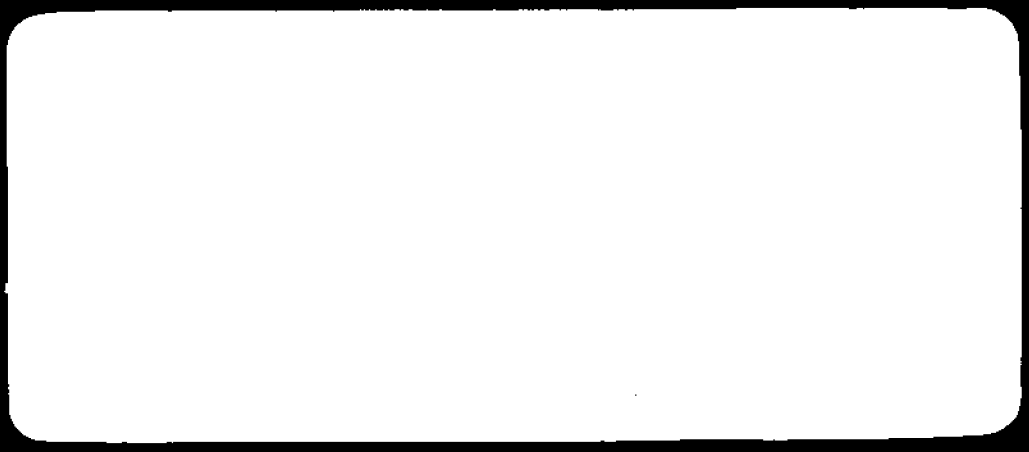

Oil Spills at Sea

Potential Impacts on Hawaii

A supplemental report prepared for the
Department of Health, State of Hawaii
by the
University of Hawaii Sea Grant College Program
School of Ocean and Earth Science and Technology

Disposal of Recovered Crude Oil and Debris from a Catastrophic Spill in Hawaii: Regulations, Existing Capacity, Options, and Issues

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Executive Summary

Hawaii imports an estimated 126,000 barrels of crude oil per day. Alaska's North Slope accounts for roughly 52 percent of the crude oil; Indonesia, Malaysia, and Singapore combined contribute 31 percent; Australia 11 percent; People's Republic of China 5 percent; and South America 1 percent. We have been fortunate that a major spill has not occurred in the islands. The probability of a catastrophic spill is once every 135 years. Such a spill could severely impact the economy, population, natural resources, and environment of Hawaii.

The state does not have plans in place that adequately address the issue of oily waste disposal nor the capacity to handle the oiled debris, recovered oil, and other materials resulting from the cleanup operations of a major spill. The absence of a coordinated statewide plan coupled with the limited in-state transportation, storage, and waste disposal facilities for recovered oil and debris could seriously impede response and cleanup operations, ultimately slowing down the recovery of the whole economy. Since many of these concerns are covered by the Oil Pollution Act of 1990 (OPA), full enforcement of its provisions would address these issues.

A statewide task force, comprised of representatives from the appropriate federal, state, county, and local agencies, should be formed to carefully develop strategies for handling oil and debris recovered from a major spill cleanup operation. The responsibility for the development and implementation of this plan should be assigned to an appropriate agency. Sufficient support should be provided for both the development and testing of the contingency plan, and, where necessary, legislation should be developed to ensure that a proper and workable plan is in place in the event of a major spill. Provisions should be made to regularly update the plan.

Introduction

A comprehensive study, based on the U.S. Coast Guard's worst case scenario in Hawaii was undertaken by the University of Hawaii Sea Grant College Program. A report, entitled *Oil Spills at Sea: Potential Impacts on Hawaii*, discusses the broad spectrum of activities from prevention and response to preparedness, cleanup, impacts on natural resources and the state's economy, and recovery. Chapter 2 of the report provides estimates of the major cost components of the U.S. Coast Guard's catastrophic oil spill scenario, including response, cleanup, disposal, and economic damages to natural resources (see Table 1). Costs and recovery were based on timely and effective response, cleanup, and disposal.

Investigation of cleanup operations of a 10-million gallon spill exposed a potentially serious bottleneck in disposing large volumes of recovered oil, debris, and other materials. Transportation, storage, and solid waste disposal facilities in the state lack the capacity to handle materials of such magnitude and composition. Existing contingency plans focus exclusively on at-sea response and shoreline cleanup strategies without planning for the disposal of recovered crude oil and oily debris from cleanup operations. This report looks into disposal problems in detail and explores various options to address the disposal of oil and oily materials recovered from a catastrophic spill in Hawaii.

Table 1. Summary of financial costs of a 10-million gallon oil spill in Hawaii

Cost Item	Amount, $ million
Cost of spilled oil	4.7
Value of vessel	25–44
At-sea response	21
Shoreline cleanup	52
Boat cleanup	0.2–0.7
Port cleanup a/	included in (2)
Bird cleanup	0.3–0.8
Marine animals cleanup	not estimated
Disposal of recovered oil, debris and other materials	48–123
Costs of federal government operations	50
Costs of state government operations b/	0.4
NRDAM/CME c/	not applicable
Beaches values	7.5
Sand Replacement	0.7
Damages to private properties	not estimated
SUBTOTAL	210–305
Per unit estimates	
Cost per gallon	21–31
Cost per barrel	882–1,302

a/ Cost is about $1 million for port cleanup alone
b/ Personnel only
c/ Natural Resources Damage Assessment Model for Coastal and Marine Environments

Although not as time-critical as the at-sea response, disposal of recovered oil and oily waste nonetheless remains one of the major areas of concern in oil spill management. Cleanup efforts will always generate waste products. Depending upon the location, size of spill, and method of cleanup, oil and debris, such as seaweeds, sand, soil, rocks, and cleanup materials, may require disposal. The state is currently ill-equipped to handle

large volumes of recovered oil and oily debris. There are a wide variety of disposal methods, each with its own strengths and weaknesses for handling oil spill waste. Choice of the appropriate technology is incident- and site-specific, and a key element in avoiding or mitigating potential economic, environmental, and health damages from an oil spill. Thus, the need to develop contingency plans for disposal before an emergency situation occurs is critical.

This report will assist decision makers in the evaluation and preparation of guidelines and choices of methods for disposal by presenting current regulatory policies, industrial capacity, technological options, and issues that surround the disposal of large quantities of recovered crude oil and oily debris. The discussion is presented under the following headings:

1. Types and volume of crude oil and debris recovered from a catastrophic spill
2. Federal and state regulations that govern management of recovered crude oil and oily debris disposal
3. Current in-state disposal practices for recovered crude oil and oily debris
4. Roles of the federal, state, and county agencies
5. In-state solid waste disposal capacity and capacity of the state to handle wastes from the worst case scenario oil spill
6. Other disposal options
7. Issues relating to the management of recovered crude oil and oily debris in Hawaii
8. Recommendations for disposal of recovered crude oil and oily debris from a catastrophic spill

Types and Volume of Recovered Crude Oil and Oily Debris Recovered from a Catastrophic Spill

The definition of oil spill waste as used in this report is "oil or oily solids collected after an oil spill which cannot be used directly or after cleaning" (Stearns et al. 1977). Cleanup operations from an oil spill generate several types of waste: clean oil, oil and water emulsion, tar balls and tar, sandy oils, oil-contaminated cleanup materials, and marine debris. The type and volume of recovered crude oil, debris, and other materials which are projected to be generated during the U.S. Coast Guard's worst case catastrophic spill is shown in Table 2.

Table 2. Estimated volume of oil and oily debris generated from a catastrophic oil spill in Hawaii (>10 million gallons)

Type of Debris	Amount
Mousse from skimmers	3.4–5.2 x 10^6 gallons
Mousse from beaches	11.4–13.8 x 10^6 gallons
Booms	130 tons
Oil-saturated sorbents	160 tons
Oil-contaminated sand	22,900 tons

Clean Oil

This type of oil may be contaminated by sea salts and other contaminants, but is still considered pure oil. This may be recovered by skimmers and is often found in rocky shorelines and impermeable surfaces. Clean oil can be recycled and burned.

Oil and Water Emulsion

Different types of skimmers recover oil offshore. Once the oil has weathered and taken up water, the result is a viscous liquid called "mousse." In the process of cleanup, this mousse may combine with marine debris. Skimmers have separators that have limited capacity to separate oil from water and/or marine debris, thus reducing the amount of waste transferred into storage tanks. Onshore cleanup operations use vacuum trucks to suck oil from pockets and recessions along the shore. As with skimmers, vacuum trucks have separators that can partially separate oil from water.

When separation has been completed (either by physical or chemical processes), the resulting residual water is considered "waste" and must be disposed of properly. Water collected during cleanup operations has to be transported ashore and disposed of. Dumping this water back to the ocean is prohibited under the Federal Clean Water Act (U.S. Congress, Office of Technology Assessment 1990).

Tar Balls and Tar

Tar balls and tar are the more highly weathered, heavy and longer chain hydrocarbons that remain after volatization. Tar balls are often seen after cleanup. In Hawaii, tar and tar balls that are not considered hazardous are commonly disposed of by landfilling.

Sandy Oils

Oil-contaminated sand and soil are generally removed from beaches and then treated and/or disposed of properly to avoid any possible pollution and threat to marine life. This may present some handling problems in cases where sandy oils comprise the bulk of the waste (e.g., because of its composition, it may not be acceptable for incineration).

Oil-contaminated Cleanup Materials and Marine Debris

Cleanup materials include booms, sorbents, and disposable clothing. Oil-contaminated debris include floating organic materials (e.g., seaweeds, driftwood, or flotsam), marine trash, shoreline vegetation, etc. The type of solid debris depends on the location of the spill and the cleanup method employed. These oiled materials will have to be transported, stored, and disposed of properly. They are prime candidates for burning (Stearns et al. 1977).

Legal Aspects of Disposal of Recovered Crude Oil and Oily Debris

Classification of recovered oil and debris from a spill as used or unused oil depends on its origin. In general, if the material spilled is virgin oil, it is treated as unused oil; if it meets the conditions specified in the Used Oil Recycling Act and the Hawaii Revised Statutes (HRS), Chapter 342N, it is used oil. As discussed here, what are referred to as oily wastes from an oil spill are not used oil waste, therefore some of the toxic components or hazardous characteristics of used oil may not be present. However, the legal definition does not necessarily take this into account. Proper planning may facilitate better understanding of this issue.

Federal Regulations

A number of federal regulations govern the management of recovered oil and oily debris, some of which are

the Occupational Safety and Health Act (OSHA), the Clean Water Act, the Coastal Zone Management Act, the Clean Air Act, Safe Drinking Water Act, Toxic Substances Control Act, Resource Conservation and Recovery Act, Used Oil Recycling Act, Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the OPA. A brief summary of each of these federal statutes is provided in Appendix A.

Resource Conservation and Recovery Act (RCRA), Subtitle C

RCRA regulates all solid waste[1], both hazardous and non-hazardous. The enactment of RCRA on October 21, 1976, established federal authority to direct most of the aspects of hazardous waste,[2] under Subtitle C. The 1980 Amendments to RCRA included the Used Oil Recycling Act, among others. An important provision of the Act included the Environmental Protection Agency (EPA) mandate to determine whether used and unused waste oil falls in the category of hazardous waste.

The EPA's final decision on November 19, 1986, identified and listed used oil as special, non-hazardous waste under RCRA,[3] based on the technical criteria specified under section 3001, and it is therefore protected from Subtitle C regulatory provisions (formally and henceforth referred to as "statutory special waste exemptions")[4] and excluded from the hazardous waste status (formally and henceforth referred to as "regulatory hazardous waste exclusion")[5] unless certain conditions are satisfied. Stensvaag (1990) notes some important clarifications and highlights some important points to these statutory exemptions and/or regulatory exclusions:

1. The statutory hazardous waste exemptions apply only to Subtitle C regulations and not to the hazardous waste status.[6]

2. The exemptions were originally designed as temporary privileges, unless deemed otherwise by the EPA. In May 1980, the EPA determined that certain special wastes (e.g., those exhibiting a hazardous waste characteristic and those included in the list of hazardous wastes) are to be excluded from such exemptions and thereby subject to Subtitle C regulatory statutes, along with all the other hazardous

[1] Under RCRA, "solid waste" is defined as "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded materials, including solid, liquid, semi-solid or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Regulations define solid waste as any discarded material that is not subject to a variance or excluded by a regulation (§261.2). "Discarded" material includes any of the following: 1. abandoned material (e.g., disposed of, burned or incinerated and accumulated, stored or treated (but not recycled) before disposal, incineration or burning); 2. inherently waste-like; and 3. recycled.

[2] Under RCRA, "hazardous waste" is defined as a solid waste or combination of solid wastes, which may, because of its quantity, concentration or physical, chemical, or infectious characteristics... pose a substantial present or potential hazard...when improperly treated, stored, transported, or disposed of or otherwise managed (§1004(5), 42 USC §6903(5)).

[3] There are four "special waste exemption" categories as specified in the 1980 RCRA amendments: 1. oil, gas, and geothermal wastes, 2. fossil fuel combustion wastes, 3. mining wastes, and 4. cement kiln dust wastes (40 CFR §261.4 (b)(4), (5), (7), (8) (1986)).

[4] Note that RCRA Subtitle C regulations provide two distinct types of exclusions: solid waste exclusions and hazardous waste exclusions. Used oil, although exempt from certain regulatory provisions as provided for by the statutory special waste exemptions clause, is still subject to RCRA Subtitle D and to the imminent hazard provision.

[5] The 1980 statutory special waste exemptions apply only to Subtitle C regulations and does not exclude special wastes from the hazardous waste status. The EPA has chosen to augment and implement the statutory waste exemptions by regulatory exclusions with its decision to exclude special wastes from the hazardous waste category. As opposed to statutory special waste exemptions, regulatory hazardous waste exclusion may affect the applicability of RCRA imminent hazard provision to special wastes that are solid wastes (Stensvaag 1990).

[6] §§3001(b)(2)(A), 42 USC §6921(b)(2)(A), §6903(27)(1985).

wastes.[7] Interpreted along these lines, these temporary regulatory exemptions for special wastes "will probably be eliminated at some point, bringing under regulation vast quantities of hazardous waste material not previously included in the Hazardous Waste Management System."[8]

3. Special wastes are still regulated under "other applicable provisions of Federal and state laws in lieu of this subchapter Subtitle C"[9] under both statutory and regulatory exclusions. Therefore, appropriate and relevant requirements (ARARs) apply.

4. Following the statutory special waste exemptions, solid wastes are still subject to two other RCRA provisions besides Subtitle C: Subtitle D (solid waste regulatory program) and the imminent hazard provision. In the case of the regulatory special waste exclusion provision, however, it may be argued that depending on the manner in which special wastes are handled, they may no longer be subject to the imminent hazard provision.

Used oil is considered hazardous waste (§261.3) and therefore subject to hazardous waste regulations and requirements as specified under Subtitle C if at least one of the following conditions are met:

1. If used oil is included in the EPA list of hazardous wastes

2. If used oil is mixed with hazardous waste

3. If used oil exhibits a hazardous waste characteristic

Federal Regulations Other Than RCRA Subtitle C

As noted in the preceding section, the regulatory hazardous waste exemptions/exclusion for special wastes apply only to Subtitle C and do not extend to other applicable sections of RCRA and federal laws. Special wastes are still regulated by two other solid waste statutory requirements within RCRA: Subtitle D and the imminent hazard provision. Although there is general agreement that special wastes are subject to the imminent hazard provision, under the statutory special waste exemption, Stensvaag (1990) has raised an interesting issue regarding the consequences of the EPA augmentation of the statutory special waste exemptions with regulatory exclusions, that of exemption from the imminent hazard provision. These regulatory exemptions in no way affect compliance under such laws as CERCLA, OSHA, etc. (Bauer & Kellar 1990, Garretson et al. 1978, Harris et al. 1987, and Pojasek 1980).

Comprehensive Environmental Response, Compensation, and Liability Act

"Hazardous substance" is defined under §101(14) of CERCLA as "a substance specifically listed or designated as hazardous under any of several other environmental statutes, including RCRA and the Clean Water Act.[10] Determination of the status of a substance ultimately depends on the nature of its constituents. A list of these hazardous substances is provided in 40 C.F.R. §302.4. Explicitly excluded from this definition of hazardous substances is petroleum (formally known as "Petroleum Exclusion").

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[7] See §6.4 Special Wastes: Origin and Attempted Abandonment of Concept

[8] Quarles, Rail Transportation of EPA-Regulated Hazardous Wastes, 17 Forum 857, 864-65 (1982).

[9] RCRA §3001(b)(3)(A), 42 USC §6921(b)(3)(A)(1985).

[10] Under both the Clean Water Act and CERCLA, oily wastes are exempt from regulations that govern hazardous wastes because they are products of remediary actions.

On July 31, 1987, a three-part definition of the term "petroleum" was provided by the EPA's General Counsel to assist and guide in the interpretation and exercise of this provision. According to this definition, petroleum

1. Includes all hazardous substances, such as benzene, which are indigenous to petroleum substances
2. Includes hazardous substances that are normally mixed with or added to crude oil or crude oil fractions during the refining process
3. Excludes hazardous substances which are added to petroleum or which increase in concentration solely as a result of contamination of petroleum during use[11].

Petroleum products that meet the definition under the third condition are exempt from CERCLA response and liability provisions for hazardous substances, while hazardous contaminants are not.

State Regulations

Despite the exemption of special wastes from Subtitle C regulations, RCRA still maintains the authority to impose "more stringent requirements than those imposed by Subtitle C regulations,"[12] at the same time invalidating state and local requirements that are "less stringent" than Subtitle C regulations.[13] Simply put, requirements imposed by state governments on special wastes should be identical or at least as stringent as federal requirements. The state therefore has the freedom to add or require different regulations, as long as they are at least as stringent as federal requirements. In cases where state and federal regulations differ, state requirements shall prevail (Bauer and Kellar 1990). The state may choose to ignore the statutory exemptions/ regulatory exclusions of the federal government and determine special wastes as hazardous wastes, subject to the full regulatory requirements for hazardous wastes as stipulated in Subtitle C (Stensvaag 1990).

State statutes on the management of used oil are embodied in Chapter 128D and Chapter 342N of the HRS. Other state legislation governing solid waste management but also affects oil spill waste disposal is summarized in Appendix B.

In general, under state regulations, oil and oily debris recovered from a spill are treated as non-hazardous waste unless specified otherwise by CERCLA, RCRA, and other applicable federal laws. Hazardous waste is disposed of according to appropriate federal laws; more often than not waste is transported to the mainland. In cases where waste is non-hazardous, disposal is decided on a case by case basis. Waste disposal facilities may only accept certain types of waste. Disposal of oil spill waste by landfilling is discouraged.

Current Disposal Practices

Oil spill waste has traditionally been disposed of by landfilling or road dusting. Due to potential deleterious effects on health and the environment from ground and surface water contamination, the state has discouraged oil and oily wastes in existing landfills and prohibits its use as a dust suppressant. Current land disposal regulations by the state discourage landfilling and other forms of land disposal that present high risk to human health and the environment. In addition to stringent federal regulations that increase the cost of land disposal, other factors which discourage landfilling and other land disposal options include increasing cost and scarcity of land, fragility of the island environment, growing environmental awareness, and potential risk to public

[11] See Memorandum from General Counsel Francis S. Blake to Assistant Administrator J. Winston Porter, "Scope of the CERCLA Petroleum Exclusion Under Section 101(14) and 104(a)(2)," 14 Chem. Waste Lit. Rep. 842 (31 July 1987).

[12] See RCRA §3009, 42 USC §6929 (1985).

[13] See RCRA §3009, 42 USC §6929 (1985).

health and the environment. These trends are likely to continue in the future, making landfilling and other land disposal options unlikely options for disposal.

The lack of consistent rulings by the state on disposal of oil-contaminated soil makes it difficult to say what the state policy might be on handling beach areas and soils contaminated with oil from a spill. However, the unique ground water system on Oahu, combined with the lack of landfill capacity and the complete lack of any hazardous waste disposal facility in the state, all portend difficulty. Currently, incineration of sorbents and oily debris, recycling of recovered oil, and the export of oil spill waste to the mainland are usual methods of disposal.

The state has two incineration facilities: H-Power with a capacity of 2,000 tons per day, and the Waipahu incinerator with a capacity of 300 tons per day. The Waipahu incineration facility is currently used for the disposal of recovered crude oil and debris. The H-Power operating permit is for disposal of municipal solid waste and used oil generated by households if put in oil-eater boxes.

Recovered oil from a spill is also recycled by private firms (e.g., Unitek, ORCO, and Industrial Technologies). Sugar companies have utilized recovered oil as boiler fuel. There are opportunities for recycling recovered crude oil since recycling facilities in Hawaii are operating below maximum capacity. They could provide additional capacity needed in disposing large volumes of waste in case of a catastrophic spill. In addition, two refineries on Oahu (the Hawaii Independent Refinery, Inc. and Chevron, USA) could be used.

Some of the oil spill wastes are transported to the mainland, specifically to California where they are incinerated or remain in storage. Oil spill wastes that are considered "hazardous" are shipped to the mainland, since Hawaii does not have disposal facilities for hazardous wastes. There are a number of local firms that transport hazardous wastes to the mainland for disposal. On the average, cost of mainland hazardous waste disposal is over $1,000 per 55 gallon drum. This cost includes transportation, consolidation, docking fees and treatment (Pacific Environmental Research Group 1990).

Roles of the State and County Agencies in Disposal of Oily Waste

The Federal On-Scene Coordinator (FOSC) is the overall coordinator of marine-based oil spill response operations.

The Department of Health (DOH) is the state's counterpart. In matters concerning the disposal of recovered oil and debris, it ensures that these materials are disposed of properly. The Office of Hazard Evaluation and Emergency Response (HEER) is the DOH branch that responds to oil spills. It coordinates with the different branches of the Department of Health, in particular, the Office of Solid Waste Management of the Department of Health, which handles all regulatory functions (e.g., permits, operating standards development, enforcement) of solid waste disposal facilities as provided for in Chapter 340A and 342H of the Hawaii Revised Statutes, 1989. This branch also lends technical expertise on legislative matters related to recycling and solid waste management. State involvement in waste disposal to date has focused primarily on permits, monitoring and inspection, and ensuring compliance with regulations (Hawaii Department of Health 1991).

The County's Role

Each of the four counties is responsible for the planning and operation of solid waste management programs within its jurisdiction. An assessment of current solid waste disposal management in Hawaii by the Department of Health (Hawaii State Department of Health 1991) highlights the lack of overall long-range planning for solid waste management services and adequate waste collection and transportation services. The

Refuse Collection and Waste Disposal Division of the City's Department of Public Works manages the solid waste facilities in Oahu. This includes collection, transport, and disposal. This division does not have direct involvement in the planning for oil spill waste disposal, but is willing to cooperate with the state in any planning activity related to it.

In-State Solid Waste Disposal Capacity

A summary of the solid waste disposal facilities in the different counties and the state is provided in Table 3. Of the 22 existing landfills in the state, five (two county-owned and three private/military owned) are located on Oahu. Of the 32 transfer stations, eight are on Oahu and both solid waste incineration facilities in Hawaii are located on Oahu. At present, operating permits, issued by the State Department of Health, prohibit acceptance of hazardous materials, determined by the toxicity characteristic leaching potential (TCLP) and other tests.

Table 3. In-state waste disposal facilities

Disposal Facilities	Counties				State
	Hawaii	Honolulu	Kauai	Maui	Total
Landfills					
County owned	2	2	2	7	13
Private/Military	1	3	3	2	9
Remaining Capacity	8 years	15 years	20 years	6 years	13 years
Transfer Stations	21	8	3	2 Proposed	32
Incineration Facilities	0	2	0	0	2

Data Source: Hawaii State Department of Health (1991)

Solid Waste Disposal Capacity on Oahu

Incineration

As mentioned previously, there are only two incineration facilities in Hawaii, both of which are located on Oahu. These are the Honolulu Program of Waste Energy Recovery (H-Power) in the Campbell Industrial Park and the Waipahu Incinerator facility. H-Power is a waste-to-energy facility that is capable of handling 2,000 tons per day of municipal solid waste, and it generates 57 megawatts of electricity for Hawaiian Electric Company, Inc. Roughly 1,800 tons are incinerated each day, generating 100-400 tons of ash and nonprocessible waste, which are landfilled in the Waimanalo Gulch Landfill. The Waipahu Incinerator facility has a much smaller capacity of only 300 tons per day. Unlike H-Power, this facility does not generate energy (Hawaii State Department of Health 1991).

Landfills

The state of Hawaii has five landfills on the island of Oahu. Two are owned by the county (Kapaa Landfill and Waimanalo Gulch Landfill), two are owned by the military (one located at Kaneohe Marine Corps Air Station and the other at Barbers Point Naval Air Station), and the remaining landfill at Nanakuli is privately owned. The Kapaa Landfill has a capacity of 27,000 tons per year. Only noncombustible residential wastes are processed in this landfill. However, after the construction of a new transfer station in Kapaa is completed, this landfill is expected to close down. The Waimanalo Gulch Landfill handles all types of waste: residential, commercial, nonhazardous industrial solid wastes, demolition debris, ash and residue from H-Power,

wastewater treatment sludge, septic tanks wastes, cesspool pumpings, and special wastes such as spent lime, contaminated food, and asbestos. Current capacity stands at 1,200 tons per day and remaining disposal capacity is 15 years. Military-owned landfills are located at Kaneohe Marine Corps Air Station and Barbers Point Naval Air Station. The Kaneohe landfill has a current capacity of 15,000 tons per year (Hawaii State Department of Health 1991). The only privately owned landfill, located in Nanakuli, handles construction and demolition debris.

Oil Recycling Facilities

There are three oil recycling facilities in the City and County of Honolulu, primarily designed to handle used waste oil from automobiles and industrial plants. A summary of the recycling capacity of each of these plants is presented in Table 4.

Table 4. Estimated capacity of oil recycling plants on Oahu

Recycling Plant	Maximum/Capacity (gallons/year)	Current Volume (gallons/year)
Unitek	NDA	NDA
ORCO	700,000	630,000
Industrial Technologies	360,000	120,000

Data Sources: Dave Caragno, Industrial Technologies; and Bob Meyer, ORCO
Note: NDA – no data available

The total capacity of the recycling plants is insufficient to handle the large volumes of waste that would be generated by a catastrophic spill. Other sites will have to be used (e.g., Hawaiian Independent Refinery, Inc. (HIRI) and the Chevron, USA facility). An interview with PRI representatives[14] reveals their willingness to accept as much recovered oil for recycling as their facilities would allow (personal communication with Gary Reiter and Robert Rath). The problems and constraints of each source are presented in Appendix D.

Other Oily Waste Disposal Options

There are other options for utilizing, disposing of, or eliminating oily wastes. However, in most cases, the utilization of any of these options requires careful advance planning, adherence to stringent environmental requirements and, in some cases, passage of new legislation. Some are very expensive. These options are briefly discussed below.

Asphalt Batching

This method involves the processing of oil-contaminated soil in a hot-mix asphalt plant. With the diminishing availability of landfill space, asphalt batching is quickly gaining recognition as a likely alternative or supplement. With some changes, asphalt batching can be made more profitable than the most commonly used disposal option, landfilling. However, as with all the other techniques, it has some limitations. There is uncertainty about health and other environmental hazards posed by the processing of heavier hydrocarbons and certain restrictions apply in the type of petroleum-contaminated soil that can be processed. The soil cannot be too clayey, fine-grained, stoney or full of organic matter (Kostecki et al. 1987). Because of the possible health and environmental hazards, the use of asphalt batching requires air and solid waste permits.

[14] Personal contact with Gary Reiter and Robert Rath by Peter Rappa and Phil Moravchick.

Bioremediation

Defined as the "on-site or in situ enhancement of live soil organisms such as bacteria, fungi, and plants to break down hydrocarbon and organic contaminants, bioremediation involves applying the organisms and/or oxygen and mineral nutrients, such as phosphate and nitrogen, to contaminated soil and groundwater" (McKinley 1991). The use of bioremediation offers a number of advantages. It can be cost-effective since it requires minimal labor and capital once established (Fogel et al. 1988, Molnaa and Grubbs 1988). In California for example, landfill disposal of 1,000 cubic yards of diesel-soaked soil could amount to as much as $325 per cubic yard as compared to $120 per cubic yard with bioremediation (Farrell 1990). Bioremediation is also gaining the reputation of being the "least damaging, most economical and thorough, in terms of beach cleanup, e.g., under natural conditions, oil breakdown in contaminated shorelines takes at least 5–7 years as compared to only 2–5 under bioremediation" (U.S. Office of Technology Assessment 1990).

Some of the disadvantages of bioremediation include the relatively long time lag involved in the process, and its applicability is limited to lightly oil-contaminated materials, rendering it of little service in cases of extensive and severe contamination.

Although this technique has been used by industry for over 20 years (McKinley 1991), regulatory constraints have hampered the move by industry to expand its use beyond the experimental stages in the treatment of petroleum-contaminated soils (Farrell 1990). Use of this method should take into account soil type, drainage patterns, climatic conditions, and nature of the contaminated material. Because its application has been limited to oily soil on land, the applicability of bioremediation as a disposal alternative for spilled oil is not well known, but, under appropriate conditions, it could be a viable alternative.

Burial (Landfill)

Dumping of non-hazardous petroleum-contaminated materials in landfills is the most commonly used disposal technique in the United States (McKinley 1991). There are two landfill options: 1) landfilling with refuse and, 2) landfilling without refuse. The first option involves combining oil spill waste with municipal refuse or industrial waste and burying it in existing landfills. Since existing landfills are used, this would entail relatively low initial cost, minimal equipment needs, and minimal site preparation. The operation is carried out quickly and the use of any excess capacity and land can be brought back to its original appearance. Disadvantages of this method are the indefinite use of land for disposal, the long-term pollution potential, and the need for long-term monitoring. The existing capacity of the landfill may not be sufficient for large volumes of waste oil (Stearns et al. 1977).

In situations where conventional landfills are inaccessible or unable or unwilling to accept oil spill waste, landfilling without refuse is another popular method of disposal. It involves the use of existing trenches or the excavation of new ones for the purpose of disposing oil spill residue. It is easy and simple. In addition, when oil is placed in landfills, it is encapsulated, thus minimizing volatization. In addition, this method provides quick results, and land surface can be returned to pre-disposal appearances (McKinley 1991, Stearns et al. 1977).

Non-regulatory limits on the size and/or oil content of debris disposed in landfills may be set by landfill operators. Contaminated materials disposed in landfills may be limited to 1,000 ppm petroleum because of the owners's liability for petroleum-contaminated materials in excess of this limit. In addition, landfill owners may be reluctant to take in more than small amounts of debris because of limited capacity.

The greatest problem accompanying the dumping of recovered oil and debris in landfills is the possible leaching and the resulting contamination of groundwater supplies. In Hawaii, landfilling of recovered oil and debris is discouraged, because of potential surface and groundwater contamination. Careful consideration should therefore be given to site selection (e.g., soil type, geological structure, topography) and use.

Export Waste

Out-of-state shipment of waste is another option that is worth exploring. It is a common practice in the United States, where at least 43 states import and/or export solid wastes (Darcey 1990). While it avoids the problem of environmental and health hazards in our own backyard, as well as the costs that accompany construction of additional capacity, these benefits have to be weighed against the costs, both in the short- and long-term. The diminishing availability of landfill space, coupled with more restrictive regulations especially with regard to out-of-state wastes,[15] will cause disposal charges to be high and they are expected to increase in the near future. Transportation costs must also be taken into account. There is also a real possibility that the importing states will cease to accept out-of-state waste as the not-in-my-back-yard (NIMBY) sentiment increases.

Incineration

Incineration involves subjecting recovered oil and debris to very high temperatures. This method offers a number of advantages, such as the highest level of toxic organic contamination control, very low human health risks, and effective disposal of waste.

Hawaii has two incineration facilities that could be used to burn recovered oil and debris. There is clearly an opportunity not only at the H-Power plant, but at the other power plants to burn any recovered oil, especially if the water can be satisfactorily separated from it. H-Power does not have the burners necessary for heavy oils. They could, however, modify burners to permit such disposal if necessary state and federal permits are provided, and if funding for the plant changes is provided. Power plant operators would need similar permits and support.

In Situ Burning (At-sea)

Under appropriate conditions (e.g., isolated location, limited human exposure from burning as in the 1989 *Independence* oil spill), in situ burning may be another viable option to consider. The main drawback of this technique is the air pollution problems it may create. Burning causes the formation of emissions and particles of unburnt residues and may result in air pollution and the possible contamination of nearby areas by "black rain." Also, low temperature burning may cause other disposal problems from the tarry residue it often leaves behind. An interview with the head of the Clean Air Branch of the Department of Health disclosed that the proposed amendments to the Clean Air Act do not include incineration and in situ burning and, therefore, the current procedures for incineration and in situ burning in the state will not be affected. Currently, a written authorization from the director of the Department of Health is required.

Land Cultivation (Landspreading/Land Farming/Soil Incorporation)

In terms of land disposal options, land cultivation is another option to consider. It involves mixing oil spill debris with soil to promote microbial biodegradation, thereby reducing any long-term adverse environmental impacts. It is best suited to handle relatively small-sized solid and heavily oiled debris (e.g., oiled soil). Inorganic, non-biodegradable debris (e.g., sorbents, plastics) should be removed prior to land cultivation, unless land cultivation is to take place in a landfill. An exhaustive discussion of the advantages/disadvantages of land cultivation is provided by Stearns et al. (1977). Aside from reduced environmental and health hazards, other advantages associated with land cultivation include reusable land surface for debris or other purposes,

[15] Some mainland states (e.g., Alabama, South Carolina) have already reduced the amount of waste from out-of-state.

growth of arable crops after a year, and low probability of negative environmental impacts. Nabil (1980) finds land farming one of the most economical disposal methods for oil spill waste.

The almost ideal climate in Hawaii makes land farming a good solution for the state, especially on the neighbor islands. This option needs to be carefully explored and like many other options, requires prior planning, full agreement by all parties concerned, and research.

Disadvantages include oil volatization (air pollution), potential leaching, periodic soil cultivation, cost, possible stockpiling at disposal site, slow degradation in cold, wet climates, and the fact that it would be inoperable during bad weather.

Road Construction

Lightly contaminated sand and shingle recovered from cleanup operations may be used for road construction. This should include careful study of the intended site.

Recycling

This involves the transfer of the oil and oil/water mixtures to the refinery where it is treated by extracting the oil and then refining it to produce a suitable hydrocarbon product. Refineries in the state are experienced in handling crude and the problems associated with such products. All of the crude they receive has been contaminated with seawater. Most crude, especially that coming from Southeast Asia, goes through some significant processing on the platform where it is separated from water.

Summary

Of the options discussed, recycling offers perhaps the most satisfactory solution to the problem of disposing large amounts of recovered oil or materials in the event of a spill in the islands. But the anticipated recovery of large quantities of oil from a catastrophic spill may well exceed the capacity of in-state facilities. Prior arrangements need to be made if the Hawaiian refineries are to accept recovered oil from a spill and to process this material. Such arrangements should include storage tanks, allotting time required for the refinery to handle the material, deciding on the methods of delivery to the refinery, and coming up with a mutually acceptable cost calculation that allows for adjustments for fluctuating operational expenses. Arrangements also need to be made for the disposal of water that has been separated from the oil, since this may quickly exceed the capacity of the refinery to handle in their normal manner. Incineration and land cultivation also offer promising alternatives for the state. In-state incineration facilities and power plants present opportunities for burning recovered oil while the climate in the islands make it suitable for land cultivation.

Issues Relating to Management of Oil Spill Waste

While in-state disposal of oil spill waste should be given priority, it is unlikely that Hawaii will be able to handle all the waste generated from a catastrophic spill. Therefore, the export of waste to the mainland will continue. Given the reality of the impact of oiled beaches on the state's economy, it is important for the state to explore in situ burning (at-sea) as an alternative. Short-term smoke may be more acceptable than long-term oil on our beaches. The other disposal options (e.g., asphalt batching, bioremediation, burial, and road construction) have not yet been determined to be technically and/or economically feasible, so should not be considered for current planning. In addition, public concern and stringent regulations on human health, safety and the environment make these unlikely choices. Some of these economic, health, and environmental issues of each method are discussed below.

1. Distance between islands and the mainland
   There are some 20 miles between even the nearest Hawaiian islands and some 2,250 miles from Hawaii to the U.S. mainland. This means that inter-island shipment of waste or the export of waste to the mainland would entail considerable transportation cost (Hawaii State Department of Health 1991).

2. Geological conditions
   Contamination of surface and groundwater supply is a critical issue in the state since "Hawaii is very dependent on groundwater for municipal drinking supplies and protecting water quality is critical to the health of Hawaii's citizens" (Hawaii State Department of Health 1991). Landfill and other land disposal methods therefore may not be practical or they may be technically difficult to site. Although additional safety measures could be installed to control leachates, before they contaminate the water supply, this may prove too costly for operators of landfills.

3. Climate
   The combination of warm and moist climate presents some problems for landfills. In general, the higher the rainfall, the more water penetrates the landfills to form leachate and the more leachate, the higher the monitoring, protection, and treatment costs (Hawaii State Department of Health 1991).

4. Ecosystem
   Our extremely sensitive island ecosystem and environment warrants special consideration for the short- and long-term health and environmental impacts of the different disposal options.

5. Limited and/or high cost of land
   For some parts of the state, land disposal may not be a viable alternative in light of the high cost of land and its increasing scarcity.

Findings and Conclusions

Planning for disposal of oil spill waste has been given relatively low priority to date. In Hawaii, this is evidenced by the absence of any overall management plan for handling oil spill waste. Past disposal practices in the state have relied on traditional land disposal methods such as landfilling and dust suppressant. The state now discourages disposal of oil spill waste by these methods because of the potential for ground and surface water contamination. In the future, landfills may not be available on Oahu and probably not on the other islands. At present, recovered crude oil and debris from spills are disposed of by incineration, recycling, or transported to the mainland. Hawaii has yet to face a serious spill with major shoreline contamination or large amounts of recovered oil.

Among the disposal methods, recycling offers perhaps the most satisfactory solution to the problem of disposing large amounts of oil mixed with sea water recovered from a spill. Prior arrangements need to be made with Hawaii Independent Refinery, Inc. and Chevron, USA to accept recovered oil and to process this material.

Hawaii is not ready to handle and dispose of large quantities of waste debris from a major spill. Existing in-state solid waste transportation, storage, and disposal facilities are not designed to handle oil and other materials of such composition and quantity. Given the present lack of planning and the limited in-state capacity to handle oil spill waste of such magnitude in compliance with the requirements and regulations, there is little likelihood of success in efficiently and effectively disposing of large quantities of oil spill waste that would be generated from a large or catastrophic spill. In the final analysis, it is important that the state be prepared for such contingencies as well as to ensure immediate spill response, cleanup, and restoration. Failure to have adequate plans in place for the handling of recovered oil, oily waste, and disposal of oil spill wastes could have serious economic and environmental consequences.

Such failure could result in a breakdown of the cleanup response for a major spill since there would be no means to off-load the oil collected. This could result in either poor decisions as to disposal of the recovered material, subsequently resulting in additional costs and liability problems, or could stop the entire cleanup operation until adequate means for off-loading skimmers and other collection methods could be developed and implemented. In addition to penalizing cleanup operations, inadequate planning for disposal for a major spill would ultimately slow down the recovery of the state's economy. It should be noted that the recovery scenario described in the report of the University of Hawaii Sea Grant College Program study, *Oil Spills at Sea: Potential Impacts on Hawaii* (Pfund 1992) was premised on fast and effective cleanup, with disposal occurring at a pace that does not impede cleanup. This would not occur under present conditions. It is imperative that these decisions be made in advance, since many of the issues involved do not lend themselves to simple solutions, nor are they minor.

These plans need to be made for each of the islands, since it is likely that a different set of parameters would apply in each case. On some islands it is possible that landfill might be more suitable than it is on Oahu, for example.

Recommendations

I. Develop an overall management strategy plan for the proper disposal of oil spill waste from a major spill. This could be done by creating an interagency task force composed of representatives from the federal, state, local, and private agencies, and individuals to plan a strategy for handling oil spill wastes from a major spill. This plan should be island-specific.

Among the objectives of this task force, priority should be given to a thorough review and evaluation of the following:

1. Responsibility
   a. Federal
   b. State
   c. City and County
   d. Spiller
   e. Owner of the cargo and vessels
   f. Refineries
   g. Other (e.g., salvage, towing, insurance, etc.)

2. Techniques
   a. Applicability for each island
   b. Temporary storage for recovered oil and oily debris and other materials on each island
   c. Disposal of each type of waste material
   d. Volume and types of recovered oil and oil spill waste that can be handled by existing in-state facilities without interfering with everyday operations
   e. Ways to increase efficiency and safety in existing facilities to be able to accommodate oil spill waste

3. Permits/regulations/standards

Applicable federal and state permits and waivers for compliance with existing regulations and the review process should be clearly defined.

Waivers and permits required should be obtained in advance and every effort should be made to insure that these will be binding in the event of a major spill. Time will not allow a court ruling on what needs to be done and what can be done when a spill occurs.

II. Environmentally sound disposal options should be encouraged and explored, and potentially hazardous disposal options should be discouraged or prohibited.

The Department of Health has already taken a step in the direction of environmentally safe and sound practices by discouraging the disposal of oil spill waste in landfills, and prohibiting the use of spill waste as a dust suppressant. Environmentally sound disposal options should be explored in keeping with the EPA and other directives of promoting and safeguarding human health and environmental welfare.

III. Recycling and reuse of recovered oil and other materials whenever feasible and safe should be given priority.

The U.S. Department of Energy (DOE) and the EPA have repeatedly underscored the importance of promoting recovery and recycling of used and unused oil in meeting the nation's energy demand and in reducing the quantity of waste to be disposed of. Also, despite the limited in-state capacity, there are opportunities in the islands for recycling.

IV. Optimize the use of available in-state solid waste disposal facilities and opportunities where they are environmentally sound and economically and technically feasible.

Ross and Associates (1990) provide excellent reasons why in-state waste management should be given priority. Although their report pertains specifically to hazardous waste management, the following reason nonetheless applies to in-state disposal of oil spill waste; it cuts down on transportation costs that accompany the export of waste to the mainland.

Priority should be given to the facilities on hand. At this point, we do not recommend construction of additional capacity for the sole purpose of oil spill waste disposal. Although there is a strong urge to do so in preparation for a catastrophic spill, this would not be economically viable, given the limited amount of waste generated in the islands and the high capital costs of commercial waste disposal facilities. Instead, what we propose is that any expansion, improvement, and planning efforts on solid waste disposal take into account accommodation of oil spill waste.

V. Investigate the option of exporting waste to the mainland and possibly other nations when in-state facilities and opportunities have been fully exhausted.

While in-state disposal of oil spill waste should be given priority, it is unlikely that Hawaii will be able to handle all the waste generated from a catastrophic spill. The state therefore should explore cost, practicality, convenience, and safety aspects of out-of-state disposal of oil spill waste. The State Department of Health, as lead agency, should be well-versed with the more stringent out-of-state requirements that govern oil spill waste disposal.

VI. Establish baseline data on disposal methods used.

While response and containment efforts are more readily available and better documented, there is dearth of information on how oil spill waste was disposed of in the past. Information on current waste oil management practices could serve as valuable input in the evaluation of suitable disposal options and in the assessment of short and long-term environmental impacts of the various disposal options. In order to establish baseline data on oil spill waste management, oil spill reports to the U.S. Coast Guard and/or other relevant agencies should include the disposal methods used.

VII. Coordination between the state, military, and privately owned solid waste transportation, storage, and disposal facilities.

The state should coordinate with the military and privately owned solid waste facilities and take responsibility for planning for the disposal of large volumes of waste from a catastrophic spill.

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Appendix A. Federal statutes that govern the management of recovered oil and oily debris

Statute	Description
Occupational Safety and Health Act of 1970 (OSHA) (PL91-596)	Authorizes the Department of Labor to set mandatory standards to protect the occupational safety and health of all employers and employees of business engaged in interstate commerce.
	Requires the Secretary of the Department of Labor to "set the standard which most adequately assures... that no employee will suffer material impairment of health or financial capacity" from regular exposure to such hazards.
	Includes requirements relating to the training of personnel involved in emergency responses and personnel who work at treatment, storage, and disposal (TSD) facilities.
	Includes requirements for the development of facility Spill Prevention Control and Countermeasures (SPCC) plans.
Clean Water Act (CWA) (formerly referred to as the Federal Water Pollution Control Act Amendments of 1972) (PL92-500)	Requires national water pollution control standards.
	Relegates to the state the task of enforcing and implementing such standards.
	Establishes statutory authority of the federal government in enforcing and implementing such standards in cases where the state fails to do so.
	Authorizes control over toxic pollutants, discharged water from point sources, the removal of toxic pollutants from critical port and harbor areas, and a plan describing the process for the disposal of pollutants.
Coastal Zone Management Act (CZMA) of 1972 (PL92-583)	Declares national policy to preserve and protect the resources of the nation's coastal zone.
	Recognizes waste disposal as a "competing demand" on coastal zone lands which has caused "serious environmental losses."
	Underscores the importance of "permissible land and water uses within the coastal zone." Failure to regulate hazardous waste for example, in a manner that is "permissible" is sufficient ground for denying federal coastal zone management grants.
Clean Air Act (CAA) of 1972	Requires national air pollution control standards.
	Relegates to the state the task of enforcing and implementing such standards.
	Establishes statutory authority of the federal government in enforcing and implementing such standards in cases where the state fails to do so.
Safe Drinking Water Act of 1974 (SDWA) (PL93-523)	Protects sources of drinking water.
	Provides regulation of specific toxic contaminants in drinking water.

Statute	Description
Toxic Substances Control Act (TSCA) of 1976 (PL94-469)	Provides for the regulation of the ultimate disposal of pollutants, more specifically toxic pollutants. Requires adequate data "be developed with respect to the effect of chemical substances and mixture on health and the environment" by "those who manufacture and those who process such chemical substances and mixtures." Authorizes the EPA to regulate manufacture, sale or use of "chemical substances and mixtures which present an unreasonable risk of injury to health or the environment." Controls used oils containing any concentration of PCBs and the disposal of used oils containing 50 ppm or greater of PCBs.
Resource Conservation and Recovery Act (RCRA) of 1976 or Solid Waste Disposal Act (PL94-580)	Regulates all solid wastes. Places primary responsibility to regulate management of hazardous waste on EPA. Directs the EPA to make a determination as to which wastes are hazardous and in what quantities, qualities, concentrations, and forms of disposal they become a threat to human health and the environment. Provides statutory authority for the ultimate disposal of solid wastes. Provides for the control of the ultimate disposal of hazardous wastes.
Used Oil Recycling Act (UORA)	Amends portions of RCRA. Mandates the EPA with the dual task of promoting the recycling of used oil, at the same time protecting human health and the environment. Establishes used oil regulations and recycling incentives.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 or Superfund	Regulates the cleanup of inactive or abandoned hazardous waste sites. Releases of hazardous wastes in reportable quantities are subject to the notification requirements of CERCLA.
Oil Pollution Act (OPA) of 1990	Addresses wide-ranging problems associated with preventing, responding to, and paying for oil spills through one comprehensive regime. Basic provisions: 1. Set limits on liability of tanker and other type vessels, and offshore and on-shore facilities 2. Expanded federal role in responding to oil spills 3. Established a $1 billion oil spill trust fund 4. Emphasis on preventive measures Provides the state with prerogative of establishing more stringent standards than those set by the federal government and to retain their pre-Exxon Valdez legislation, if none is in place.

Data Sources: Garretson et al. 1978; Pojasek 1980; Harris et al. 1987; Bauer and Kellar 1990

Appendix B. State legislations that govern management of solid waste

Legislation	Description
Chapter 340A, Hawaii Revised Statutes (HRS): Solid Waste	Provides state definitions for solid waste, source separated waste, resource recovery facility, incineration, landfill, etc.
	Provides counties power of waste flow control in protection of best public interest. Some exceptions apply.
	Requires that no state solid waste disposal facility permit be issued where a county has a resource recovery facility in use or when the design for such a facility begins. Some exceptions apply.
Chapter 342N, HRS: Used Oil Transport, Recycling, and Disposal	Specific provisions on the transport, recycling and disposal of used oil.
	Prohibits the disposal of used oil in sewers, drainage systems, surface and groundwater courses and the ocean; ground disposal permitted only with state and landowner approval.
	Requires identification for used oil transporters and permits for the transportation, marketing, and recycling of used oil.
	Assigns to the Department of Health the right to recordkeeping, testing and sampling.
	Manifest requirements.
Title 11, Chapter 58, Department of Health Administrative Rules on Solid Waste Management Control, 1981	Provides the rules for enforcement of Solid Waste Pollution Chapter on the HRS (e.g., permit system, operating standards for solid waste disposal facilities and identification of responsible entities in solid waste management).
Act 276, Chapter 226-15, HRS: Existing State Recycling Policy, 1986	Summarizes the state's two central policies for state agencies on waste reuse and recycling: (1) promote reuse and recycling to reduce solid and liquid wastes and encourage conservation, and (2) promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.
Chapter 344, HRS: State Environmental Policy, 1974, revised 1976 and 1985	Promotes the optimal use of solid waste through programs of waste prevention, energy resource recovery, particularly recycling.
Chapter 128D, HRS: Environmental Response Law	Provisions for prevention, response, and cleanup of oil, toxic, or other hazardous spills.
HCR 050,1989	Urges all state and county agencies to review, revise, and adopt policies promoting the use and purchase of goods made from recycled products.
HRO 027,1989	Requests the House of Representatives to adopt and implement a recycling policy and the Clerk of the House to consult with the Department of Accounting and General Services to identify wastes generated by House offices that are capable of being recycled.

Data Source: Hawaii State Department of Health, 1991

Appendix C. Potential technical and legal constraints and problems in disposing oily waste at existing facilities

Disposal Facility	Type of Debris	Constraints/Problems
Waipahu Incinerator	booms sorbents trash	Need to consider flashpoints of materials; low flashpoints could be a problem.
		Liquid wastes cannot be processed.
		Limited capacity in handling very large volumes of waste; will displace waste currently handled.
H-Power	booms sorbents trash	Need to consider flashpoints of materials; materials should have sufficiently high flash point.
		Materials should not be explosive.
		Material being burned should have some positive fuel value of at least 3,000 BTU/lb. or be prepared to pay the additional costs associated with burning it.
		Liquid waste cannot be processed.
		Limited capacity in handling very large volumes of waste; will displace waste currently handled.
		Permit from the state does not allow the disposal of industrial waste or any type of hazardous waste, therefore there is need to get approval from the state to handle oil spill wastes.