survey, was completed for an engineering evaluation/cost analysis (EE/CA) of a landfill and three dumpsites. An ITIR was submitted for the four sites and Waimanalo Stream. Waimanalo Stream was also characterized because its proximity to the disposal sites may have effects on potential ecological receptors. The characterization of the sites and the stream involved sampling the soil/sediments, fish tissues and groundwater. Baseline human and ecological risk assessments were also

conducted. After review by DOH and resolution of the comments, only the landfill needs further investigation. Chemicals of concern (COCs) in the landfill include high levels of lead and low levels of pesticides and PCBs in surface soil. Dioxin and furans were also potential COCs because there were evidences of in-situ burning of landfill materials. The DOH will recommend additional sampling for dioxins and furans.

Several sites which undergo remedial investigation and removal action were finally closed with no further response action planned (NFRAP). These include the Nike-Hercules Missile Launch area, the bomb dispersal area, and the tar batching plant.

*Areas of Concern* - Four AOCs were also closed with NFRAP after site investigation revealed no chemicals of potential concern (COPCs). The AOCs include a transformer site; a medical waste dump; a site with tank of unknown contents; and the Communication facility dump site.

The Navy completed their site investigation of two IRP sites and two areas of concern (AOCs) in the northern part of Bellows, which will be used by the Marine Corps. These sites included a former grease pit, a former wash rack, a former heat treatment shop, and the former sub-depot area drums. NFRAP was recommended and the DOH concurred with the condition that they would need to revise the report and incorporate DOH comments regarding background data.

Hickam Air Force Base (AFB). The Hickam AFB IRP includes 42 IRP sites and 25 AOCs (including Fort Kamehameha sites). Site investigation, sampling and remediation at Hickam AFB are an ongoing process. Multiple areas of concern are currently being investigated.

*Runway 8L Sites* - The sites related to the transfer of Runway 8L and adjacent lands to the State of Hawaii Department of Transportation, have been characterized. The characterization is intended to support either a no further action decision or further evaluation. The Runway 8L site has been divided into subsites for remediation purposes.

These subsites consist of two major drainage canals, two fuel spill sites, four landfills, a fuel distribution pipeline, a leach field, and one area previously containing abandoned drums. Four sites were recommended for NFRAP closure—two former landfills, a petroleum spill site and a drum removal area. Eight sites along the Runway 8L have been evaluated. Four sites (the Honolulu Airport site, the explosive ordnance area, and two inactive landfills) were closed with no further response action planned (NFRAP). Four other sites will undergo remedial action. The interim remedial action chosen for these sites include; Kuntz pipeline – closure in place; the Atomic Energy Commission area – long-term monitoring (LTM) for 5 years for vinyl chloride; Fuel leak area – bioslurping with LTM and monitored natural attenuation; and the inactive landfill access restriction (fencing) with LTM for PAHs. The action memoranda for these sites were reviewed and finalized.

*Underground Storage Tank and Fuel Distribution and Storage System Components* - A comprehensive Remediation Management Plan was developed by the Air Force to address contamination from previously-closed USTs and fuel distribution and storage system components at Hickam. The plan develops a multi-year strategy to locate, characterize, remove and cleanup approximately 590 existing components. The final work plan for UST verification and removal was also submitted. Records of closure for two UST subsites were submitted for the Department's review. Issues regarding UST closure at Hickam and Fort Kamehameha were discussed in a meeting between DOH and the Air Force with their consultants. Streamlining of the report was agreed upon. It was also agreed upon that the Air Force should do administrative closure of suspected UST sites wherein no USTs were found and no DOH oversight is provided (i.e., approval and signature).

*Subsurface Fuel Plume Investigation* - A subsurface fuel plume delineation and recovery for three large fuel spill sites were continued from the previous year. The remedial design and work plan for the pilot study at the spill area under the Base Exchange, one of the largest fuel plume sites on Hickam AFB, have been reviewed. The pilot study



investigated the optimal location of extraction wells and system design for bioslurping. It was completed and the results will be incorporated in the final EE/CA for the LNAPL removal at the site. The interim remedial action chosen for the groundwater plume with floating free product (AVGAS) under the Base Exchange is the multi-phase extraction system (bioslurping). The action memorandum is being drafted.

The two other major subsurface spill sites are the areas underneath the former John Rodger Tank Farm and the Par 3 golf course. Site characterization was completed which included passive soil gas survey, soil and groundwater sampling, product characterization, and measurement of product thickness. DOH submitted comments for the site characterization reports which are being resolved.

*Fire Training Area* – The fire training area was finally closed with a NFRAP. The isolated high hit of TPH in surface soil will be addressed separately.

Fort Kamehameha. A comprehensive multi year underground storage tank removal program was initiated for Fort Kamehameha to verify and remove underground storage tanks associated with Army activities at Fort Kamehameha. Seven UST subsites records of closure were submitted to DOH. Issues regarding characterizing and remediating the tuff layer beneath these UST subsites were raised.

Hickam Petroleum, Oil & Lubricant (POL) Pipeline and Fuel Storage Annexes (FSAs). A remedial investigation (RI) and installation restoration assessment which included a quarterly groundwater monitoring continued during FY 1999 at the Waikakalaua Fuel Storage Annex (FSA), the Kipapa FSA and a Valve Pit area.

*Waikakalaua Fuel Storage Annex (WSFA)* - At the WSFA, the latest RI work plan was finalized. The work focused on collecting more site-specific data necessary to refine the vadose zone and groundwater modeling (which is being used to support the presumptive remedy of natural attenuation for petroleum contaminants found in the Pearl

Harbor basal aquifer. A quarterly groundwater investigation report for 1999 and the first quarter of 2000 was submitted to DOH. The report includes results of the groundwater sampling and aquifer testing. . Moderate levels of the total petroleum hydrocarbon (TPH) as well as benzene, toluene, ethyl benzene and xylene (BTEX) and TCE contamination have been detected. Based on the groundwater data and review of past studies done at the site, the DOH perceived that the hydrocarbon plume underneath WFSA might not be intercepted by the off-site down gradient well. A decision to install a new basal aquifer monitoring well and where to locate it was agreed upon by the Air Force and DOH.

A draft interim remedial action (IRA) O&M and performance monitoring for the bioventing system at Waiakakalaua FSA were submitted to DOH for comments.

*Kipapa Fuel Storage Annex* - At Kipapa FSA in-situ bioventing is underway at the shallow vadose zone where significant levels of petroleum contamination exist. A draft interim remedial action (IRA) O&M and performance monitoring for the bioventing system at Kipapa FSA were submitted to DOH for comments. The air sparging pilot study was deemed not feasible to remediate the shallow groundwater because of subsurface soil conditions.

Pearl Harbor basal aquifer monitoring as well as the perched water aquifer monitoring are underway. A quarterly groundwater investigation report for 1999 and the first quarter of 2000 were submitted to DOH. The report includes results of the groundwater sampling and aquifer testing. Moderate levels of the total petroleum hydrocarbon (TPH) as well as benzene, toluene, ethyl benzene and xylene (BTEX) and TCE contamination have been detected in the basal aquifer. The shallow perched water aquifer has significant petroleum contamination and it extends and recharges Kipapa Stream. Several instilling wells were installed in Kipapa Stream to monitor stream water levels and the hydraulic relationship to the perched water aquifer. An ecological risk assessment in Kipapa Stream is being conducted to determine the impacts of the contaminants in the Kipapa shallow water-bearing zone on the ecological receptors in Kipapa Stream.

Laboratory problems have made much of the soil volatile organic compound (VOC) data unusable for risk analysis and the soils were resampled. Surface soil samples were collected along Kipapa Stream to re-evaluate data collected previously. The soil samples were taken from the sludge pit location where high levels of lead were detected. One soil boring was advanced to the basal aquifer in the area between Valve Pits 1 and 2 and Kipapa Stream, to fill in the data gap caused by the laboratory fiasco.

TCE was detected at a maximum of 2.5 ug/l in the basal aquifer monitoring well up gradient of the Kipapa FSA. TCE is not considered a petroleum by-product and is not expected to have originated from site activities. However, the source will still have to be determined, possibly by the US Army which occupies the land up gradient of the Air Force facility.

*Valve Pit #17 (VP17)* - At VP17 four shallow groundwater-monitoring wells and a Pearl Harbor basal aquifer monitoring well were installed around the valve pit. A quarterly groundwater-monitoring program to gather additional RI level data was initiated in FY 1998 and extends into FY 2000. This data will be crucial to the understanding of contaminant transport. The shallow water table at VP17 is considered discontinuous due to the large variability in water elevations observed both laterally and over time. Petroleum contamination has been detected at elevated concentrations within a central plume located beneath the valve pit and extending 75 feet from the facility fence line. There was no significant contamination observed in the basal aquifer monitoring well beneath the valve pit.

Additional site characterization for Valve Pit 17 site was finalized as part of the remedial investigation. A deep vapor monitoring point was installed in VP17 to monitor vapor fate and transport at 120 feet below ground surface. Confirmatory surface soil samples were also collected to fully characterize this media/layer. Subsurface soil samples indicate contaminants have migrated southwest. Full-scale in-situ bioremediation is underway throughout the central plume.

Wheeler Army Airfield (AAF). Wheeler AAF was transferred to the Army in 1993 and is currently being operated by them. The Air Force retains IRP management under an agreement between the Army and the Air Force established at the time of land transfer. All compliance activities except for one dumpsite have been transferred to the Army, mainly the fuel component systems. There were eight IRP sites identified and five AOCs. These included two former dump sites, a landfill, a fire training area, two aircraft parking and maintenance areas, a sewer line, and a pond used for oxidation of disposed sludge. Site inspections were initiated last year for the last four sites mentioned. A work plan to close these four sites was submitted and reviewed by DOH. DOH submitted comments, and resolution was finalized. The decision document to support NFRAP of the four sites was approved and signed by DOH.

The remaining 450 cubic yards of stockpiled soil left from a previous dumpsite is still awaiting disposal. The soil contains more than 10 ppm of PCBs but less than 50 ppm, so it's not a TSCA-regulated waste. The plan to do an on-site thermal treatment did not materialize. Administrative issues are being worked out to dispose of this soil pile.

Kaala AFS. The IRP at Kaala AFS included 9 IRP sites and 1 AOC. These included former USTs, a waste oil sump, a drum rack outfall area, disposal areas, and a former transformer. Four of the nine IRP sites were administratively closed. There are no ongoing removal or remedial actions at Kaala AFS. Due to the low relative human health and environmental risk and the ongoing FAA construction project at the site, no remedial actions are planned until after year 2002. The main sites of concern are the waste oil sump and the drum rack outfall. There were no reports submitted for Kaala AFS for FY2000.

Punamano AFS. This site was divided in three subsites for remediation purposes: the Motor Pool Drain Outfall Site (SS01), the Environmental Area 4 (EA04) and the Suspected Sunken Tank Area. At the Motor Pool Drain Outfall Site, 40 cubic yards of soil contaminated with petroleum hydrocarbons were taken for thermal desorption treatment.

After investigation the Environmental Area 4 turned out to be a non-site as there were no tanks or any appurtenances discovered upon investigation. No tanks were discovered at the Suspected Sunken Tank Area either. During FY 1998 the three subsites were closed out, closing documents were signed and no further action is planned. A burn pit was inadvertently discovered near SS01. Lead in soil was reportedly above Tier 1 action level and a removal action was supposed to be implemented in FY 2000. However, the Air Force informed the DOH of possible resampling of the soil because the data analysis were done by the fraudulent laboratory.

Satellite Stations (Kokee Air Force Station, Palehua Solar Observatory, Kaena Point Satellite Tracking Station). Site inspection was completed for the three Air Force satellite installations. No contaminants of concern (COCs) were identified above the regulatory levels and the Air Force is recommending no further remedial action planned for the sites.

The NFRAP decision documents for the two areas of concern at Kaena Point STS, drainage trough and base of antenna, were submitted and approved by DOH. There were no COCs found at the site.

At Palehua Solar Observatory, NFRAP was approved for the leach field/septic system sites. The levels of COCs at the site do not pose a significant risk to human health and the environment.

At Kokee AFS, the NFRAP decision documents for the POL shed and contractors' area and the paint thinner disposal area were approved. However, the decision for NFRAP of a radar shaft site was not approved. The radar shaft cannot be located; therefore there are no media samples to support the NFRAP. The DOH contends should future land use change and/or there be discovery of contamination at the site they will re-open the site regardless of the fact it was granted NFRAP status at this time.

## **Technical Support to the DSMOA Program and Oversight of Hawaii State Remediation Sites**

During FY 2000 the HEER Office Geologist provided technical support in the following areas to the DSMOA program and investigation on the Hawaii State remediation sites.

GIS Information. Information is now available to more readily evaluate the impact of a remediation site on human health and the

environment. Data include: locations and types of groundwater wells, depth of groundwater at a site, groundwater flow direction, type of aquifer, spatial relationship to nearby wetland and streams, and background or regional concentrations of certain chemicals. The HEER Office Remediation Project Managers are now able to utilize the GIS system to obtain this information.

Geostatistical Applications. Spatial patterns of contaminants are observed at many remedial sites as a result of site history and operation activities. Unfortunately, most classical statistical techniques make no use of the spatial information. Geostatistics can overcome the shortcoming of classical statistics and provide a solution for estimation problems utilizing the spatial information in sampling data sets. This insures that decisions made for a remedial site are accurate as well as protective of human health and the environment. For example, the application of geostatistical techniques and GIS display tools in the evaluation of the remedial decisions at the Kapalama Incinerator was described in a technical memorandum.

Groundwater Modeling. Assistance and recommendations on evaluation of groundwater modeling studies were provided for the following investigations:

- Fate and transport of the petroleum plume in the caprock groundwater body at the Home Depot site
- Fate and transport of pesticides in the basal aquifer in Kunia
- Fate and transport of BTEX in the unsaturated zone at Waikakalaua fuel storage annex, central Oahu
- Fate and transport of BTEX from perched groundwater to the basal aquifer at Kipapa gulch, central Oahu.

### Statistical Analysis

- Provided assistance to the Toxicologist and RPMs on the statistical calculation of exposure concentration and associated risk.
- Addressed the issue regarding the calculation of 95% upper confidence limit of mean for risk assessment at remediation sites.

### Sampling Plans

- Provided assistance to the HEER office RPMs with evaluation of the sampling plans for both military and state sites.

### Metal Background Analysis

- Initiated the development of guidance for the analysis of background metals.
- Placed limited data on metal background levels for Oahu, Hawaii, and Kauai into the GIS database.
- Commented and made recommendations on the studies of background concentrations of metals in soil and groundwater.

### Document Review

- Assisted RPMs to review the reports on various military and state remediation sites.
- Provided other technical support on issues involving geology and groundwater.

## **Significant Site Summaries from the Site Discovery, Assessment, and Remediation Section (SDAR)**

### **Preliminary Assessment/Site Investigation Sites**

Ewa - Ewa Sugar Mill/Oahu Sugar Co. This site consists of five subunits: (1) the coral waste pit, (2) the former fumigant storage area, (3) the pesticide mixing/loading area in Ewa, (4) the herbicide mixing/loading and seed cane fungicide dipping site on Waipio Peninsula, and (5) the pesticide staging area in Kunia. Sampling events have been performed by the HEER Office at all subunits.

(1) A mixture of waste oil and water was disposed of at the coral wastepit adjacent to NAS Barber's Point. The landowner conducted additional sampling, and removal/remediation options for the petroleum-impacted soil are currently being evaluated. This site is inaccessible to the public and not located on any terrestrial sensitive environment. A Site Inspection (SI) report was submitted to EPA in September 1999. The site was given a No Further Remedial Action Planned (NFRAP) determination under CERCLA, because the oil discovered appeared to contain no CERCLA hazardous substances, and was given a low priority ranking by the HEER Office.

(2) The former fumigant storage area is located within a residential area. It was previously suspected that chemicals used for fumigating plantation homes and various pesticides used on the sugar fields may have spilled at the site. Sampling has indicated the presence of only trace amounts of various pesticides, all of which are below regulatory action levels. There were also several detections of arsenic above the screening level; however, the HEER Office's toxicologist has determined that these levels do not currently pose a risk to human health or the environment. An SI report was submitted to EPA in November 1999; the site was NFRAP'd under CERCLA and given a No Further Action (NFA) by the HEER Office.

(3) Ametryn, atrazine, arsenic, pentachlorophenol, and dioxins/furans have been detected in the soil at the Ewa pesticide mixing/loading site at levels above action levels. This site has been given a high priority ranking by the HEER Office. Further sampling will be required of the landowner to delineate the extent of contamination. The site is currently fenced, and chemical warning signs are posted. An SI report will be prepared and submitted to EPA in early 2001.

(4) The herbicide mixing/loading and seed cane fungicide dipping site on Waipio Peninsula is owned by the Navy and is located within a restricted area. Sampling at this site by the HEER Office has indicated the presence of dioxins. This site has been given a high priority ranking by the HEER Office. The responsible party has recently conducted additional sampling to characterize the extent and nature of contamination. An SI report will be prepared and submitted to EPA in early 2001.



(5) Arsenic was detected in the surface soils at the Kunia staging area at levels above action limits. This subunit lies within an area which may be developed into a residential subdivision. An SI report was submitted to EPA in November 1999. The site was NFRAP'd under CERCLA, due to the lack of people immediately surrounding the site and the nature of the contamination but was given a medium priority by the HEER Office. The site requires further investigation. The landowners have been notified of the sampling results and the priority ranking.

Kahului, Maui - Kanaha Pond Industrial Sites (East and West). The HEER Office conducted sampling in December 1999, to determine if there have been adverse impacts to Kanaha Pond from the industrial businesses formerly operating along Amala Place. Soil was sampled at the former business sites, and sediment and surface water samples were collected from within Kanaha Pond. Preliminary analytical results indicate that soils at the site and the sediments and surface water of the pond received little to no impact by the chemicals of potential concern for this site. EPA will be validating the data in the fall of 2000 for final evaluation by the HEER Office.

Pearl City - Waiawa Gulch. This site began as a federal facility SI review conducted by the HEER Office. The Hawaii Army National Guard (HIARNG) provided the EPA with a PA and SI, and the HEER Office was later asked to further evaluate the site by performing a federal facility SI review using EPA's Hazard Ranking System (HRS) criteria. Lead was detected at a concentration of 4,371 mg/kg in a soil sample collected from the bank of Waiawa Stream at a 6-inch diameter pipe drainage outfall which is connected to a wash rack at the HIARNG facility. Possible sources of contamination to the stream include the HIARNG facility, a junkyard/ recycling facility located along both sides of the stream (including a portion directly across the stream from the site), and other small industrial operations in the area. An Ecologist/Microbiologist from EPA Region IX conducted a site visit and stream walk in Waiawa Gulch with DOH in July 1998. Observations made during the stream walk indicate a reduction in aquatic macrofauna biodiversity as the stream flows through the light industrial area, the recycling area, and the HIARNG property. The Field Sampling Plan for this site is currently being reviewed by EPA. It calls for sampling to be conducted during a "wet" season,

perhaps during December 2000. Surface water and sediment samples will be collected from 8 locations along the stream. Because Waiawa Stream flows into the Waiawa National Wildlife Refuge, located approximately 3 miles downstream, it is important to document whether there have been adverse environmental impacts to the stream water and sediments.

Kailua - Kapaa Landfill, Oahu. The Kapaa Landfill is comprised of 3 distinct inactive landfill areas covering approximately 750 acres. Kawainui Marsh, adjacent to the landfill, is the largest freshwater marsh in Hawaii. An investigation will be conducted to determine leachate infiltration locations. The Field Sampling Plan, currently being finalized, will be implemented to determine if leachate from the landfill is adversely impacting the marsh, host to 4 federally listed endangered avian species. The City and County of Honolulu, who owns and maintains the landfill, is currently preparing a groundwater monitoring and leachate characterization plan. Results of the groundwater monitoring and leachate characterization reports may be used by the HEER Office to assess the potential for impacts to ecological receptors at the Kawainui Marsh. With cooperation from the DOH Solid and Hazardous Waste Branch's Office of Solid Waste, SI sampling activities will include the collection of 5 surface water samples and 5 sediment samples by the HEER Office.

Kauai – Kauai Agricultural Research Center. From May 1967 to June 1968, the Department of the Army, in conjunction with the University of Hawaii Agricultural Experiment Station, tested various pesticides on plots of land on the Island of Kauai. The purpose of this testing was to determine which pesticides and combinations of pesticides were most efficient at defoliating numerous types of jungle vegetation prevalent in Hawaii. Pesticides tested include 2,4-D; pentachlorophenol; picloram; 2,4,5-T; 2,4,5-TP (Silvex); and combinations of chemicals such as 2,4-D mixed with 2,4,5-T ("Agent Orange"). Preparation of the PA report is nearly complete. It is anticipated that sampling for this site will be conducted in early 2001.

### **Hawaii State Remediation Sites**

Honolulu Harbor - The first Voluntary Agreement between the Department of Health (DOH) and the Honolulu Harbor Work Group

(HHWG) was completed. The HHWG is composed of representatives from the six parties to the Agreement. Three documents were produced from tasks in the first Voluntary Agreement. The final Data Assimilation and Review Report, Identification of Additional Parties Responsible for Petroleum Releases in the Iwilei Unit of Honolulu Harbor and the Conceptual Site Model have been submitted to the DOH.

The DOH and the HHWG are preparing a second Agreement that will include immediate response procedures for the release or threat of release of hazardous substances, a fuels management program, filling data gaps, development and implementation of sampling plans, development and implementation of a groundwater study, and building and refining the existing GIS information.

Sites identified by the DOH and the U.S. Coast Guard as requiring immediate oil spill and hazardous substance response actions are on the "critical sources" list and include: the storm drains at piers 26 and 35; a fractured sea wall at piers 29 - 30 and 35; and various formerly used petroleum pipelines that require investigation and evacuation.

The HHWG is currently made up of four oil companies (BHP Hawaii, UNOCAL, Chevron, Equilon), Hawaiian Electric Company and the State of Hawaii, Department of Transportation, Harbors Division. The HHWG and the DOH have contacted parties identified in the HHWG document Identification of Additional Parties Responsible for Petroleum Releases in the Iwilei Unit of Honolulu Harbor and will discuss their participation in the HHWG. The DOH and the HHWG should be finalizing the second Voluntary Agreement in January 2001.

Kalihi- Kapalama Incinerator - Lead has been detected in soil at the site of the former Kapalama Incinerator on Kokea Street. The City and County of Honolulu operated the Kapalama Incinerator to burn municipal waste from the 1940s to the 1970s. The City & County is investigating the extent of contamination and is evaluating options for remediation of the site.

Mapunapuna – Honolulu Wood Treating Site - Pentachlorophenol, arsenic, and dioxins have been detected at a property leased by Servco Pacific, Inc. on Pukoloa Street. Honolulu Wood Treating a former lessee, conducted wood treatment activities at the site from

the 1960s to the 1980s. Servco, as well as the property owner and former lessees, are investigating the site to determine the extent and magnitude of contamination.

Kalihi - Flynn-Learner Site - Lead has been detected at the former Flynn-Learner site on Sand Island Access Road. Flynn-Learner Inc., the former lessee, conducted scrap metal recycling activities at the site from the 1940s to the 1990s. Damon Estate, the property owner, is negotiating with the Department of Health to enter into a voluntary response agreement to investigate and remediate the site.

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### **3.0 STATE PRIORITY CLEANUP SITES**

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The majority of cleanup sites are identified through the spill/release “notification system” required by the State Contingency Plan. The Release Notification Log (Appendix A) contains the FY 2000 notifications. All spills and releases, both Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and non-CERCLA eligible (i.e. petroleum product contaminated), are reported to the DOH. The remainder of sites identified are from referrals by other programs and the HEER Office’s site discovery process.

The State Site List (Appendix B) contains all of the sites through FY 2000 which have been determined by the HEER Office to need further assessment and possible removal or remedial action. These sites have gone through the Initial Site Screening Team (ISST) prioritization process based upon the criteria in the Hawaii State Contingency Plan, Chapter 11-451, Hawaii Administrative Rules. These sites have been determined to be high, medium, or low priority and are either actively being worked on by a project manager from the HEER Office or they will be addressed in the future.

Chapter 128D, HRS, requires that the department publish a list of those facilities undergoing action where a formal agreement has been established or a "responsible party" is not conducting the appropriate action. Although the program currently provides oversight to a number of sites, the following sites are the only ones officially listed on the State Priority List. All of these facilities voluntarily entered into agreements to conduct the appropriate action.

Pearl Harbor  
Waikakalaua/Kipapa Fuel Pipeline  
Schofield Barracks (Delisted August 10, 2000)  
Del Monte Kunia  
Honolulu Harbor - Iwilei

There are currently three sites in Hawaii listed on EPA’s National Priority List (NPL) for cleanup: Pearl Harbor; Del Monte Kunia; and the Naval Computer and Telecommunication Area Master Station (NCTAMS). Schofield Barracks, the fourth site, was delisted on August 10, 2000.

The following sites are currently going through the process to determine if they are eligible for remediation under CERCLA. Once a site is determined to be a CERCLA site, it may be added to the National Priority List and the cleanup may be managed by the EPA; generally, it will require no additional State funding.

1. Ewa/Oahu Sugar Company, pesticide mixing and loading site.
2. Ewa/Oahu Sugar Company, Waipio Peninsula.
3. Pukoloa Wood Treating Site, PA/SI.
4. Kanaha Pond Industrial sites, SI.
5. Maili Kai Emergency Access Road, PA.
6. Kawainui Marsh/Kapaa Landfill, SI.
7. Kauai Agricultural Research Center, PA.

The HEER Office continues to provide oversight to all military site cleanups through the Department of Defense/State Memorandum of Agreement (DSMOA) grant. The "Top Military Sites" were identified for the purpose of setting goals for the Year 2000. These sites are listed below with no preference to priority order:

Naval Computer and Telecommunication Area Master Station - Pacific  
Barber's Point Naval Air Station  
Naval Station Pearl Harbor - Aiea Laundry  
Waikakalaua/Kipapa Fuel Storage Area - Hickam Air Force Base  
Pearl Harbor Naval Base - Subsurface Oil  
Pearl Harbor Naval Shipyard - Battery Shop, Building 394  
Ewa Junction Gasoline Spill - Pearl Harbor  
Hickam Air Force Base  
Bellows Air Force Base

The military sites listed above are considered to be the highest priority military sites for consideration of oversight and compliance in accordance with the State Contingency Plan.

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## **4.0 HEER OFFICE BUDGET AND EXPENDITURES**

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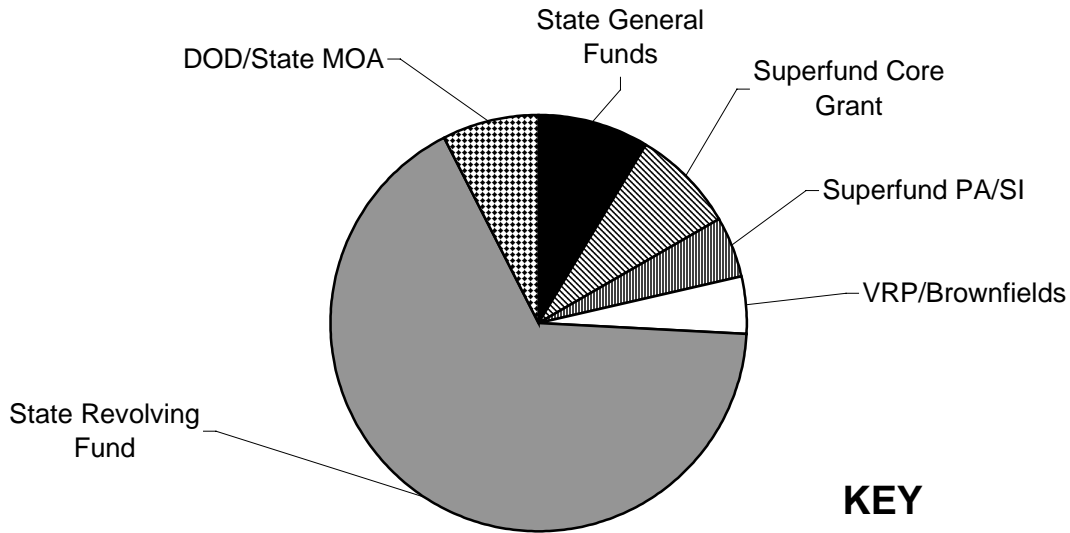
### **4.1 FY 2000 Budget Summary**

The combined total operating budget for both State and Federal funds was \$4,304,156 during Fiscal Year (FY) 2000. The State FY 2000 extends from July 1, 1999 to June 30, 2000 while the Federal FY 2000 extends from October 1, 1999 to September 30, 2000. The federal fund amounts have been adjusted to coincide with the State fiscal year as reflected in the Annual Operating Budget and the FAMIS Expenditure Report.

State general funds (July 1, 1999-June 30, 2000) appropriated amounted to \$314,402 and were basically used to operate the Emergency Preparedness and Response and the Hazard Evaluation sections of the HEER Office. These functions are vitally important in protecting Hawaii's environment as these sections are concerned with hazardous materials, emergency responses and the assessment of chemical exposures on human health. These functions cannot be funded with the federal grant dollars currently received by the office.

The HEER Office also had an operating allocation of \$2,857,945 from the State Environmental Response Revolving Fund (ERRF) during State FY 2000. The ERRF was utilized by the HEER Office for two primary purposes: operations and response. The operations budget of \$1,056,413 was allocated to conduct oil spill cleanups; enforce Chapter 128D, HRS; and fund the counties' used oil recycling programs. Funding for the recycling programs is in the HEER Office budget; however, management and oversight of the programs is provided by the Solid and Hazardous Waste Branch, Office of Solid Waste Management. The HEER Office also budgeted \$1,094,000 for both emergency response and remedial contract services, which supplement its response capacity.

Two other branches receive funding from the ERRF. For FY 2000 the Solid and Hazardous Waste Branch had a budget of \$453,263 and the Safe Drinking Water Branch had a budget of \$607,081. To date, a total of \$3,918,289 was allocated from the ERRF for these three programs. The HEER Office received four federal grants totaling \$1,131,809. Three of the grants were from the U.S. Environmental Protection Agency and one from the U.S. Department of Defense. These grants were very specific as to their designated usage and wherever possible, the Office utilized federal grant funds in lieu of state funds.



**FY 2000  
BUDGET**

- KEY**
- State General Funds
  - ▨ Superfund Core Grant
  - ▤ Superfund PA/SI
  - VRP/Brownfields
  - State Revolving Fund
  - ▩ DOD/State MOA

**HEER Office Funding Source and Budget for FY 2000:**

State General Funds (appropriation)	\$ 314,402
State Revolving Funds (appropriation)	\$ 2,857,945
The Department of Defense/State (Federal) Memorandum of Agreement	\$ 429,877
EPA Superfund Core Grant (Federal) (Amended 1999 grant budgeted allotment Includes ERO & EPO support costs)	\$ 350,911
Superfund PA/SI Cooperative Agreement (Federal) October 1999 grant budgeted allotment	\$ 177,221
Brownfields/VRP (Federal)	<u>\$ 173,800</u>
<b>TOTAL STATE &amp; FEDERAL BUDGET FOR FY 2000</b>	<b>\$ 4,304,156</b>

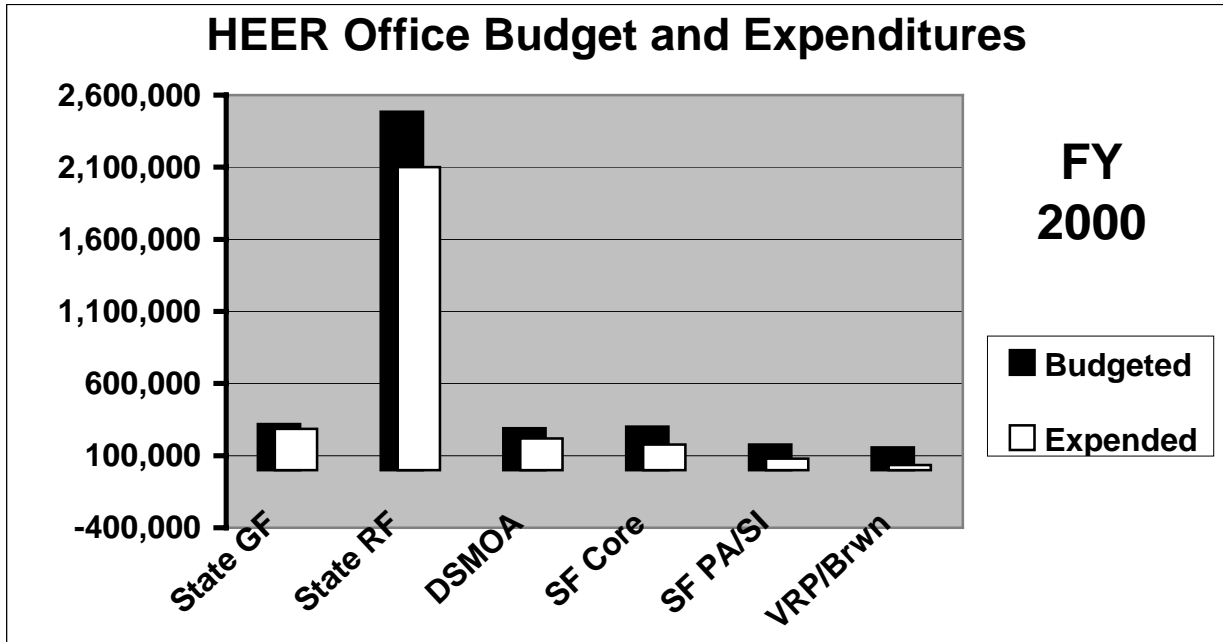


## **4.2 FY 2000 Expenditure Summary**

The HEER Office spent a total of \$1,941,227 of the state and federal budgeted amount of \$4,304,156 during FY 2000. State general funds of \$324,351 were expended between July 1, 1999, and June 30, 2000, and, as mentioned previously, were basically used to operate the Emergency Preparedness and Response and the Hazard Evaluation sections of the HEER Office. These functions are concerned with hazardous materials, emergency response, and the assessment of chemical exposures on human health. These functions cannot be funded with the federal grant dollars currently received by the office.

The HEER Office expended \$875,937 from the State Environmental Response Revolving Funds (ERRF) during State FY 2000. The ERRF was utilized by the HEER Office for two primary purposes: operations and response. The operations expenditure of \$184,978 was used to conduct oil spill cleanups; enforce Chapter 128D, HRS; and fund the counties' used oil recycling programs. The response expenditure of \$214,966 was used to conduct responses to releases or threats of releases of hazardous substance. In addition to the HEER Office budget, the Solid and Hazardous Waste Branch expended \$337,151 and the Safe Drinking Water Branch expended \$396,478 from the ERRF. A total of \$1,609,566 was expended by all programs from the ERRF.

The HEER Office expended \$624,705 from the four federal grants for FY 2000. Three of the grants were from the U.S. Environmental Protection Agency and one from the U.S. Department of Defense. These grants were very specific as to their designated usage; however, wherever appropriate, the Office attempted to use federal grant funds in lieu of state funding.



**HEER Office Funding Source and Expenditures for State FY 2000:**

	<b><u>Expended As of 6/30/00</u></b>
State General Funds	\$ 324,351
State Revolving Funds	\$ 875,937
VRP Sub Fund	\$ 16,415
LEPC Sub Fund	\$ 99,819
The Department of Defense/State (Federal) Memorandum of Agreement	\$ 195,585
Superfund Core Grant (Federal)	\$ 234,979
Superfund PA/SI Cooperative Agreement (Federal)	\$ 117,458
Brownfields/VRP	<u>\$ 76,683</u>

**TOTAL STATE & FEDERAL EXPENDITURES FOR FY 2000      \$ 1,941,227**

**\* Note:** This amount reflects only the HEER Office expenditures/encumbrances in FY00 and does not include expenditures from other environmental programs which also participate in revolving fund activities.

## General Funds

General funds support the Hazard Evaluation Section, as well as the Emergency Response and Preparedness Section. These functions are vitally important in protecting Hawaii's environment as these sections are concerned with hazardous materials, emergency responses and the assessment of chemical exposures on human health. These functions cannot be funded with the federal grant dollars currently received by the office.

**Table 1 - HEER Office General Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended As of 6/30/00</u></b>
A. Funds		
1 Office Manager		
1 Epidemiologist IV, SR 22		
4 Env. Health Spc. IV, SR 22		
1 Env. Health Spc. III, SR 20		
<u>1</u> Clerk Typist, SR 8		
8		
Subtotal	262,884	310,551
B. Funds	51,518	13,800
C. Funds	<u>-0-</u>	<u>-0-</u>
<b>TOTAL HEER GENERAL FUNDS</b>	<b>314,402</b>	<b>324,351</b>

### **4.3 Environmental Response Revolving Fund**

The Environmental Response Revolving Fund (ERRF), established in Chapter 128D, HRS, is supported by a tax of five cents per barrel on petroleum, fines and penalties for environmental violation, grants, legislative appropriations, and costs recovered from response actions. The fund may be used to conduct removal or remedial actions consistent with Chapter 128D; however, the oil tax:

- 1) Shall also be used:
  - a) For oil spill planning, prevention, preparedness, education, research, training, removal, and remediation; and
  - b) For direct support for county used oil recycling programs; and
- 2) May also be used to address concerns related to drinking water, underground storage tanks, including support for the underground storage tank program of the department and funding for the acquisition by the State of a soil remediation site and facility.

Currently, three programs within DOH have budgeted accounts for access to the ERRF: The Hazard Evaluation and Emergency Response Office (HEER), Solid and Hazardous Waste Branch (SHWB), and the Safe Drinking Water Branch (SDWB).

*Please note that this report is intended to provide a complete overview of the HEER Office activities; however, to meet the requirements of ACT 300/93, SLH, this section of the report provides a complete overview of all budgeted activities in the ERRF.*

Find the specific activities and expenditures under each program in the following pages.

**Table 2 - HEER Office Revolving Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended</u></b>
A. Funds		
2 Toxicologist I, SR 26		
1 Eco Risk Assessor, SR 26		
1 Epidemiologist III, SR 20		
2 Env. Health Spc. V, SR 24		
1 Clerk Typist II, SR 08		
5 Env Hlth Spc. IV, SR 22		
<u>2</u> Voluntary Cleanup Spc, SR22		
14		
Subtotal	707,532	395,551
B. Funds		
Oil Related Activities	1,056,413	184,978
Clean-up/Removals	<u>1,094,000</u>	<u>214,966</u>
Subtotal	2,150,413	399,944
C. Funds	<u>-0-</u>	<u>80,442</u>
<b>GRAND TOTAL</b>	<b>2,857,945</b>	<b>875,937</b>

**HEER Office Cost Recovery**

Chapter 128D, HRS, authorizes cost recovery from money spent from the ERRF. During FY 2000, the HEER Office cost recovered \$86,544.27. This is a lot less than the \$949,635 cost recovered in FY 1999 and a bit less than the \$88,459 cost recovered in 1998. A large amount (\$533,069) of the 1999 recovery came from a 70% FEMA reimbursement for the cost of Operation Kokua. Operation Kokua took place in 1996 and involved the removal of hazardous waste remaining after floods on Oahu.

Del Monte	\$ 817.02
Chevron Waiiau	1,299.22
Brewer Environmental - Barbers Point	74,850.08
Century Aviation	<u>600.00</u>
<b>Subtotal:</b>	<b>\$ 77,566.32</b>
Tesoro Oil Spill Response (NRDA)	<u>8,977.95</u>
<b>TOTAL</b>	<b>\$86,544.27</b>

**Table 3 - Solid and Hazardous Waste Branch (SHWB)  
Revolving Funds**

A. Funds	<u>Budget FY 2000</u>	<u>Expended</u>
1 Env. Engineer IV, SR 24 (SW)		
1 Env. Health Spc. III, SR 20 (HW)		
1 Env. Health Spc. IV, SR 22 (HW)		
1 Env. Health Spc. III, SR 20 (LUST)		
1 Env. Health Spc. IV, SR 22 (LUST)		
1 Geologist I, SR 24 (LUST)		
2 Env. Health Spc. III, SR 20 (UST)		
1 Env. Health Spc. IV, SR 22 (UST)		
<u>1</u> Clerk Typist II, SR 08 (UST)		
10		
Subtotal	438,263	337,151
B. Funds	15,000	-0-
C. Funds	-0-	-0-
<b>TOTAL SHWB</b>	<b>453,263</b>	<b>337,151</b>

The Environmental Response Revolving Fund provides support for the following program activities within the Solid and Hazardous Waste Branch (SHWB):

Used oil management and recycling

Since promulgation and incorporation of state used oil management regulations into HAR 11-279 (Hazardous Waste Management), hazardous waste inspectors have been inspecting used oil transporters and processors. It is evident from the inspections conducted from 7/1/99 to 6/30/00 that there is a problem with the proper management of used oil in the state of Hawaii. Facilities that were inspected under hazardous waste management were also inspected for used oil compliance. The goal of the Hazardous Waste Program is to insure compliance. By working with the Waste Minimization Coordinator, the program plans to provide technical assistance via workshops and handouts to generators, transporters and processors of used oil.

An even bigger problem is the disposition of the used oil. Closures of the sugar mills which accepted and burned used oil have left the processors and transporters scrambling for places to take the used oil. Ideas and solutions are now being discussed among the state, military and private entities to alleviate the buildup and storage of used oil, and ultimately to prevent illegal dumping of used oil.

### Special Waste

The Special Waste permitting engineer is responsible for permitting and enforcement activities over a wide range of special waste management facilities including petroleum contaminated soil (PCS) recyclers and Auto Salvage facilities where a primary concern is the proper management of gasoline, oil and other automotive fluids removed from the vehicles. Currently, the Engineer has responsibility for more than 40 facilities which deal directly or indirectly with oil related issues.

### Hazardous Waste Permits, Closures and Corrective Action

The EHS IV currently funded through the oil fund is responsible for review and issuance of hazardous waste permits. The Navy PC and DRMO joint hazardous waste storage permit was completed and reissued. The EHS IV also revised the used oil permit application to conform with HAR 11-279. Two new used oil transporter permits were issued and several were modified. Previous used oil transporter and processor permits issued under HAR 11-58.1 are being revised and replaced with citations from HAR 11-279.

### Management of Leaking Underground Storage Tank (LUST) sites

The EHS III and EHS IV of the LUST staff, and the geologist were assigned 457 cases involving releases of petroleum from Underground Storage Tank (UST) systems in Hawaii. The staff provided timely review of release response documentation and actions which included meetings, not only with owners and operators of UST systems, but also with consultants and contractors. The staff ensured compliance with federal UST regulations. As of June 30, 2000, 1007 cleanups had been initiated at 1,602 confirmed release sites in Hawaii. Approximately 42% of sites (680) have completed their work.

The EHS IV, LUST staff, also performed a semiannual update of the DOH's UST database. Updating the UST database is a service provided to consultants and contractors. The real estate, banking, and petroleum industry benefit from timely

access to the information in the UST database. For example, consultants use the UST database to obtain information for environmental assessments (i.e., to determine if petroleum releases occurred at facilities and adjacent properties).

The LUST staff also gave presentations regarding leaking underground storage tank regulations and release cleanup requirements to various groups.

### Inspection of Underground Storage Tank Facilities

The UST staff helped to develop draft state UST rules that have been reviewed by U.S. EPA and a UST committee representing Hawaii's small business interest. The DOH conducted statewide information meetings and public hearings on the rules in November and December 1999. The UST rules were adopted and became effective on January 28, 2000. Between January 28, 2000 and June 30, 2000, staff conducted 44 field citation inspections and issued 24 citations. Staff also reviewed and issued nine permits for the installation and operation of new UST systems.

The two EHS IIIs, UST staff, conducted compliance inspections at facilities with UST's in Hawaii to ensure that release detection equipment were properly installed, maintained and operated. The goal of the compliance inspections is to prevent releases of petroleum and hazardous substances from UST systems and to minimize the volume of a release if one does occur.

During the compliance inspections, the UST staff also checked UST systems to ensure compliance with the federal December 22, 1998, UST requirements. By December 22, 1998, all UST systems were required to meet corrosion protection standards and have spill and overfill prevention equipment installed. It is estimated that 81 - 90% of the regulated UST's have met the 1998 deadline and also have a monthly leak detection method.

The two EHS IIIs, UST staff, provided assistance to consultants and contractors who requested and reviewed facility records. Timely review of facility records assists the banking, real estate and petroleum industry to complete transactions involving the sale or return of properties that were affected by petroleum releases. The two EHS IIIs, UST staff helped the UST Unit process requests for public records.

The UST EHS IV tracked and reviewed the daily work activities of two EHS IIIs. The EHS IV was also designated as the Safety Coordinator for the Solid and Hazardous Waste Branch and ensured that staff had proper equipment for field inspections.



**Table 4 - Safe Drinking Water Branch Revolving Funds**

A. Funds	<b>Budget FY 2000</b>	<b>Expended</b>
3 Env. Engineer IV, SR-24		
1 Env. Hlth Spec. III, SR-20		
1 Clerk-Steno II, SR-09		
1 UIC Clerk-Steno II, SR-09		
1 Clerk-Typist II, SR-08		
1 UIC Geologist II, SR-28		
<u>2 UIC Geologist I, SR-24</u>		
10		
Subtotal	457,088	360,440
B. Funds		
Travel	12,150	5,350
Supplies	20,500	1,904
Contractual	50,000	741
Air Freight	8,000	-0-
Dues	3,500	600
Maintenance of Motor Vehicle	1,500	180
Motor vehicle gas and oil	4,000	148
Phone	2,500	678
Postage	2,600	-0-
Registration Fee	6,000	633
Rental of Training Space	2,000	-0-
Rental of Office Equipment	8,000	3,286
Rental of Equipment Other	6,000	597
R&M Other Equipment	1,600	250
R&M Office Furn. and Equip.	6,000	-0-
Reproduction costs	5,800	458
Subscriptions'	1,500	192
Utilities	2,000	-0-
Other Misc. Current Exp.	6,343	1,660
Subtotal	149,993	16,677
C. Funds	-0-	19,361
<b>TOTAL SDWB</b>	<b>607,081</b>	<b>396,478</b>

## **Safe Drinking Water Branch (SDWB)**

In FY 2000, the Environmental Response Revolving Fund (ERRF) continued to support activities in the protection of the drinking water quality in Hawaii. The maintenance of the high quality of drinking water in Hawaii is essential to the protection and promotion of good public health. A portion of these funds also increased the federal funds available to administer the state's safe drinking water program by providing matching resources.

The ERRF supported a total of 10 positions within the Safe Drinking Water Branch during FY2000. Responsibilities of these positions include: Conduct sanitary surveys; review and approve substantial modifications of public water systems (including treatment plants); develop and implement the capacity development program; develop new rules and regulations; administer the Lead and Copper Rule; develop and administer the drinking water treatment plant and distribution system operator certification program; administer, implement, enforce, and do surveillance of a permitting program for underground injection control facilities; provide additional drinking water monitoring support; develop and implement a capacity development program, and clerical support.

### **Sanitary Surveys**

Sanitary surveys are reviews of water system facilities to identify physical deficiencies. The elimination of deficiencies helps both the water supplier and the water consumer by helping to ensure that the water is properly protected from potential sources of contamination. Under current regulations, these reviews are required on a schedule depending upon the nature of the water system. These surveys are an essential part of public water system regulation, which helps to identify possible sources of contamination and emphasizes increased protection of the system from natural and man-made intrusion. The ERRF enabled the SDWB to conduct needed water system reviews. The need for this support will continue in the future when sanitary surveys will be intensified to examine eight major aspects of water system operation and maintenance.

### **Lead and Copper Rule Administration**

Work under the Lead and Copper Rule continued in FY2000. The health effects of lead are serious and well documented. An initiative to further reduce the occurrence of lead in drinking water systems by placing further

restrictions on plumbing faucets and fixtures has been taken on the federal level. The current program involves the ensuring of compliance with monitoring as well as with lead and copper action levels. When monitoring demonstrates that action levels are not being met, systems must initiate efforts to determine what treatment(s) will enable them to meet the action level and implement public education programs to advise affected consumers of methods to reduce their potential levels of exposure. This work will be required for some time as the solutions to these problems often depend on several factors, including water quality characteristics, system funding resources, selection from a number of technologies/chemicals, etc.

#### Strengthened Review of Surface Water Treatment Plants

The ERRF supports engineering staff who provide required reviews of major system modifications. This program assures that the materials used are approved for use in drinking water systems. This program also reviews surface water treatment plants for their adherence to design requirements of the Surface Water Treatment Rule. The need for prompt but thorough review is essential to improving water treatment in the shortest possible time. ERRF funds provide additional engineering resources which help conduct and expedite these reviews.

#### Development and Implementation of the Interim Enhanced Surface Water Treatment Rule (IESWTR) and the Disinfectant/Disinfection By-Products (D/DBP) Rules

Personnel funded by the ERRF are also involved in the development and implementation of two new state rules which reflect recently passed federal rules related to improving the required treatment of surface waters (known as the Interim Enhanced Surface Water Treatment Rule), and limiting the potential formation of by-products while maintaining proper disinfection practices and dosages (known as the Disinfectant/Disinfection By-Products Rule). When adopted, these rules will set new standards for surface water treatment plant performance, maximum concentrations of disinfectants, lowered drinking water standards for trihalomethanes, and drinking water standards for new disinfection by-products known as haloacetic acids.

#### Increased Capability to Monitor Drinking Water

During the year, additional monitoring to determine public exposure to levels of 1,2,3-Trichloropropane (TCP) was conducted from sites

throughout the State. This information is being developed as the State prepares to re-examine its drinking water standard for TCP. This chemical has occurred in numerous drinking water sources, some of which already have granular activated carbon treatment. Additional testing for TCP is being conducted at a lowered detection limit to determine the occurrence and levels of exposure in support of this re-evaluation. Drinking water monitoring support provided by the ERRF is essential to assure that water systems are monitored at the required frequencies and for the proper contaminants.

In addition, proposed regulations already call for increases in the number of contaminants to be monitored and reduction of the detection limits of contaminants to be monitored.

#### Protection of Existing and Potential Sources of Drinking Water (UIC Program)

The Underground Injection Control Program is responsible for protecting existing and potential underground sources of drinking water through a permitting program for the siting, construction, operation and abandonment of injection wells used for subsurface wastewater disposal. This program enforces standards for wastewater quality, controls the location of injection wells, and further requires the submission of monitoring data varying in frequency from quarterly to annually on various aspects of an injection operation. In addition, this program sets strict requirements for the abandonment of injection wells to assure that wells are properly sealed so that they do not become conduits for groundwater contamination.

Injection wells provide an important alternative disposal method for facilities which do not have either physical or financial access to other, more conventional means of wastewater disposal such as the municipal sewer or ocean disposal. In FY 2000, the program administered 732 active permits, which controlled 534 million gallons per day of wastewater from sewage, industrial processes, and storm water runoff.

#### Certification of Operators of Drinking Water Treatment Plants and Distribution Systems

In FY2000, the Department, in compliance with EPA requirements, petitioned and received authority from the Hawaii State Legislature to extend its certification program to include distribution system operators. This extension will further ensure that persons responsible for maintaining

drinking water distribution systems have or be supervised by someone who has direct knowledge of and experience with good water distribution system principles and practices. It is estimated that the addition of distribution system operators will require an additional 400 persons currently working on water systems to be either certified, or be supervised by someone who is certified. Staff supported by the ERRF are responsible for the development and scheduling of training courses, development of examinations for the different levels of treatment plant and distribution system operators, receipt and assessment of applications, administration of examinations, collection of fees, and support of all functions of the certification board.

#### Assistance to Owners/Users of Rainwater Catchment Systems

The need for assistance continues for owners and users of rainwater catchment systems. Established in 1997, the ERRF supports a program of technical assistance and subsidized payment for testing of rainwater catchment systems for lead and copper. The Safe Drinking Water Branch has attempted to answer questions concerning the operation and maintenance of rainwater catchment systems. During FY2000, the contract for laboratory services expired. A call for re-issuance of the contract resulted in no interested bidders. The SDWB has been forced to establish an agreement with a private laboratory to perform lead and copper analyses of rainwater catchment systems on a non-contract basis.

#### Capacity Development Program

The aim of this program is to assure that all public water systems have appropriate technical, managerial, and financial capabilities to comply with existing and future drinking water regulations. This program is divided into two parts. First, capacity requirements will be applied to new water systems. Second, these requirements will be applied to existing systems.

Systems that cannot demonstrate adequate capacity do not qualify for low interest loans available under the Drinking Water State Revolving Fund (DWSRF) program for correction of system deficiencies.

The State's development plan for new water systems beginning operation after October 1, 1999, was approved by the U.S. Environmental Protection Agency (EPA) in September 1999.

In July 2000, the State forwarded for EPA approval the State's capacity development strategy for existing systems. A major part of this strategy

was to provide training to managers and operators of public water systems in the State.

During FY2000, the State entered into a contract with the Rural Community Assistance Corporation (RCAC) to provide the training. To date, over 100 managers and over 400 operators have participated in the training. The managers were trained on technical, managerial and financial capacity. The 36-hour operator training was on the water system distribution systems. Many of the operators previously had very little formal training. The operator training will continue until the end of 2000. Operator refresher training courses will then be conducted until June 2001.

Complete implementation of this plan will begin when EPA approval is received. The plan will require selecting a water system that needs improvement in capacity, working with the system's management to identify the problem areas, and then assisting the system's management in developing a workable improvement plan.

**Table 5 - Environmental Response Revolving Fund  
Summary by Program**

<b><u>HEER-HTH 849-FD</u></b>	<b><u>FY2000 Budgeted</u></b>	<b><u>FY2000 Expended</u></b>
A. FUNDS	707,532	395,551
B. FUNDS	2,150,413	399,944
C. FUNDS	<u>-0-</u>	<u>80,442</u>
Subtotal HEER Operating Funds	2,857,945	875,937
<b><u>SHWB-HTH 840-FJ</u></b>		
A. FUNDS	438,263	337,151
B. FUNDS	15,000	-0-
C. FUNDS	<u>-0-</u>	<u>-0-</u>
Subtotal SHWB Funds	453,263	337,151
<b><u>SDWB-HTH 840-FH</u></b>		
A. FUNDS	457,088	360,440
B. FUNDS	149,993	16,677
C. FUNDS	<u>-0-</u>	<u>19,361</u>
Subtotal SDWB Funds	607,081	396,478
<b><u>TOTAL FUNDS</u></b>	<b><u>3,918,289</u></b>	<b><u>1,609,566</u></b>

#### **4.4 Federal Funds**

The budgets listed in this section are adjusted to coincide with the State fiscal year. Since federal grants are received in Hawaii based upon the federal fiscal year (October through September), these numbers do not match the federal grant amounts. Expenditures are also based upon the State fiscal year.

#### **Core Grant**

The Core Grant is provided to the state by the U.S. Environmental Protection Agency (EPA) to develop our state "Superfund" program. This grant provides the state with funding for program development, training, and administrative projects. It cannot be used to conduct any site-specific activity. The Core funds consist of \$350,911.

**Table 6 - HEER Office Core Grant Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended As of 6/30/00</u></b>
A. Funds		
1 Planner V, SR-24		
1 EHS IV, SR-22		
1 Secretary, SR-14		
	<hr/>	<hr/>
Subtotal	117,739	147,548
ERO Support	18,589	24,407
EPO Support	<u>12,259</u>	<u>13,439</u>
Subtotal	30,848	378,46
B. Funds		
HEER	184,446	43,116
ERO	15,247	3,675
EPO	<u>2,631</u>	<u>90</u>
Subtotal	202,324	46,881
C. Funds	<hr/>	<hr/>
	-0-	2,704
<b>TOTAL</b>	<b>350,911</b>	<b>234,979</b>

**Note: Expenditures for Federal Grants are derived based on the State fiscal year and which includes the last quarter of Federal fiscal year 1999 and not the last quarter of Federal fiscal year 2000.**



**PA/SI Cooperative Agreement**

Since October 1989, Hawaii has entered into a PA/SI Cooperative Agreement (CA) with the EPA. The scope of this agreement is specific: can only be used for costs associated with continuing the federal PA/SI program in the State. PA/SI funds consist of \$177,221.

**Table 7 - HEER Office PA/SI Cooperative Agreement Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended As of 6/30/00</u></b>
A. Funds		
1    Env. Health Spc. IV, SR-22		
2    Env. Health Spc. III, SR-20		
<u>0.5</u> Clerk Typist II, SR-08		
3.5		
Subtotal	132,260	78,982
B. Funds	44,961	35,634
C. Funds	<u>-0-</u>	<u>2,842</u>
<b>TOTAL</b>	<b>177,221</b>	<b>117,458</b>

**Brownfields/Voluntary Response Program (VRP) Grant**

In 1997 the HEER Office established a State Voluntary Response Program (VRP) with federal funds from the EPA. The scope of this program is to use State resources to encourage the voluntary cleanup of hazardous waste contaminated sites by developers and prospective purchasers. The Brownfields Program is intended to work hand in hand with the VRP, specifically to cleanup abandoned hazardous waste sites. The budgeted funds for VRP in FY00 were \$173,800 and \$0.00 for Brownfields.

**Table 8 - HEER Office Brownfields/VRP Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended As of 6/30/00</u></b>
A. Funds	-0-	48,138
B. Funds (contractual)		
Brownfields	-0-	-0-
VRP	173,800	28,072
C. Funds	-0-	473
	<hr/>	<hr/>
<b>TOTAL</b>	<b>173,800</b>	<b>76,683</b>

**Federal Facilities Cleanup Grant**

The Department of Defense/State Memorandum of Agreement (DSMOA) program was established by the federal government to cover reimbursement of costs incurred by the state in providing oversight services to the Department of Defense (DOD) installations conducting environmental cleanup activities funded under the Defense Environmental Restoration Program (DERP). The program allows a funding limit of up to 1 percent of the funding allocation given to DOD installations in Hawaii under the DERP to accomplish environmental activities. Also allowed is a funding limit of one and one-half percent (1.5%) of the funding allocation given to DOD installations which are closing under Base Realignment and Closure (BRAC).

A 2-year Cooperative Agreement (CA) application was submitted in May 1997 and an approval was received to obtain reimbursement funding to cover FY1999 and FY 2000 costs incurred by Hawaii in the DSMOA Program.

The DSMOA funds are given to the State based on the State's request for reimbursement or advance payment. There is no carry over of funds unspent in the 2-year Cooperative Agreement. If there is need for additional funding the Cooperative Agreement allows for the renegotiation for increased funding.

**Table 9 - HEER Office Fed Facilities Funds**

	<b><u>Budget FY 2000</u></b>	<b><u>Expended As of 6/30/00</u></b>
A. Funds		
1 Geologist, SR 24		
3 EHS IV, SR 22		
<u>0.5</u> Clerk Typist, SR 8		
4.5		
Subtotal	173,877	181,850
B. Funds	256,000	13,735
C. Funds	-0-	-0-
<b>TOTAL</b>	<b>429,877</b>	<b>195,585</b>

## APPENDICES

**APPENDIX A**

**2000**

**DEPARTMENT OF HEALTH  
RELEASE NOTIFICATION LOG**

**APPENDIX B**

**2000**

**DEPARTMENT OF HEALTH  
STATE SITE LIST**