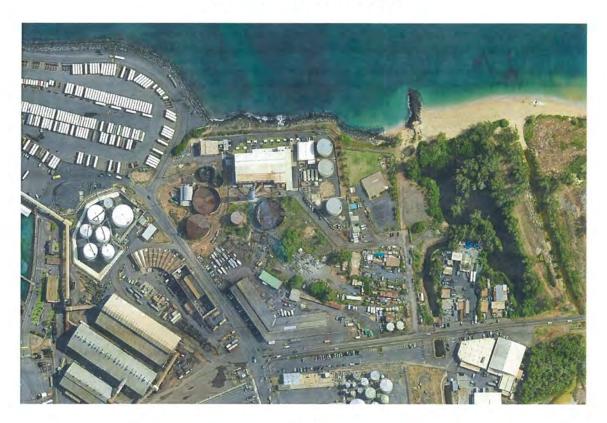
DRAFT ENVIRONMENTAL ASSESSMENT PROPERTY ACQUISITION FOR KAHULUI HARBOR

District of Wailuku, County of Maui
Tax Map Key: (2) 3-7-011:017 portion, (2) 3-7-011:019 portion, and (2) 3-7-11:023

VOLUME III OF III





Proposing Agency: STATE OF HAWAI'I, DEPARTMENT OF TRANSPORTATION

June 6, 2019

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Cultural Impact Assessment for the Kahului Harbor Acquisition, Kahului, Wailuku Ahupua'a, Maui, Hawai'i

Tax Map Key (2) 3-7-011:017 and 3-7-011:023



Prepared for:

EKNA Services, Inc. 615 Piikoi Street # 300 Honolulu, HI 96814

INTERNATIONAL ARCHAEOLOGICAL RESEARCH INSTITUTE, INC. JULY 2014

—Final— CULTURAL IMPACT ASSESSMENT FOR THE KAHULUI HARBOR ACQUISITION, KAHULUI, WAILUKU AHUPUA'A, MAUI, HAWAI'I

Tax Map Key (2) 3-7-011:017 and 3-7-011:023

by

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International Archaeological Research Institute, Inc.

July 2014

Cover Photo 1. Hale Nanea Meeting House for Royal Order (All photos were taken by author unless otherwise specified)

EXECUTIVE SUMMARY

This Cultural Impact Assessment (CIA) is in response to a request from International Archaeological Research Institute, Inc. (IARII) for the Kahului Harbor Acquisition, Kahului, Wailuku Ahupua'a, Maui; TMKs (2)3-7-011:017 and 023. This CIA is part of an Environmental Assessment (EA) completed by EKNA Services, Inc., in compliance with federal and state requirements to identify and evaluate possible cultural impacts to cultural resources, cultural practices and access to resources and/or practices in advance of the acquisition of two parcels of land adjoining Kahului Harbor.

According to the final Development Plan (SSFM 2012:41), three possible parcels for acquisition were reviewed, all in proximity to each other and approximately 10 acres in size. They were compared for cost, constraints, and flexibility of use. Parcel B, consisting of Parcel B-1 (TMK [2]3-7-011:017, 9.994 acres) and Parcel B-2 (TMK [2]3-7-011:023, 2,233 square feet), was found to be most advantageous. The State of Hawai'i Department of Transportation Harbors Division intends to utilize State funds to purchase the two privately owned Alexander and Baldwin, Inc., parcels and the improvements thereon. Both parcels are located adjacent to and east of Pier 1, Kahului Commercial Harbor, between Hobron Avenue and Amala Place.

This CIA is in accordance with the State of Hawai'i Environmental Council Guidelines for Assessing Cultural Impacts (1997) and in compliance with Act 50 SLH 2000 (HB 28 H.D.1) as it amends the State of Hawai'i Environmental Impact Statement law (Chapter 343, HRS) to include "effects on the cultural practices of the community and State. [It] also amends the definition of 'significant effect' to include adverse effects on cultural practices." The level of effort for this CIA included ethnographic research (six oral history interviews) and analysis, a review of relevant historical and cultural literature and a CIA report.

There are several properties of cultural/historical value on the parcels that were identified in previous studies. One of these properties is the Hale Nanea meeting house that is used by the Chapter V Royal Order of Kamehameha, as well as by various community ethnic groups and the general public. It has been on a month-to-month lease. The ethnographic consultants expressed their sentimental and cultural value of the meeting house. However, efforts to contact an official spokesperson from the Royal Order were not successful. Members of three canoe clubs in the vicinity were interviewed; they expressed concerns regarding the canoe paddling water path fronting the project area on the north. It is part of the training, practicing and racing pathway. The dirt road on the eastern border of the project parcel is used as an access for fishermen, *limu* (seaweed) gatherers, and other beach goers and also serves as access to the meeting house and other current businesses in Parcels B-1 and B-2.

Recommendations include forming a small cultural advisory group to help with transition plans for cultural users of Hale Nanea meeting house, beach and offshore resources regarding future access and use of the area. The harbor expansion plans for the parcels will include removal of existing structures, which would include Hale Nanea and its traditional *imu* or underground ovens. Depending on consultation with the Royal Order, cultural mitigation could include the relocation of Hale Nanea meeting house and *imu* to Hoaloha Park. Since the dirt road is not part of the acquisition, access should remain available to fishermen and gatherers. Additionally, since there currently have not been any restrictions for canoe paddlers accessing the water fronting (north) Pier 1, there should not be any foreseeable restrictions of the canoe water path north of the project area in the future.

ACKNOWLEDGEMENTS

Without the ethnographic consultants this Cultural Impact Assessment could not have been done, therefore **Mahalo Nui Loa** goes out to them: Ms. Mary Akiona, Ms. Diane Ho, Ms. Karen Chun, Mr. Cliff Libed, Mr. Paul Kauhane Lu'uwai and Ms. Mary "Maizie" Cameron Sanford.

Very special mahalo to Maizie for sharing the history of her impressive family in several sessions and for the articles, photos, and books.

Mahalo to Mr. Foster Ampong for showing me around the project area - sorry we could not finish the interview; and mahalo to transcriber Se Ah Kee and tech advisor Jessica Orr.

MAHALO NUI LOA!

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INTRODUCTION

This report is in response to a request from International Archaeological Research Institute, Inc. (IARII) for the following service: Cultural Impact Assessment (CIA) for Kahului Harbor Acquisition, Kahului, Maui; TMKs (2)3-7-011:017 and 023. This CIA is part of an Environmental Assessment (EA) prepared by EKNA Services, Inc. The project area is identified in the CIA as Parcel B, sub-divided into Parcel B-1 (TMK [2]3-7-011-017) and Parcel B-2 (TMK [2]3-7-011-023).

This CIA is in compliance with Act 50 SLH 2000 (HB 28 H.D.1) (Appendix A) as it amends the State of Hawai'i Environmental Impact Statement law (Chapter 343, HRS) to include "effects on the cultural practices of the community and State. [It] also amends the definition of 'significant effect' to include adverse effects on cultural practices." The purpose of a CIA is to gather information about traditional cultural practices, ethnic cultural practices and prehistoric and historic cultural resources that may be affected by the implementation of a development project or undertaking in accordance with the State of Hawai'i Environmental Council *Guidelines for Assessing Cultural Impacts* (Adopted on November 19, 1997) (Appendix B). The level of effort for this CIA included ethnographic research (six oral histories) of people who are connected to these lands in various ways and an archival cultural/historical background review of the literature (including Internet research).

This report is organized into five chapters. Chapter 1 describes the project area in terms of location, in the context of *ahupua'a*, district and island, as well as a generalized description of the natural environment (e.g., geology, flora and fauna) and built environment (e.g., any current features). Chapter 2 explains the methods and constraints of this study. Chapter 3 summarizes a review of the historical and traditional (cultural) literature in the context of the general history of Hawai'i, the island of Maui, the traditional district or *moku* of Wailuku and local history of the *ahupua'a* (traditional sub-district land division) of Kahului. Chapter 4 presents the ethnographic analysis based on the supporting raw data (oral history transcripts) as it pertains to land, water and cultural resources and use in the project area and vicinity. It also includes background data of the ethnographic consultants. Chapter 5 summarizes the findings of this cultural impact study based on supporting data from Chapters 1 through 4 and presents a summary of finding, cultural impact assessment and recommendations.

Scope of Work

The CIA scope-of-work (SOW) (Appendix C) was based on the Environmental Council *Guidelines for Assessing Cultural Impacts* (1997) and focuses on three cultural resource areas (traditional, historical and ethnographic), conducted on two levels: archival research (literature/document review) and ethnographic data (oral histories):

- 1) conduct historical and other culturally related documentary research;
- identify individuals with knowledge of the types of cultural resources, practices and beliefs
 found within the broad geographical area, e.g., district or ahupua a; or with knowledge of the
 area potentially affected by the proposed action [e.g., past/current oral histories];
- identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- assess the impact of the proposed action on the cultural resources, practices and beliefs identified.

Traditional resources research entailed a review of Hawaiian *mo'olelo* (stories, legends or oral histories) of late nineteenth and early twentieth century ethnographic works. Historic research focused on previous reports. Ethnographic research focused on current interviews with knowledgeable individuals.

Basis for Generating CIA Studies

The project was generated because the Department of Transportation, Harbors Division (DOT-Harbor) is proposing to expand Kahului Harbor by purchasing two parcels on the eastern border of the harbor. The map below (Figure 1) indicates the area to be purchased (outlined in red and marked "B"), which consists of two sub-parcels (Parcel B-1, TMK [2]3-7-011-017 and Parcel B-2, TMK [2]3-7-011-023).



Figure 1. Kahului Harbor Acquisition - Parcel B (EKNA 2013).

Project Location

The project is located on the island of Maui, in the *moku* or district of Wailuku in the *'ili kupono* (an *'ili* that is independent of any *ahupua'a*) of Wailuku (Alexander 1855) - now Wailuku Ahupua'a, in Kahului on the northeastern coastal area of Kahului Bay. A large portion of the *moku* of Wailuku comprises the isthmus between two shield volcanoes - Pu'u Kukui and Pu'u Haleakalā.

The island of Maui is 77 kilometers long and 42 kilometers wide, 1,902 square kilometers. The highest points on the island are Mt. Haleakalā (Red Hill) at 3,055 meters (m) or 10,023 feet above sea level and Pu'u Kukui of Mauna Kahalawai or the West Maui mountains at 1,764 m or 5,788 feet above sea level (Macdonald et al 1983:3; Juvik & Juvik 1998:308). The older volcano Mauna Kahalawai/Pu'u Kukui dates to 1.3 million years ago and the younger volcano Haleakalā or East Maui dates to approximately .75 million years ago (Clague In Juvik & Juvik 1998:43-44).

Additional descriptions below from the website of the School of Ocean and Earth Science Technology (SOEST 2013):

Maui has 193 km of general coastline that wrap the two main shields and the isthmus. The isthmus was created during the shield building stage of Haleakalā as lava flowed into West Maui and, is bounded by two embayments, one to the north [Kahului], and one to the south. Although the West Maui Volcano is extinct, Haleakalā is merely dormant having had its most recent rejuvenated eruption just over 200 years ago.... The central north side of the isthmus, at Kahului and Wailuku, has been developed as a hub of industrial activity and the coast is primarily a commercial deepdraft harbor and heavily constructed shoreline. Development extends for 4 km northeast along the low sloping lands of the West Maui Volcano. The narrow shoreline is largely backed by seawalls, residential neighborhoods, and in the case of Waihe'e and Waiehu Beach Parks, a golf course.

The *moku* or district of Wailuku (Figure 2) includes the *ahupua'a* from Wailuku to Waihe'e in the northwest as described by Fish & Wildlife Service (FWS-MNWRC 2012:6-2) below.



The Wailuku *moku* covers the entire isthmus between East and West Maui. This area was also referred to as Na Wai 'Eha, meaning "the four waters," and is named after the four major streams (Waikapū, Wailuku ['Īao], Waiehu, and Waihe'e) flowing in the windward portion of West Maui. Wailuku and its coastal environs are thought to have been initially settled around 1100-1200 CE.

Figure 2. Moku map of Maui (UTC 2011); arrow indicates project area.

Figure 3 illustrates where the famous Wailuku *moku* streams are located and Fischer (2013a) gives a cultural perspective in the following:



A thousand years ago, Hawaiians gathered at 'Jao Valley to celebrate and honor the bounty of Lono, god of agriculture, during the annual makahiki festival. More than a hundred years ago visitors began coming to witness the natural beauty of this valley. Today 'Jao Valley is recognized as a very special place for both its spiritual value and spectacular scenery 'Tao means 'cloud supreme' - the bank of clouds that often sits over the valley. These clouds bring the frequent rains that feed the streams in the valley. It is these waters that carved this spectacular landscape over the past 1.5 million years. The Hawaiian god Kane is the procreator and the provider of the life giving elements. He is the patron of wai (fresh water) and is often associated with clouds, rain, streams and springs. From the highest peak of Pu'u Kukui to the shoreline of Kahului Bay, the ahupua'a (land division) of Wailuku was a favorite place of ali'i (chiefs) and a ruling center of Maui. 'Iao Valley is part of this ahupua 'a (Fischer 2013a).

Figure 3. Map of Na Wai 'Eha/Wailuku streams (EarthJustice 2013).

A former resident and now cultural practitioner from the Hawaiian Canoe Club (HCC) shared his memories of Kahului Harbor and the fresh water in the harbor (Parsons 2007):

Iokepa Naeole spoke of his own childhood growing up and around Kahului Harbor, and of his Hawaiian Outdoor Education (HOE) program-a hands-on program that teaches 16 children how to paddle, surf and fish. Naeole once told me that when 'Iao Stream ran to the sea without any diversions or concrete waterways, Kahului Harbor was fed by the fresh water of underground springs. His father said it was possible for a person to dive to the bottom, open his mouth and drink the upwelling fresh water.

Wailuku District is frequently mentioned in historical texts and oral tradition as being politically, ceremonially, and geographically important during traditional times (Cordy 1981, 1996; Kirch 1985). Wailuku was considered a "chiefly center" (Sterling 1998:90) with many of the chiefs and much of the area's population residing near or within portions of 'Īao Valley and lower Wailuku. The importance of the Wailuku district is reflected by the relatively large number of *heiau* (temple sites) that were reportedly present in Pre-Contact times. Oral traditions about these *heiau* provide examples of how religion tied into political power in the traditional Wailuku setting (FWS-MNWRC 2012: 6-1).

The project is in Kahului, the northern section of Wailuku *moku* between Kahului Bay/Harbor and Kanahā Ponds. Kahului has a total area of 16.3 square miles (42 km²), of which, 15.2 square miles (39 km²) of it is land and 1.2 square miles (3.1 km²) of it is water. The total area is 7.16% water. Kahului is in the Tropical wet and dry climate zone (Köppen classification *As*) with a dry summer season. Kahului is also one of the windiest places in the U.S. with an annual average wind speed of 13.7 miles per hour (mph) (Wiki-Kahului 2013). Kahului town was marginal compared to Wailuku town, and comprised of scattered fishing settlements (Frampton & Ward 2011:13) until modern residential and business zones were created in the 1950s.

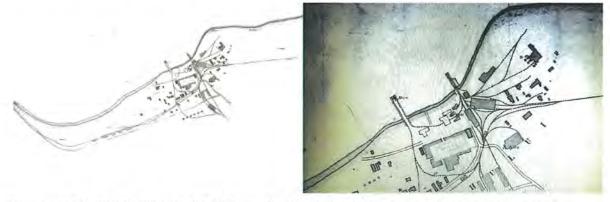
The following descriptions of Kahului bay and harbor are from the 2030 Master Plan report done by Cardno Tec (2009: IV-1, 2, 5):

The bay is bordered to the south and east by Maui's principal towns of Kahului and Wailuku. 'Īao Stream has meandered throughout the Kahului Harbor area in the recent geological past, cutting through ancient reefs and backfilling the stream valley with basalt sands, gravels, cobbles, and boulders. The shoreline bottom area consists of a fringing coralline platform made up of calcareous sediments varying in degrees of lithification from loose to well-cemented.

Kahului Harbor is a manmade port, dredged from naturally formed Kahului Bay. The harbor basin was constructed to be 2,050 feet wide by 2,400 feet long and has a project depth of 35 feet. The entrance channel is 660 feet wide and 40 feet deep.

Early development at Kahului Bay was swift and unorganized. In 1863, the first western building, a warehouse near the beach, was erected. This provided the impetus for the establishment of a small settlement near the harbor as sugar made its commercial debut and proved to be an economically viable crop. In 1879, to facilitate the loading and unloading of goods and passengers, the first small landing was constructed in Kahului Bay. By the turn of the 19th century, Kahului supported a new customhouse, a saloon, a Chinese restaurant, and a small but growing population. However, further development was temporarily curtailed when the Bubonic Plague infected Kahului in 1900 and the town was deliberately burned to the ground to destroy disease-infected rats. The rebuilding of Kahului town coincided with the evolution of Kahului Bay into a full-scale commercial harbor.

Kahului Harbor and associated town/city was established circa the 1850s when Samuel Alexander and Henry Baldwin started their successful sugar and pineapple ventures. Kahului was called Maui's "Dream City" because the plantations offered so many jobs (WPS 2013). Figures 4 to 7 below from the School of Ocean and Earth Sciences and Technology (SOEST 2002) depict its development through time.



Figures 4 and 5. USGS 1899 Map #2463/Flynn – [portion] Kahului Harbor with railroad and docks, but no breakwaters (adapted from SOEST 2002).

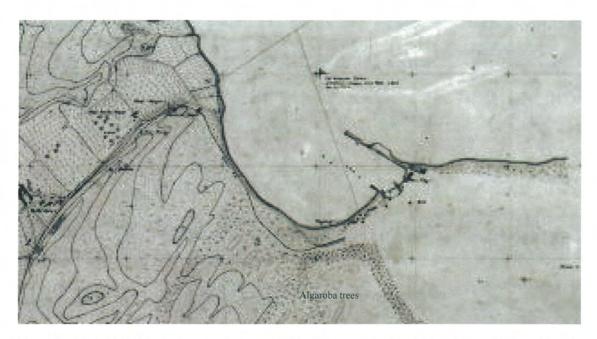


Figure 6. 1912 DCL Coast & Geodetic Survey Map #3271/Gauger [portion] Kahului Harbor with east breakwater, dock; algaroba trees, south (adapted from SOEST 2002).

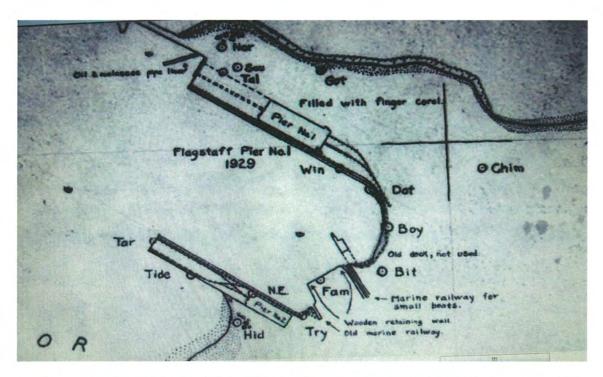


Figure 7. 1929 USGS Map #4465/Boothe [portion] - Kahului Harbor features and filled area (SOEST 2002).

Part of the impetus for the early development of the Kahului area was the growing needs of the sugar industry as noted on the Post Office in Paradise (POP 2001) website below:

Following adoption of a Reciprocity Treaty with the United States in 1876, Hawaii's emerging sugar industry boomed. On Maui, several significant plantations were located in the isthmus neighborhoods surrounding Wailuku, Haʻikū, Makawao and Pāʻia. Getting sugar to the port at Kahului was sometimes difficult. The remedy was to construct a railroad connecting the port to the major plantations. Thomas Hobron succeeded with a narrow gauge railroad. The first train ran on July 17, 1879.

In 1881, the railroad was given the name of the Kahului Railroad Company. Service was extended eastward to Pā'ia by 1884 and included the Spreckelsville Plantation. The Kahului Railroad continued to operate through the balance of the 19th Century and well into the 20th Century. Hobron, who also was postmaster of Kahului, allowed mail to be sent free over the railroad. Later, in 1884, a subsidy of \$25 per month was paid for hauling mail. Mail carried on the railroad was in closed bags for delivery to postmasters along the route.

Before long the Kahului Railroad Company (KRR) and the Harbor also had to expand to meet the needs of industry as well as the growing population (Figure 8) as reported by Cardno Tec (2009:IV-5).

With the success of the sugar industry came the development of rail systems for transporting cane from fields to the harbor. Passenger cars were added to the rail system and in 1879 Thomas Hobron founded the Kahului Railroad Company (KRR), the first railroad in Hawaii that provided passenger service between the population centers at Wailuku and Kahului Harbor. The Kahului station was located southeast of the harbor at Hobron Point and tracks extended through Spreckleville as well as to the sugar mill at Pu'unēnē.

In 1901, KRR purchased its first tugboat, the *Leslie Baldwin*, to tow lighters to and from vessels. Harbor development was initiated three-years later by KRR, which was at the time a subsidiary of Hawaiian Commercial and Sugar Company (HCSC). Although Kahului Harbor has been the island's sole port of entry, until that time it was little more than a natural inlet, exposed to the prevailing winds and severe storms from the Pacific. Further, the population of Maui had grown to 27,920 and consisted of mostly immigrant Japanese and Chinese laborers contracted to work on the sugar plantations.

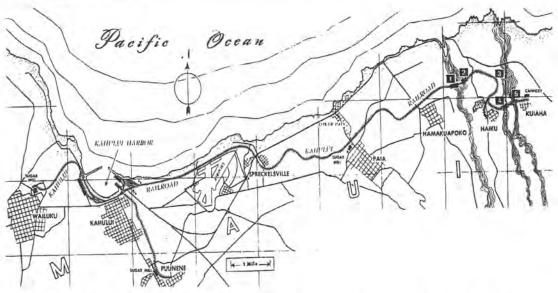


Figure 8. Map of Kahului Harbor Railway System and population areas (Cardno Tec 2009: IV-5/Fig. 4.3),

According to Cardno Tec (2009: IV-6), as a part of its expansion, KRR constructed a breakwater and wharf and dredged the harbor with the caveat that it would all be turned over later to the Territorial government.

To facilitate easier movement of cargo and passengers between islands and the mainland, KRR constructed 1,800 feet of breakwater and a dock basin for lighters. More than 300,000 cubic yards of material dredged from this project were deposited on the windward side of the breakwater. By 1910, breakwater construction, harbor dredging, and the installation of moorings and buoys amounted to \$164,909. An additional \$136,081 was spent on a wharf capable of berthing vessels up to 1,000 tons.

In 1910, KRR proceeded to obtain a license from the Territory of Hawaii to build a wharf for inter-island vessels. The Claudine Wharf, so-called in honor of the inter-island steamer of the same name, was built with the understanding that the terminal would be turned over to the territorial government at a later date. Accordingly, in 1924, KRR ceded all of its interests to the wharf and breakwater to the Federal government.

The breakwater construction continued from 1910 to 1931 (Cardno Tec 2009: IV-7):

Under acts of Congress in 1910, 1916, and 1927; the US Army Corps of Engineers (Corps) extended the east breakwater to a total length of 2,850 feet. They also built a 2,390-foot west breakwater with an entrance 660-feet wide and dredged the balance of the present harbor basin on the leeward side of the east breakwater. These harbor improvement projects were completed in 1931.

The Territory of Hawaii became involved with Kahului Harbor in the 1900s (Cardno Tec 2009: [V-9):

Around the turn of the century, the Territory of Hawaii also became involved in the development of Kahului Harbor. In 1917, the territorial government deepened the slip along Claudine Wharf. Between 1921 and 1924, the Territory directed the construction of the first 500-foot section of Pier 1 and the erection of a concrete pier shed that measured 132-feet wide and 374-feet long. After acquisition and demolition of Claudine Wharf, Pier 2 was constructed in increments beginning with a 627-foot section in 1927, and concluding with an extension to 891 feet in 1929. In addition, a steel-frame shed, 77-feet wide and 242-feet long was included in the initial stage of Pier 2 construction. Subsequent contracts awarded by the Board of Harbor Commissioners extended Pier 1 to 929 feet and the Pier 1 shed to 770 feet.

Today the port authority for Kahului Harbor is the State of Hawai'i's Harbors Division within the Department of Transportation. The State of Hawai'i owns and operates three piers in Kahului Harbor according to the World Port Source (WPS 2013) website:

Pier 1 is used to ship and receive conventional and containerized cargo and automobiles. It is also used to receive steel products, petroleum products, lumber, and coal. It ships molasses and bulk raw sugar. Kahului Harbor Pier 1 is also used for boarding passengers. Pier 1 in Kahului Harbor has berthing space of 411 meters (1350 feet) with alongside depth of 10.7 meters (35 feet) MLLW.

Matson Navigation Company manages a 13-acre storage area that includes 36 refrigerated container positions, at the rear of Kahului Harbor's Pier 1. Kahului Trucking and Storage Inc. had two molasses storage tanks with total capacity of 20 thousand tons. A manifold system and pipelines are used to receive petroleum products at Pier I in Kahului Harbor.

Pier 2 has berthing space of 272 meters (894 feet) with alongside depth of 8.2 meters (27 feet) MLLW. Kahului Harbor Pier 2 is used to ship and receive conventional and containerized general

cargo and automobiles and to receive lumber, bulk cement, and liquefied petroleum gas. An HEI Company affiliate, Young Brothers Ltd. operates a paved storage area of about 7.5 acres at the rear of Piers 2 and 3 that includes 28 refrigerated container positions. Doing business as The Gas Company, Citizens Utilities Services has storage tanks with total capacity for 12.5 thousand barrels of liquefied petroleum gas at Kahului Harbor's Pier 2. The Hawaiian Cement Corporation has two storage tanks with total capacity for 3.8 thousand tons of bulk cement.

Pier 3 has berthing space of 152 meters (500 feet) with alongside depth of 5.2 meters (17 feet) MLW. Pier 3 in Kahului Harbor is used for shipping and receiving conventional and containerized general cargo and automobiles. Kahului Harbor's Pier 3 also receives lumber, sand, and petroleum products, and steel products. Pier 3 is also used for mooring towboats and boarding passengers. Tesoro Petroleum Corporation operates six storage tanks with total capacity for 135 thousand barrels at Kahului Harbor's Pier 3. Shell Oil Company has a 27-thousand-barrel capacity storage tank at Pier 3, and Maui Electric Company has three storage tanks with capacity for 83.9 thousand barrels.

Kahului Harbor Piers (Cardno Tec 2009: IV-2; IV-3) (Figures 9 and 10) as of 2009:



Figure 9. Kahului Harbor piers (adapted from Cardno Tec 2009:IV-2/Fig. 4.2).

Pier 1A: American Hawaii Cruise; U.S. Lines' MS Independence; Kahului Trucking & Storage's

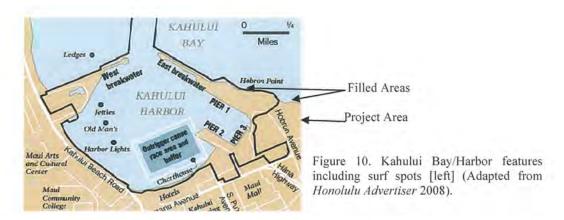
Pier 1B: Maui Land & Pineapple Company's tin plate ship;

Pier 1C: Matson (cargo)

Pier 1: Maui Electric Company's coal ship;

Pier 2: Young Brother's Inter-island barge cargo operations; CSX Lines' overseas container shipments; The Gas Company's liquid bulk cargo shipments; Hawaiian Cement

Pier 3: The liquid bulk (fuel) cargo operations of Tesoro, Chevron, and the Maui Electric Company; The dry bulk cargo (sand) operations of Hawaiian Cement and Ameron Hawaii



The following is from the Division of Land and Natural Resources (DLNR) Hawai'i Division of Aquatics Resources website (DAR 2012) summarizing the Kahului Harbor Fisheries Management Area:

Kahului Harbor is the primary port on the northern coast of Maui. The Fisheries Management Area (FMA) is bounded seaward by a line between the seaward edges of the breakwaters. Permitted activities shall not be construed as allowing activities within any portion of the harbor which may otherwise be prohibited by laws or rules of the Department of Transportation.

Permitted

To use a bait net to take nehu and other baitfish, with a license.

To use a net, except lay net, to take akule with a valid commercial marine license.

To use a landing net to secure hooked marine life.

To use a push or hand net while on shore to take shrimp or other marine life, provided the net, including handle, is no more than three feet in any dimension.

To use up to ten crab nets not more than two feet in diameter to take crabs.

To use a net to take mullet less than three inches fork length for stocking an aquaculture facility, with a license.

Prohibited

To use any net, except as indicated in permitted activities above.

To take or possess a total of more than 50 marine life per person per day, except baitfish or *akule* with the proper license.

To snag any marine life.

To use more than two poles with one line and up to two hooks per pole, each hook having only one point.

Fisher check stations

Individuals and groups entering the FMA to take marine life must follow check-in and reporting requirements posted at fisher check stations on site.

Project Setting - Natural and Built Environment

The project encompasses an area within Kahului in the *moku* and *ahupua'a* of Wailuku TMK: (2)3-7-011:017 and (2)3-7-011:023 (Figures 11 and 12; Section B) adjacent to the Maui Electric Power Plant and Kahului Harbor. The State of Hawai'i Department of Transportation, Harbors Division intends to utilize State funds to purchase two privately owned Alexander and Baldwin (A&B) parcels (Parcels B-1 and B-2; total 10.5 acres) and the improvements thereon. Both parcels are located adjacent to and east of Pier 1, Kahului Commercial Harbor, between Hobron Avenue and Amala Place.





Figure 11. Acquisition Map - Parcel B (EKNA 2013).

Figure 12. Project area 'B' (SSFM 2012:42/Fig 4.2).

The project parcels "B" were described in the final Development Plan report by SSFM (2012:42):

Reviews of historic properties and hazardous materials also show Parcel B as a preferred property. Parcel B has the greatest amount of usable land and became the preferred acquisition strategy. One major current user on Parcel B, KT&S, would need to be relocated. A&B indicated this was possible by moving it to Parcel A. Other businesses behind KT&S are on month-to-month leases and could be moved with notice, making those lands available for re-use. Several abandoned storage tanks would need to be de-commissioned, and one that is still in use would have to be moved. It is also recommended to purchase an adjacent "notch" area, which is a separate parcel, currently with a storage tank not in use. [Parcel B-1 (9.994ac); Parcel B-2 (2,230 sq ft)]

The project area is located on the northern coast of the isthmus area where the surrounding lands were historically associated with the sugar cane industry. However, the environment and ecosystem were very different prior to human settlement, as well as at Western Contact. According to Pratt and Gon III (1983:121) an ecosystem is a community of organisms interacting with its physical environment. The following segments describe the natural environments and ecosystems of the project area and vicinity.



Photo 2. Composite of coast or beach side of project lands; rock jetty on east end.

The parcels to be acquired are bordered on the north by the Pacific Ocean and small sandy beach and rocky area (Photo 2); to the east by a dirt road leading to the beach (Photo 3) (part of the road abuts a waterway to the Kanahā Ponds [Photo 4]) and access to various entities currently using the parcels; to the west, Hobron Avenue, to the south





by Amala Place and to the east by a dirt road. Photo 3. Dirt road to beach. Photo 4. Waterway off dirt road.

Before human settlement the project area would have been a pristine coastal/sandy beach, but has now been modified by human activity (Pratt and Gon III In Juvik and Juvik 1998:128).

Vegetation greatly influenced by proximity to ocean; many salt-tolerant species. Dwarf shrublands of naupaka-kahakai (Scaevola sericea) most common; those dominated by 'ilima (Sida fallax), naio (Myoporum sandwicense) or hinahina (Heliotropium anomalum) uncommon. Simple communities of 'ākulikuli (Sesuvium portulacastrum), 'aki'aki grass (Sporobolus virginicus), or the sedge Fimbristylis cymosa are widespread. Coastal forests of hala (Pandanus tectorius) in a few windward sites; wetlands of native seges now rare.

Prior to human settlement native fauna included sea turtles, monk seals, a variety of sea and land birds, and land snails; the only mammals were a couple species of bats. Today many of the native species are extinct or endangered. When early Polynesian voyagers settled on the main Hawaiian Islands they brought their culture, cultigens (flora and fauna), food and live animals. Their activity and introductions modified first the coastal and valley environments, then the forested and leeward zones. Early Polynesian introduced animals included the Southeast Asian pig (Sus scrofa), jungle fowl (Gallus gallus), dog (Canidae), and the Polynesian rat (Rattus exulans) (Juvik & Juvik 1998:126-127). The pigs, dogs, chickens and rats impacted the native flora and fauna; the lands were also modified to plant their introduced species. Coconut trees (Cocos nucifera), kukui or candlenut (Aleurites moluccana), ti (Cordyline fruticosa), 'ulu or breadfruit (Artocarpus species) and ko or sugar cane (Saccharum officinarum), were introduced in coastal zones and kula zones. Later some mesic areas were converted from forests to dryland kalo (taro) (Colocasia esculenta) and 'uala (sweet potato) agriculture (Pratt and Gon III In Juvik and Juvik 1998:127).

Handy (1940:159-160, in Sterling 1998:63) made the following observations:

On the northeast coast of western Maui it was only the shores and adjacent flatlands below the taro terraces of Waihee and Waiehu that were favorable for the combined enterprises of planting potatoes and fishing. The flat north coasts, eastward from Wailuku, had fishing settlements here and there in ancient times and presumably sweet potato plantations.... From Waihee to Waikapu there is much good land below and bounding the ancient terrace area on the *kula* and in the lower valleys which would be ideal for sweet potato culture, but it is said that little was grown in this section because there was so much taro.

After Western Contact many more species were introduced into the Hawaiian Islands. In the coastal areas kiawe (Prosopis pallida or algarroba/algaroba/mesquite) was introduced and literally took over the landscape in some areas; ironwood (Casuarina equisetifolia, horsetail casuarina) was also introduced. Cattle were introduced early and food lands were modified as pasturelands. Most coastal areas, particularly beaches continue to be used and altered by humans. Alien species such as rats, cats, mongooses, and dogs, all harass nesting turtles, waterbirds, and seabirds (Pratt and Gon 1998). Today the project area is primarily small to light industrial businesses and flora is sparse, consisting mainly of coconut, ironwood, kiawe and various shrubs and grasses.

Sugarcane became a mono-crop as plantations also modified the landscape; wetlands and fishponds were drained or modified for cattle grazing, sugar crops, development then urbanization (Pratt and Gon III In Juvik and Juvik 1998:127-128). And some former sugar lands were later converted to pineapple mono-crops or light industry.

The following photos of the project area (Parcels B-1 and B-2) by the author illustrates current vegetation in areas within the parcels - related site numbers from Hill et al., (2009) of Cultural Surveys Hawaii (CSH) are included for some sites.







Photos 5 - 7. Project area – Royal Order/community meeting house abuts the beach to the north (Site #12/CSH).







Photos 8-10. Various areas of the project area – vegetation very sparse.







Photos 11-13. Various areas of the project area – vegetation very sparse.







(Site #10/CSH 10) KT&S

Photos 14-16. Areas of the project area/off Amala Place – vegetation very sparse.







(Site #7/CSH)

Photos 17-19. Areas of the project area/off Hobron Avenue – vegetation very sparse.

Figure 13 is an aerial view of the project area from the *Kahului Harbor Development Plan* report (SSFM 2012:47) identifying locations of historic features within the project parcels with CSH site numbers. The vegetation seen from this view is very sparse:



Figure 13. Project area historic sites (SSFM 2012:47/Fig 4.4); little vegetation.

Kanahā Pond State Wildlife Sanctuary is a 143acre (58 hectares [ha]) wetland in Maui, in near proximity to the project lands. It is a famous waterfowl sanctuary, home to three endangered Hawaiian bird species: the Hawaiian coot ('alae, 'alae ke 'oke 'o) (Fulica alai), the Hawaiian duck (koloa) (Anas wyvilliana), and the Hawaiian (or black-winged) stilt (ae'o) (Himantopus mexicanus knudseni). Kanahā Pond was designated a state sanctuary in 1951 and a

National Natural Landmark in 1971 (Wiki-Kanahā). The ponds produced huge quantities of mullet until the early 1900s. The water used to be clean, and natural springs filled the pond which overflowed through an open ditch in Kahului Harbor. When the harbor was dredged in 1910 Mau'oni pond was filled and is now occupied by oil storage tanks and industrial areas. When Mau'oni Pond was filled, part of the overflow ditch was filled and this resulted in Kanahā Pond becoming less clear and drying up during the hot summers (Melgar 2002).



Figure 14. Aerial of Project Area (red outline) and Kanahā Pond (SOEST 2002).

Development plans for Kahului's 'Dream City' In Chris Hart & Partners, Inc (CHP 2006:8).



Figure 15. Dream City Plan, 1947 (from CHP 2006:8).

METHODS

This Cultural Impact Assessment was conducted from February 2013 to August 2013. The study consisted of three phases: (1) cultural and historical archival literature review; (2) ethnographic survey (oral history interviews), analysis of ethnographic data (past oral histories) and (3) report writing.

The personnel consisted of the author (ethnographer) who has a master's degree in Anthropology, with a graduate curriculum background in the archaeology track as well as anthropology theory, cultural resource management, ethnographic research methods, and public archaeology; an undergraduate curriculum background that included Hawaiian History, Hawaiian Language, Hawaiian Archaeology, Pacific Islands Religion, Pacific Islands Archaeology, Cultural Anthropology, as well as a core archaeology track, Geology, and Tropical Plant Botany; and ethnographic field experience that includes over 400 interviews to date.

This CIA is loosely based on *Grounded Theory*, a qualitative research approach in which "raw data" (transcripts and literature) are analyzed for concepts, categories and propositions. Categories were preselected as part of the overall research design. However, it is not always the case that these research categories are supported in the data. Categories were generated by forming general groupings such as "Land Resources & Use," "Water Resources and Use," and "Cultural Resources & Use." Conceptual labels or codes are generated by topic indicators (i.e., flora, fauna). In the *Grounded Theory* approach, theories about the social process are developed from the data analysis and interpretation process (Haig 1995; Pandit 1996). This step was not included in this cultural impact assessment as the research sample was too small.

The level of effort for this study included a broad archival research literature review and an ethnographic review and analysis (six interviews plus one partial). Primary source material included genealogies, oral histories and other studies and reports. Secondary source material included translations of 19th century ethnographic works, historical texts, indexes, various reports and Hawaiian language resources (i.e., proverbs, place names and dictionary).

The selection of the consultants was based on the following criteria:

- Had/has Ties to Project Location(s)
- Known Hawaiian Cultural Resource Person
- Known Hawaiian Traditional Practitioner
- Referred By Other People

The formal interview process included a brief verbal overview of the study. Then the ethnographic consultant was provided with a consent or 'agreement to participate' form to review and sign (Appendix D). An ethnographic research instrument (see Appendix E) was designed to facilitate the interview; a semi-structured and open-ended method of questioning based on the person's response ('talk-story' style). Each interview was conducted at the convenience (date, place and time) of each consultant. The interviews were conducted using a cassette tape recorder. The interviewees were allowed to choose where they wanted to have their interview conducted. Notes were also taken, but more attention was given to listening intently to the consultant. A makana or gift was given to each ethnographic consultant in keeping with traditional reciprocal protocol.

Ethnographic fieldwork or research depends on the availability and time of consultants; occasionally things just do not work out as planned. A list of ethnographic fieldwork constraints follows:

- The initial ethnographic "level of effort" or number of interviewees was not in accordance with a later assessment of the properties and tenants/leaseholders;
- More canoe club members were willing to be interviewed than other cultural practitioners;
- · Two people did not show up for interviews;
- The spokesperson for The Royal Order-Chapter V did not return emails or phone calls in regard to the meeting house in the project property;
- One interview was interrupted and asked to be resumed on another day, however, the person's schedule did not clear up. The interviewee asked if it could be completed by email, but that was not returned.
- The majority of the interviewees did not return any revised transcripts; only one person did.

The taped interviews were transcribed by a hired transcriber and edited by the ethnographic investigator. The consultants were emailed their interview transcripts, an explanation of the transcript review process, and a 'release of information' form. This process allows for corrections (i.e., spelling of names, places), as well as a chance to delete any part of the information if so desired or to make any stipulations if desired. The consultants were also informed of the two-week time limit for their review after which it will be assumed that the raw data can be selectively used. Five people did not return corrected/revised transcripts. One transcript was revised by the author with the interviewee dictating the revisions and additions.

The analysis process followed a more traditional method, as a qualitative analysis software program was not necessary. The interview was manually coded for research thematic indicators or categories (i.e., personal information; land resources and uses; site information-traditional and/or historical; and anecdotal stories). For the purpose of this CIA, it was also not necessary to go beyond the first level of content and thematic analysis. However, sub-themes or sub-categories were developed from the content or threads of each interview (e.g., land resources; cultural resources).

CULTURAL & HISTORICAL BACKGROUND REVIEW

The Cultural and Historical Background Review entailed a review of previous reports that included primary and secondary source literature. Examples of primary source material include maps, Land Court records, newspaper articles, genealogies, oral histories and other studies. Secondary source material includes translations of 19th century ethnographic works, historical texts, indexes, archaeological reports, internet research and Hawaiian language resources (i.e., proverbs, place names and Hawaiian language dictionary). A review of selected archival material is presented in this section.

Genealogies

The genealogies handed down by oral tradition and later recorded for posterity, not only give a glimpse into the depth of the Hawaiian culture of old, they provide a permanent record of the links of notable Hawaiian family lines. *Po'e ku'auhau* or genealogy *kahuna* (masters) were very important people in the days of old. They not only kept the genealogical histories of chiefs "but of *kahuna*, seers, land experts, diviners, and the ancestry of commoners and slaves ...an expert genealogist was a favorite with a chief." During the time of 'Umi-a-Līloa, genealogies became *kapu* (forbidden) to commoners, which is why there "were few who understood the art; but some genealogists survived to the time of Kamehameha and even down to the arrival of the missionaries" (Kamakau 1992:242).

There are several chants from Hawai'i and other Polynesian islands referred to as migration chants that expand on the travels of ancient Polynesians and not only explain why they traveled from place to place, and where they traveled, they also give their genealogy illustrating how families are connected from one Polynesian island-nation to another. Examples are the chants and stories by Kamakau and Kepelino about Hawai'i-loa a famous ancient navigator and discoverer of the islands named after him (PVS 1999).

Surviving genealogies illustrate that the ruling families of each island were interrelated quite extensively. The chiefs of O'ahu, Kaua'i, Hawai'i, Maui and Moloka'i had one common ancestry. Families branched out, but conjoined several times in succeeding generations. O'ahu and Hawai'i's chiefs were linked as are Hawai'i and Maui chiefs, and Hawai'i's chiefs were linked to Kaua'i chiefs (Kamakau 1991:101; McKinzie, 1983:xxv). Not only were the chiefs or *ali'i* related to each other, they were also related to the commoners. In *Ruling Chiefs*, Kamakau states that "there is no country person who did not have a chiefly ancestor" Kamakau (1992:4). In the following passage Kamakau (1991:101) explains how some of the *ali'i* were connected:

It is said that the chiefs of Hawai'i īsland were from Maui and from Oʻahu and Moloka'ī between the times of 'Aikanaka and Hanala'anui. Thus 'Aikanaka was the chief of Koali and Mūʻolea in Hāna; Hema, the chief of Kaʻuiki in Hāna; Kahaʻi, the chief of 'Īao in Wailuku; Wahieloa, the chief of Papauluana in Kīpahulu. Laka the chief was born at 'Alae in Kīpahulu, Maui; he ruled in Koʻolaupoko, Oʻahu; the site of his house, Haleʻula, was at Waikāne, Oʻahu.

Malo (1971:52) also wrote about the connection between the *maka 'āinana* and the chiefs, stating that "Commoners and *alii* were all descended from the same ancestor, Wākea and Papa." This is evident in the genealogies. Genealogies were very important to the chiefs, because ranking was very important. The genealogies not only indicated rank, they ascertained a link to the gods. The following excerpt from Beckwith (1970: 11) explains the idea and importance of rank and the role of genealogies:

Position in old Hawaii, both social and political, depended in the first instance upon rank and rank upon blood descent—hence the importance of genealogy as proof of high ancestry. Grades of rank were distinguished and divine honors paid to those chiefs alone who could show such an accumulation of inherited sacredness as to class with the gods among men...a child inherited from

both parents.... The stories of usurping chiefs show how a successful inferior might seek intermarriage with a chiefess of rank in order that his heir might be in a better position to succeed his parent as ruling chief...a virgin wife must be taken in order to be sure of child's paternity - hence the careful guarding of a highborn girl's virginity,

One could defend and/or prove their rank by knowing or having one's genealogist recite one's genealogy. "To the Hawaiians, genealogies were the indispensable proof of personal status. Chiefs traced their genealogies through the main lines of 'Ulu, Nana'ulu, and Pili, which all converged at Wākea and Papa (Barrere 1969:24). Two well-known genealogy chants are the *Kumuhonua* and the *Kumulipo*.

The Kumuhonua was first published by Fornander in 1878, in The Polynesian Race Vol. I was based on information from Kamakau and Kepelino. Kumuhonua, the man, was of the Nana'ulu line, and the older brother of Olopana and Mo'ikeha (McKinzie 1986:14-15). Barrère (1969) explains that some of the Kumuhonua legends were recorded by Kamakau and Kepelino between the years 1865 and 1869, however, the 'genealogy' of the Kumuhonua, published by Fornander, was given to him "to provide credibility to the legends...this 'genealogy' (was) constructed from previously existing genealogies--the Ololo (Kumuhonua) and the Paliku (Hulihonua), which are found in the Kumulipo chant (see Beckwith 1951:230-234) and interpolations of their own invention" (Barrère 1969:1).

Beckwith (1940:308) discusses the Kumuhonua Tradition in the following:

The Kumuhonua tradition, according to which Hoʻokumu-ka-honua (Founding of the race), as his name implies, is the original ancestor, is recited on Molokai. Hawaii and Maui genealogists favor the O-puka-honua (Opuʻu-ka-honua) or Budding-of-the-race. Oahu and Kauai follow the Kane-huli-honua (Over-turner of the race) ancestral line.

On the Kumuhonua genealogy a line of chiefs leads down from Kumuhonua, the first man descended from the gods, through Laka, or Kolo-i-ke-ao (Creeping toward the light), brother of Kolo-i-ka-po (Creeping toward the night), to Nu'u (Ka-hina-li'i) in whose time came the great flood known as the Sea-of-Kahinali'i, and thence to Lua-nu'u (Lu son of Nu'u), called also Kanehoa-lani, ancestor of the Mu and Menehune people; to Hawaii-loa, called Ke-kowa-i-Hawaii (The channel to Hawaii), and from him to Eleeleua-lani and from him to Ku-kalani-ehu and his wife Ka-haka-ua-koko, parents of Papa-hanau-moku the wife of Wakea. Malo calls Kumuhonua the father, through his wife Ka-mai-eli (The digger), of the root of the land (mole o ka honua), which may be interpreted as the rootstock of the race.

The following is an explanation of the Opuka-honua Genealogy; this genealogy is favored by Hawai'i and Maui genealogists, according to Beckwith (1940:308):

The Opuka-honua (Opu'u-ka-honua) genealogy opens with the coming to Hawaii, after the islands are already peopled, of the chief Opukahonua and his younger brothers Lolo-mu and Mihi and the woman Lana, and leads down to Papa and thence to the Kamehameha line. According to the Opukahonua legend the islands were fished up out of the ocean by the great fisherman Kapuhe'euanui (The large headed octopus).

Fornander version. Kapuhe'euanui lets down his fishline into the sea from Kapaahu and fishes up a piece of coral, which the *kahuna* Laulialamakua advises him to throw back into the sea with prayer and the sacrifice of a pig, at the same time pronouncing a name over the coral, and for each piece he throws there rises an island, first Hawaii, then Maui, then Oahu, and so on.

Barrère (1969:426) expounds on the Opuka-honua genealogy or Opuukahonua in Fornander's version: "Opuukahonua is found as Puukahonua in the Kumulipo, and is another "brother" of Liaikuhonua and Ohomalia; from Liaikuhonua comes Wākea and from Ohomalia comes Haumea or Papa."

However, Puukahonua is not in the Kumulipo genealogy as noted by Barrère (1969:427):

The genealogical line of Puukahonua is not followed in the Kumulipo. The Kumulipo continues after Papa and Wakea to Ki'i, father of two sons, 'Ulu and Nana'ulu (lines 1974-1975), and through the son 'Ulu to the ancestors of the high chief for whom the chant was composed. The Opuukahonua genealogy as given by Fornander was probably a creation for a chief in the line of Nana'ulu.

The Kumu-uli genealogy is used in Kaua'i and Maui genealogies according to Beckwith (1940:309).

The Kumu-uli genealogy, employed instead of the Kumuhonua on Kauai and Maui, is sacred to chiefs; to teach it to commoners is forbidden. The name is explained to mean "Fallen chief" (Keali'i-kahuli) from kumu meaning "chief" in poetic diction and (kah)uli, "fallen." It resembles the Kumu-honua up to a certain point, but differs in that it opens with the gods Kāne, Kanaloa, Kauakahi, and their sister Maliu and wife Ukina-opiopio as ancestors of Huli-honua, and leads down through Laka instead of Pili to Wakea through Kahiko and his wife Kapulanakehau, instead of to Papa through her parents Ka-lani-ehu and Kahakauakoko. In the legend of Kuali'i it is quoted as the genealogical tree which leads down to Kamehameha. It names Kāne-huli-honua and his wife Ke-aka-huli-lani as the first parents after the group of gods named above. A variant on the twelfth branch of the Kumulipo says that at the close of the Ololo line were born Kumuhonua, Kāne, Kanaloa, and Ahukai, the last three represented as triplets.

Beckwith (1940:310-311) discusses the Kumulipo genealogy in the following:

The Kumulipo genealogy (Kumu-[u]li-po, Beginning in the darkness of night, that is, in the spirit world) is contained in a long chant of 2,077 lines divided into two periods, the first that of the po or spirit world, the second that of the ao or world of living men; that is, of ancestors who have lived on earth as human beings. The first part tells of the birth of the lower forms of life up through pairs of sea and land plants, fish and birds, creeping reptiles and creeping plants, to the mammals known to Hawaiians before the discovery by Europeans: the pig, the bat, the rat, and the dog. The second period opens with the breaking of light, the appearance of the woman La'ila'i and the coming of Kane the god, Ki'i the man, Kanaloa the octopus, together with two others, Moanaliha-i-ka-waokele (Vast expanse of wet forest), whose name occurs in romance as a chief dwelling in the heavens, and Ku-polo-liili-ali'i-mua o-lo'i-po (Dwelling in cold uplands of the first chiefs of the dim past), described as a long-lived man of very high rank. There follow over a thousand lines of genealogical pairs, husband and wife, broken by passages containing myths familiar to us from other sources, those of Haumea, Papa and Wakea, Hina, and Maui.

The chant is said to have been composed about 1700 for the young chief Ka-I-i-mamao, son of Keawe-i-kekahi-ali'i-o-ka-moku, at the time he was dedicated in the *heiau* and given the burning (*wela*), honoring (*hoano*), and prostrating (*moe*) tapus which elevated him to the rank of a god. The child was born during the Makahiki festival and was hence given at birth the name of Lono-i-ka-makahiki. It is said that at the time of Captain Cook's arrival at Kealakekua Bay in 1789 during the Lono festival, when sacred honors were paid him in the heiau of Hikiau as the returned god Lono, this chant was recited by two officiating kahunas. It was given to Alapai-wahine, child by his own daughter, according to genealogists, of Ka-I-i-mamao and from her descended to the former king Kalakaua and his sister Liliuokalani who succeeded him. Kalakaua took an interest in genealogies and had the chant written down. When the German anthropologist, Adolf Bastian, visited the islands he studied the manuscript, recognized its importance, and made a partial translation into German which appears in his studies of sacred chants of Polynesia. In 1889 Kalakaua had his manuscript version printed, and this has become, in spite of many textual errors and alleged tampering with the original, the standard text for the Kumulipo. Liliuokalani's translation appeared in 1887.

Feher (1969) asks several notable Hawaiian scholars to write passages in his Kumulipo: Hawaiian Hymn

of Creation-Visual Perspectives. In the Introduction Momi Naughton states "The Kumulipo belongs to a category of sacred chants known as *pule ho'ola'a ali'i*, 'prayer to sanctify the chief,' which was recited to honor a new-born chief (Feher, 1969:1). In her passage, Edith McKinzie states:

The *Kumulipo* is a historical genealogical chant that was composed by the court historians of King Keaweikekahiali'iokamoku of the island of Hawai'i about 1700 AD in honor of his first born son Kalani-nui-'l-a-mamao. This important chant honors his birth and shows the genealogical descent of both the *ali'i* (chiefs) and the *maka'ainana* (commoners) from the gods, in particular Wakea... (Feher 1969:1).

In a passage by Roger T. Ames, he corroborates this idea and states that "what is of particular humanistic interest is the way in which the *Kumulipo* as a repository of cultural authority served Hawaiian society in transmitting its cultural legacy and organizing its community. In doing so it combines both a linear sense of temporal development and the richness of one particular moment in time" (Feher 1969:3).

The Kumulipo was an inoa or name chant for Ka-lani-nui-'I-a-mamao, first born son of Keawe, who later became the father of Kalaiopu'u [Kalani'opu'u], ruling chief of Hawai'i (Beckwith 1970:9). However, Johnson comments that "Malo remarks that the Kumulipo is important to both ali'i (chiefly) and maka'āinana (commoner) groups. It is also a means by which Polynesians as a whole may corroborate lineal ties to the Hawaiian people" (Feher 1969:2)

Edith McKinzie completed the first volume of *Hawaiian Genealogies* in 1983, based on genealogy articles translated from 19th Century Hawaiian newspapers such as *Ka Nonanona* and *Ka Nupepe Kuokoa* in the late 19th century and early 20th century. These articles were in response to a call to preserve the Hawaiian heritage. Some of the information came from Malo's (1838) *Hawaiian History*, and in Fornander's (1880), *The Polynesian Race* (Book I) (McKinzie 1983:1).

We see prominent Maui ali'i nui in the last verse of the Sixteenth Era, in Campbell's (1997:78) The Kumulipo: An Hawaiian Creation Myth, which is a reproduction of Queen Lili'uokalani's translation.

Kawaukaohele was born, also Keleanuinohoanaapiapi,
The woman that lived at [with] Kalamakua,
From whence Laielohelohe was born and who married Piilani.
Piikea was born and married Umi;
Kumamaenui Umi, who owned those precipices from whence slaves were held.
Kumalaenui of Umi was the husband of Kunuunuipuawalau.
Their son, Makua, was the only high chief (wohi Kukahi) of the island.
Kapohelemai, his wife, whose rank as sacred wohi Alii and Honor.
So their heir I, the I of the Kingdom,
Whose power and right to execute,
And lord of the famed lands of Pakini,
Of the sliding Ohia and the weaving of the islands of Hawaii,
To Ahu—to Ahu of I, of Lono, of Lonoikamakahiki.

Youngblood (1992) found that he could draw on both Fornander and Beckwith's translations of *The Kumulipo* to sketch a socio-political history of Hawai'i (Youngblood 1992:34). In his re-creation he found that stemming from Wākea and Papa are two major Hawaiian genealogies: the *Nana'ulu* and the '*Ulu*. The *Nana'ulu* was the wellspring for the *ali'i* of O'ahu and Kaua'i, while the '*Ulu* line supplied the chiefs of Maui and the Big Island.

Using thirty years to account for one generation, McKinzie determined that Wākea was born ca. AD 190; Umi-a-Līloa ca. 1450; Keawekehahialiiokamoku ca 1650, Kalanihuiikupuapaikalanui Keoua ca. 1710;

and Kamehameha I ca. 1740" (McKinzie, 1983:12). Volume Two of *Hawaiian Genealogies* was published in 1986 (1991) with information extracted from genealogical lists published in thirteen newspapers from 1858 to 1920. It compliments genealogies found in other works, such as Fornander's (1880) *An Account of the Polynesian Race* and David Malo's (1903) *Hawaiian Antiquities* (McKinzie 1986: v).

The following excerpt is from Kamakau's article in *Ka Nupepa Kuokoa* October 7, 1865, and was translated by McKinzie (1986:18-19). It illustrates some of the mid-19th century sentiment regarding genealogies:

I na maka'āinana, he mea wai wai ole, no ka mea ua papa ko lakou mau makua o hoohalikelike, a hoohanau keiki o ke kuaaina a pii aku i na li'i. Nolaila ia ao ole ia ai na keili a na makaainana, ma kahi makuakane a makuahine, a kupuna aku no.... Ia kakou i ka poe o keia wa, aole waiwai o keia mea he mooalii aole a kakou mau kuleana nui iloko. Aka, ma ko kakou noonoo iho he waiwai nui. Ua komo kakaou iloko, ua waiwai na li'i na kupuna; a ua waiwai pu kakou i koo kakou ike ana. No ka mea, ua kapu i ka makaainana aole e ike i keai mea. Aka, no ka pii ana i ka naauao a me ke akamai o na keiki a na makaainana; nolali, ua noa na wahi kapu, ua pii waleia. O ke koeana mai o na kupuna oia kahi waiwai.

To the commoners, a genealogy was of no value because their parents forbad (sic) it lest comparisons should occur and country children be born and rise up as chiefs. Therefore, the children of the commoners were not taught beyond father, mother, and perhaps grandparents.... To us, the people of this time, there is no value of this thing of a chiefly lineage; we have no great interest in it. But in our thoughts it is of great value. We have entered into discussion of it; the chiefs valued the chiefs and ancestors; and we also value our knowledge of it. Because it was forbidden to the commoners, they were not to know this. However, due to the rise of wisdom and skill of the children of the commoners, therefore, all of the ranking privileges were no longer restricted; it was only lifted. What remains of the ancestors is something of value.

The following are tables (a work in-progress) of the genealogy of the Maui Royal Line extracted from several works. They illustrate the various family connections with all the island kingdoms or royal lines. The ruling chiefs of the various islands come from combinations of genealogies or branches. Most of the main individuals in Table 1 are in a loose chronological order, however, the multiple unions of a particular person is not necessarily in a chronological order, as much of that information was not provided in most cases. This annotated genealogy illustrates how interconnected the royal lines were, especially between Maui and Oʻahu and Maui and Hawaiʻi Island kingdoms based on the works of McKinzie (1983, 1986); Kamakau (1992); Fornander (1969); Beckwith (1940); Barrère (1969); Kekoʻolani (2010); Peleioholani (2011/original from the 1800s); MauiCulture (MC 2013); and Wikipedia-Maui Kings (2013). Table 2, is a genealogy of Victoria Kamāmalu who was awarded the lands of Kahului during the *Mahele*.

Table 1. Annotated Genealogy of the Maui Royal Line following the Ololo/Nana'ulu Lines.

Kane (k)	Wahine (w		wing the Ololo/Nana'ulu Lines. Keiki
(Beckwith's1st Man version			ne][→ indicates skipped generations]
Kealiiwahi	Lailai		Kahiko
Kahiko		→	Wakea
	Man - below) [Malo refers t		
			ililani were created by the gods Kāne, Kū and Lono
Kane-huli-honua	Keakahuli		Laka
Laka	Kapapaiala		Kahiko
(Fornander version of 1st M			
Kumu-Honua (First Man)	?		Laka
"	?		Kuluipo
*	?		Kapili → Pa⁺ao
[In the Kumulipo version]	Kapili is the grandson of K	umu-Honua (Barre	re 1961:422-423)]
(Rootsweb version-below)			
Kumu-Honua (1st Man)	Ke Ola Kı	Honua/Lalo-Honu	ua (1 st Woman)
(Kumulipo version)			
Kiʻi	La'ila'i		Kamehaina
Kāne (god)	"		Halia (w)
Kamehaina (½ sibs)	Halia	\rightarrow	Puanue
Puanue		\rightarrow	Paliku & Ololo
Paliku	→ Ohomalia	\rightarrow	Kahakauakoko (w)
"	→ Liaikuhinua	→	Kalaniehu (k)
"	"	\rightarrow	Kupulanakehau (w)
Ololo	→ Kumuhonu		Kahiko
Kahiko	Kupulanak		Wakea
Kalaniehu	Kahakaual		Papa
		lations k/w	
Palipalihilo	Palialihia		Paliku
"	n.		Ololo
"	"		Ololohonua
"	(P		Kumuhonua-a-Palipalihia
Kumuhonua-a-Palipalihia			Ahukai I/Ahukai-o-Kumuhonua (ca 252 BC
tr .	"		Kane-o-Kumuhonua
"	**		Kanaloa-a-Kumuhonua
Ahukai-o-Kumuhonua	Holehana		Kapili
Kapili	Alonainai		Kawakupua
Kawakupua	Heleaeilu		Kawakahiko
Kawakahiko	Kahohaia		Kahikolupa
Kahikolupa	Lukaua	200	Kahikoleikau
Kahikoleikau		taikaelene	Kahikoleiulu
Kahikoleiulu	Kanemak		Kahikoleihonua
Kahikoleihonua	Haakook		Haakoakoalaulani
Haakoakoalaulani Kuno	Kaneiako		Kupo
Kupo Nahaeikekua	Lanikupo Hanailuna		Nahaeikekua Keakenui
Nanaeikekua Keakenui	Laheama		KahianahinakiiAkea
KahianahinakiiAkea	Laneamai		KaniananinakiiAkea Koluanahinakii
Kaniananinakii Akea Koluanahinakii	Hanahina		Limanahinakii
Limanahinakii	Onohina		Hikuanahina
Hikuanahina	Waluana		Iwahinakiiakea
wahinakiiakea			kiipapa Welaahilaninui
Kahiko Laumea I	Kupulan		Wakea (ca AD 166)
Wakea	Papa/Ha		Hoohokukalani
wakea	гара/на	шпса	Haloa I → Kalo
1	"		Kauakahi
u .	ii.		Kaonohiula
	"		Kaalewlewa
,	Hoohok	ukalani	Haloa II

Hinamanaouluae " Huhune	Waia Huhune (w)
" Huhune	Huhune (w)
Huhune	
	Hinanalo
"	Haunu'u (w)
Haunu*u	Haulani/Haulele (w)
Haulani	Waia-loa
*	Hikawaakaunu (w)
Hikawaakaunu	Kio
H.	Kamuoleilani (w)
Kamuoleilani	Ole
H	Haihailauahea
Haihailauahea	Kahiko Laumea II
"	Pupue (w) N. Nanaulu Tradition
"	Pupue (k) S. 'Ulu Tradition
Kamahele	Manaku
Hikohaale	Kahiko-a-Manaku
Kae'a	Lukahakona
Koʻulamaikalani	Lu'anu'u I
Kawaamaukele	Hinakoula
·	Kuki*i/Ki'i
Hinakoula	Nana'ulu
	'Ulu
- H	Kapomaleolani (w)
Kapu-nu'u	Nanaele
Kahauomokuleia	Hina-a-Hinaau (w)
· u	Nanailani
Hina-a-Hinaau	Waikumaikalani
- 'm'	Kekaulani (w)
Kekaulani	Kaohikiula (w)
rr .	Kuheleimoana
Kaohikiula	Kaululena I (w)
	Wawena
Kaululena I	Hinamanuia (w)
Hinamanuia	Hinaakeka (w)
"	Akalana-a-Kahiki
Hinaakeka	Hinakapaikua (w)
"	Maui-mua
**	Maui-Kikii
· · ·	Maui-waena
- 4	Maui-a-Kalana
Hina-a-Kealoha	Nana-maoa
"	Hinaakeka
Hinakapaikua	Kahihiokalani (w)
"	Nana-kulei
Kehaukuhonua	Nanakaoko
Kahihiokalani	Kapawa (b/Kukaniloko)
"	Heleipawa
Hinamakanui	Kanikaniaula (w)
	Hinamaikalani (w)
"	Hulumanailani
	Hina-ʻai-ka-malama
	Aikanaka I
	Hinawaikoli
	Hema
rilliawalkoli "	Puna
	Kaha'i I
runa-uiu-onia	Wahieola
	Haulani Hikawaakaunu Kamuoleilani Haihailauahea Kamahele Hikohaale Kae'a Ko'ulamaikalani Kawaamaukele Hinakoula Kapu-nu'u Kahauomokuleia Kaekaulani Kaohikiula Mapunaiaala Kaululena I Hinamanuia Hinamanuia Hinakapaikua Kehaukuhonua Kahihiokalani Hinamakanui Kanikaniaula Kanikaniaula Kanikaniaula Kehaukuhonua Kahihiokalani Hinamaikalani

Table 1. Annotated Genealogy of the Maui Royal Line following the Ololo/Nana'ulu Lines (cont.)

alabata and a second a second and a second a	Wahine (w)	Keiki
Wahieola	Hoʻolaukahili	Lakanohoikawehiwehi
(Kipahulu Chief b/Punalu'u, Ka'u)		
Laka II	Hīkāwaelena/Hikawaolena	Luanu'u II
(built heiau in Punalu'u to honor fat	ther)	
,	CRO .	Kapohuleiula
Luanu'u (Kauai ruling chief) (sibs)	Kapokulaiula	Ulumaikehoa/Popomalili
	#	Ka'omea/Kamea
Kamea	Popomailili	Pohukaina
(some genealogist say he is son of Laar	mea not Luanu*u)	
	"	Huahuakapolei/Huahuakapali (w)
Pohukaina (sibs)	Huahuakapalei	Hua-a-Pohukaina (b/ca 966)
(Hua-a-Poh	ukaina was born in Kehoni, Laha	nina; he died in Niua and was buried in 'Iao Valle
	71	Hikimokuleia (w)
Hua-a-Pohukaina (sibs)	Hikimolulolea (Oʻahu)	Paunuiikeanaina/Pau-a-Hua (ca 988)
Pau-a-Hua was born in Ohikilolo, Waiana and is buried in 'Īao Valley)	ne, Oahu – his mother was a chie	fess of the area; he died in Kalae-o-ka-Laau, Maui
	n ·	Kapohakia (w)
Pau (Maui Chief) (sibs)	Kapohaakia	Huanuikalalaʻilaʻi
	(Th	nis Hua-a-Pau was born at Kawelo, Oahu ca 1010)
	"	Kapokulan/Moleai (w)
Pau	Kapalakuakalani	Paumakua-a-Lonoho'ohewa (O'ahu)
oyaging chief Lonoho ohewa who went to Kahiki DK 2010)	o Kahiki; six generations later hi	I named after his great-grandfather, famous Oʻahu s descendant La'amaikahiki would also travel to
Huanuikalalailai (cibe)	Kapoea Kapokulani/Moleai	Paumakua-a-Hua (Maui Chief) Kalanileo
(5105)	Kapokulani/Moleai	Kalanneo
N .		Vichalalani (ni)
н и	" Hajahakukalani 2	Kuhelelani (w)
<i>y</i>	" Hoʻohokukalani 2 Manokalililani (Maui)	Kuhelelani (w) Manokalililani (w) Haho (born in Waialua, Oʻahu)
" Paumakua-a-Hoohokukalani (Hawaii) There is difference in genealogies as to w Hawai'i Paumakua; Kamakau (1991) says	Manokalililani (Maui) hich Paumakua was father of Ha the Maui-named Paumakua, but	Manokalililani (w) Haho (born in Waialua, Oʻahu) ho, the Maui Paumakua, the Oahu Paumakua or th born where the Oʻahu Paumakua was born; this aughter Manokalililani)
Paumakua-a-Hoohokukalani (Hawaii) There is difference in genealogies as to w Hawai'i Paumakua; Kamakau (1991) says genealogy line follows the Paumakua of H	Manokalililani (Maui) hich Paumakua was father of Ha the Maui-named Paumakua, but awai'i line who marries Hua's d	Manokalililani (w) Haho (born in Waialua, Oʻahu) ho, the Maui Paumakua, the Oahu Paumakua or th born where the Oʻahu Paumakua was born; this laughter Manokalililani) Kauilaanapa
Paumakua-a-Hoohokukalani (Hawaii) There is difference in genealogies as to wl Hawai'i Paumakua; Kamakau (1991) says genealogy line follows the Paumakua of H	Manokalililani (Maui) hich Paumakua was father of Ha the Maui-named Paumakua, but awai'i line who marries Hua's d " Kauilaianapa	Manokalililani (w) Haho (born in Waialua, Oʻahu) ho, the Maui Paumakua, the Oahu Paumakua or th born where the Oʻahu Paumakua was born; this laughter Manokalililani) Kauilaanapa Palena-a-Haho (ca 1120)
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Paumakua-a-Hoohokukalani (Hawaii) (There is difference in genealogies as to where the difference in genealogy line follows the Paumakua of Hookalogy line follows the difference in general difference in	Manokalililani (Maui) hich Paumakua was father of Ha the Maui-named Paumakua, but awai'i line who marries Hua's d " Kauilaianapa 'u Ka'uiki, Hāna; his sons were " Hikawai-nui (twin) he is the ancestor of Hawai'i Isla enuiaumi] Hikawainui (twin) e is the ancestor of Maui Island c Mahuia/Mahuialani " Kukamolimolialoha Kapukapu/Mahuia Kauhua ler one rule with help of his uncke	Manokalililani (w) Haho (born in Waialua, Oʻahu) ho, the Maui Paumakua, the Oahu Paumakua or the born where the Oʻahu Paumakua was born; this laughter Manokalililani) Kauilaanapa Palena-a-Haho (ca 1120) born in Mokae; [(DK says born in Mokae, Hana]) Hiʻilani/Hikawai-nui Hanalaʻanui nd chiefs: Lanakawai, Laʻau, Pili, Kalapana, Hanalaʻaiki hiefs] Lanakawai Kalohialiiokawai (w) Pilikaʻaiea (Samoa?) Maui Loa (b/Kaupo) Alo/Alau
Paumakua-a-Hoohokukalani (Hawaii) (There is difference in genealogies as to where the difference in genealogy line follows the Paumakua of Hoome of the difference in th	Manokalililani (Maui) hich Paumakua was father of Ha the Maui-named Paumakua, but awai'i line who marries Hua's d " Kauilaianapa 'u Ka'uiki, Hāna; his sons were " Hikawai-nui (twin) he is the ancestor of Hawai'i Isla enuiaumi] Hikawainui (twin) e is the ancestor of Maui Island c Mahuia/Mahuialani " Kukamolimolialoha Kapukapu/Mahuia Kauhua ler one rule with help of his uncke	Manokalililani (w) Haho (born in Waialua, Oʻahu) ho, the Maui Paumakua, the Oahu Paumakua or the born where the Oʻahu Paumakua was born; this laughter Manokalililani) Kauilaanapa Palena-a-Haho (ca 1120) born in Mokae; [(DK says born in Mokae, Hana]) Hiʻilani/Hikawai-nui Hanalaʻanui nd chiefs: Lanakawai, Laʻau, Pili, Kalapana, Hanalaʻaiki hiefs] Lanakawai Kalohialiiokawai (w) Pilikaʻaiea (Samoa?) Maui Loa (b/Kaupo) Alo/Alau e, Haho of Hawaiʻi Island, but "ceded" Hāna to

(According to another genealogy Maui-Loa was succeeded by his son, Alau and the generation of Maui kings passed as follows: Maui-Loa wed Moe-I-Kaeaea and had Kanemo-ku-Heali'i, who wed Keakauhale and had Lono-Mai-Kalewa, who wed Kolu-Ku'i-Mulia and had Waka-Alana, who wed Kauai-Kapu and had Alo-I-Kahakau, who wed Puhia and had Kahekahoku, who established on Maui the worship of the Lizard-God La'a. Kahekahoku wed Maia-o-Ula and had Ma-pule-o-Ula, who wed Kamai-o-Kalani and had the warlike Paukei, who conquered the Kingdom of O'ahu and then wed the Princess Painalea of O'ahu and had Luakoa who lost the Kingdom of O'ahu, Luakoa wed the chiefess Hina-Apeape of Kona and had the twin brother and sister, Kuhimana and Kaumana; Chiefess Hina was the sister of Queen Hapae of Hawai'i and half-sister Ali'i Nui Kalapana, ruling chief of Hawai'i Island.

Table 1. Annotated	Genealogy	of the	Maui Royal	Line fol	lowing the	Ololo/Nana'ulu	Lines (cont.)

Kane (k)		Wahine (w)	Keiki
Kuhimana	sibs	Kaumana/Ka*ana	Kamalo*ohua
· M		/M	Waoha akuna (w) → Ma ilikūkahi on O ahu
(When Kuhimana v together at 'Iao, Ma		of Kaeleiki a distraught Kaumana kill	ed herself falling onto his corpse; they were burie
Kamalo ohua		Kapu-I-Kaheke (sib of HI Que	en) Loe -Ua-Kane (k)
(Legends are conne	cted to Kamalo ol		'i Kalaunuiohua (2) arrival of fair-skin people.)
Loe-Ua-Kane		Waha'akuna/Waoha'akuna	Kahokuohua (ali'i nui of Molokai)
"		Wao-Haapuna (Kaupo)	Kahaoku-Ohua (k)
Kahokuohua (Molo	kai ali'i ma)	Hikakaiula (Hawai'i chfs)	Kapohanaupuni (w) (Hilo chfs)
		· Ir	Kaulaheanuiokamoku I
	()	According to Kamakau, Kaulaheanuiol	kamoku I was born at Kûkaniloko, Lîhu'e, O'ahu
Kaulaheanuiokamo		Kapohanaupuni (Hilo chiefess	
n'	(sibs)		Kaka'alaneo
(Kaka'alaneo	and Kakae later ru	iled Maui jointly-Kakae's descendants	ruled Maui; Kaka'alaneo's →O'ahu)
Kaka alaneo (court		Kaualua	Kaihiwalua
(Kaka alaneo was f	amous for first pla	nting breadfruit in Lahaina; he later ba	nnished his 2nd son Ka'ulula'au to Lana'i for
		ula au rid Lana i of all the E epa maki	
"		Kanikaniaula	Ka'ulula'au (banished to Lana'i)
W.		?	Wao (w)
		(Wao later order	ed Auwai-a-wao dug in Lahaina; still there today)
Kaihiwalua		Kahekilimanuahumanu	Luaia (grandson of Kaka'alaneo)
Piliwale (Ewa/Līhu	'eO'ahu ali'i nui))	Paakanilea (Lihue, Kaua'i)	Kūkaniloko (Oʻahu Ruling Chiefess)
			eanuinoho ana api api, aunt of Pi ilani)
"	a or rancom mount	"	Kohepalaoa (Pi'ilani's mother)
Luaia (Maui ruling c	hief)	Kūkaniloko (Oʻahu ruling chief)	Kalanimanuia (w) (Oʻahu Moʻi)
			'ahu ruling chief after her mother Kūkaniloko
		onds in Pearl Harbor; her son is also la	mous for building monumental fishponds in the
now Hickam/Honol Kakae (*Īao/Olowalı (Kakae's descendar	lulu Airport area) u-Maui <i>ali 'i nui</i>) nts would become	Kapohauola (maternal aunt) the ruling chiefs of Maui; Kapohauola	Kahekilinuiahumanu 1 was also wife of Ehu, who was son of Hawai'i
now Hickam/Honol Kakae (*Tao /Olowalt (Kakae*s descendar Mo*i Kuaiwa, whos impoverished his ki	ulu Airport area) u-Maui ali 'i nut) nts would become se father was Kala ingdom because of	Kapohauola (maternal aunt) the ruling chiefs of Maui; Kapohauola unuiohua, and Kamanawa) (Kahekili l fit (MC); he was 2nd cousin of Luaia v	Kahekilinuiahumanu I was also wife of Ehu, who was son of Hawai'i waged many wars on Maui and was said to have who married O'ahu ruling chiefess Kūkaniloko)
now Hickam/Honol Kakae ('Tao /Olowalu (Kakae's descendar Mo'i Kuaiwa, whos impoverished his ki Kahekili I (Kāne-H	fulu Airport area) a-Maui ali 'i nui) ats would become se father was Kala ingdom because of fekili)	Kapohauola (maternal aunt) the ruling chiefs of Maui; Kapohauola unuiohua, and Kamanawa) (Kahekili l fit (MC); he was 2nd cousin of Luaia v Haukanuimakamaka (Kauai ch	Kahekilinuiahumanu I was also wife of Ehu, who was son of Hawai'i waged many wars on Maui and was said to have who married O'ahu ruling chiefess Kūkaniloko) nfs) Kawaukaohele (Pi'ilani's father)
now Hickam/Honol Kakae ('Tao /Olowalu (Kakae's descendar Mo'i Kuaiwa, whos impoverished his ki Kahekili I (Kāne-H (According to MC I	fulu Airport area) a-Maui ali'i nui) ats would become se father was Kala ingdom because of [ekili) his name was Kaw	Kapohauola (maternal aunt) the ruling chiefs of Maui; Kapohauola unuiohua, and Kamanawa) (Kahekili l fit (MC); he was 2nd cousin of Luaia v Haukanuimakamaka (Kauai ch	Kahekilinuiahumanu I was also wife of Ehu, who was son of Hawai'i waged many wars on Maui and was said to have who married O'ahu ruling chiefess Kūkaniloko) nfs) Kawaukaohele (Pi'ilani's father) overty to commemorate this time; Kawau was I st
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Table 1. Annotated Genealogy of the Maul Royal Line following the Ololo/Nana ulu I	Genealogy of the Maui Royal Line following the Ololo/Nana'ulu Lines (con	t.)
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Kane (k)	ica denealogy (Wahine (w)	Keiki
"		ii .	Pi*ikea
(Pi*ikea	married 'Umi-a-Li	loa Hawai'i chief and helped younger bro	other Kiha wage war on brother Lono-a-Pi'ilani
и		"	Kalaaiheana II [Kihawahine]
"		ii .	Kiha-a-Pi'ilani
"		Kumunuikapokii	Nihokela → W.C. Lunalilo
**		Kuamookea	Kauhiiliulaapiilani
Lonoapiilani		Kealana'awauli	Ka'akaupea (w)
	ealana*awauli was	the great granddaughter of Kahakuakane	
"		?	Moihala (w) → Sarai Hiwauli I'i
'Umi-a-Liloa	(½ sibs)	Kapukini-a-Liloa (3rd wife)	Keli'iokaloa (eldest son) usurped
'Ewa, O'ahu as v generations) of a h	vere her mother l läna independent e	sland <i>ali'i nui</i> Liloa (son of Kiha-nui-le Ne'ula and grandmother La'a-kapu) ar	ulu-moku/Kiha I and Wai-o-lea a chiefess from nd Akahi-a-Kuleana who was a descendant (war god of Liloa; 'Umi's eldest son Keli'iokalo
"		W .	Kapulani
0.		'#" =	Keawenuia umi
(Kea	wenuia'umi usurp	ed older brother; became the father of Lo	ono-I-kamakahiki)
'Umi-a-Liloa (Hav	vai'i ruling chief)	Pi'ikea (Maui chiefess)	Aihakoko
W.		"	Kumalaenuiaumi (Hilo ali`i)
		(Kumalaenuiaumi w	as an ancestor of Kalākaua and Lili'uokalani)
'Umi-a-Liloa (Hav	vaiʻi Is)	Ku'i-hewa-maka-walu	Papaikaniau I
Hoʻolae (Kauiki, I-	lana Chief)	Kaululena (Waiakea Chfs)	Koleamoku
Nihokela (und	ele/niece)	Ka'akaupea (dau/Lonoapiilani)	Pi'ilaniwahine (gd of Lonoapiilani)
Kihapiilani		Kumaka-Kui-Kalani (Hāna)	Kamalalawalu (Maui Chief)
#		Koleamoku (Waimea)	Kekauhiokalani
,,		Umahauuleiohua	Kapuiholani Kuaimanuu
w:		Hilima	Keaweau
"			Moemoe → Heleluhe family
(Kumalaenuiaumi	- Hilo chief	Kunuunuipuwala'au	Maua - Hilo chief)
Kauhiokalani		Kauamanu	Makaku
Kamalalawalu		Kapu-kini-akua (father-Kona chief)	Kauhiakama (k) [Kamakau 1992:60]
Kamalalawalu	(cousins)	Pi'ilaniwahine (Maui/Hilo/O'ahu)	Kauhiakama (k) [McKinzie 1986:12]
(Kamakau and Mc	Kinzie differ as to		children are grandchildren of the bothers Lono-a
"		ar e	'Umikalakauehuakama (k)
**		·#:	Paikalākauaakama (k)
"		The state of the s	Piilanikapu/Piilanikapokulaniokama (w)
"		2.0	Ka'unohohoikapelapuokakae (w)
**		- H	Kekaikuihalaokeku'imanano (w)
Kauhiakama		Kapukini-2 (Kapukinia-a-Liloa/HI)	Kalanikaumakaowakea (Maui king)
			ruling chief Hakau and Kini-Laukapu; her firs children were ancestors of Hawai*i Island ruling
w		N .	Kanea-Kauhi (w)
#		?	Kauhi II
who collects the be side and feels he in	ones; Haloalena pl mocently twisted h	eads with Kuali'i of O'ahu to make war	aks up the bird bones of Lana'i chief Haloalen r on Maui for this act; Kuali'i listens to Kauhi' is impressed with Kauhi's daring and takes hin o).
[Oʻahu <i>aliʻi mui</i> I Peleioholani beco Mailikukahi (Beck	Cuali'i takes a ve mes a famous O' with 1940:396)].	ry high ranking Maui pi'o chiefess k ahu ali'i nui who made O'ahu more	Ka-lani-kahi-make-i-ali'i as his wife; their so prosperous than any other ruling chief sine
r 1 11 1	akea sibs	Kaneakauhi	Lonohonuakini
Kalanikaumakaow			Service Field Co.
Kalanikaumakaow "		*	Pi'ilani II (w)
		H	'Umi-a-Liloa (w) [according to MC]

Table 1. Annotated Genealogy of the Maui Royal Line following the Ololo/Nana'ulu	Lines (cont.)	
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Kane (k)	Wahine (w)	Keiki
Lonohonuakini	Kalanikauamakinilani (Hāna)	Kaulaheanuiokamoku II
·w	¥	Lono-Maka-Honua (k)
#	W	Kalani-Mai-Heula [Heuila](w)
	W.	Kuhala (w)

[Kuhala was the great-grandmother of high chief Kalahuimoku II of Hāna and Kipahulu; he married Chiefess Kamehameha and had two daughters, Kahikikala and Kalani-Lehua who became wives of cousin Keōua Kalanikupuapa'ikalaninui Ahilapalapa/Keoua Nui who liked to visit Maui; Keoua and Kahikikala had a son Kalokuokamaile who is the eldest half-brother of Kamehameha I; Keoua was ordered back to Hawai'i by his father Kalani Kama Ke'eaumoku-nui son of Keawe'īkekahiali'iokamoku and half-sister Kalanikauleleiaiwi - royal daughter of ruling chiefess Keakealaniwahine of Hawai'i Island. Keoua had to leave his son and wives on Maui; he then married his cousin Kamakaeheukuli daughter of the high chief Haae-a-Mahi of Hawai'i and the chiefess Kalelemaoli-o-Kalani of Maui; Keoua & Kamakaeheukuli had a son Kaleimamahu who is the ancestor of the Lunalilo ohana (MC)]

(Keoua was ½ brother of Kalan'iopu'u and father of Kamehameha I; he spent much time in his youth on Maui and with several wives had many significant children; wife Kahikikala of Hana <keiki Kalokuomaile>; Kalanilehua of Hana <NI>; Kalola <Kekuipoiwa II>; Kamakaehuikuli <Kaleimamahu/Kala'imamahu>; Manono <Ki'ilaweau>; Kekuipoiwa II <Kamehameha I and Kealiimaikai>; and Akahi-a-Kawalu <Kaleiwohi>

Kaulaheanuiokamoku II	Papaikaniau II (Hawai'i)	Kekaulike	
*	"	Kaleiamaoli-o-Kalani (w)	
"	Kalani-kau-lele-i-a-iwi (Hawai'i Is)	Keku'iapoiwa Nui	
н	**	Kahilipoilani	
Lono-Maka-Honua	Kapoohiwi (Kalae, Moloka'i)	Kauakahiakua-o-Lono	

[Kauakahiakua-o-Lono by his first wife, cousin Keku'iapoiwa I of Maui had Kekelaokalani (w) who married the Haae-a-Mahi (k) of Hawai'i and had Keku'iapoiwa II (w), mother of the Kamehameha I; Kekelaokalani also married Kamanawa the Great. They were the parents of Peleuli (w) who married Kamehameha I and had the Kahoanoku-Kinau (k) – father of Kekauonohi wife of Kamehameha II, Kaikoolani (k) and the Kaleikiliwehi (w); Kauakahiakua-o-Lono by his second wife High Chiefess Umiaemoku (also called Umiaenaku) of the Hawai'i House of the Mahi - had one daughter, Kānekapolei, who was the favored queen of Kalaniopu'u, King of Hawai'i – their children were Keoua-Kuahuula (k) of Hilo, and the Pauli-Kaoleioku (k) ancestor of the Princess Ruth Ke'elikolani and her cousin, the Princess Bernice Pauahi Bishop (MC)]

Kekaulike (1st cousins) Kahawalu (sis of Peleitoholani) Kauhiaimokuakama

(Kauhiaimokuakama was the eldest son of Kekaulike and became his assistant; after his father's death the kingdom went to his younger brother whose mother was half-sister of his father therefore higher rank; kahuna advised him to fight his brother for his birthright; Kauhi asked his uncle Peleioholani ruling chief of O'ahu for help; brother Kamehamehanui asked his uncle Alapa'inui ruling chief of Hawai'i Island; after death of thousand of relatives on both sides they called a truce in Pu'unēnē; Kauhi ruled the Hāna district; Kamehamehanui ruled west Maui, Moloka'i and Lana'i)

Kekaulike Holau Manuha'aipo (Queen of 'Ī'ao)
(Holau was the daughter of high chief Kawelo-a-Aila and chiefess Kauakahialii-a-Kaiwi, descendant of Lono-I-Kamakahiki)

" Ke-kau-hiwa-moku
" Ka'eokulani

(Ka'eo became the high chief of Kaua'i and father of Ka'umu ali'i, last ruling chief of Kaua'i; Ka'eo was later killed on O'ahu by nephew Kalanikupule)

Kekaulike (½ sibs) Keku'iapoiwa Nui Kamehameha Nui (Maui Moʻi)

"Kalola (several noted husbands)

"Kahekili II was barn in Hālišiimaila: he was a fierce warriors and called the Iron King; he was lest Moʻi of Maui)

(Kahekili II was born in Hāliʻiimaile; he was a fierce warriors and called the Iron King; he was last Moʻi of Maui)

"
Ku-hoʻoheihei-pahu

Kekaulike (uncle/niece) Haʻaloʻu (Hawaiʻi/Maui) Na-mahana-i-kaleo-nalani

(Ha'alo'u was the daughter of Hawai'i Island high chief Haae-a-Mahi, son of ali'i nui Kauauanui-a-Mahi and Kalanai Kalele-a-Iwi, and Maui chiefess Kaleiaomaoli-o-Kalani, full-sibling of Kekaulike; Ha'alo'u had two half sisters — Kamakaeheukuli and Kekuiapoiwa II — same father; Haae was the younger half-brother of Alapainui, who was Hawai'i Island

king when Kamehameha I was born; daughter Namahana became the mother of Ka'ahumanu)

Ke-kua-manoha (k) father of Boki

[(Boki was born Kamā'ule'ule, son of Kekuamaoha and Kamakahuikilani; younger brother of William Pitt Kalanimoku; Boki later was appointed governor of O'ahu and chief of the Wai'anae district; he ran a mercantile and shipping business and encouraged Hawaiians to gather sandalwood; he married Kuini Liliha, daughter of Ulumāheihei Hoapili and Kalilikauoha, daughter of Kahekili II – they both traveled to England [1824] with Kamehameha II and Kamāmalu; Boki agreed with the breaking of the *kapu* and was the first chief to be baptized; he left Hawai'i in 1827 with cousin Kaleohano, son of Kauhiaimokuakama eldest son of Kekaulike, to search for more sandalwood and never returned; there is evidence that they ended up in Samoa where his descendants live today (Wiki-Boki and pers comm with genealogist Analu Josephides)]

Kane (k)	Wahine (w)	g the Ololo/Nana'ulu Lines (cont.) Keiki
Kekaulike	?	Ahia
n.	-?-	Nahulanui
"	?	Naaiakalani
m	?	Manuailehua
#	Kane-a-Lae/Hoakalani (Molokai)	Kumukoʻa (Molokai Chief)
		also wife of King Keawe II/Keawe Nui-a-'Umi o ke and mother of Kauhi-aimoku-akama)
ŷ.	"	Ha'o II (Moloka'i Chief)
u .	ii .	Awili (Moloka'i Chief)
		Kaliloamoku (w) (Moloka'i Chiefess
(72 3103)	Kahilipoilani	Kalaniahaniahiliha Walaniahinia (Kana)
Kamehameha Nui (sibs)	Kalola (Maui/Hawai*i)	Kalaniakuaiokikilo/Kalaniwaiakua (Kapu) w
View shows if a Nivi	?	Kuakiniokalani
Kamehameha Nui	?	Pe'ape'a-maka-walu (Kauiki, Hana)
71	2	Kalani-ulu-moku
		Kalani-hele-mai-i-luna
Kalei'o-u'u/Kalani'opu'u (Hawai'i)	Kalola (Maui)	Kīwala'ō (Hawai'i ruling chief)
Keoua-kalani-kupua-i-kalani-nui Kīwala'ō (½ sibs)	Liliha nui	Liliha nui
		Kalani-kau-i-Kaʻalaneo/Keʻopu-o-lani
Kahekili II (½ sibs)	Kau-wahine	Kalani-ku-pule
и		Koʻalaukani (k.)
n	"	Kalola II
w .	n .	Kau-lili-kauoha
Kahekili		Kalilipakauoha
Kalanikupule	Luahiwa (Moloka'i)	Manono Ka-ua-kapeku-lani
	'Ualapu'e (Moloka'i)	Kau-peka-moku
Ke'eaumoku (son of Keawepoepoe)	Namahana (Maui)	Pele-io-holani II
	was Kekela; their mother was Kalani-ka	
Ke'eaumoku	Namahana'i	Kuakini
	0	Ka'ahumanu
+	**	Opiia (Lydia Piia Namahana)
#	"	Kaheiheimalie
		Kahekili Ke'eaumoku III
Kamehameha	Ka'ahumanu (at 13yrs)	NI Liholiho/Kamehameha II
Kamehameha I	Ke'ōpū-o-lani (Maui/Hawai'i)	
n.	"	Kauikeuoli/Kamehameha III
	of Ka'ahumanu and Sibs - mix of Haw	Nahi'en'ena
Hawai'i Island connections	y of Ka anumanu and Sibs - mix of Flaw	an & Madi Genealogy)
Liloa	Aihakoko (Hāna chf descendant)	'Umi-a-Liloa (k)
'Umi-a-Liloa	Ku'i-hewa-maka-walu	Papaikaniau I (w)
Kauakahilau	Kuluina	Lonoikahaupu (k)
Kaneikauaiwilani	Keakealaniwahine	Kalanikauleleiaiwi (w)
Kauaua-a-Mahi	Kalanikauleleaiwi	Haʻae-a-Mahi (k)
Lonoikahaupu	Kalanikauleleiaiwi	Keawepoepoe (k)
Keawepoepoe	Kūma*aikū	Ke'eaumoku Pāpā'ahiahi (k)
	nd Keawepoepoe, father of Ke'eaumoku	
Maui-Hawai'i Island inter-connection		A CONTRACTOR OF THE PROPERTY
Lonohonuakini	Kalanikauanakinilani	Kaulahea II (k)
Kaulahea II	Papaikaniau (Hawaii)	Kekaulike (k)
"	" (Hawaii)	Kalelemauliokalani (w)
Ha'ae-a-Mahi (Hawai'i)	Kalelemauliokalani (sib of Kekau	
Kekaulike (uncle/niece)	Haʻaloʻu	Nāmāhāna'i Kaleleokalani (Maui)

Table 1. Annotated Genealogy of the Maui Royal Line following the Ololo/Nana'ulu Lines (cont.)

	Wahine (w)	Keiki
Ke eaumoku Pāpā ahiahi (2nd cousins)	Nāmāhāna'i Kaleleokalani	Kaʻahumanu (Maui/Hawaiʻi)
to his younger brother Kahekili II who exp from Hawai'i Island who was in hiding bed Kalola, full sister of Kahekili II and ½ siste suspicious of this union and spied on them	ected ½ sister Namahana to r cause he took the side of Kan er of Namahana, and Keōua I - Namahana had lands in Wa ahekili II. That was not safe	iluau the Mo'i of Maui; after his death the reign went marry him; she chose instead Ke'eaumoku, a "visitor" nehameha I against Kīwala'ō - whom he killed - son of Kū'ahu'ula, cousin of Kamehameha I; Kahekili became aihe'e, but they moved their family to Hāna where so they eventually moved to Hawai'i Island at age to Kamehameha I.)
Ke'eaumoku Pāpā'ahiahi (2 nd cousins)		Kalākua Kaheiheimālie
mother of King Lunalilo; divorced him the Kamāmalu who married Liholiho-Kameha	n married Kamehameha I an meha II, and Kīna'u who had	ther of Kamehameha I and had a daughter Kekāuluohi, d had two sons who died in infancy and two daughters, I Alexander Liholiho-Kamehameha IV, Lot Kapuāiwa- ameha I death she married Ulumāheihei Hoapili
Ke'eaumoku Pāpā'ahiahi (2 nd cousins)	Nāmāhāna Kaleleokalani	Kahekili Ke'eaumoku 'Opio П
and took over responsibilities of his father captain Harold Cox; he had multiple wives	after his death; he took the none of whom was Grace Ka and befriended European and	was appointed Governor of Maui by Kamehameha I ame George after King George IV and Cox after sea ma'iku'i Young, daughter of John Young and foster d American traders and was one of the first to house I write).
Ke'eaumoku Pāpā'ahiahi (2 nd cousins)	Nāmāhāna Kaleleokalani	Nāmāhāna-o-Pi'ia (Lydia)
Peleioholani Laanui, grand nephew of K Christian ceremony-they lived in Waialus	amehameha I, who was ter a, O'ahu; she also served a of Hāna, niece of Kameha	I and Ka'ahumanu arranged for her to marry Gideon years younger; Hiram Bingham married them in a as Governor of O'ahu. Gideon was born in Waimea, meha I and heir to the lands of Hāna, Kīpahulu, and Kaloiokalani.)
	Nāmāhāna Kaleleokalani	Kuakini (John Adams)
(John Adams Kiiapalaoku Kuakini the you excelled in sports and canoeing; he was ap 1844, however during a "rebellion" on O'a	ngest of the siblings chose his pointed the first governor of hu in 1833 he was appointed sland; he had the "Great Wal	s name after President John Quincy Adams; as a youth Hawai'i Island and served from 1829 to his death in relief governor of O'ahu where he lived at Fort I of Kuakini" built to contain the cattle running wild in
	Ka'ahumanu	NI

Table 2 lists the royal lineage of Victoria Kamāmalu, a descendant of Pi'ilani and Kekaulike of Maui and granddaughter of Kamehameha I. She was awarded the lands of Kahului.

Table 2. Lineage of Victoria Kamamalu (RP 7713) (McKinzie 1986:31; Spoehr 1987:8-9).

Kane (male)	Wahine (female)	Keiki (offspring)
Kekaulike (descendant of Pi'ilani)	Haʻaloʻu (Hawaiʻi/Maui lines)	Nāmāhāna Kaleleokalani
Ke'eaumoku Nui (Hawai'i Chief)	Nāmāhāna (Maui Chiefess)	Kuakini (k)
п	н	Kalākua (w)
tt.	#	Ka'ahumanu (w)
Kamehameha I (Hawai'i Chief)	Kalākua (Maui Chiefess)	Elizabeth Kina'u
#	u.	Kamāmalu
w,	Ka'ahumanu (Maui/Hawai'i Chiefess)	NI
W.	Keōpūolani (Maui/Hawai'i Chiefess)	Liholiho
· · ·	· n	Kauikeaouli
u.	· w	Nahi'ena'ena
Mataio Kekuanaoʻa	Elizabeth Kina'u	Moses Kukuaiwa
W.	"	Victoria Kamāmalu
H-1	н	Lot Kamehameha (K-V)
"	"	Alexander Liholiho (K-IV)
Alexander Liholiho (K-IV)	Emma Na ^s ea Rooke	Albert Edward Kauikeaouli

The following quotation from the 'Genealogy of the Royal Descendants' living at the time of Queen Liliu'okalani further illustrates how the Hawaiian people were related: "The tillers of the soil were chiefly people. Rare indeed were the men and women who do not have their royal genealogy from ancient times up to this period" (McKinzie 1986:88).

Traditional Literature: Mo'olelo

The ethnographic works of the late 19th and early 20th century contribute a wealth of information that comprise the traditional literature - the *mo'olelo*, *oli*, and *mele* - as well as glimpses into snippets of time, and a part of the Hawaiian culture often forgotten. The *mo'olelo* or legends allow *ka po'e kahiko*, the people of old, the *kupuna* or ancestor, to come alive, as their personalities, loves, and struggles are revealed. The *oli* (chants) and the *mele* (songs) not only give clues about the past, special people, and *wahi pana* or legendary places, they substantiate the magnitude of the language skills of *na kupuna kahiko* (the people of old). The following sections give some explanation of the traditional literature.

Legends or *mo'olelo* are a great resource as well as entertaining. Leib and Day (1979: xii) state in their annotated bibliography of Hawaiian legends, that legends are a 'rough' history. They noted Luomala's idea of the value of myth and legend in studying a culture. According to Luomala, "to a specialist in mythology, a myth incident or episode is as objective a unit as an axe, and the differences and similarities of these units can be observed equally clearly and scientifically" work (Leib and Day 1979:xii). Leib and Day (1979:1) also expressed concern about authenticity, and sometimes found it difficult to determine if a legend was a primary or secondary source. The following definitions of terminology, including the Hawaiian classification of prose tales - *mo'olelo* or *ka'ao*, come from their work as follows:

Tradition used to refer to that which is handed down orally in the way of folklore a rather inclusive term, covering the beliefs, proverbs, customs, and literature

(both prose and poetry) of a people a story of the doings of godlike beings

Myth a story of the doings of godlike beings deals with human beings and used interchangeably with 'myth' ... because the

collectors and translators of the tales often failed to make the strict distinction

themselves

Ka'ao "pure fiction"

Mo'olelo deals with historical matters and somewhat didactic in purpose... included tales

of the gods, as well as tales of historical personages... many have recurring

patterns, plots, and types of characters

According to Leib and Day (1979) a substantial number of legends were collected and written in Hawaiian during the century following Cook's arrival in Hawaii. A few accounts of the mythology were printed in the journals of missionaries and travelers, and a few of the Hawaiian lore were printed in languages other than English. About 1836 a movement was started under the influence of Reverend Sheldon Dibble, to write down in Hawaiian some of the material dealing with the native legendary history, customs, and other lore. Results of the research were published at the Lahainaluna press in 1838. A partial translation made by Rev. Reuben Tinker was issued serially in 1839 and 1840 - the first four installments appearing in *The Hawaiian Spectator* and the last four in *The Polynesian*. In 1841 the Royal Hawaiian Historical Society was formed at Lahainaluna. Some of their research and the earlier *Ka Moolelo Hawaii* were incorporated into Dibble's *History of the Sandwich Islands* (1843). After his death in 1843 his work was carried on principally by two of his outstanding native pupils, David Malo and Samuel M. Kamakau. Malo wrote his own *Moolelo Hawaii* about 1840 at the request of Rev. Lorrin Andrews, which was later translated by Emerson as *Hawaiian Antiquities*. In 1858 the Rev. John F. Pogue of Lahainaluna printed a third *Moolelo Hawaii*, based on the 1838 history, but including additional material. Kamakau did not print any of his material for thirty years (Leib and Day (1979:7, 8, 9).

The increase in the amount of Hawaiian folklore appearing in the native press in the 1860's and thereafter was at least in part the result of an organized effort to collect and preserve this material. At Kamakau's instigation a Hawaiian society was formed in 1863 to collect material for publication in the native press at the time, and also to aid Fornander's research. Fornander was the greatest collector of Hawaiian folklore. He credits as sources, several natives whom he sent on tours of the Hawaiian Islands to collect all available Hawaiian mo'olelo, as well as Kalākaua, Lorrin Andrews, Malo, Dibble, Dr. John Rae, Kamakau, Naihe, S.N. Hakuole (Haleole), Kepelino, and Remy. The culmination of this effort was Fornander's (1880) An Account of the Polynesian Race: Its Origin and Migrations and the Ancient History of the Hawaiian People to the Times of Kamehameha I. Fornander's collection remains the most important single source of Hawaiian legends (Leib and Day 1979:9-13).

In June 1865 Kamakau began publishing articles on traditions and legends in *Ka Nupepa Kuokoa*. His series of articles dealing with Hawaiian history, particularly from the late 18th century on, and especially of Kamehameha, appeared weekly in the same publication in October 1866. When the newspaper was discontinued in 1869, this series continued in *Ke Au Okoa* for nine months. Kamakau then wrote a series on ancient Hawaiian religion, customs, and legendary history in *Ke Au Okoa* until February 1871. All of his writings were in Hawaiian (Leib and Day 1979:8, 9).

Very little work was done in translating Hawaiian mythology into English until late in the 19th century. It was not until 1888, over a hundred years after the discovery of the Hawaiian Islands, that the first book in English dealing exclusively with Hawaiian mythology was printed: *The Legends and Myths of Hawaii* by King Kalākaua. However, it was more likely authored by former United States Minister to the Hawaiian Islands, R.M. Daggett (Leib and Day 1979:5, 7).

Thrum is one of the most frequently cited authorities on Hawaiian lore. He was born in Australia in 1842 and arrived in Honolulu in 1853. In 1875 he began publication of the *Hawaiian Almanac and Annual*, later known as *The Hawaiian Annual* or *Thrum's Annual*, which appeared yearly under his editorship until his death in 1932. Thrum's contribution was as editor, compiler, and publisher of translations, not translator. By providing a place for the publication of such material in his *Annual*, and perhaps by persuading authors to provide him with translations, he was instrumental in many stories appearing in printed form. Thrum wrote or rewrote a large portion of his own material (Leib and Day 1979: 17).

Thrum's first book *Hawaiian Folk Tales* was published in 1907 and consisted largely of tales that had previously been published in *Thrum's Annual*. Only 35 of the 260 pages were translated by Thrum, the rest were credited to Rev. A.O. Forbes, Rev. C.M. Hyde, William Ellis, J.S. Emerson, Mrs. E.N. Haley, N.B. Emerson, Mrs. E.M. Nakuina, Walter M. Gibson, Joseph M. Poepoe, and M.K. Nakuina. His second book *More Hawaiian Folk Tales*, published in 1923 was similar. A number were translations from Hawaiian language newspapers from half a century earlier, often with no translator cited. Translators credited were A. F. Knudsen, Henry M. Lyman, W. D. Westervelt, J. H. Boyd, and Lahilahi Webb. Some of the chapters were reprinted or abridged from the Bishop Museum translations of the *Fornander Collection*, of which Thrum was editor. His greatest work, *Fornander's Collection of Hawaiian Antiquities and Folklore*, was published by Bishop Museum in 1916 and 1920 in three volumes. The original editor was W. D. Alexander and most of the work was completed under his supervision. However, Alexander died in 1913 and Thrum was appointed to complete the production. Beckwith credits John Wise with the original translation of that work. In 1920 or 1921 Thrum completed another work "Ancient Hawaiian Mythology" which was never published (Leib and Day 1979: 18-19).

Leib and Day (1979:14) discuss a resurgence of collecting legends in the early 1900s in the following:

A great resurgence of interest in Hawaiian folklore began in the early twentieth century, in part caused by the annexation to the United States. People on the mainland wanted to know more about 'their new

island possessions.' The funds of the Bureau of American Ethnology were made available for Hawaiian studies i.e., Emerson's *Unwritten Literature* and Beckwith's *Laieikawai*. The most important twentieth-century translators of Hawaiian legends have been N. B. Emerson, Thomas G. Thrum, William D. Westervelt, William Hyde Rice, Laura C. S. Green, Martha Warren Beckwith, and Mary Kawena Wiggins Pukui. Emerson's extensive notes were a major contribution to Hawaiian scholarship. Most of them explain the meanings of Hawaiian words. In many, Emerson alludes to legends, giving a number of them briefly and relating a few in some detail. Some of these probably do not exist anywhere else in print.

The following are excerpts of stories about various significant *ali'i nui* of Maui and other islands, who impacted Maui and greater Hawaii, beginning with some ancestral chiefs of Hāna. What becomes evident is how inter-related the chiefs or royal families were.

Hua lived in eastern Maui around AD 1170, and was known as the "robber baron that was censored by high priest Luahomoe" (Musick 1897:324). In *Tales and Traditions of the People of Old*, Kamakau (1991) discusses the infamous king Hua, but also clarifies the different Hua, their descendants and their relationships to Maui. In spite of his infamy, most of his descendants turned out to be commendable chiefs. Kamakau (1991) explained about Hua and his 'ohana, and that ali'i nui often went by different names. Fornander (1880:80) also noted this: "according to ancient custom, it was very common for high chiefs to be known by several names."

One Hua was from Lahaina, Maui, but was not the Hua who constructed the *heiau* Apahu'a in Waine'e next to Puako. This Hua was the son of Kapua'imanaku (Pohukaina) whose *heiau* was Luakona, near Kapo'ulu. Huanuiikalala'ila'i was born at Kewalo in Honolulu (Kamakau 1991:101) and Hua-a-Pohukaina also known as Hua-a-Kapua'i-manaku was born at Lahaina. He built the *heiau* of Honua'ula and Kuawalu at Ka'uiki, Hāna and was considered a war-loving chief. He lived at Wānanalua in Hāna. His son Pau-a-Hua also known as Pau-nui-i-ke-anaina, was born at Wai'anae, and later ruled from Ohikilolo to Keawaula on O'ahu. Another Hua, Hua-a-Pau also known as Hua-nui-i-ka-la-la'ila'i was born at Kewalo, O'ahu and was known as a good chief. His government was called *he aupuni la'i*, a peaceful government. He was a chief of Honolulu and Waikīkī (Kamakau 1991:148, 149; see also Sterling 1998:133).

According to legends, two of Hua-a-Pohukaina descendants, Hanala'anui and Hanala'aiki, became the progenitors of the Hawai'i and Maui royal lines. These were twin children of Hikawainui (w) and Palena-a-Haho (also born in Hāna, and son of Hawai'i Island *ali'i nui* Haho, who was the son of Paumakua-a-Hua of O'ahu. The twins were born in Kahinihiniula in Mokae adjacent to Hāmoa Ahupua'a and certain districts of Maui were named after them. The following synopsis is from Kamakau (1991:101, 150-152).

Paumakua, chief of Koʻolau and Mokapu was the son of Hua-nui. He married his sister Mano-kapili-lani and they had a son Haho who was born in Waiʻalua, Oʻahu. Hahoʻs child was Palena-a-Haho...Palena [a-Haho] was born on the hill of Kaʻuiki [sic], in Hāna, Maui at the site Hananaiku; he ruled and died on Oʻahu...his grave is Kalua-o-Palena in Kalihi, Oʻahu...Palena-a-Haho who with Hi-ka-wai-nui had the twins Hanalaʻanui and Hanalaʻaiki who were born at Kahinihini'ula, at Mokae and Hamoa, [Hāna] and a certain mokuʻāina land was named after these boys...The twins were progenitors of Hāna people...and because of their good deeds...their descendants gave the land their names. This was after the division of the island into ahupua'a, 'okana, and moku'āina – at the time when the island was divided by Kalai-haohia during the reign of Kakaʻalaneo.... Hanalaʻanui was the ancestral chief for those of Hawaiʻi and Hanalaʻaiki for those of Maui.... [However] there is a dispute...Hanalaʻanui really belonged to Maui.... In the division and separation of the Maui ancestral genealogies, the line of succession of Maui chiefs was made clear. It can be found in the genealogy of Hanalaʻaiki to the time of Kahekili by turning to the ancient traditions of deeply versed persons. Here are made plain the places in which the chiefs were born, their deeds, and places in which their corpses were laid.

In Beckwith's (1970: 387, 389) version Haho is a Maui chief as follows:

Hanala'anui and Hanala'aiki. Maui chief Haho, son of Paumakua and grandson of Hua-nui-ka-la'ila'i [Haho was grandfather of the twins], was the traditional founder of the Aha'ali'i or ranking body of chiefs whom were distinguished by the use of the sacred cord called aha. They cultivated a metaphorical form of speech to conceal their words from the uninitiated..... Between the periods of Hua and Pi'ilani, that is, between Moikeha's time and that of Umi on Hawaii, the twins were born at Kahinihini in Mokae, Hāmoa [sons of Palena, son of Haho]. 'Little and big sacred one of Hāna' called Hana-la'a-nui and Hana-la'a-iki, from who respectively the chiefs of Hawaii and Maui are descended. From Kiha and his wife Koleamoku are descended the great Kaupō families of Ko'o and Kaiuli. From them, Kahekili's wife Kauwahine, mother of Kalanikūpule, the last ruling chief of Maui, and of a daughter, Kailikauoha, who became the wife of the Maui chief Ulumehe'ihe'i Hoapili and mother of Liliha, beloved wife of Boki of sandalwood fame.

The following synopses consists of excerpts from Fornander's (1880) An Account of the Polynesian Race: Its Origins and Migrations, and gives an overview of the various ali'i nui (ruling chiefs) of Maui. which Fornander refers to as "Moi." In the following excerpt Fornander (1880:80) notes the independent chiefs:

Among the Maui chiefs from the close of the migratory period, say La'amaikahiki to Pi'ilani, the contemporary of 'Umi and his father Liloa, not many names arrest the attention of the antiquarian student. The position of 'Moi' of Maui appears to have descended in the line of Haho, the son of Paumakua-a-Huanuikalalailai, though, judging from the tenor of the legends, East Maui, comprising the districts of Ko'olau, Hāna, Kīpahulu, and Kaupō, was at times under independent Mois (sic). The legends mention six by name, from Eleio to Hoolae, the latter of whom was contemporary with Pi'ilani, and whose daughter [Koleamoku] married Pi'ilani's son, Kiha-a-Piilani. Their allegiance to the West Maui Mois was always precarious, even in later times.

In the following excerpt Fornander (1880:80) discusses the reign of Kamaloohua and the Wailuku visitors during this period:

While Kamaloohua ruled over the greater part of Maui, a chief who was doubtless a near relation, and who was called Wakalana, ruled over the windward side of the island and resided at Wailuku. During his time tradition records that a vessel called "Mamala" arrived at Wailuku. The captain's name is said to have been Kaluiki-a-Manu, and the names of the other people on board are given in the tradition as Neleike, Malaea, Haakoa, and Hika. These latter comprised both men and women, and it is said that Neleike became the wife of Wakalana and the mother of his son Alooia, and that they became the progenitors of a light-colored family, "po'e 'ohana Kekea;" they were white people, with bright, shining eyes, "Kanaka Keokeo, a ua alohilohi na maka."

In the following excerpt Fornander (1880:80) discusses three generations after Kamaloohua:

After the reign and times of Kamaloohua nothing worthy of note has been recorded of the Maui chiefs until we arrive at the time of Kakae and Kakaalaneo, the sons of Kaulaheanuiokamoku l [Kaulahea I], three generations after Kamaloohua.... Kakae's brother, Kaka'alaneo, appears, from the tenor of the legends, to have ruled jointly with Kakae over the islands of Maui and Lāna'i. He was renowned for his thrift and energy. The brothers kept their court at Lahaina, which at the time still preserved its ancient name of Lele, and tradition has gratefully remembered him [Kaka'alaneo] as the one who planted the breadfruit trees in Lahaina, for which the place in after times became so famous.

Kaka'alaneo was a grand uncle of Pi'ilani; the following synopses about Kaka'alaneo and Kūkanaloa are excerpts from Beckwith (1970). There appears to be a time-conflict with the arrival of the light-skinned foreigners. Fornander (1880) indicates they arrived during Ka-malo-o-Hua's reign, while Beckwith indicates the foreigners arrived four generations later during the time Kaka'alaneo.

Many legends mention the name of Kaka'alaneo (Kūka'alaneo, Ka'alaneo), who lived in the Lahaina district on the hill Keka'a [Black Rock of Sheraton Maui]. He also owned fishponds in the Hana district on the opposite end of the island and planted a famous breadfruit grove in Lahaina. His wife was the Moloka'i chiefess whom Eleio found for him and who brought him the first feather cape ever seen on Maui, and by whom he had the mischievous son Ka'ulula'au who killed off the bad spirits [E'epa] on Lāna'i. In his day Lahaina was called Lele. According to tradition, a group of strangers (haole) who later played an active part in court life and whose names were (according to Kamakau), kept in memory as late as Captain Cook's day, arrived on Maui in Kaka'alaneo's time. Kūkanaloa and Kaekae (also Kakae) were the leaders of this group. The "last allusion" in this legend is a pun about chief Lolae of O'ahu who abducted the pretty chiefess of Maui, Kelea [sister of Pi'ilani's father], while she was out surfing and carried her away to O'ahu in the uplands of Līhu'e. She later left him for his cousin Kalamakua of 'Ewa [also Hālawa and Waikīkī], by whom she became mother of the high chiefess Laie-lohelohe (The drooping pandanus vine), who became the wife of her Maui cousin Pi'ilani. All these names appear in the chant linked with the coming of Kü-kanaloa, together with the names of a wife and son of Kaka'alaneo (Beckwith 1970:384-385). Along with the "Legend of Kukanaloa" is an accompanying mele that refers to Pi'ilani. This mele was probably after Kaka'alaneo's time because Pi'ilani was born much later.

Legend of Kūkanaloa. The strangers land first at Ke'ei in South Kona and then come on to Waihe'e, Maui, and land at a place called Ke-ala-i-Kahiki (The road to Kahiki). They are exhausted and the natives clothe and feed them. They are light-skinned with sparkling eyes. When asked after their homeland and parents they point to the uplands 'far, far above where our parents dwell' and show that they are familiar with bananas, breadfruit, mountain apple, and candlenut trees. The two leaders became Kaka'alaneo's property and there is no *kapu* place closed to them. They married chiefesses and some of their descendants are living today. They were called Kani-ka-wi and Kani-ka-wa, 'perhaps because their speech was as unintelligible as that of the *lale* birds that live in the hill' (Beckwith 1970:386). Pi'ilani and some of his family are mentioned in the following *mele* of this *mo'olelo*:

Puka mai o Kanikawi, Kanikawa O na haole iluna o Halakaipo, Puka mai nei Kukanaloa, Kupuna haole mai Kahiki Puka mai nei Kakaalaneo Me ke leo iki o Kakae, O Kaualua is, o Kaihiwalua O Kelea, o Kalamakua, O Pi'ilani ia, o Lajelohelohe

Came Sharp-sound, Loud sound,
The strangers above Halakaipo
Came Ku-kanaloa
The stranger forefather from Kahiki
Came Kakaalaneo,
With the soft-voiced Kakae,
Kaualua (the wife), Kaihiwalua (the son),
Kelea (the wife), Kalamakua (the husband),

Pi'ilani (the husband), Laielohelohe (the wife).

According to Fornander (1880), Kakae was the son of Kaulaheanuiokamoku I, and the brother of Kaka'alaneo with whom he co-ruled Maui. He was also the father of Kahekilinuiahumanu I and Kaulaheanuiokamoku II, grandfather of Kawaokaohele and Keleanuinoho'ana'api'api and great-grandfather of Pi'ilani of Hāna and Lahaina. The Maui royal line of ruling chiefs comes primarily from Kakae's descendants. The following synopses from Fornander (1880) reveal some of their history.

<u>Kakae</u>, <u>Kahekili I, and Kawaokaohele</u>. Kakae's son was Kahekili I, who is known to have had two children, a son name Kawao Kaohele [Pi'ilani's father], who succeeded him as Mo'i of Maui, and a daughter named Kelea-nui-noho-ana'api'api [Pi'ilani's wife's mother], who became the wife of Lō-Lale, son of Kalona-iki, and later of Kalamakua, son of Kalona-nui, of the O'ahu Maweke line. Fornander (1880:78-79) expounds on this genealogy in the following:

From the time of Mauiloa, third from Haho and contemporary with La'amaikahiki, to the time of Kaulahea I [father of Kakae and Kaka'alaneo] there must have been troublous times on Maui, and much social and dynastic convulsions, to judge from the confusion and interpolations occurring on the royal genealogy of this period. I have shown it to be nearly historically certain that the O'ahu and Maui Paumakuas were contemporary, and it will be seen in the sequel that it is absolutely certain that Kawaokaohele [Pi'ilani's father] on the Paumakua-Haho line was contemporary with Kalamakua, Piliwale and LōLale on the Maweke line of O'ahu chiefs, as well as on the O'ahu Paumakua line through Lauli-a-La'a; and yet the Maui royal genealogy, as recited at the court of Kahekili II at the close of the last century, counts thirteen generations between Mauiloa and Kaulahea I, or sixteen generations between Mauiloa and Kawaokaohele [Pi'ilani's father], whereas the Maweke and Oahu Paumakua genealogies count only seven from La'amaikahiki to Keleanuinohoana'api'api [mother of Pi'ilani's wife La'ielohelohe], the sister of Kawaokaohele [Pi'ilani's father].

Fornander (1880:83-87) discusses Kawaokaohele, father of Pi'ilani in the following:

Kawaokaohele. During the reign of Kawaokaohele [Pi'ilani's father], the son of Kahekili I, and grandson of Kakae, the island of Maui appears to have been prosperous and tranquil. No wars with neighboring islands or revolts of turbulent chieftains at home have left their impress on the traditional record. Kawaokaohele's wife was Kepalaoa, whose pedigree is not remembered, but who was probably some Maui chiefess. Kawaokaohele was succeeded as Mo'i of Maui by his son Pi'ilani, who, through his good and wise government, and through his connection with the reigning chief families of O'ahu and Hawai'i, brought Maui up to a political consideration in the group which it never had enjoyed before, and which it retained until the conquest by Kamehameha I consolidated the whole group under one rule.

There are several legends of Keleanuinoho'ana'api'api (Kelea), the sister of Kawaokaohele, aunt of Pi'ilani, and mother of La'ielohelohe, Pi'ilani's wife. Her story is one of intrigue, and romance, but also allegorizes the life and privileges of *ali'i mui* women. It further illustrates the interrelationships between the *ali'i nui* of the various islands. The following *mo'olelo* is extracted from Fornander's (1880:83-87, 90-91) "Story of Keleanui-Nohoanaapiapi."

The Story of Keleanui Nohoanaapiapi, sister of Kawaokaohele, begins in Hāna. The men of Chief LōLale of Līhu'e, O'ahu [now Schofield] were searching for a wife for him.... They went first to Moloka'i, then to Lāna'i, then sailed for Hāna intending to go to Hawai'i. While at Hāna they heard that Kawaokaohele, the Mo'i of Maui was stopping with his court and his chiefs at Hamakuapoko, regulating the affairs of the country, and enjoying the cool breezes of that district, and the pleasures of surf-bathing, and that with him was his sister Kelea, the most beautiful woman on Maui, and the most accomplished surf-swimmer.

They thought of a plan to win her confidence by going surfing with her, and challenging her to a race. On her third time out, they captured her, and took her into a waiting canoe to O'ahu. They took her to Chief LōLale of Līhue, O'ahu, son of O'ahu Moi Kalona-iki, and brother of heirapparent Piliwale. "And as she did not commit suicide, it may be inferred that she became reconciled to her lot and accepted him as her husband. And as no invasion of O'ahu was ever attempted by Kawaokaohele, or vengeance exacted for the abduction of his sister, it is probable, though the legend says nothing about it, that the affair was diplomatically settled to the satisfaction of all parties." [Lō-Lale was a Lō Ali'i, who were guardians of the sacred birthing place of Kūkaniloko; chiefs born there were given first consideration if a new chief was needed to be replaced anywhere in the islands.]

Kelea and Lō-Lale had three children: Kaholi-a-Lale, who later married Kohipalaoa [Kohepalaoa], sister of Kūkaniloko, Moʻi of Oʻahu after their father Piliwale's death; Luliwahine, and Lulikane. After several years and three children she informed Lō-Lale that she was leaving him, as was her privilege due to her high rank. He reluctantly gave his consent, but his grief was preserved in a

chant. While traveling around O'ahu, Kelea met Kalamakua, chief of Hālawa, son of Kalona-nui and cousin of Lō-Lale. They marry and have a daughter La'ielohelohe, who in her youth was betrothed to her cousin Pi'ilani, son of Kelea's brother Kawaokaohele.

There are other versions of that story. The following synopsis corroborates Fornander's (1880) "Story of Kelea." The genealogies indicate how *ali'i nui* from all the islands were related, and the *mo'olelo* also confirm this as indicated in the following story of La'ielohelohe in Kamakau (1991:45-49).

The Story of La'ielohelohe. Kalamakua was a good chief who cultivated large pond fields of Waikīkī. He married [Kelea] Keleanuinoho'ana'api'api, a beautiful chiefess and sister of Kawaukaohele [children of Kahekili 1], [Pi'ilani's father, also spelled Kawaokaohele] the ali'i mui of Maui. She loved to surf at Hamakuapoko, Kekaha, and Wailuku.... The chiefs of O'ahu, searching for a wife for Chief Lolale, ruling chief of Līhu'e, O'ahu, when reaching Hāna heard about the beautiful Kelea, they wanted to obtain her for their chief. They found her at Hamakuapoko, and she proved to be an unsurpassed surfer of East Maui. They tricked her and kidnapped her to Wai'alua, O'ahu, where she was taken to Chief Lolale at Līhu'e. They had three children: Kaholialale, Luliwahine, and Lulikane, ancestral chiefs of O'ahu. After ten years she asked her husband if she could go to 'Ewa to go sightseeing and he agreed. On her travels she heard about the surfing of Waikīkī and asked her companions if she could go there and they agreed. She asked the kama'aina for a board and she proved to be a very skilled surfer. The people cheered and cheered her. Chief Kalamakua was working in his fields and heard the shouts. He went to check and watched her from the shore. When he saw her skill and beauty he asked if she was Kelea. She said yes. He wrapped his kihei around her naked body and took her to a kapu place. She married Kalamakua. They had La'ielohelohe, born at Helumoa and raised in Waikīkī. She was betrothed to Pi'ilani, the son of the ali'i mui of Maui [Kawaokaohele]. Her akua grandmothers Hapu'u and Kalaiohauola took care of her. Later she voyaged to Maui to marry Pi'ilani. They lived at Halehuki and had four children: Lono-a-Pi'ilani, Pi'ikea, Kala'aiheana, and Kihapi'ilani. La'ielohelohe returned to O'ahu for Kiha's birth. He was born at 'Apuakehau in Waikīkī—there is a rock there to mark the place.

Pi'ilani, nephew of Kelea was a descendant of Hanala'aiki of the 'Ulu line as indicated in the genealogies and *mo'olelo*. His parents were Maui *ali'i nui* Kawaokaohele and Kepalaoa. Kawaokaohele was the son of Maui *ali'i nui* Kahekili I and Kauai chiefess Haukanuimakamaka. During Pi'ilani's life and reign as *ali'i nui* of Maui, he was a contemporary of Big Island *ali'i nui* Liloa and his son 'Umi-a-Liloa. However, there is no "Story of Pi'ilani" by any of the early compilers of *mo'olelo*. Fornander (1880) does note that during Pi'ilani's reign, and perhaps during that of his father, the Hāna chiefs acknowledged the "suzerainty" of the Mo'i of Maui, and Pi'ilani made frequent tours all over his dominions, enforcing order and promoting the industry of the people (Fornander 1880:87).

According to Fornander (1880), Pi'ilani's children with La'ielohelohe were Lono-a-Pii, who succeeded him as Mo'i of Maui; and Kiha-a-Pii, who was brought up to the age of manhood among his mother's relatives on O'ahu. Their daughter Pi'ikea, became the wife of 'Umi, son of Līloa, Mo'i of Hawai'i, and through her great-grandson, I, became the "ancestress of the present sovereign of the Hawaiian group, Kalākaua" (Fornander 1880:87). They had another daughter, Kala'aiheana, who is not mentioned any further. With another wife, named Moku-a-Hualeiakea, a Hawai'i chiefess of the Ehu family, Pi'ilani had a daughter, Kauhi'iliula-a-Pi'ilani, who married Laninui-a-Kaihupee, chief of Ko'olau, O'ahu, and lineal descendant of Maweke through his son Kalehenui. And with still another wife, named Kunuunui-a-kapokii, whose pedigree has not been preserved, he had a son, Nihokela, whose eighth descendant was Kauwa, grandmother of the late King Lunalilo on his father's side (Fornander 1880:87).

There are some modern references to Pi'ilani unifying Maui by warfare (see Speakman 1978/1984; Kolb 1991:67). In Youngblood's (1992:38) re-creation of Hāna's history, in *On the Hāna Coast*, we see a peaceful Pi'ilani in the following excerpts:

It is known that Kaka'e established a court at Lahaina about 1360 A. D. and that he was succeeded by a son, Kahekili I, who was in turn, succeeded by his son Kawao-kao-hele then his son and successor, Pi'ilani. The Hāna Coast came under their control, thus unifying Maui under one family of ali'i. Pi'ilani's rule is remembered as a time of unity, peace, prosperity and construction of public works, including at Le'eleku, the largest heiau in existence. Although Pi'ilani kept his court "Out There" in Lahaina and Wailuku, he maintained a home in Hāna. Even then it was a place of physical and spiritual refuge.

Pi'ilani ordered the construction of fishponds and irrigation systems for the taro fields, and he undertook the immense task of building a network of stone-paved roads, four to six feet wide, around and across the island. The job was continued by his son Kiha-a-pi'ilani, who extended the ribbon of coastal road first built in Hāna around West Maui and also up Kaupō Gap through the center. Kiha was followed by his son Kamalalawalu [by Kumaka], who is said to have sent his son to spy on the Big Island.... The Maui line passed to Kauhiakama...to Kalanikaumakao Wākea to Lonohonuakini to Kaulahea [II] to Kekaulike [II] to Kamehamehanui to Kahekili [II], the last of the Maui kings.

The next major story in *Ruling Chiefs* (Kamakau 1992), and also Thrum's *Hawaiian Annuals* was the 'Story of Kiha-a-pi'ilani' - the youngest son of Pi'ilani's royal children. In Thrum's version (1916) of 'Traditions of Kihapiilani' he notes that there is a different version of the 'Umi/Kihapi'ilani story found in the *Polynesian* in 1840 "as told by natives" (Thrum, 1916:128-135).

The following story is based on Thrum's version (Thrum, 1916:129, 130). It gives a glimpse of Kihapi'ilani the man, as well as the conflict between his older brother and heir, Lono-a-Pi'ilani. Many of the references to 'Pi'ilani' we see today is actually a reference to his son, Kiha-a-Pi'ilani.

The Story of Kihapiilani. Kihapiilani was born and raised on O'ahu with his mother's family. He lived with his uncle and mother and wanted to know who his "real" father was and was told that his father was on Maui, so he wanted to go there and live with his father. She made ready the canoe, provided the food and said: 'Go, you will find your father keeping the 'awa kapu, and no canoe will be allowed to land...if you reach Keawaiki at Lahaina...land on the beach, let all the men remain on board the canoe...but go yourself ashore to the large man sitting at the door of the house; he is your father, sit on his lap, and if he asks you whose boy you are, tell him you are his, I am Kihapiilani. If he places you at his left hand, that is your place; there is no land on that side; the right side is the place of lands. There will be two cups of 'awa, the one in his right hand represents your elder brother Lonoapii, the other ourself. He will drink first the cup in his right hand, then that in his left; then take pieces of potato in his right hand and left hand and eat them in the same succession; then a banana in each hand, eating them in the same order; after which he will eat fish and poi, then the kapu will be ended. If he offers you the cup and potato and banana which are in his right hand you will be the heir; if not, you have no inheritance.'

Kiha found everything as his mother said upon his landing...he sat in the big man's lap...his father kissed him and seated him on his left, but the boy leaped over to the right side. The father said 'You have taken your elder brother's place' and without consent of his father he continued to sit there. The father put out his right hand to take the cup of 'awa, but the son snatched it from him as he did with the potato and banana...he constantly conducted himself in this manner during the life of his father. At his death the lands were willed to the elder brother, who was angry with his brother Kiha for his efforts to obtain the birthrights.

After many conflicts and abuses from his brother, Kiha decided to rebel. They fought in the Wailuku valley near the present female seminary and Kiha was beaten---he and his guardian alone escaping. Kiha then returned to Lahaina to dwell. When he had grown a large following and he rebelled again, and was again beaten and all his people killed, together with his guardian.

Thrum (1916:131-135) continues the story of Kiha-a-pi'ilani:

He escaped to Moloka'i and rebelled again. They fought on a hill called Pakui where he escaped again. A friend gave him a canoe and together with his wife he fled to Lāna'i where he stayed two days. His friend said lets go to Maui...They arrived in East Maui and went into the woods where they were seen by some fishermen who reported it to the king on his arrival at Maui. The king sent his runner after him...his friend advised him to go and hide in Kula while he returned to the King. Kiha and his wife lived in Makawao. He stole kapa implements to make kapa, he stole potato tops to plant, but was still befriended by a man from Kīpahulu who invited them to live with him.

Kiha was later told to see a priest in Hamakuapoko who will see if the kingdom will be his. Then was told to go to see Hoko a priest in Keanae who would perform the same ceremony. He was then told to go to Hāna, to the priest Owao...[part of the plan was to take Kolea, Hāna chief Ho'olae's daughter as his wife—the priest advised his present wife to become their servant until he had gotten the kingdom, which she agreed]. The lands he asked for were: Honokolani [sic], Waipapa [?Kawaipapa] and Wānanalua. Her father said "no, if you take those lands you take the two hills which are celebrated in war; you will then be rebels". He was then advised to leave his new wife, take his old wife and go to Hawaii to see his sister Pi'ikea (Thrum, 1916b:132)

He told his story to 'Umi who told him we shall lose our labor in fighting with your brother. He will hear of your arrival here and will be taken with fear of me and die trembling. This happened; he died and left his kingdom to his sons. Kiha lived with 'Umi till the end of the year.

Then "they sailed to the war and landed at Hāna; all the chiefs and people and canoes of Hawaii, and the women and children. Landing a party at Hāmoa, they fought with Holai [Ho'olae] who drove them back to their canoes...[but] they took possession of Ka'uiki and put Holai to flight.... Piimaiwaa soon found him and chased him among the *lauhala* trees until dark, when he killed him...

[In Kamakau's (1992) version, Ho'olae-makua was found at Kapipiwai in the back of Nahiku. He was killed and his hands were brought to Kihapi'ilani as confirmation of his death. "Ho'olae-makua was killed because Kiha-a-Pi'ilani bore a grudge against him, his father-in-law, for not helping on his side...revengeful indeed was the haughty Oahuan!" (Kamakau 1992:31)]

The next morning they advanced by land and canoe until they reached Wailuku where they fought with the chiefs of Maui and put them to flight. The priests advised Kiha not to take the kingdom but to give it to the children of 'Umi [and Piikea, his sister].

So Kumalae and Aihakoko were left in charge and 'Umi returned to Hawaii. Aihakoko eventually died after traveling to Lāna'i, and Molokai [on a funerary quest] after his guardian was killed. He ended up in East Maui where he died. After 'Umi died, Kiha sent Kumalae to Oahu, and took possession of Maui. He reigned a long time, oppressed the people, made a road of flat stones all around the island and finally died a natural death.

We see a very different view of the brothers, Lonoapi'ilani and Kihapi'ilani, and their conflicts in Kamakau's versions (1870, 1991, and 1992). Kamakau (1991:49) presents a brief overview of Kihapi'ilani in the following excerpt:

Kihapi'ilani was taken by the *kahuna* and raised at the *heiau* of Mau'oki at Kamo'ili'ili [Mo'ili'ili]. He was taught to be an orator and warrior. When he was twenty he was ordered home to become heir apparent, but when he got to Kalae on Moloka'i he found that his father Pi'ilani had died at Lahaina. The first-born Lono-a-Pi'ilani became the *ali'i mui* of Maui.

Kamakau wrote the following Story of Kiha-a-Pi'ilani in the newspaper Ke Au 'Oko'a on December 1,

1870, and included in *Ruling Chiefs* (1992). In this story we see the conflict between the brothers, and the various place names associated with Kihapi'ilani (Kamakau 1992;22-33).

The Story of Kiha-a-Pi'ilani. Pi'ilani died at Lahaina, Maui, and the kingdom of Maui became Lono-a-Pi'ilani's. He was the oldest son by La'ieloheloheikawai, next came Pi'ikea, Kalai'aiheana then Kiha-a-Pi'ilani. It was said that there were two heirs Lono and Kiha but Kiha wasn't present at his father's death because he was in O'ahu where he was born and reared. So it went to Lono. Pi'ilani commanded that Lono have the kingdom and Kiha dwell in peace under him. In the first years his reign was well and people content.

Lonoapiilani took care of Kiha and he cared for the people by giving them food. Then Lonoapii became angry with Kiha. They both farmed in the *ahupua'a* of Waihe'e. Lono's taro patch was smaller while Kiha's was bigger. Lono got angry and abused Kiha and they fought. Lono tried to kill Kiha so he fled in secret to Moloka'i to the fortress of Paku'i then later to Lāna'i...from there he sailed to Kapoli in Ma'alaea, and from thence to the upland of Honua'ula. Someone saw him and it was reported to Lono. Kiha fled to Lahaina where he was hunted, but the gods saved him.

He and his wife went to the gulch of Kuanu'u and round back to the boundary of Honua'ula and Kula to a place named Ke'eke'e. Later to Kula/Makawao--many people went there to play games and to go swimming in a pool called Waimalino as Kula and part of Makawao were waterless lands. During a famine Kiha cleared an immense patch of land for sweet potato.

Kamakau (1992:24-30) continues with the travels of Kiha around Maui and Hawaii Island and his continuing efforts to conquer Maui in the following:

Kiha went to Hamakuapoko and Hāli'imaile to ask for slips...a rainbow revealed his identity. He later went to Pa'ia for help, but was directed to Kaluko in the upland of Ke'anae, then to Lanahu in Wākiu, then by Weua-Lanahu to Kawaipapa to consult Kahu'akole at Waipuna'alae. Kiha became a ward of Kahu'akole. He dwelt at Kawaipapa at a place called Kinahole. His wife's name was Kumaka whom he made his sister....

Hāna had a chief to govern it, Ho'olaemakua. It belonged to the ruling chiefs from ancient days, and the ruler was a descendant of the chiefs of Hāna. He belonged to a family that was noted for strong people, and Ho'olaemakua was numbered among them. He was small in size, but his hands had a very strong grip. Ka'hu'akole felt that if Ho'olaemakua sided with Kiha then war could be fought against Lono to take the kingdom from him. Ka'uiki was the strongest fortress there was.

Ho'olae had a daughter, Koleamoku, and Kahu'akole believed that when she became Kiha's wife her father would aid him.... Kiha's constant bathing reddened his cheeks to the color of a cooked crab and his eyes as bright as those of the *Moho'ea* bird. Kolea surfed at Keanini in the bay of Kapueokahi (Hāna Bay). Kolea fell for Kiha, but her father was against it because she was betrothed to the ruling chief Lono-a-Pi'ilani. Kiha told her that he was the son of Ka'hu'akole. When Kiha didn't show up at surfing [one day] she went to the upland of Waika'ahiki to Waikaloa and to Kawaipapa where she and Kiha got married. When news that Kolea had married the son of Kahuamoku (same as Ka'hu'akole) her father became angry and he disowned her.

They had a son named Kauhiokalani and he became ancestor to some chiefs and commoners. Kiha asked Kolea to take their son to Ho'olae to make amends..., and to ask for some farm lands.... 'If your father should offer you all of Hāna, do not accept. These are the lands for us: Honoma'ele, Ka'eleku, Kawaipapa, and the two Wānanalua.' Her father wanted to give her the district of Hana, extending from Pu'ualu'u to 'Ula'ino. She said these are the lands my husband asks for 'Honoma'ele, Ka'eleku, Kawaipapa, the two Wānanalua and Koali.'

He said "Your husband is no commoner. He is a chief, Kiha. Your child is a chief. I shall not take Kiha's part. I shall remain loyal to his older brother till these bones perish. Your husband

does not want farmlands for the two of you, but is seeking means to rebel against the kingdom. "The lands of Honoma'ele and Ka'eleku supply the 'ohi'a wood and 'ie'ie vines of [the forest of] Kealakona to build ladders to the fortress. Kawaipapa supplies the stones of Kanawao that are used in battle, and then the fortress will be well supplied. The Wānanalua lands hold the Ka'uiki fortress and the places below it. Koali is the fortress of Kue. I shall not take your husband's side."

Her father said he would give assistance only when Kiha was willing to abide under Lono's rule...then he took his grandson to raise. Kiha was angry when he heard this and wanted vengeance and to rule all of Maui. He decided to go to Hawaii to consult his brother-in-law, 'Umi-a-Liloa. Kiha's first wife [Kumaka] was a chiefess of Hāna and Kīpahulu. Kiha took her to Hawaii...they landed at Kohala, then to Maka'eo in Kailua where he told his entourage to wait for him while he visited his sister.

Kiha told 'Umi that his father had commanded that they share the kingdom of Maui, but his brother took it all for himself and wanted to kill him. 'Umi decided to help Kiha who had been wronged. Lono heard that war canoes were being built in great numbers. The *kauila* wood of Napu'u and Kahuku, the o'a and *koai'e* were being made into clubs to be used against Maui---they trembled in fear. After a year they were ready. When the first canoes reached Hāna, the last ones were still on Hawaii.... Ho'olae was at Ka'uiki building a tower and ladders to reach the top.... The first canoes reached Kīpahulu and [were] coming towards Kapueokahi [Hana Bay].... The Hawaii canoes hardly reached the spring of Punahoa when Ho'olae killed the men who manned the spring. The canoes were forced to land at Waika'ahiki...the men who landed at Kihahale walked to Waikoloa in front of Kawaipapa where they fought with slings.... Ho'olae stayed close to a rock now called Ho'olae Rock...and was victorious over the warriors of Hawaii who fled to open sea

The losing warriors of Hawaii sailed for Wailuaiki [sic] at Koʻolau. When the canoes reached Wailuaiki they were dismantled and set upright...then they headed for battle. Upon reaching 'Ula'ino, the fighting commenced at Makaolehua, and in 'Akiala, at La'ahana, at Kawaikau [old name for the Honoma'ele Stream], at Nenewepue, at Kameha'ikana's kukui tree, and all the way along to Honokalani and Wākiu, into the pandanus grove of Kahalaoweke, down to Pihele, to the flats of Kalani and the spring of Punahoa. Hoʻolaemakua proved to be a worthy foe…and very clever - he set up the giant image called Kawalaki'i and dressed it in war apparel.

[In Ka Hoku o Hawaii (1909), it also mentions the black stones ('eleku) of Ka'eleku used in this battle between Ho'olaemakua and the Hawai'i warriors (Sterling 1998:121)].

Kamakau (1992:31) ends with the final battle and the death of Lono in the following:

Finally a warrior named Pi'imaiwa'a figured out the ruse of the ki'i and destroyed it. Ho'olae escaped. Kiha commanded that Ho'olae's daughter Kolea and her son not be hurt [Kolea was his second wife during his stay in Hāna]. Ho'olae was finally found in the back of Nahiku at a place called Kapipiwai and killed ("Revengeful indeed was the haughty Oahuan!" refers to Kiha born and raised on O'ahu] When Lono heard the news he trembled with fear of death and died in Wailuku. Kiha tried to find his body but it had been hidden. They sent for a prophet from Kauai to tell them where the corpse was buried. He said it was in Wailuku in a land called Pa'uniu, but Kiha's men could not find it. Kiha divided the lands...'Umi left his son 'Aihako'ko' to remain with Kiha and he went back to Hawaii.

Beckwith (1970:387-388) first published her *Hawaiian Mythologies* in 1940. The following are excerpts from her version of the story of Kihapi ilani.

Legend of Kihapi'ilani. The name of Kiha is preserved locally about the island of Maui in connection with his feats of leaping from a height into a pool of water, called *lelekawa*, and for the

famous paved road about the island with the building of which he oppressed the people. Men are said to have stood in line and passed the stones from seashore to upland. Parts of the road are still in place and may be followed where the trail cuts in a straight line up and down the deep gorges that break the windward slope of the island.

Kihapi'ilani was brought up on O'ahu, but when his uncle scolds him for wasting food he goes off to Lahaina to find his true father. He is dissatisfied to take the place of a younger son. After their father's death Lono takes pains to humiliate him. The brothers come to blows. Kiha is defeated and saves himself only by leaping off a cliff down the hill Pakui. He hides himself in the Kula district at Kalani-wai in the Makawao region with his wife Kumaka of a Hāna family of chiefs, whom he passes off as his sister....

He consults various *kahuna* as to the course he should pursue to win the rule from his brother. He goes back to O'ahu learns surfing and, returning to Hāna district, surfs with the daughter of Ho'olae [Chief of Hana]. The couple are repudiated by the father, but after a son is born, a reconciliation is effected and Kiha sends his wife to ask of Ho'olae such lands as will give him control of the fortress Ka'uiki.

Ho'olae recognizes at once that this is no common man to whom his daughter Kolea-moku has born a child, but the chief Kihapi'ilani. He nevertheless loyally refuses to desert his old chief Lono. Kiha retires to Hawaii and succeeds in winning 'Umi's cooperation through the influence of his sister Pi'ikea. After the death of Lono, 'Umi sends an army to establish Kiha in the succession. Ho'olae defends Ka'uiki for Lono's son and sets up a wooden image so huge as to frighten off 'Umi's men... Eventually Pi'imaiwa [one of 'Umi's warriors] discovers the trick and they defeat Lono's warriors. Kiha has Lono's son put to death and asks that the lands may be made over to Pi'ikea's sons. The two lads come to Maui, but are despised and done to death and Kiha is established as ruler over his father's lands. It is his famous son Kama-lala-walu (son of eight branches) who gives the name Maui-of-Kama to the island.

In the Fornander's (1880:206-207) version of the "Story of Kihapiilani" we see that all the subsequent ali'i nui of Maui were descended from Kiha and Kumaka, sister of the Kawaipapa chief, Kahuakole.

Story of Kihapiilani. Kiha, who thus forcibly succeeded his brother as Mo'i of Maui, had been brought up by his mother's relatives at the court of Kūkaniloko of O'ahu.... Having, as before related, through the assistance of his brother-in-law 'Umi obtained the sovereignty he devoted himself to the improvement of his island. He kept peace and order in the country, encouraged agriculture, and improved and caused to be paved the difficult and often dangerous roads over the Palis of Kaupō, Hāna, and Ko'olau - a stupendous work for those times, the remains of which may still be seen in many places, and are pointed out as the "Kipapa" of Kihapiilani. His reign was eminently peaceful and prosperous, and his name has been reverently and affectionately handed down to posterity.

Kiha had two wives - Kumaka, who was of the Hāna chief families, and a sister of Kahuakole, a chief at Kawaipapa, in Hāna. With her he had a son named Kamalalawalu, who succeeded him as Mo'i of Maui. Koleamoku, who was the daughter of Ho'olae, the Hāna chief at Kauwiki...with her he had a son called Kauhiokalani, from whom the Kaupō chief families of Koo and Kaiuli descended. Kamalalawalu followed his father as Mo'i of Maui. He enjoyed a long and prosperous reign until its close, when his sun set in blood and disaster [when Kahekili lost to Kamehameha I].

[See also 'Traditions of Kihapiilani' In Thrum, More Hawaiian Folk Tales pp77-86.]

Kahekili II (1713-1794) was (at least) the seventh child of Kekaulike, ruling chief of Maui and his half-sister wife, Keku'iapoiwa Nui, who was also the half-sister of Alapa'i nui, ruling chief of Hawai'i Island. Kahekili II was born near Hāli'imaile. His older siblings included half-brother Kauhiaimokuakama (his mother was Kahawalu, cousin of Kekaulike and sister of Pelei'oholani, ruling chief of O'ahu); half-siblings Manuha'aipo (Queen of 'Ī'ao), Ke-kau-hiwa-moku and Ka'eokulani (Kaua'i ruling chief and

father of Ka'umu alii) - their mother was Holau, daughter of high chief Kawelo-a-Aila and chiefess Kauakahialii-a-Kaiwi, descendant of Lono-I-Kamakahiki of Hawai'i Island.

His older full-siblings included brother Kamehamehanui, ruling chief of Maui after the death of their father Kekaulike, and sister Kalola – wife of Kamehameha nui, Keoua and Kalaniopu'u, ruling chief of Hawai'i Island after the death of his uncle Alapa'i nui; his younger full sibling was Ku-ho'oheihei-pahu. Another younger half-sibling was Na-mahana-i-kaleo-nalani whose mother was Ha'alo'u – niece of Kekaulike, and Kauwahine daughter of Hawai'i Island high chief Haae-a-Mahi – son of *ali'i nui* Kauauanui-a-Mahi and Kalanai Kalele-a-lwi – and Maui chiefess Kaleiamaoli-o-Kalani, full-sibling of Kekaulike. Namahana was married to older half-brother Kamehamehanui until his death, then she married [2nd cousin] Ke-eaumoku of Hawai'i Island – they were the parents of Ka'ahumanu who married Kamehameha I.

Kahekili II married his half-sister, the chiefess Kauwahine; Kamakau (1991:41) has a passage about her:

In the year 1781, Kauwahine, a granddaughter of Kaiuli of the *ali'i* family of Kaupō, Maui, had a thought. She had mated with Kahekili, the *ali'i* kapu, and they had had four children, Kalanikūpule mā (his brother Koa-lau-kani and sisters Ka'ilikauoha and Kalola II). They could be considered "cousins" a ua hiki ke ho'ohoahānau, of the children and grandchildren of Kalola I, the older sister of Kahekili. Kauwahine asked Kāneahei the genealogists, "My children are *ali'i* are they not?" Kāneahei replied, "I will die (if I answer you)," "You will not die," said Kauwahine. "Above is mine, below is mine, I am the wife of Kahekili. You will do nothing to cause your death." "I will die," repeated Kāneahei. "Tell me!" demanded Kauwahine. Then Kāneahei said, "There are only four chiefs." (The four were Kalola's children, Kalaniakua (w) by Kamehamehanui; Kiwala'ō (k) by Kalani'ōpu'u; Liliha (w) by Keōua, and the daughter of the last two [Kiwala'ō and Liliha], Keōpūolani.)

'Last Days of Ka-hekili II.' Kahekili was the last Mo'i of Maui although there were occasions when his son Kalanikupule or his brother Ka-'eo-ku-lani took over in his place such as when he was on O'ahu. Kahekili became the ruling chief of Maui following the death of his older brother Kamehamehanui. He originally had his court in Lahaina as some of his ancestors did. However, when the royal or primary wife of Kamehamehanui – their half sister Namahana – decided to marry Ke'eaumoku, a Hawai'i Island chief, Kahekili moved his court to Wailuku (where Haleakala Motors is currently located) to spy on his sister who lived in Waiehu on lands that she owned. The couple (parents of Ka'ahumanu) eventually left Waiehu and fled for their safety to Hāna, then to Moloka'i, then to Hawai'i Island where Ke'eaumoku began supporting Kamehameha I. The following excerpts are from Kamakau's Ruling Chiefs (1992: 159-167 Chapter XIII; originally In Ka Nupepa Ku'oko'a, May 25, 1867) and gives a view of a small window of the "last days" (actually few years) of Kahekili's life.

When Ka-'eo-ku-lani, ruling chief of Kauai, heard how narrowly Ka-lani-ku-pule and the other chiefs of Maui had escaped death in the war on Maui, and how the waters of 'Īao had been choked with the bodies of the slain in this war, he was so perturbed that he set sail to war against Kamehameha. He set out with Pe'ape'a, son of Kameha-meha-nui, his counselor of war, Ki'iki'i, Kai-'awa, and chiefs, warriors, and paddlers, all well armed with muskets and weapons of all kinds, and with his two man-eating dogs. (He also took with him) Maka-'eha and Mr. Mare Amara, a man skillful in the use of arms who acted as his gunner. On O'ahu he met Ka-hekili, ruling chief over O'ahu, Moloka'i, Lana'i, and Maui, and persuaded him to join in a war against Kamehameha. Ka-hekili selected a type of soldier new to Oahu called "Cut in two" (pahupu), strange-looking men tattooed black from top to toe, with eyelids turned inside out and held up by props and only their eyeballs and teeth left in their natural state. They were led by Koi, Kuala-kia, and Manu-o-ka-iwi. Had the black negroes who came later to Nu'uanu arrived at that time they might have been made favorites and given the lands of "Black waters" (Wai-pouli) and "Daubed black" (Hono-ma'ele)! Ka-hekili left his son, Ka-lani-ku-pule, to govern Oahu during his absence

and set out to accompany the ruling chief of Kauai, with his chiefs, both high and low, his warriors, the children of chiefs, and among them Ka-niu-'ula, Ke-po'o-uahi, the *puhupu*, and other soldiers newly picked from Oahu.

The war party landed at Kaunakakai on Moloka'i, and when the Kauai chief saw for the first time. by the ovens they had left, the size of the camp which Kamehameha had occupied he said, "Where a big squid digs itself a hole, there crab shells are heaped at the opening." Upon their reaching Maui, Ke-kua-po'i-'ula (former wife of Ka-hahana) died, a woman famous for her beauty. The army camped at Wailuku, and of Waiehu the Kauai chief remarked, "Here is the land of the warrior to whom Kamehameha owes his kingdom (alluding to Ke'e-au-moku whose wife, Namahana, brought him the land of Waiehu). O Kauai! Stand up! This is the land where you shall leave your excrement!" The Kauai people were vulgar in their speech at best. Waiehu fell to Ki'iki'i and it was, alas! The Kauai people who ate the poi of Waiehu. The mouth that eats food should never throw stones at the producer (I pono i kau a na waha, mai noho a pehi wale iho). Kahekili gave some of the land of Maui to the ruling chief of Kauai [his brother] to be divided among his men, and Waiehu fell to Ki'iki'i. This caused discontent among the chiefs of Maui, who had thus to lose some of their land, and they rose against the Kauai chief [Ka'eo is actually from Maui - son of Kekaulike]. A battle was fought at Paukukalo adjoining Waiehu while some of the people were out surfing. Koa-ku-kani was the hero of that day's battle. You know him and the size of his feet. He was surrounded by the Kauai soldiers and in a perilous situation, but he dodged long and short spears and showed his courage in the fight that day.

Ka-'eo-ku-lani made a circuit of the north end of the island, came with all his people, and climbed the fortified hill of Ka'uiki, and he twirled his war weapon (*la'au kaua*), called Ka-mo'o-lehua, and made a thrust upward believing he could reach the sky. Failing in this he remarked, "It is said of Hāna that the sky there is low; but it is too high for my weapon, the war-eater Ka-mo'o-lehua, to touch. I fear therefore that my spear may not be able to strike down Kamehameha. O you of Kauai! chiefs, soldiers, warriors, and dear little ones, be strong, be brave! Drink the water of Waipi'o and eat the taro of Kunaka!" Ka-hekili and his men set sail for Hawaii from Mokulau in Kaupo, and Ka-'eo-ku-lani from Hāna. They landed at Waipi'o. There Ka-'eo-ku-lani carried out his vow. He wantonly destroyed everything in Waipi'o. He overthrew the sacred places and the tabu threshold of Liloa; he set fire to Ka-hou-kapu's sacred threshold of *nioi* wood and utterly destroyed all the places held sacred for years by the people of Hawaii. No one before him, not even Keoua who had passed through there the year before and destroyed the land and the food, had made such wanton destruction. Perhaps it was a sign of the downfall of the ancient tabus of Hawaii "by the kingdom of God."

Ka-hekili in the meantime went to Halawa in Kohala where some desultory fighting occurred while Kamehameha was in Kona. Eight-eyed-bat (Pe'ape'a-maka-walu Ka-maka-uahoa), a son of Kameha-meha-nui, performed great feats of valor. It was said that Kamehameha himself could not have overcome him in combat. His strength is shown by his famous deeds. At Kahahawai he uprooted a kou tree; at Napoko he pulled up the ti plant of Mulei'ula and Polipoli. He tore in pieces the banana-eating monster (mu 'ai mai'a) of La'auhaele. He rent the hairless one (olohe) of Pu'ukapele, and did other wonderful feats. At Kohala he seized men by fours, lifted them up and broke their backs so that they fell lifeless. It was not until the close of the war that his death occurred at Kapelenui-a-Haho, while Ka-hekili and Ka-'eo-ku-lani were staying at Hāna and Pe'ape'a was living for a time on Ka'uiki with his followers. One day as he fired off a gun a spark fell into a keg of powder, and an explosion followed which blew up the house and burned Pe'ape'a. He was carried still alive to Honokalani in Ka'anapali and there he died. What a terrible disaster!

Ka-hekili sailed from Halawa and joined forces with Ka-'eo at Waipi'o. When Kamehameha heard of this he consulted his counselors and those men who understood wise sayings, and they coined this phrase, "The fish have entered the net; they are gone into the bag." Believing this to be true, Kamehameha set sail with his forces and blocked the entrance of Waipi'o Bay. He had several double canoes and a sloop owned by Ka-me'e-ia-moku on board of which were John

Young and Isaac Davis. Ka-hekili and Ka-'eo met the fleet off the Waimanu cliffs, and a fight took place at sea which ended indecisively with the loss of warriors on both sides. This battle, called Ke-pu-waha-'ula, took place in 1791. It was Ka-hekili's last battle. He and his men all returned to Maui and he died in 1793. Keoua was at this time still living, and Ka'i-ana and some of the men had gone to Ka'u to make war against him because they were unwilling or perhaps ashamed, to make war on Kamehameha....

On March 8 Vancouver left Kealakekua and sailed for Maui and on March 12 reached Lahaina. Here he met Ka-hekili, the ruling chief of Maui, a very old man at this time and strange in appearance because of his black tattooing. Vancouver told him to stop fighting and establish friendly relations with the chiefs of Hawaii. Ka-'ili-naoa spoke for him and said that Ka-hekili would agree to peace, but it was not right for the chiefs of Hawaii to raid Maui and rob and pillage without cause. Ka-hekili requested Vancouver, if he desired peace, to stay there all the time and guard him against further wars. Vancouver remarked that Kamehameha "had many chiefs in his following" (nuinui ali'i Kamehameha), [but because of his imperfect knowledge of the language he used the words, "is a great chief"]. Ka-hekili, thinking he referred to Kamehameha's rank, protested, saying, "Kamehameha has come up from nothing; I am a great chief." Vancouver answered, "Ho! you have few chiefs, he has many." "No, no! I am the great chief, he is not a chief!" All this time Ka-hekili was speaking of their respective ranks, Vancouver of the number of their followers, because he had seen Kamehameha's men and how many there were and how well equipped with arms. The chiefs of old were very jealous of each other. And because Vancouver had called him a "little chief" ('u'uku ali'i) Ka-hekili called his grandchild, Ahukai, who was named after the sea-sprayed land of Waialua, "The little chief' (Ka-'u'uku-ali'i). She was the daughter of Manono Ka-ua-kapeku-lani and of Ka-'ili-naoa, who was the daughter of Manoha'aipo, the daughter of Ke-kau-like with Holau, who was the daughter of Ka-ua-kahi-hele-i-kaiwi....

After the battle of Ke-pu-waha-'ula'ula and the fighting along the cliffs of Hawaii, Ka-hekili returned and ruled Maui for three years and some months. In Ikiiki (May) he fell ill and, returning to O'ahu, died at Ulukou, Waikīkī, in the month of Ka'aona at the age of eighty-seven. His bones were carried away by Ka-me'e-ia-moku and Ka-manawa and hidden in a secret cave, perhaps at Kaloko in North Kohala. Ka-hekili was a famous chief, a tabu chief, one who ruled men, and so sacred that whatever had touched his body was burned with fire [after he was through with it, so that no one else could use it]. He was a famous leaper from a cliff into water (lelekawa), sometimes from a height of 500 or 600 feet or even higher, and he could climb cliffs which no other person could ascend. He elected to have his skin black; one half of his body from head to foot was tattooed black, and his face was tattooed black, and this became an established law with him: Any person taken in crime who passed on his dark side, escaped with his life. He delighted in war and fought many battles with Ka-lani-'opu'u, with Puna, with the chiefs of Moloka'i, with Ke'e-au-moku, Mahi-hele-lima, and Ka-hahana, ruling chief of O'ahu, and in strife with Kamehameha. While he ruled over Maui, Moloka'i, Lana'i, and O'ahu he appropriated to himself the gods of these islands. Here are the names of the gods he worshiped as a means of keeping control of the government: Ku-ke-oloewa, Kuho'one'e-nu'u, Kalai-pahoa, Ololupe, Kameha'ikana, Kala-mai-nu'u, and Kiha-wahine, Haumea, and Wali-nu'u. These gods were deities whose heiaus were tabu and in which human sacrifices were offered. Ka-hekili was a man prudent in warfare and skilled in statecraft (kalai 'aina) and oratory (kaka 'olelo). He took the greatest delight in feats of strength. Rolling the maika stone was his favorite sport, and there were many maika courses constructed from Maui to Oahu. He liked solitude and would separate himself from the other chiefs and from his wives. He erected living quarters on high points of land and admitted only those who were special favorites. No woman entered his house, not even his wives; his house was set perhaps a quarter or half a mile from the house of his wife, and perhaps it was for this reason that he was so studious. He would go out at night to spy about, accompanied by his two favorite friends, Ka-hui and Ka-halawai. He did this in order to detect rebellion or conspiracy, to find out which men ate with their wives, whether men asked the gods for the life of the ruling chief when they drank 'awa, whether they were worshipers or not, whether they ate things sacrificed to the gods, and whether they were carousing at night and making false vows. He was

cruel to his enemies. Ka-umu-pika'o at Hana was a place famous for the roasting of chiefs and lesser chiefs. On Oahu he had even roasted tabu chiefs in the imu. His cruelty to chiefs and people on Oahu is notorious. But God punished him for his cruel deeds for, although he had many sons and daughters, none of his children produced a long line of descendants (*puko loa i ke ao*). He was nevertheless a religious man and heeded well the laws of his gods, and this is why he was victorious over his enemies, and it was for this reason that he had half of his body tattooed black like Kane-of-the-thunder (Kane-hekili) and Kane-hekili-nui-'ahu-manu, and he lived to a good old age.

There were several legends of foreign (*haole*) visitors to the islands in ancient times including Wailuku, Maui. The following were from Fornander *Collection* (vol 6-248; In Sterling 1998:64).

Among other southern families of note who arrive at the Hawaiian group during this migratory period (9-10th century), though now it is impossible to place them in their proper order, the legend mentions Kalana-nuunui-kua-mamao, and Humu, and Kamaunua-niho who came from Kahiki (the southern groups), and landed at Kahahawai in Waihee, Maui. Aumu soon returned to Kahiki, being discontented with Kalana, who had taken Kamaunuaniho for wife.

This period of great migrations, of national activity and restlessness and of grand enterprises, having passed, comparative quiet seems to have succeeded for several generations; and the meles and legends become silent upon the subject of foreign voyages or foreign arrivals until the time of Kakaalaneo, King of Maui and brother to the great grandfather of Pi'ilani - about fourteen generations from the present - at the close of the fifteenth or the commencement of the sixteenth century. The traditions as written down by S. M. Kamakau runs thus: "In the time of Kaka'alaneo several foreigners (haole) arrive at Waihe'e in Maui, two of whom only were or became remarkable, viz: Kukanaloa and Pele, who was Peleie, and the name of the vessel was Konaliloha. They landed at Kiwe in the night and when discovered in the morning by the natives, they were taken to the village and fed and brought to the king and the chiefs who treated them kindly and made friends of them (hoopunahele) and admitted them to all the privileges of the kapu. They settled in the country, married some of the chief-women and became progenitors of both chiefs and commoners, and some of their descendants survive to this day." They were called Kanikawi and Kanikawa after the beautiful flowers of Haumea." - "Their speech sounded like a bird's, like the lale of the mountain, a chattering, vociferous bird." - "They said they came from Kahiki, from the very interior." "Their land was a fertile land with plenty of fruits and large animals." - "Their parents dwelt far inland (uka) on the side of the mountain, away up in the forest (ukaliloloa, ikawaonahele)." - "They were acquainted with the banana, the breadfruit, the ohia-applies, and the kukui nuts."

The tradition which refers to the wrecking and landing of the foreigners, (haole) – two men and one woman, at Keei, South Kona, Hawaii, in the time of Keliiokaloa, the son of 'Umi-a-Liloa, before the middle of the sixteenth century,- is well known and has long been recorded. There is some obscurity however thrown over both this and the foregoing tradition, inasmuch as the name of the vessel ("Konaliloha") and of the principal personage (Kukanaloa) are the same in both traditions, and also some of the attending circumstances. But whether it was only one and the same event, adopted – mutalis mutandis – on both islands, or two separate occurrences, the fact of the arrival, and the retention of that fact in the Hawaiian memory, are none the less established.

The following is a list of mo'olelo and sources from the Hawaiian Legends Index Vol II and III by the Hawai'i State Public Library System (HSPLS) (1989) that mention Kahului and Wailuku.

Kahului

Hina and the Wailuku River ('Iao)

In Westervelt, Legends and Maui – a demi god of Polynesia

Wailuku

Hina, the Helen of Hawaii In Kalākaua. Legends and Myths of Hawaii (pp 69-94).

Pele and Hiiaka Emerson, Nathaniel Bright

Story of Lonoikamakahiki In Fornander, Fornander Collections of Hawaiian Antiquities

and Folk-lore, v. 2 (pp 256-363)

Story of Kekuhaupio In Fornander, Fornander Collections of Hawaiian Antiquities

and Folk-lore, v. 2 (pp 256-363)

The Iron Knife In Kalākaua, Legends and Myths of Hawaii (pp 177-205).

Kaiana, the last of the Hawaiian

Knights

In Kalākaua, Legends and Myths of Hawaii (pp 383-408).

Defeat of the Alapa In Nakuina, Hawaii, its People, their Legends (pp 59-60)

The battle of the owls In Pukui, The Water of Kane (pp 216-218)

Tradition of Kihapiilani <u>In</u> Thrum, More Hawaiian Folk Tales (pp 77-86)

First Foreigners <u>In</u> Westervelt, Hawaiian Historical Legends (pp 93-99)

The Alapa Regiment In Westervelt, Hawaiian Historical Legends (pp 125-142)

'Ōlelo no 'eau or proverbial/traditional sayings usually had several layers of meanings. They reflected the wisdom, observations, poetry and humor of ancient Hawai'i; some of them referenced people, events or places. 'Ōlelo no 'eau were compiled by Pukui between 1910 and 1960 with both translations and an explanation of their meaning (Williamson et al. In Pukui 1983: vii), which are often more kaona (hidden or double meaning) than obvious.

Kahului

Meaning

*Ölelo no eau Ke kai holu o Kahului
Translation The swaying sea of Kahului

Meaning Refers to Kahului, Maui (Pukui 1997:185 #1722).

'Ōlelo no 'eau Nūnū lawe leka o Kahului
Translation Letter-carrying pigeon of Kahului

Meaning In 1893 carrier pigeons arrived at Kahului, Maui. One was brought to

Honolulu and released with a letter tied to its neck. It flew back to Kahului. This was of such great interest to the people that a song was

written and a quilt design (Pukui 1997:255 #2351).

'Ōlelo no 'eau Pākāhi ka nehu a Kapi 'ioho.

Translation The nehu of Kapi'ioho are divided, one to a person

Kapi'ioho of Molokai had two ponds, Mau'oni and Kanahā, built on his land at Kahului, Maui. The men who were brought from Molokai and O'ahu to build the ponds were fed on food brought over from Molokai. The drain on that island was often so great that the men were reduced to eating *nehu* fish, freshwater 'opae and poi. The saying is used when poi is plentiful but fish is scarce and has to be carefully

rationed (Pukui 1997:284 #2578).

Wailuku

'Ōlelo no 'eau Ke ìnu aku la paha a'u 'Ālapa i ka wai o Wailuku

Translation My Ālapa warriors must be now drinking the waters of Wailuku.

Meaning Said when an expected success turns into a failure, This was a remark made by Kalaniōpu'u to his wife Kalola and son Kiwala'o, in the belief that his selected warriors the Alana were winning in their battle.

that his selected warriors, the Alapa, were winning in their battle against Kahekili [brother of Kalola]. Instead they were utterly

destroyed (Pukui 1997:184 #1711).

'Ólelo no 'eau Na wai 'ehā Translation The four wai

Meaning A poetic term for these places on Maui: Wailuku, Wai'ehu, Waihe'e,

Waikapū, each of which has a flowing water (wai) (Pukui 1997:251

#2300).

*Olelo no 'eau*Translation

Pili ka hanu o Wailuku

Wailuku holds its breath

Meaning Said of one who is speechless or petrified with either fear or extreme

cold. There is a play on luku (destruction), Refers to Wailuku, Maui

(Pukui 1997: 290 #2647).

'Ōlelo no'eau Wailuku 1 ka malu he kuawa Translation Wailuku is the shelter of the valleys

Meaning Wailuku, Maui reposes in the shelter of the clouds and the valley

(Pukui 1997:319 #2912).

The names of the winds, rain and clouds are often mentioned in the mo'olelo: the winds of Wailuku Moku are noted in Sterling (1998:62):

The Four Winds

Wailuku's wind is the Makani-lawe-malie, the wind that takes it easy.

Waiehu's wind is the Makani-hoo'eha-ili, the wind that hurts the skin.*

Waikapū's wind is the Makani-ko-kololio, the gusty wind.

Waihee's wind is the Makani-kili-'o'opu.

*Love disturbance, M. K. Pukui

Rebecca Nuuhiwa, Audio Collection HAW 84.2.1.

The 'Flying Clouds of Wailuku' are noted in Sterling (1998:63):

Wailuku is the source of the flying clouds. It is a broad plain where councils are held (from A. Fornander, Collection, 4:304.)

Place Names of Kahului and Wailuku

Ancient Hawaiians named everything, from *pohaku* and *hale* to *wahi pana*, and roads and parcels of land. These names were preserved in the *moʻolelo* and many are still used today. The following table includes meanings and *moʻolelo* associated with places in Kahului and Wailuku; their citations are included:

Table 3. Place names in Kahului and Wailuku and their mo 'olelo

Amala Street. 'Armorer or blacksmith' (Hill et al. 2009:11).

Hale Ki'i Heiau Site #44 N.N.W. of Pihana 350 feet on another sand dune. A large heiau of the same type as

Pihana but it has resisted erosion more successfully. It shows massive wall facings in ruins of four

terraces on the south side. Water-worn boulders are used in its construction. It measures 300 x 150 feet (W. M. Walker, 'Archaeology of Maui,' 1929:148 In Sterling 1998:78).

Heiau. It is not known when or by whom Hale Ki'i was built, but it may have been at the order of the Maui king Kahekili. Pihana Kalani is said to have been erected for him nearly 200 years ago. Hale Kii was originally adorned by rows of images which represented the various gods. The images were symbols believed to be imbued with man, or the supernatural power of the gods...(Charles C. Young, Historical Society Restores Maui Heiau, Sunday Star-Bulletin, Dec. 13, 1959, 25 In Sterling 1998:77) (Too late to be at all authentic - K.P. Emory In Sterling 1998:77)

*I-ao.

Stream, valley, peak (2,250 feet high), park, and one-time sacred burying place of chiefs (Jarrett 22), Wailuku qd. (see Kūkaemoku); intermediate school, Wai-luku, Maui, Lane, Lit., cloud supreme.

'Īao Valley is centrally situated in the Mauna Kahalawai range of mountains, now called West Maui... Facing 'Īao at its entrance Mauna Kāne is to the right and Mauna Leo is to the left of the highway. Ka-ne is the deity of creation in the Hawaiian Trinity, and the word Leo means "voice" or "The Voice of Ka-ne" who created 'Īao Valley as a sacred spot for the alii of Maui who possessed the Kapu)(restriction) of the Rising Sun. The name 'Īao means "Of the Dawn," in reference to the rising sun giving new life each day to the spirits of mankind and to the earth. 'Īao is also the name of the planet Jupiter as a Morning Star (Ashdown 1960:4 In Sterling 1998:84).

Two Entrances. In the days of the ruling alii, 'Īao was a very restricted place. Its first entrance was Kawela, that area extending from about where the Kahului breakwater now is to the mouth of the 'Īao Valley stream, called Kapela River at that time and Wailuku River today. The second entrance to 'Īao Valley was Ma-nia-nia, the area where the plaque to the Battle of Kapaniwai o 'Īao and the Shrine of the Madonna now stand. No one except the Mo'i Alii (king), his priests and personal attendants could enter the valley at Maniania without permission (Ashdown 1960:4 In Sterling 1998:84).

Nearby, about where Haleakala Motors now is, was the residence of the ruling king (Ashdown 1960:4 In Sterling 1998:84).

Ka'a

(Point) Lit., "rolling" A shoreline promontory just east of Kahului Bay (Hill et al. 2009:11).

Kahalawai

Mauna or mountain; West Maui mountains often referred to as Pu'u Kukui, its highest peak; the older of the two volcanoes that make up the island of Maui – the isthmus or saddle separates them.

Ka-hului.

Bay and Town, elementary school, port, bay, railroad, and surfing area known as Kahului Breakwater (Finney 1959a:108), Maui. Probably *lit.*, the winning (Pukui et al. 1974:67).

Kahului Landing. After his (Kapa-kahili) death the fighting ceased, and Kamehameha and his chiefs went on to the principal encounter at Wailuku. The bay from Kahului to Hopukoa was filled with war canoes. For two days there was constant fighting in which many of the most skillful warriors of Maui took part, but Kamehameha brought up the cannon, Lopaka, with men to haul it and the white men, John Young and Isaac Davis, to handle it; and there was great slaughter. Had they fought face-to-face and hand-to-hand, as the custom was, they would have been equally matched. But the defensive was drawn up in a narrow pass in 'Iao, and the offensive advanced from below and drew up the canon as far as Kawelowelo'ula and shot from there into 'Iao and the hills about, and the men were routed. The victors pursued them and slew the vanquished as they scrambled up the cliffs. There was a great slaughter, but mostly among the commoners; no important chief was killed in this battle. "Clawed off the cliff" (Ka-'uwa'u-pali) and the "The damming of the water' (Ka-pani-wai) this battle was called...Ke-Ku'i-apo-iwa, Ka-lani-akua, and Ke-opu-o-lani were taken over at the pass in 'Iao Valley to Olowalu, where they met Ka-lola's party and sailed to Molokai (S.M. Kamakau, Ruling Chiefs of Hawaii, 148 In Sterling 1998:81).

After this victory (*Hamakualoa*) Kamehameha moved his fleet to Kahului, and hauled up his canoes from there to Hopukoa without opposition. After two days of preparation he marched on to Wailuku, where Kalanikupule awaited him with such forces as he had been able to collect (A. Fornander, *Account of the Polynesian Race*, 2:236 In Sterling 1998:81).

When Kamehameha's war canoes arrived from Hawaii, the sands of Kahului were covered with them and it was said that he canoes extended from this side of Kahului to Kalaeilili at Waihee and below Puuhele and Kamakailima (John H. Wise, Hookumuana o no Paemoku, *Ke Au Hou*, Dec. 6, 1911.MS SC Sterling 3.12.3 In Sterling 1998: 81).

Kaihuwa'a

According to Sterling (1998), the native name for the Kahului region; Malo (1903:268) described the Kahului region as "flat and treeless" (Hill et al. 2009:11).

Kaluli

Heiau, Site #42 Above Puohala Camp in the cane fields. Thrum says it was repaired in the time of Kahekili under the priest Keliopuupuu. Now totally destroyed (W. M. Walker, 'Archaeology of Maui' 1929:145 In Sterling 1998:75).

Through Kaleopuupuu's advice to Kahekili, the heiau of Kaluli in Puuohala, on the northern side of Wailuku was restored. While Kaleopuupuu performed his rites there he uttered a prophecy to Kahekili, "The fish have gone through the sluice gate and are caught in the fine meshed net".... In the year 1776, when Kamehameha was almost forty, the war canoes of Kalaniopuu and his son, Kiwala'ō, ventured forth from Kohala (Joseph Mokuoai Poepoe, 'Kamehameha I, The Conqueror of Hawaii,' Ka Na'i Aupuni, Dec 7, 1995 MS SC Sterling 1.8.19 In Sterling 1998:75). (Kalani'opu'u was defeated at the battle of Ka-lae-o-ka-'ilio in Kaupo and returned to Hawai'i to rebuild his forces. At the same time Kahekili was strengthening his forces in anticipation of further attack.)

Ka-nahā

Wildlife sanctuary and pond near Kahului, Maui, said to have been built by Chief Kiha-a-Pi'ilani, brother-in-law of 'Umi (HM 387) who lived about A.D. 1500. Nearly 500 native Hawaiian stilts $(\bar{a}e'o)$ have been counted here at one time, about a third of the known total. Some 50 kinds of birds have been seen here, including herons, geese ducks, owls, plovers, sandpipers, tattlers, coots, pheasants, and doves Lit, the shattered [thing] (Pukui et al. 1974:83).

Star name (Pukui and Elbert 1986); Sterling (1998) notes that salt was gathered at Kanahā. "When the sea rose the hollows in the rocks were filled." The story of the building of the ponds is further noted by Sterling (1998:87) (Hill et al. 2009:11-12).

SIHP #50-50-05-1783 (Hill et al. 2009:13).

Kealakaihonua

Heiau in Waihe'e, is noted as belonging to "Koi, a certain dark-skinned (paele) native, prominent in the rank of Kahekili's chiefs, one of his generals and a priest of the Kaleopuupuu order. He it was who led the assault on the boat's crew of the Daedalus and murder of the two officers and a seaman, at Waimea, Oahu." (Kuokoa, May 18, 1867 - Thomas G. Thrum, 'Tales of the Temples,' Hawaiian Annual for 1909, 47. In Sterling 1998: 68).

Mau'oni

Pond. One of the two fishponds located at the shore of Kanahā; SIHP #50-50-05-1783 (Hill et al. 2009:13).

A traditional story concerning the construction and dedication of the fish ponds named Mau'oni and Kanahā at Kahului appears in Sterling (1998: 87-88), based on an interview with Mrs. Rosalie Blaisdell in 1923 by J.F.G. Stokes (BPBM Anthropology Department archives, Group 7, 10.10.C9). According to the story, construction of the pond walls was begun by an O'ahu chief, but finished by Kamehamehanui, mō'ī of Maui in the mid-1700's. The story established that Kapi'ioho'okalani, the original architect of the two ponds and onetime ruler of O'ahu and half of Moloka'i, was killed in battle before he could complete the construction of the pond walls. His daughter, Kahamaluihi, sought her brother, Kanahāokalani, and searched Moloka'i and Maui for

him. The pond walls were finished by Kamehamehanui, who placed a *kapu* on the bank, or *kuapa*, dividing the two ponds. The chiefess Kahamaluihi was born of such high rank that she was able to break the *kapu* by walking on the center *kuapa* of the ponds. Following this act, Kamehamehanui allowed her to name the ponds. She named Kanahā for her brother, and Mau'oni for the identity she travelled by to protect her status as a chiefess of the highest rank (Hill et al. 2009:13-14).

Na Poko

On Maui the lands of Waikapū and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two *ahupua'a*, together with Waiehu and Waihe'e, which were independent, belonging to no Moku, were called Na Poko, and have been formed into a district in modern times (W. D. Alexander, 'A brief History of Land Titles in the Hawaiian Kingdom' *Hawaiian Annual for* 1891:106 In Sterling 1998:63).

Na Wai Eha

It was at Kalepolepo that Kamehameha the Conqueror beached his canoes. If the oldest inhabitants of Ma'alaea claims this distinction for his port, believe him not. I have the facts from an eye-witness. The sea was dark with victorious canoes; Kamehameha landed at Kalepolepo, and a kapu was put upon the nearest stream. It became sacred to royalty, as was the custom and is known as Waikapu to this hour - that is, forbidden water. Presently the monarch began his march; and at the second stream a great battle raged, so those waters were called Luku. Luku - "to slaughter, to slay as in war, the destruction of many at once"... The enemy defeated and put to flight, and a third stream was called Ehu. Ehu - "to scare away, as hogs or hens," or as fainthearted and sore-footed foes. Waiehu is a meager rivulet that seems to have wasted away under the influence of this withering epithet. There over the hill and down into the dale of Waihee rushed the panic-stricken hosts. As for the word Hee, it may mean, probably does mean in this case, utter out, or to be dispersed in battle; and well they must have been who fled before Kamehameha, inasmuch as Waihee is the jumping-off place; after it-the deluge! That is the legend of the four waters, given me by one Paahao, of Waihee, who knew Kamehameha; whose hand I shook, which had been shaken by Kamehameha the great; who is the proud possessor of a pipe, the gift of the conqueror after he had buried the hatchet and was willing to smoke in peace. [The author gives him a cigarette to smoke.] ... One the contrary, it was a heartfelt Aloha, wafted to me from another country and another age, as it were; for Paahao smoked first pipeful with his old friend Captain Cook, and he was at that moment flourishing, like the bay-tree, in the one hundred and twelfth year of his age (C. W. Stoddard, Hawaiian Life, 1894:161 In Sterling 1998:63).

Paukūkalo

Lit., "taro piece." This present-day shoreline community is located at the northernmost region of the Kahului Harbor [Bay]. The 'Iao Stream reaches the ocean at Paukūkalo, a region formerly heavily planted in kalo (wetland taro) (Hill et al. 2009:12).

Pihana Heiau

Pihana-a-kalani, wherein is the *heiau* of Haleki'i, Liliha and Kaloha – Luakini. A few traces of the foundation can easily be found. The Luapa'u ($Luapa'\bar{u} = refuse$ pit) Liliha, once surrounding the *heiau*, has been filled up with stones. Tradition relates Kiikewa, the high chief who lived at the time of Kakae, the king of West Maui, built the Heiau of Pihana – every rebellious high chieftains of Maui were sacrificed at this *heiau*, but, no *alii* whose lineage was tainted were sacrificed on its alter, Liliha is the name of the Luapa'u (offal pit). Haleki'i is the *heiau* reserved for the females of high rank and is situated on the *makai* side of the bluff – Kalola is another name. The whole combined in general is Pihana. It is said there is a cave beneath Pihana, and Liliha is the mouth of the cave. Then follows a story of the sacrifice of a chiefess of high rank, Poloahilani – the last at Pihana.

After the battle of Hana, Kamehameha I and soldiers stopped at Naholo-ku (Kaupo), to visit the high chiefess Kalanikaukooluaole, a daughter of Kamehamehanui, whom he knew to be one of the chiefesses of exclusive tabu. Crossing the stream, he saw a young woman taking her bath, and asked the way to the house-which was indicated. At the house, the kahu said she was at the stream (the attendants had hidden). Kamehameha I felt he had been insulted, stamped his foot and exclaimed: Ka! Ike iana 'lii o Maui ikapepeiao. Pshaw! The Maui chiefs are recognized by their

ears. After the battle of 'Iao, he sent for the princess (to be sacrificed at Pihana). Poloahilani came instead, on the advice of the priest, and saved the life of the alii.

After the victory of Kamehameha I at Kepaniwai ['Iao], he observed the *kapu* at Pihana, the *kapu* of Kaloa-where in offering to his war god, he thought of the incident at Naholo-ku. On the priest's advice, he sent his messenger in haste for the princess' custodian. Sadly the priests were consulted and omens studied; lots were drawn between the princess and her foster-sister, the priests meanwhile chanting prayers. The princess drew the long straw, and her foster-sister the short one, thus pointing to their roads to tread.

After the custom of ancient Hawaii, custodians of royalty were chosen from near kin. Their duties were to rear their charges to the highest attainments, giving their all on all, even their very life blood without fear or murmur – it meant added honor to their prerogatives. Poloahilani with her attendant took the road through Hamakualoa, reaching Wailuku on the eve of the last Kaloa and in time for the *kapu heiau*. Thus she was sacrificed at Pihana Heiau to appease the gory thirst of the war god of Kamehameha I, the slayer of chiefs. The princess, accompanied by the priest, took the long route through Kahikinui, reaching Wailuku after the *kapu* was free. She lived incognito, burying her identity with the monument of an *ahu* at Lamalii, Wailuku. Poloahilani was the last sacrifice. Pihana was demolished by Kalanimakakaualii and Kauanaulu during Ka'ahumanu's proclamation, 1819 (J. F. G. Stokes Group 7 In Sterling 1998:75-76).

It is said of Pihana that on Kamehameha's invasion of Maui, in 1790, with an army of warriors which resulted in the defeat of Kalanikupule's forces in the celebrated battle of Pani-wai-o-Iao the conqueror invoked the blessing of his war god Kūka'ilimoku there at, and sacrificed upon it altars (Thomas G. Thrum, Tales of the Temples, *Hawaiian Annual for 1909*, 46 In Sterling 1998:77).

Site #43. West side of 'Iao Stream on the sand ridge about half a mile from the sea, about opposite the Wailuku Sugar Co,'s mill. A large heiau partly eroded away by the action of Iao Stream. Stokes in 1916 described it as follows: "This heiau occupied the top and upper slopes of a high lime-sand-dune, its floor being about 70 feet above the stream bed on the Southeast. The dune is one of a series paralleling the coast line of Wailuku bight. The dunes on the west, on one of which Pihana stands, are hardened on the surface for a depth of 2 to 6 feet, the underlying sand being loose. Probably since the heiau was built, floods in the stream (the bed of which was formerly more to the southeast) have cut through the hardened portion of the base of the Pihana dune, and are now gradually removing it together with the heiau.... The southwestern end of the dune is very precipitous, the floor of the heiau being about 60 feet above the ground at the foot of the terraces. The only local information obtainable was that the heiau had been built by Kahekili." There is some doubt as to whether the part of the heiau shown as B is really a part of the ancient structure. Mr. Stokes in 1916 made no mention of it, yet as shown in the plan it is centrally located with reference to the high platforms at the south so that it seems reasonable to assume that it was an open court connected with the heiau. It is bounded by low walls and has suggestions of a number of small enclosures at one side. The court measures 90 by 166 feet, whereas the undisturbed side of the heiau proper (A) is about 300 feet in length. This portion consists of high terraced facings built of large beach stones (W. M. Walker, 'Archaeology of Maui,' 1929:146-147 In Sterling 1998:76).

Travelling backwards and forwards along the east slope of the dune towards the N. end of the heiau, where the heiau stones were most abundant, human, pig and fish bones were found, and the trail led right up to the N. portion of the heiau, where *'ili'ili* were abundant. At the North were mostly human bones, but some pig. A little to the South of this spot were two places where were quantities of burned bone. Mostly if not all of pigs. The 3 places were in line and near together Rat bones were present.... To the S.W. several graves marked by stones from Pihana (J. F. G. Stokes, Fieldstones, MS SC Strokes Group 2.3.14-5 In Sterling 1998:76).

Pihana Heiau is believed to have been built on the advice of the high priest, Kaleopuupuu, who had been borrowed from Oahu by Kahekili in preparation for an expected attack by Kalaniopuu of

Hawai'i Island. In the ensuring battle, the invaders, including Kalaniopuu's favorite Alapa Regiment, were vanquished. This temple was a *luakini*, or sacrificial *heiau*. Human sacrifices were performed only on the most important occasions and at a *heiau* of the highest class. In 1790, Kamehameha I is believed to have made sacrifices here before defeating Maui in the Battle of Kepaniwai (Charles C. Young, Historical Society Restores Maui Heiau, *Sunday Star-Bulletin*, Dec. 13, 1959, 25 In Sterling 1998:77) (Too late to be at all authentic - K.P. Emory In Sterling 1998:77).

According to Kamakau (1992), the *tabu* chiefess Keopuolani, wife of Kamehameha I and mother of his royal children, was born at Pihana (Hill et.al. 2009:13).

Lit., "fullness" According to Pukui et al. (1974), stories of this Wailuku heiau includes it being built in a single night by the legendary race of Menehune, who brought the stones from Paukūkalo beach. Pukui also states that the [re]construction of this heiau has been attributed to the Maui chief, Kahekili. It is listed as Walker Site 43 (Hill et.al. 2009:12).

Waiakamakeha

Where the Kaahumanu church stands today stood the Heiau (temple) of Wai-aka-ma-keha (water reflecting like lightning), the stones of which were used by the early Protestant missionaries to erect Kaahumanu Church (Ashdown 1960 In Sterling 1998:84).

Wai-ehu

Ahupua'a. Land division, point, streams, village, beach, park, and golf course, Wailuku qd., Maui Lit., water spray (Pukui et al. 1974:221).

Wai-he'e

Ahupua'a. Land section, village, school, canal, point, reef, river, sugar company, farm, trail, park, canyon, and water tunnels, Wailuku qd., Maui Lit., squid liquid. (A mute, Ke-aka-o-Kū, the shadow of Kū, was told that his speech would be restored if he went to Kahiki to be married. On the way he was attacked by a huge squid which he killed and threw to Kaha-lu'u, O'ahu. Slime flowed over the land; hence the name [Sterling and Summers 5:64; Pukui et al. 1974:221]).

Wai-ka-pū

Ahupua'a. Land section, village, ditch, stream, park, sugar company, water tunnels, valley, Wailuku qd., Maui. Lit., water [of] the conch. (A conch in a cave here could be heard everywhere in the Hawaiian Islands until it was stolen by a supernatural dog, Puapua-lenalena, yellow tail feathers.) (Pukui et al. 1974:223).

Wai-luku

Ahupua'a. Land division, elementary school, quadrangle, heights, city, point, sugar company, and stream, West Maui; site of the battle in the late eighteenth century in which the army of Ka-lani-topu'u was nearly annihilated by Kahekili of Maui (Kuy.1:31; PH 57; RC 148.) See Ke-pani-wai, Lit., water [of] destruction (Pukui et al. 1974:225).

The battle began at Wailuku...How the owls and men fought! The men and chiefs were destroyed; many men of the Four-Waters. Kapoi and his wife were also killed. Because the owls caused such destruction the place was called Wai-luku (Water-of-destruction) to this day. (W. H. Uaua, 'The Legend of the Battle of the Owls,' *Ke Au Okoa*, June 29, 1871, 3. MSC SC Sterling 3.12.3 In Sterling 1998:71).

Moku. Wailuku, the district to who the Hekuawa trees belong and the best of sugar growing lands. Therefore, O ye who dwell near the fishponds of Kanahā and Mauoni and who pull up the taro plants of Kahului [S. W. Nailiili, E nohoanaoe e hoohlonoikimaiana, Ke Au Okoa, Nov. 6, 1863. MS SC Sterling 3.12.3. (Sterling 1998:71)]

The following excerpts note significant events and/or places in Kahului and Wailuku.

Battle of Kalai'ili'ili (Fornander, Account of the Polynesian Race, 2:148 In Sterling 1998:69):

After the death of Kamehamehanui, which happened about 1765, Ke'eaumoku took one of his widows for wife. This lady was Namahana, daughter of Kekaulike and his wife Ha'alou, and consequently half-sister of the deceased king and of his brother and successor, Kahekili. The latter was greatly displeased with the match....

At that time the large and fertile land of Waihee was in the possession of Namahana, and here she and her new husband took up their abode. They appear to have kept court in princely style, and thither gathered many of the gay and restless spirits of the time.... While this brilliant assembly were passing their time at Waihee, Kahekili had come over the mountain from Lahaina and was holding his court at Pihana and at Paukukalo in Wailuku, and the ill-will which the marriage of Ke'eaumoku and Namahana had engendered soon found an occasion to show itself.

Among the subordinate landholders in Waihee, occupying a subdivision of land called Ka'apoko, was a warrior named Kahanana. For some reason, now unexplained, this Kahanana had frequently been neglected when the chief of Waihee distributed fish, after fortunate catches, among the subordonates and warriors living on the land. Incensed at what he considered a studied neglect and insult, Kahanana donned his feather cape-the Ahu'ula- and his helmet-the Mahiole-and went in the night to Nuikukahi in Waiehu and killed three men belonging to Ke'eaumoku. An emeute [insurrection] arose, sides were taken, and the Kahanana party being supported by Kahekili, a general fight ensued, in which Ke'eaumoku and the Waihee party maintained their ground for some days, but were eventually overmatched, beaten, and obligated to flee. This battle is known in the regions as the battle of "Kalaiiliili," The Waihee coterie of chiefs having thus been broken up, some fled over the Lanilili spur of the Eke Mountains into the Kaanapali district. Among these were Ke'eaumoku, his wife Namahana...and at Kaanapali they embarked for Molokai. [NOTE: Ke'eaumoku and Namahana were the parents of Ka'ahumanu]

Ka-lae-'ili'ili Battle (Kamakau, Ruling Chiefs of Hawaii, 83 In Sterling 1998:70):

In the year 1765 a quarrel arose among the descendants of the chief Ke-kau-like Ka-lani-ku'i-hono-i-ka-moku...The quarrel arose through a certain soldier for the guard named Kahahana who belonged to Ke'e-au-moku and lived at Ka'apoko within the district of Waihe'e. This man went every day to his plantation and when he returned at night his wife cooked the taro tops. The chiefs distributed fish to the people and left out this man and his wife. Now Waihe'e had good fishing in ancient times; there were maomao, a'ua'u, he'e, and 'ohua, besides fish that came at special seasons, like *nehu* and *pihā*, but the chiefs were constantly depriving the people of their fishing rights...Thus the battle began and lasted all that day and the next with loss on both sides, neither side having the advantage. Ka-lae-'ili'ili was the name of this battle. Ke'e-au-moku and the chiefs of Molokai fled, some by canoe and some by the mountains of Lanilili and Eke, to Ka'anapali.

Kalo Cultivation - 'Jao/Wailuku (E. S. C. Handy, Hawaiian Planter, 1940:108 In Sterling 1998:75):

This is the third [Wailuku] of "The Four Streams," the great torrent that drains the highest cloud-capped uplands of western Maui through deep 'Iao Valley. Much of the upper section of what is now the city of Wailuku is built on old terrace sites. Along the broad stream bed of 'Iao Valley extending several miles up and inland, the carefully leveled and stone-encased terraces may be seen. In the lower section of the valley these broad terraces now serve as sites for camps 10 and 6 of Wailuku Sugar Plantation, being utilized for house sites, garden, playgrounds, and roads. A little farther up, neat private homes and vegetable and flower gardens cover these old taro terraces; while at their upper limits the terraces are submerged in guava thickets. Here a few wild taros were found but I saw no terraces in Iao or Wailuku being used as flooded taro patches. It is significant that here, as at Waihee, the old terraces are adapted to market gardening (Chinese bananas, vegetables, and flowers) by Japanese and Portuguese gardeners.

Wailuku cultivation (H. T. Cheever, Life in the Sandwich Islands, 124 In Sterling 1998:75):

As you get into the valley and vega [sic] of Wailuku, you see numerous remains of old *kihapais*, or cultivated lots, and divisions of land now waste, showing how much more extensive formerly was the cultivation, and proportionally numerous the people, than now.... The whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty to one that has a position a little above it.

Wailuku Heiau [Re]Consecrated (Kuokoa, July 20, 1867 In Sterling 1998:64).

Of the Wailuku heiaus [sic] it is somewhat remarkable that of the seven we have been able to learn of in that section, five are named as [re]consecrated by Liholiho during his tour for this service during the year's stay of the "peleleu" fleet at Maui, viz: Pihana, Kaluli, Malumaluakua, Keakuku and Olopio, as also Kealakaihonua at Waihee. This was plainly in the line of a religious duty in connection with the proposed invasion of Kauai by Kamehameha, that the gods would favor his ambitions, for in the expedition was the high priest Puou, and Hewahewa his father, of the Paao order of priesthood; Kuaiwa, and Holoilena of the Nahulu order, and Kapoukahi, diviner and heiau architect, as forming his Boards of Priests.

Wailuku Heiau (Thomas G. Thrum, 'Tales of the Temples', Hawaiian Annual for 1909, 45 In Sterling 1998:64).

It may be inferred that most of the *heiaus* [sic] in this section were war temples. The massiveness of Pihana, as shown in its ruins, as also the prominence of Kaluli in turbulous times confirms this. The time of their construction doubtless dates far back, and of their repair or reconstruction, Kahekili is credited with placing Kaluli in order on the instructions of the high priest Kaleopuupuu, (Polynesian Race, vol II p. 152) in anticipation of war with Kalaniopuu of Hawaii. And in the battle of Waikapu common when the Maui forces annihilated the invading army so that but two out of the 800 escaped alive, the only prisoner, a chief of Hilo, brought alive to Kahekili to be sacrificed at the heiau of Kaluli in honor of the victory, died of his wounds before he could be offered up to the gods. This was in 1776.

According to an 1853 map (Figure 16) there were no Hawaiian Villages in the project area.



Figure 16. Hawaiian Villages 1853; none in project area (CHP 2006:2).

Early Historic References

By and large "Early Historic References" pertain to notable historic events and overviews of important places and land tenure within the project area and district. One of the most significant practices in the history of the Hawaiian people was their concept of the stewardship of the land. However, over time, these practices were replaced by more Western methods of land tenure and use, as the lands of Kahului went from the domain of the *ali'i nui* to the monarchy, to various individuals and entities. The history of land use in this area went from traditional land management and use (fishponds, fishing and gathering) to agricultural-related activities in the early 1800s to light industry, recreation and commercial industry today.

It was during the time of Kahaukapu of Hawai'i and Kaka'alaneo of Maui (also said to be the time the Spanish first came with Ku-kanaloa [Kamakau 1991:324]) that the division of lands is said to have taken place under a kahuna named Kalaihaohi'a. He portioned out the lands into districts, sub-districts, and smaller divisions, each ruled over by an agent appointed by the landlord of the next larger division, and the whole under control of the ruling chief over the island or whatever part of it was his to govern (Handy and Handy 1978:491; Beckwith 1970:383). Each island was divided into moku or districts that were controlled by an ali'i 'ai moku. Within the moku on each island, the land was further divided into ahupua'a and controlled by land managers or konohiki. The boundaries of the ahupua'a were delineated by natural features such as shoreline, ridges, streams and peaks, usually from the mountain to the sea, and ranged in size from less than ten acres to 180,000 acres (Moffat and Fitzpatrick 1995:24-29, see also Chinen 1958:3). But sometimes "only the line of growth of a certain tree or grass marked a boundary; and sometimes only a stone determined the corner of a division" (Chinen 1958:1). The ideal ahupua'a, from mountain to the sea, enabled a chief and his followers to obtain fish and seaweed at the seashore, taro, sweet potatoes and bananas from the lowlands, and forest products from the mountains. However, this more often than not, was not the case (Chinen 1958:3). Ahupua'a were also political sub-divisions for taxation purposes during the Makahiki period (Handy and Handy 1978:48).

Each ahupua'a was often divided and sub-divided several times over (i.e., 'ili, kuleana, mo'o, pauka, kōele, kiha pai), answerable to ali'i where the lesser division was located. However the 'ili kūpono or the 'ili kū was "completely independent of the ahupua'a in which it was situated...tributes were paid directly to the king himself" (Chinen 1958:4). Rights to lands were mutable or revocable; a ruling chief or any "distributor" of lands could change these rights if displeased, or as favors - usually after a victorious battle, and after the death of the ali'i nui or ruling chief (Chinen 1958:5). During the period 1839 to 1855, several legislative acts transformed the centuries-old Hawaiian traditions of ali'i nui land stewardship to the Western practice of private land ownership. In the first stage, King Kamehameha III (Kauikeaouli) divided up his lands among the highest-ranking ali'i (chiefs), konohiki (land managers), and favored haole (foreigners) (Chinen 1958:7-14; Moffat and Fitzpatrick 1995;11, 17). This historic land transformation process was an evolution of concepts brought about by fear, growing concerns of takeovers, and western influence regarding land possession. Kamehameha III, in his mid-thirties, was persuaded by his kuhina nui and other advisors to take a course that would assure individual personal rights to land.

One-third of all lands in the Kingdom would be retained by the king; another one-third would go to *ali'i* or chiefs as designated by the king. In 1846 he appointed a Board of Commissioners, commonly known as the Land Commissioners, to "confirm or reject all claims to land arising previously to the 10th day of December, AD 1845." Notices were frequently posted in *The Polynesian* (Moffat and Fitzpatrick, 1995). However, the legislature did not acknowledge this act until June 7, 1848 (Chinen 1958:16; Moffat and Fitzpatrick, 1995:48-49), known today as The Great *Mahele*. "The *mahele* did not actually convey title to the various *ali'i* and *konohiki*; it essentially gave them the right to claim the lands assigned to them - these lands became known as the *konohiki* lands. The *konohiki* chiefs were required to present formal claims to

the Land Commission and pay a commutation fee, which could be accomplished by surrendering a portion of their land to the government." The government could later sell these lands to the public in the form of Grants. Upon payment of the commutation fee, the Minister of Interior issued a Royal Patent to the chief or *konohiki*. The last one-third was originally designated to the *maka 'āinana*, but not acted on-instead it was set aside to the government, "subject always to the rights of the tenants" (Moffat and Fitzpatrick 1995:41-43; see also Chinen 1958:15-21).

'Ili kūpono were the only 'ili (parcel) recognized in this process, all the 'ili and lesser divisions were absorbed into the ahupua'a claim (Chinen 1958:20). In 1892 the legislature authorized the Minister of Interior to issue Royal Patents to all konohiki or to their heirs or assignees where the konohiki had failed to receive awards for their lands from the Land Commission. The Act further stipulated "that these Royal Patents were to be issued on surveys approved by the Surveyor General of the kingdom" (Chinen 1958:24; Moffat and Fitzpatrick 1995:41-43). Kamehameha III formalized the division of lands among himself (one-third) and 245 of the highest-ranking ali'i and konohiki (one-third) between January 27 to March 7, 1848. He acknowledged the rights of these individuals to various land divisions in what came to be known as the Buke Mahele ('sharing book') or The Great Mahele. These lands, however, were all "subject to the rights of native tenants" or kuleana lands, with reversionary rights to ahupua'a and 'ili kūpono claimants if the tenant died without heirs (Chinen 1958: 29-30). The Great Mahele marked the end of the feudal system in the kingdom (Chinen 1958:15).

An online search of the Waihona 'Āina website did not produce any information regarding Mahele, Royal Patents and Grants of Kahului, but a search for 'Kaihuwaa' (said to be native name for Kahului) did produce one claim: #03257C by Nahuina, which was awarded. However, according to Baker and Baker (1989:126) 'Kahului' was given as *konohiki* lands to Kapui. Welch et al. (2004:8) state that most of the lands around the harbor were granted to Victoria Kamāmalu, granddaughter of Kamehameha I.

The following excerpt by Fischer (2013b) may offer a clue about Kahului:

The history of Kahului, like much of modern Hawaii, is closely tied to the sugar industry. Prior to middle of the 1800's, Central Maui was largely uninhabited. Henry Baldwin and Samuel Alexander purchased land near Makawao and started a sugar plantation, which was to expand greatly over the next century. As the plantation expanded, so did the area of what is today, Kahului. In 1880's Kahului became the headquarters for Maui's first railroad, built to haul sugar from the fields to the refinery and harbor - all of which were owned by Alexander and Baldwin. A squatter town grew up in the area, but was short lived when the bubonic plague epidemic of 1900 resulted in a decision to burn most of the town and kill the infected rats. The Kahului we know of today is a planned community developed in 1948 by the Alexander & Baldwin Sugar Company. Nicknamed "dream city" by the cane workers it [Kahului Town] was a much nicer place to live than the dreary barracks of the plantation camps. The town continued to grow with more homes, roads, stores and by the 1940's the major airport serving the island of Maui. Today, Kahului is Maui's major town.

Baldwins and Alexanders of Maui

The Baldwins and the Alexanders were two prominent families who had far reaching influence on the lives and industry of Maui including the Kahului-Wailuku areas. The two parcels proposed for acquisition in the project are owned by A&B Properties. The following are some Alexander and Baldwin stories and their connections to the project area.

Dr. Dwight Baldwin (1798–1886 second child of twelve children) and Charlotte Fowler Baldwin (1805–1873) were part of the fourth company of American missionaries in Hawai'i arriving in 1831 (Alexander 1935). Dr. Baldwin was not only an ordained minister, he was also a physician who served fellow

missionaries, ali'i and the maka'āinana; first in Kohala and Waimea and all the way to Hilo. Then for health reasons he was transferred to Lahaina (Lyons n.d.; Wiki-DB 2011) in 1835 where they occupied the former Spaulding house (Alexander 1935). During the smallpox epidemic in 1853, Dr. Baldwin served as a government physician for Maui, Moloka'i and Lana'i and is credited with keeping the disease at bay (JWC n.d). After seventeen years of service, Dr. Baldwin was granted (ca. 1853) 2,675 acres of land in the ahupua'a of Māhinahina and Kahana for farming and grazing (KR 2003: H-2). This later became part of the Baldwin Estate of lands in West Maui. The Baldwins had eight children: David Dwight Baldwin (1831-1912), Abigail Charlette (1833-1913), Charles Fowler Baldwin (1837-1891), Henry Perrine Baldwin (1842-1911), Emily Sophronia (1844-1891), Harriet Melinda (1846-1932) a son, Douglas Hoapili Baldwin, who died young in 1843 (Wiki-DB 2012) and a daughter Mary Clark (born after Abigail) who also died young (Sanford 2013).

In 1890 David Dwight Baldwin (1831-1912), the oldest son of Dr. Baldwin, was one of the first to plant pineapples on Maui; however, it was not until several decades later (1920) that pineapple became an economically viable crop. Pineapple as a commercial crop was first planted on O'ahu by Captain John Kidwell in Mānoa (Baldwin 1946:5).

Henry Perrine Baldwin (1842-1911), or 'H.P.', was born in Lahaina, the sixth of the eight children of Dr. Dwight Baldwin and Charlotte Fowler Baldwin. Henry grew up in Lahaina and was educated at Punahou. Although he first wanted to get a medical education, he started managing a rice plantation, then went into sugar. He first worked for his brother David Dwight, followed by a long-lasting



partnership with his soon-to-be brother-in-law, Samuel Thomas Alexander (1836-1904), the son of Rev. William Patterson and Mary Ann McKinney Alexander. Samuel Alexander like H.P. Baldwin also grew up in Lahaina. Later Alexander went to the mainland for work and college, while Baldwin stayed on Maui to work for his brother raising



sugarcane. After studying on the Mainland, Alexander returned and began teaching at Lahainaluna. He and his students successfully grew sugar cane and bananas. Christopher H. Lewers, owner of Waihee sugar plantation, heard of this feat and offered Alexander the manager's position of his plantation. Alexander hired Baldwin

as his assistant, who at the time was helping his brother raise sugar cane in Lahaina. This was the beginning of a lifelong working partnership (A&B Properties 2013). In 1869 the partnership of Alexander & Baldwin (A&B) invested in twelve acres of land between Pa ia and Makawao, followed soon after with the purchase of 559 acres of land. In 1870 they planted their first sugarcane and Baldwin married Alexander's sister. H.P. and Emily Whitney Alexander Baldwin had eight children: Henry "Harry" Alexander Baldwin (1871-1946), Maud Mansfield (Baldwin) Cooke (1872-1961), William Dwight Baldwin (1873-1943), Arthur Douglas Baldwin (1876-1954), Frank Fowler Baldwin (1878-1960), Fred Chambers Baldwin (1881-1905), Charlotte (Baldwin) Rice (1884-1938), and Samuel Alexander Baldwin (1885-1950). (Henry's older sister Abigail married Samuel and Emily's older brother William De Witt Alexander, who was a noted Hawaiian historian [Lyons v1:4] and teacher and president of Punahou School.)

In 1876 the partners started the 17-mile Hāmākua-Ha'ikū irrigation ditch that crossed several ridges and ravines to irrigate 3,000 acres of cane fields belonging to them and neighboring plantations. They competed with Claus Spreckels (see box below) for the first ditch of its kind. Alexander and Baldwin completed their ditch in two years, founding the Hamakua Ditch Company (aka East Maui Irrigation) the oldest subsidiary of A&B. Although H.P. Baldwin lost an arm in a mill accident, that did not deter him (Day 1984:7-8). He became famous when he climbed down a rope with only one arm into Maliko Gulch (every day according to Sanford [2013]) to show his workers it could be done; they followed him thereafter (Day 1984:8; Wilcox 1996:60; Dorrance and Morgan 2000:59).

Alexander later moved his family to California (1883) and Baldwin ran the firm for almost thirty years (Day 1984:8). Other ventures of A&B included establishing the Hawaiian Sugar Company on Kauai (1889); acquiring control of the Hawaiian Commercial & Sugar Co. in Pu'unēnē and operating a fleet of vessels between Hawai'i and the mainland; these were eventually replaced by steamers of the American-Hawaiian Line, then the freighters of the Matson Navigation Co., a subsidiary of A&B until 2012 (Sanford 2013). From 1887 to 1903 H.P. Baldwin also served in the legislature; he devoted much of his income to community works (Day 1984:8).

Claus (aka Adolph Claus J.) Spreckels (1828-1908) was born in Germany; he left in 1846 for America where he became an industrialist in Hawai'i and California. In 1852 he married Anna Christina Mangels and had thirteen children (five lived to adulthood). Spreckels was involved in Hawai'i government and industry starting with the Kingdom during the era of Kalākaua to the Territorial years.

While in Hawaii, he purchased the *Pacific Commercial Advertiser* in 1880 and became a publisher. This paper later became known as the *Honolulu Advertiser* and, prior to its demise in 2010, was one of the largest newspapers in circulation in the United States. Spreckels' conservative, pro-monarchy slant caused him to fall from favor in the business community, and he eventually sold the newspaper. Claus Spreckels also lent his assistance to William Matson when he first founded Matson Navigation Company. Spreckels financed many of Matson's new ships including Matson's first ship called *Emma Claudina* named for Spreckels' daughter. Matson had been captain of a vessel, engaged chiefly in carrying coal to the Spreckels Sugar Refinery and later worked aboard the Spreckels family yacht (Wiki-CS 2013). Spreckelsville on Maui is named after him.

In 1900 Alexander & Baldwin incorporated as an agency for sugar plantations such as Hawaiian Commercial & Sugar Company (HC&S) and Maui Agricultural Company, Ltd., an A&B creation managed by H.A. Baldwin (Sanford 2013). In 1906 F. Baldwin succeeded his father H.P. Baldwin as manager of HC&S; and became both president and manager in 1911 when his father died. In 1908 HC&S and Maui Agricultural Company jointly organized East Maui Irrigation Company, Ltd. to manage their ditch system and divide water between them.

In 1917 Maui Agricultural Company, Ltd. built the first distillery in the U.S. for producing alcohol from molasses; the plantations' vehicles operated on molasses alcohol instead of kerosene or gasoline during World War I. The company also grew corn which they ground at their Haʻikū factory, supplying the Territory of Hawaii. Maui Agricultural Company, Ltd. once had a thriving pineapple department; in 1932 the department became a part of Maui Pineapple Company. In 1948 HC&S and Maui Agricultural Company merged forming one of the largest sugar producers. The following year HC&S abandoned its Puʻunēnē railroad in keeping with the new trucking era.

HC&S had small but thriving dairy and beef cattle operations for many years; the cattle (Grove Ranch) were inherited from the Maui Agricultural Co. HC&S ranch department raised Aberdeen Angus cattle on 6,000 acres of land above Hāli'imaile. The dairy sold pasteurized milk for the first time in 1948, but HC&S sold its Pu'unēnē Dairy to Haleakala Dairy in mid-1951. In 1962 HC&S merged with and became a division of A&B. HC&S had three subsidiary companies, which became subsidiaries of Alexander & Baldwin: East Maui Irrigation Company, Limited; Kahului Railroad Company which it had owned since

1899; and Kahului Development Co., Ltd. HC&S president Asa Baldwin became a vice-president of A&B, Inc. Since 1965 the company had been modernizing its sugar equipment; between 1985 and 1990 their factories were completely computerized.

Maui's Pineapple Industry. David D. Baldwin was one of the pioneers of the pineapple industry on Maui (1890) in Ha'ikū (it had also been planted elsewhere on Maui), but it wasn't until 1903 that the Haiku

Fruit & Packing Company, Ltd. was chartered; his younger brother H. P. Baldwin served as president and he became vice-president; son of H.P., Henry "Harry" Alexander Baldwin became Secretary and William A. Baldwin was appointed manager. In 1906 other companies were encouraged to plant for their cannery; these included Grove Ranch division of Maui Agricultural Co. (lower Ha*ikū); Haleakala Ranch Co., owned by H.A. and S.A. Baldwin (Sanford 2013), but it wasn't until 1920 that pineapple became a really viable crop (Baldwin 1938:8-13; 1946:5). There were several reasons for this such as incompetence, devastating rains of 1914, slumping mainland market (Baldwin 1938:10-13) and the lack of general knowledge about crop fertilization (Baldwin 1946:6-7).



Photo 22. Harry Baldwin

Several people in the Ha'ikū area tried their hands at growing pineapple but later gave up: James Lindsay (1897-1911), Clarence White (1906-1915) who sold his holdings to Harold W. Rice (1915) and Krauss (1912) (Baldwin 1946:5-11). In 1917 the Hawaiian Pineapple Co. sold its holdings in the Haiku Fruit & Packing Company to a Maui hui (partnership) headed by Harold Rice who also affected the joining of Ha'ikū and Maui Pineapple Company, a Japanese company located at Pauwela Village founded in 1910. Rice sold his stock the following year. The Company then ventured into Hāna, buying the Kīpahulu Sugar Company and planting pineapple in Mu'olea and Kīpahulu. This move however, was a complete disaster and by 1927 Hāna was abandoned. The Great Depression sealed their fate and the company was sold to Hawaiian Pineapple Company of Honolulu (Baldwin 1938:12-15).

In 1925 J. Walter Cameron was called from Honolulu to be the manager of the pineapple department of Haleakala Ranch Co. where they cultivated pineapple on marginal lands in Pulehu; four years later they separated from the ranch and incorporated as Haleakalā Pineapple Company. The Haleakalā fields and the Maui Agricultural Co. fields at Kaluanui and the Hāli'imaile section were very productive until the market slump late 1929. In April of the same year, Libby McNeil & Libby exercised their option and absorbed the Pauwela Pineapple Co. They began to discourage independent growers in favor of planting their own fields, as opposed to Hawaiian Pineapple Company of Ha'ikū who encouraged growers. By 1932 heavy losses and market depression led to a reorganization of Maui Agricultural Co., which merged with Haleakala Pineapple Co. and incorporated as Maui Pineapple Company Ltd. (MPC). MPC was headquartered at Hāli'imaile with J. Walter Cameron as manager. In 1934 MPC exercised an option regarding interest in the California Packing Corp. and bought out all the interests; this venture was financed by Alexander & Baldwin, Ltd., marketing agents and financial factors of MPC (Baldwin 1938:24-27).

In 1938 Maui County (Baldwin Packers-Lahaina [aka Honolua Ranch]; Maui Pineapple Company-Kahului; Hawaiian Pineapple Company (Haʻikū and Molokaʻi) Libby, McNeil & Libby (Haʻikū and Molokaʻi) and California Packing Corporation (Lānaʻi) was producing half of the pineapple grown in the Territory of Hawaii. By 1941 MPC developed the contour planting system, which greatly improved production, but this was hampered by the drought of 1943-44 and World War II (WWII), when several key personnel joined various branches of the Service and wartime restrictions on materials prevented completing harvesting using a newly developed mechanized system (Baldwin 1946:16-20).

Maui Pineapple Company began in 1909 as the Keahua Ranch Company and became the Maui Pineapple Company in 1932. In 1962, the parent company A&B merged Maui Pineapple Company with Baldwin

Packers. In 1969 the Cameron family, descendants of H. P. Baldwin and his son Harry A. Baldwin, acquired Maui Pineapple Company, Ltd. (devoted to agricultural operations) in a "buy out" from parent company A&B, and later changed the company name to Maui Land & Pineapple Company, Inc. (ML&P) and went public. ML&P owned a multi-purpose processing facility in Kahului, Maui, where its fresh fruit packing and processing operations were consolidated. The facility also provided refrigerated storage, freight consolidation and warehousing to the greater Maui farming and agricultural community.

ML&P headquarters were located in Kahului, Maui with a satellite division, Kapalua Farms, located near Kapalua Resort, which was also owned by its parent Company (Wiki-MLP). In 1976 J. Walter Cameron died and his son Colin C. Cameron was elected Chairman of the Board of ML&P and its subsidiaries (KR 2003: RT; see also Bruce 8/29/78:4). Colin Cameron died in 1992 and his sister Mary C. Sanford was elected Chairman of the Board and Gary L. Gifford was named President and CEO of ML&P; in 1995 Donald A. Young succeeded Gary Gifford (KR 2003: RT).

Lives and activities changed during the war and Kahului Harbor and vicinity were no exception as discussed by Hill et al. (2009:23) below:

During World War II, the area along the shoreline west of Pier 2 contained 20 buildings either constructed or improved by the U.S. Navy as a base of operations for military shipping. Nine structures were built by U.S. Navy Construction Battalion (SeaBee) workers, and eleven structures were refurbished for military service (NARA 2008). Supplies for military bases including the 4th Marine Division camp at Kokomo, the 10th Amphibious Training at Mā'alaea, the Underwater Demolition Team training base at Kīhei, Naval Air Station Puunene and Naval Air Station Kahului were either transferred directly to each base, stored at the 18th Service Battalion Storage Depot at Kahului Harbor, or stored at an ammunition depot located above Makawao town.

A series of open-air ammunition storage areas were developed by the U.S. Navy in an uninhabited area of Maui northwest of the Kahului Harbor. The site was surrounded by a wire fence, ringed with 40-foot tall watch towers and guarded by a U.S. Marine Corps Tank Battalion Camp (NARA 2008).

Beginning in 1943, the 48th SeaBees and the 127th SeaBees constructed 40 corrugated steel Quonset huts arranged in a straight line along the western coastline of Kahului Harbor. Each structure was supported by a foundation of poured concrete and raised above grade on 4-foot concrete walls. Supplies arriving at Kahului Harbor were delivered to this depot by rail.

Hill et al. (2009:25) noted the tidal wave that affected Kahului Harbor and vicinity in 1946:

On April 1, 1946, the Kahului Harbor and NAS Kahului suffered serious damage after a tidal wave generated in the Aleutian Islands, Alaska, struck the north coast of the island of Maui. Kahului Harbor was left empty when the water receded. The Coast Survey tide gage recorded 5 waves with heights in excess of 9 feet during the first 90 minutes of the tsunami, two of the waves being greater than 11 feet (Green 1946).

Hill et al. (2009:29) also note post-World War II activities in Kahului:

All pineapple shipments from the Baldwin Packers cannery in Lahaina were trucked to the port of Kahului for shipment. The systematic closing of all military installations on the island of Maui saw the departure of about 15,000 men from "Maui's Own" 4th Marine Division. During October and November 1945, Marines of the 23rd, 24th and 25th Regimental Combat Teams, plus their attached support groups, boarded aircraft carriers docked at the port of Kahului for deactivation in California.

The following table highlights some of activities and events pertaining to Wailuku, Kahului Harbor and vicinity, and Maui industry based on archival data from previous sections of this report. Citations included only if not previously noted.

Table 4. Chronology of selected events and activities related to Kahului Harbor and vicinity.

- While residing at Wailuku, Maui chief Kahekili repulses an attack by Hawai'i Island chief, Kalani'opu'u;
- Kamehameha brings his war canoes from the island of Hawai'i and lands them on the beach at Kahului; he defeats Kahekili in the battle of Kepaniwai in 'Iao Valley;
- 1837 A visitor describes Kahului as a settlement of 26 pili grass houses (Cardno Tec 2009:IV-4);
 - The missionary Richard Armstrong, stationed at Wailuku, describes in his journal a tidal wave that wiped out a village of 26 grass houses on the Kahului shore. Strong swimming and quick thinking enabled all but two of the villagers to survive—Armstrong writes admiringly of the rescue work he witnessed or heard about—but the villagers' homes and belongings were swept inland and smashed into a small lake, possibly Kanahā fishpond (*Maui News* 1937 In Welch et al. 2004:8);
- 1839-55 Legislative acts transform the centuries-old Hawaiian land stewardship traditions; the Great Mahele allows for Kamehameha III to redistribute lands Crown/Kingdom, Konohiki, Kuleana, Government (the last category allows for land grants where non-natives can purchase lands); ali'i Victoria Kamāmalu is awarded Kahului;
- 1849 Hāli'imaile Plantation is started by Stephen Reynolds and Alfred W. Parsons on leased land;
- 1850's Kahului Harbor, a manmade port, is dredged from naturally formed Kahului Bay. The harbor basin is constructed to be 2,050 feet wide by 2,400 feet long and has a depth of 35 feet; the harbor and its associated lands are the foci as Kahului and the sugar and pineapple industries grow;
- 1857 Stephen Reynolds dies; Hāli'imaile Plantation bought by Charles Brewer II, who changes the name to Brewer Plantation;
- 1860s Thomas H. Hobron starts Grove Ranch on 3,000 acres in Hāli'imaile and Pā'ia; his Waihe'e Sugar Mill is managed by Samuel T. Alexander and his field boss is Henry P. Baldwin;
- Wailuku Sugar Company is organized by James Robinson & Company, Thomas Cummins, J. Fuller, and agent C. Brewer & Company (Wilcox 1996:122), on government grant lands of upland Wailuku (Gilmore 1936 In Hill et al. 2009:15);
- The first western-style building, a warehouse, is erected near the beach by Thomas Hogan this provides the impetus for the establishment of a small settlement near the harbor as sugar makes its commercial debut and proves to be an economically viable crop;
 - Brewer Plantation is sold to Judd, Wilder and Judd;
- 1866 Heir-apparent Victoria Kamāmalu Ka'ahumanu dies at 27 years (Day 1984:66); all of her lands are passed on to her father Mataio Kekūanāo'a, and then to her half-sister Princess Ruth Ke'elikōlani, who wills her lands to their cousin Princess Bernice Pauahi Bishop;
- Samuel T. Alexander and Henry P. Baldwin both resign from Waihe'e Plantation in the 1860s to establish their own plantation in Pā'ia (Gilmore 1936 In Hill et al. 2009:15);
 - Alexander and Baldwin purchase 12 acres of Bush Ranch in Sunnyside area of Makawao for \$110 (A&B Inc. 2013);

Alexander and Baldwin purchase 559 acres of grazing land at Sunnyside down what is now Baldwin Avenue from Makawao, for \$8,000 known as Bush Ranch, formerly part of Haiku Sugar Co. – their property abutted Thomas Hobron's Hāli'imaile Plantation (Murphy 2012; A&B 2013);

Alexander and Baldwin produce their first crop of sugar cane (Lassalle 2003);

- 1870s Sanford B. Dole buys out mortgages of Grove Ranch and becomes one-fourth owner;
- James McKinney Alexander (second son of William P. and Mary Ann Alexander, younger brother of William DeWitt Alexander and Emily Alexander Baldwin) founds Seaside Farm half a mile east, past Kaunoa (Murphy 2012);
- 1873 Kimble's Store is built near the beach (Welch et al. 2004:59);
- 1875 Pā*ia Plantation is established by Alexander and Baldwin closed in 2000 (Lassalle 2003);
- 1876 H.P. Baldwin loses arm in mill accident;

The Hamakua Ditch Company is organized and owned by the Haiku Sugar Company, T. H. Hobron/ Grove Ranch plantation, Alexander & Baldwin, and Samuel Alexander's brother, James Alexander (Kuykendall 1967:64);

The Hawaiian Kingdom and the United States adopt the Reciprocity Treaty;

Hawai'i's emerging sugar industry is booming. On Maui, several plantations are located in the isthmus neighborhoods surrounding Wailuku, Ha'ikū, Makawao and Pā'ia;

A wheelwright/blacksmith shop is built near the site of the old Kahului saloon (Welch et al. 2004:59);

Kepoikai, who lived at the Wailuku end of Kahului Bay, owned the fishing rights at Kahului (Maui News, 1900 In Welch et al. 2004:8);

A tidal wave floods Kahului (Welch et al. 2004;59);

Thomas Hobron builds a narrow gauge railroad running between the beach at Kahului and Wailuku. The first train runs on July 17, 1879;

To facilitate the loading and unloading of goods and passengers, a small landing is constructed in Kahului Bay;

- 1880 Claus Spreckels establishes Spreckels Sugar Mill, and the town of Spreckelsville grows around the mill (Lassalle 2003);
- Thomas Hobron founds the Kahului Railroad Company (KRR). Passenger cars are added to the rail system and KRR becomes the first railroad in Hawai'i that provides passenger service between the population centers at Wailuku and Kahului Harbor. The Kahului station is located southeast of the harbor at Hobron Point and tracks extend through Spreckleville as well as to the sugar mill at Pu'unēnē; Hobron is also the Postmaster;
- Claus Spreckels acquires Royal Patent Grant (R.P.G.) 3343 for 24,000 acres of fee-simple lands on the Maui isthmus (Daws 1986 In Hill et al. 2009:15);

Spreckels establishes Hawaiian Commercial & Sugar Company (HC&S) on lands that include a portion of Wailuku Ahupua'a;

Spreckels engineers the Waihe'e Ditch (also called the Spreckels Ditch) to tap water resources from West Maui. The 15-mile-long ditch starts at the 435 foot elevation of Waihe'e Stream, and carries 60 million gallons of water (per 24-hour day) to the Wai'ale Reservoir at the 214 foot elevation of Wailuku (Wilcox 1996:122; Hill et al. 2009:16);

A new custom house is built at Kahului Bay (Maui News 1900 In Welch et al. 2004:10);

- Alexander and Baldwin formalize their partnership by incorporating their sugar business as the Pā'ia Plantation, also known at various times as Samuel T. Alexander & Co., Haleakala Sugar Co., and Alexander & Baldwin Plantation. (By spring of 1900, Alexander & Baldwin had outgrown the partnership organization and plans were made to incorporate the company, allowing the company to increase capitalization and facilitate expansion [A&B, Inc 2013]);
- 1884 KRR service is extended eastward to Pā'ia and includes the Spreckelsville Plantation;

The Kahului Railroad becomes a freight forwarder and subsidiary of the Wilder Steamship Company (Dean 1950 In Hill et al. 2009:17);

Haleakala Ranch is established (HR 2013) on lands acquired by Charles Hog Alexander (son of William P. and Mary Ann Alexander), who died in 1885 as a result of a horse-riding accident. His widow Helen Thurston Alexander sold the lands to Edward Bailey – Lorrin Thurston put up half the money. They expanded the lands with the addition of Edward's brother and father's lands. Bailey and Thurston incorporated in 1888. H.P. Baldwin was brought on board as Treasurer (Murphy 2013):

By this date Spreckels plantation covered 28,000 acres, making it the largest sugar plantation in the world (Hill et al. 2009:16);

Thomas H. Hobron dies in San Francisco (obituary in Commercial Advertiser September 14, 1889 from Library of Congress);

A consortium led by H.P. Baldwin buys the KRR from Wilder Steamship Company (Welch et al. 2004;9);

- 1890 David Dwight Baldwin starts Maui pineapple industry with plantings in Ha'ikū;
 - H.P. Baldwin is elected president of Haleakala Ranch;
 - 1895 Wailuku Sugar Company takes over Waihe'e Plantation;
 - The Spreckels-owned HC&S Company attempts a blockade of the Kahului wharf to drive the Wilder Steamship Company out of business. In order to outmaneuver the blockade, the directors of Alexander & Baldwin purchase the disputed 5.47-acre harbor-front parcel owned by Spreckels and create a partnership of other plantations to drive Spreckels out of business (Dean 1950 In Hill et al. 2009;17);
- 1898 Alexander and Baldwin purchase HC&S;

HC&S begins Lowrie Ditch project, planned by William J. Lowrie; the ditch traverses 21.9 miles from East Maui to the border of Kihei, bringing water to the arid lands south of Kahului (Thrum 1900 In Hill et al. 2009:18);

KRR begins construction on the East Breakwater:

- Alexander and Baldwin successfully take over the sugar interests of Claus Spreckels, and negotiate a friendly purchase of KRR (Dean 1950 In Hill et.al. 2009:18);
- Bubonic plague infects Kahului and the town is deliberately burned to the ground to destroy diseaseinfected rats;

Alexander & Baldwin, Limited, becomes a Hawai'i corporation when the Articles of Association and affidavit of the president, secretary and treasurer are filed with the treasurer of the Territory of Hawai'i. The Board of Directors include Joseph P. Cooke, Wallace M. Alexander, James B. Castle, Henry Baldwin, and Samuel Alexander (A&B Inc 2013);

1901 KRR purchases its first tugboat, the Leslie Baldwin, to tow lighters to and from vessels:

H.P. Baldwin hires an engineer to survey the harbor (Welch et al. 2004:59);

1902 HC&S start Pu'unēnē mill operation;

The McCandless Brothers are hired to drill 12 wells for new Pu'unēnē Mill (Hill et al. 2009:18).

1903 Haiku Fruit & Packing Company (HF&P) is established as a pioneer pineapple operation;

Maui Agricultural Company is formed from Ha'ikū and Pā'ia Plantations;

1904 HF&P builds a cannery in Hatikū;

Samuel Alexander dies after getting hit on the head from a falling boulder at Victoria Falls, Africa (A&B Inc 2013):

Harbor development is initiated by KRR, which is a subsidiary of HC&S;

A new roundhouse is built (Welch et al. 2004:59);

1905 A&B buys part of the Matson Navigation Company (KBR 2009);

Dredged harbor coral is used to fill and level much of the Kahului waterfront to create a more orderly business district. Early structures that are constructed near to or within this waterfront business district include the Baldwin National Bank of Maui (1906), the Puunene Store at Kahului (1908), and the Kahului Store (1916) (Hill et al. 2009:19);

Work on a 1,800 foot long eastern breakwater at Kahului Harbor is begun;

- 1906 The California and Hawaiian Sugar Company (C&H) is founded; it operated from 1921 to 1993 as an agricultural cooperative marketing association owned by the member sugar companies in Hawai'i (HARC 2013);
- 1907 KRR redesigns the layout of Kahului town (Maui News 1907 In Welch et al. 2004:11);
- 1908 Hamakua Ditch Company becomes East Maui Irrigation Co. from Nahiku to Maliko (KBR 2009);
- 1909 Keahua Ranch Co. is incorporated (Maui Pineapple Company [MPC] started as Keahua Ranch);
- 1910 KRR obtains a license from the Territorial government to build a wharf for inter-island vessels. The Claudine Wharf, so-called in honor of the inter-island steamer of the same name, is built with the understanding that the terminal will be turned over to the territorial government at a later date;

The eastern breakwater is completed; over 300,000 cubic yards of fill have been deposited on the windward side of the breakwater, creating a landfill area of over 12 acres. The entrance to the harbor and the area alongside the pier are dredged to a depth of 35 feet (U.S. Army 1913:1412 In Hill et al. 2009:18);

A 40-foot tall lighthouse is established on the eastern breakwater (Welch et al. 2004:60);

The federal government takes over responsibility for the harbor (Welch et al. 2004:60);

The harbor handles 100,000 tons of outgoing sugar and incoming goods (Board of Harbor Commissioners 1920 In Hill et al. 2009:18-19);

- 1911 H.P. Baldwin dies; one son, Frank F. Baldwin, takes over as President-manager of HC&S and KRR, while another son, Harry A. Baldwin, becomes Haleakala Ranch president;
- 1912 Pineapple is planted at Honolua Ranch/Baldwin Packers;
- 1913 KRR, under contract to the War Department, adds 75 feet to the eastern breakwater (Welch et al. 2004:60); the line for a western breakwater has been surveyed and charted, but construction awaits funding approval by the U.S. Congress;
- 1917 The Territorial government deepens the slip along Claudine Wharf; construction of a western breakwater begins, with KRR as the contractor (Welch et al. 2004:14);
- 1919 Kahului Bay basin and west breakwater dredging is completed; dredging of the harbor supplies ample material to fill in wetland areas along the harbor shoreline and south of the east breakwater in the vicinity of Kanahā Pond (Hill et al. 2009:20);
- 1920 Over 370,000 tons of outgoing sugar and incoming goods pass through Kahului Harbor (Board of Harbor Commissioners 1920 In Hill et al. 2009:19);
- Maui Agricultural Company has merged seven East Maui companies: Haiku Sugar Plantation, Pā'ia Plantation, Kailua Plantation, Kula Plantation, Makawao Plantation, Pulehu Plantation and Kalialinui Plantation:
- 1922 Construction on Pier I begins in May (Welch et al. 2004:60):
- 1923 February 3 tsunami causes some damage at Kahului Harbor (Hill et al. 2009:20);

Claudine Wharf is closed for repairs in June (Welch et al. 2004:60);

Pier 1 is completed and turned over to the Territorial government in August; the new pier has 500 feet of berthing space that is suitable for large steamers, which cannot be accommodated at Claudine Wharf; it is used for the first time in September (Welch et al. 2004:60);

1924 Haleakala Ranch grows pineapple for California Packing Company (CPC) (HR 2013);

The Territorial government buys the Claudine Wharf for \$25,000 (Welch et al. 2004:61);

The western breakwater loses 15 feet in a storm, adding up to a total loss from "surface washout" of 125 feet (Welch et al. 2004:61);

The Los Angeles Steamship Company announces that two of its ships will make regular stops at Kahului Harbor, but the *City of Los Angeles* has continuing problems with docking at what the company considers an unsafe port (Welch et al. 2004:14);

1925 Hāli'imaile Store is built by Maui Agricultural Co.;

Both east and west breakwaters are extended with more dredging (Hill et al. 2009:20):

The Claudine Wharf piles give way, suspected to be the result of recent harbor dredging that caused ocean currents to erode sand around the piles (Welch et al. 2004:61);

- 1926 Kahului Cannery is built by CPC; MPC transports pineapple to this cannery;
 KRR replaces its older wooden buildings around the harbor with new concrete buildings (Welch et al. 2004:61);
- 1927 U.S. Army Corps of Engineers further extends the east breakwater;
 Demolition of the Claudine Wharf begins in May; its replacement, Pier 2, is completed in December (Welch et al. 2004:61);
- 1929 Keahua Ranch Co., Ltd., changes name to Haleakala Pineapple Co., Ltd.;
 Haleakala Ranch Company and Keahua Ranch Co., Ltd., form Maui Pineapple Company;
- 1931 Pier 1 is extended to double its original length;
- 1932 Maui Pineapple Company, Ltd., is incorporated, and consolidates the pineapple operations of Haleakala Pineapple Co. and Maui Agricultural Co.;
- 1934 Maui Pineapple Company purchases Kahului Cannery from CPC;
- 1940s Various military activities are conducted at Kahului Harbor and vicinity;
- 1941 U.S. (Hawai'i) enters World War II; Kahului Harbor is shelled twice by Japanese submarines in the bay;
- 1942 KRR builds a 40,000-ton bulk sugar plant at the harbor (Welch et al. 2004:15):
- 1943 Naval Air Station Kahului is developed east of the harbor;
- 1946 April 1 a tidal wave generated in the Aleutian Islands, Alaska, strikes the north coast of the island of Maui - Kahului Harbor is left empty when the water receded;
 - Samuel A. Baldwin becomes Haleakala Ranch president after the death of his brother, Harry A. Baldwin (HR 2013);
- 1948 Maui Agricultural Company (Pā'ia) merges with HC&S (Pu'unēnē) consolidating Alexander & Baldwin's sugar plantations on Maui under HC&S, with A&B owning 35 percent of the company stock;
- 1949 A residential and commercial master plan for "Dream City" is developed for the town of Kahului;
- 1950 Post-WWII switch from railroad to trucks and buses;
 - KRR locomotives are relegated to shuttling dockside cargo, such as fertilizer from Kahului Harbor to the Pacific Chemical and Fertilizer Company warehouse at Ka'ahumanu Avenue and Lower Main Street (Gilmore 1954 In Hill et al. 2009:29);
 - J. Walter Cameron becomes Haleakala Ranch president after the death of Samuel A. Baldwin (HR 2013);
- 1955 Pier 1 at Kahului Harbor is improved and expanded;
- 1960 150 acres of waterfront land adjacent to the Kahului Harbor are designated for light industrial use (Hill et al. 2009:29);
 - May 23 Hotels, warehouses and the structures of the Kahului Shopping Center are heavily damaged when a tidal wave, originating along the coast of Chile, hits the Kahului area (Hill et al. 2009:29);

Table 5. List of Previous Archaeological Studies (cont.)

Year	Author	Location Type	Finding		
Vear	Author	Location	Type	Finding	
1998	Burgett & Spear	KH YB yard	monitoring	no historic properties	
1998	Devereux & Hammatt	Maui C Park	monitoring	5 sets of human remains, USMC supply depot, KRR track berm	
2004	Welch et al.	Kahului Harbor	Arch Assess/CIA	prep for KCH 2025 Master Plans identify historic properties and TCPs in compliance with Section 106 of NHPA (as amended)	
2009	Hill et al.	Hill et al. Kahului Harbor Lit Review/Field		historic impact; effect with mitigation; KCH SIHP 50-50-04- 2953; 3 project parcels heavily modified over the past 125 years and surrounded by industrial parcels continually modernized; thirteen historic properties identified; structure CSH-2 is historically significant [not in current project area]	

Hill et al. (2009:62) summarize the history of the project area as follows:

A review of the historic documentation indicates that the present project area portion of the Kahului Harbor was extensively developed for railway access, fuel and molasses storage, freight storage and trucking, and bulk sugar storage beginning in the late 1880's. The project area was continually redeveloped to accommodate new technological advances, both in handling bulk sugar and during the transition from railroads to trucking. According to research conducted for this report, soils in this region of Kahului consist of coral and silt dredged from the ocean and deposited as fill. It is presumed that any surface pre-contact traditional or cultural historic properties in this portion of the Wailuku Ahupua'a have been obliterated, and that the closest undisturbed area within this portion of the Wailuku Ahupua'a lies to the southeast, within portions of Kanahā Pond not previously modified by the military.

Legend for some of the CSH sites cited in Figure 17 below (Hill et al. 2009:40):

CSH 6 two small storage tanks CSH 7 large molasses tank and pump house constructed prior to 1911 abandoned CSH 8 large bulk fuel storage tank constructed ca. 1916 abandoned CSH 9 bulk fuel storage tank constructed prior to 1930 abandoned CSH 10 garage-auto/truck repair shop constructed in 1929 in use/storage CSH 11 garage-2 service bays constructed prior to 1935 unknown CSH 12 plantation meeting house constructed in 1936 used by Royal Order

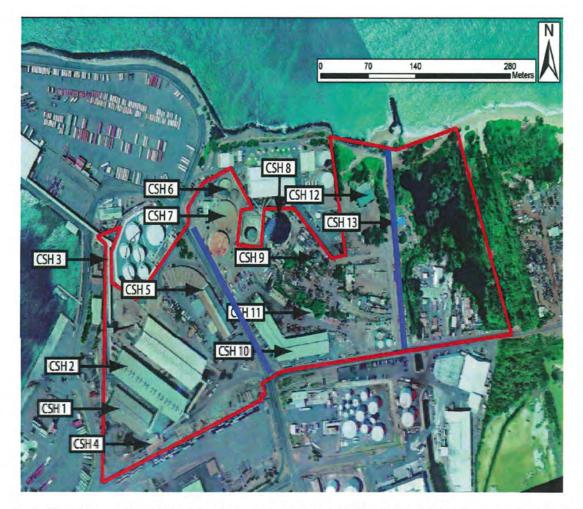


Figure 17. Historic properties within the project area located on a 1997 aerial; the CSH project area is outlined in red (Hill et al. 2009:40); CSH 6, 7, 8, 9, 10, 11, and 12 are in current project area – between blues lines (see Figure 13 above).

ETHNOGRAPHIC DATA REVIEW AND ANALYSIS

The Ethnographic Survey (oral history interviews) is an essential part of the Cultural Impact Assessment (CIA) because the ethnographic data helps in the process of determining if an undertaking or development project will have an adverse impact on cultural properties and practices or access to cultural properties and practices. The following are initial selection criteria:

- Had/has Ties to Project Location(s)
- Known Hawaiian Cultural Resource Person
- · Known Hawaiian Traditional Practitioner
- · Referred By Other People

The consultants for this CIA were selected because they met the following criteria: (1) consultant grew up, lives or lived in Kahului, Wailuku and vicinity; (2) consultant is familiar with the history and mo'olelo of Kahului, Wailuku and vicinity; or (3) consultant was referred by staff of Hawaiian Canoe Club or other consultants. Copies of signed "Consent" and "Release" forms are provided in (Appendix F and Appendix G).

In order to comply with the scope of work for this cultural impact assessment, the ethnographic survey was designed so that information from ethnographic consultants would facilitate in determining if any cultural resources or practices or access to them would be impacted by the implementation of the project (expansion onto A&B lands). To this end the following basic research categories or themes were incorporated into the ethnographic instrument: Consultant Background, Land Resources and Use, Water Resources and Use, Cultural Resources and Use; Anecdotal Stories and Project Concerns. Except for the 'Consultant Background' category, all the other research categories have sub-categories or sub-themes that were developed based on the ethnographic raw data (oral histories) or responses of the ethnographic consultants. These responses or clusters of information then become supporting evidence for any determinations made regarding impacts on cultural resources and/or practices including access.

Each person interviewed is asked to talk about their background; where they were born and raised, where they went to school and worked, and a little about their parents and grandparents. This category helps to establish their connection to the project area, their area and extent of expertise, and how they acquired their proficiency. In other words, how they meet the selection criteria. Ethnographic consultants either have family or personal ties to the project vicinity and/or are familiar with the history of the area.

Nine people were scheduled to be interviewed. Only six interviews were completed (Table 6); two of the nine were no shows; one of the nine provided a partial interview that was not completed. Five of the six ethnographic consultants were members of one of three canoe clubs located in the Kahului Harbor area.

Table 6. Consultant Demographics

Consultant	Born/Raised	Hawn	Lived/Lives	Work	Connection
Mary Akiona	CA	No*	Waiehu/Maui since 1962	Ret/Vol/HCC	Canoe Club
Karen Chun	CA	No*	Maui since 1980s	Eng/Websites	Canoe Club
Diane Ho	Pa ia	Pt. Hawn	Pa'ia	Atty	F/HC&S:M/KR
					Canoe Club
Paul Lu'uwai	Kiribati/Kula	Pt. Hawn	Maui	Teacher	Canoe Club
Cliff Libed	O'ahu	No**	Wailuku (over 32 yrs)	Sub-teacher/	Canne Club
				CC&A-MC	
Maizie Sanford	Makawao	No	Makawao/Manoa/Kihei	Writer/CEO	A&B/Cameron

^{*}Husband/Children are Hawaiian; Ret=retired; Vol=volunteer; Eng=Engineer; Atty=attorney; F=father; M=mother; KR=Kahului Railroad; CC&A-MC=Commissioner on Culture & Arts-Maui County; **Pacific Islander; HCC=Hawaiian Canoe Club; HC&S=Hawaiian Commercial & Sugar Co.; CEO=Chief Executive Officer

There is always a danger of not allowing the consultant's "voice" to be heard; of making interpretations that are not theirs; and of asking leading questions. To remedy this, the "talk story" method is used and allows for a dialogue to take place, thereby allowing the consultant to talk about a general topic in their own specific way, with their own specific words. All of the excerpts used are in the exact words of each consultant or paraphrased to insert words that are "understood" or to link sentences that were brought up as connected afterthoughts or related additions spoken elsewhere in the interview. The following "Consultant Background" provides an overview of the consultant, as well as information about their families.

Mary Peckney Palakiko Akiona. My name is Mary Akiona; I was born (1946) and raised in San Diego, California. I moved to Hawai'i after I graduated in 1964 to Honolulu to live with my great-aunt who lived on O'ahu. After living there, I was working and going to school, I was on my own after a few months, had a job and a roommate, went to school at University of Hawai'i for a while, I ended up dropping out and just working. One of my coworkers at the bank was from Maui and I got to come here to Maui, Easter weekend, and I just fell in love with Maui. Those were the days when there were no traffic signals, I wanted to live in Maui but there were no job opportunities, I ended up moving to Maui, I met my ex-husband, Paul Akiona, my last name used to be Mary Palakiko, lot of people still call me that. I met my



husband in Kona, and we ended up dating and moving to Maui in 1968. I've been in Maui since 1968, and I've seen a lot of changes since I came. We use to leave our car keys in the car, groceries, no one use to take anything, so I've seen some great changes.

My parents are Irwin and Dorothy Peckney. I'm the oldest of eleven children; my father was born in Chicago and my mother in Colorado. My parents met in San Diego that was a big jumping off point for WWII, that's where a lot of people met. My sister, Chris, the fifth one, she came to visit me when she was eighteen, she's five years younger, she was getting ready to leave for the states so we introduced her to my husband's cousin, Moki Keahi, and she ended up staying, got married to him and still here, a teacher in Lahaina so I have one sister here at least.

My ex-husband [Palakiko] and I moved to Kihei and when Kihei Canoe Club [established in 1973] started in 1975 they were looking for paddlers and my ex-husband used to paddle for Lahaina Canoe Club, and they said bring your wife because we don't have any women; I didn't even know how to swim. That's how I got started in 1975 with Kihei. I had two kids at that time, I have six total, I continued to paddle so my kids were raised at the beach; someone always watched them while I paddled. They all paddled, every single one of my kids paddled.

He's [Palakiko] still alive, he lives in Lahaina, and he's Hawaiian, Filipino. My kids are all very talented musically, my oldest boy plays music professionally, he's a contractor, but every Thursday he plays at the Kaanapali Beach Hotel. He has five kids and they all can play music. Charlie is off the grid, sort of independent guy, works when he needs to - he's a whatever kind of guy - he can play music. Markie plays piano, stand-up bass and bass, guitar, he plays for the halau, and his wife is with the halau that comes here [Pueo Pata] but she just gave birth and she's the halau's alaka'i, so they are on break. My ex-husband was adopted by his Grandfather, the second marriage, the family fishermen in Lahaina is Naleieha - the Naleieha were all fishermen. My daughter who lives on O'ahu is a total fisherperson, she loves fishing, my son Charlie goes out fishing all the time, he goes out fishing all the time, he's a total water person, they are all water people. It's in their blood, because their family was all fishermen, my ex-husband used to surround net, dive and surfing, he isn't in good health right now. I have one daughter and five boys.

I worked at Kaiser and left them and eventually came to work for the canoe club and then left that and before I retired I was doing auditing for insurance, Workers Comp and General Liability Insurance, working for a company that was based in California, I was doing that and they were sending me to California and that was getting old. I've never been there in my life, I got my Map Quest and GPS and traffic there is scary, I did not own a car in San Diego, I came here when I was eighteen and spent my whole life in Hawaii. I was driving down the freeway going I cannot believe I'm doing this, I'm sixty some years old and I must be out of my mind and I was in the Fresno area, than Oakland, it's such a bad area and I'd ask people and they'd say just don't be there after dark because it's really a bad place. I didn't know that, but finally I left. Since last year, actually almost two years, we've been babysitting; my husband is still working, working for the County, Liquor Department, runs the Lahaina Office. He could retire but he doesn't mind working, so I'm okay.

I eventually ended up at Hawaiian Canoe Club, I knew Diane Ho, and I was going to retire from paddling after my last kid and I couldn't do it, a single parent with six kids and Diane says, 'we'll watch your kids, you won't have to do nothing', as you can see I'm still doing a lot. My thing about Hawaiian Canoe Club as a single parent with six kids, struggling, working at Kaiser and part time on the weekends cleaning trying to survive; when my youngest son Richard was eight, he's a big kid, I thought I didn't know what to do with him the whole summer. I got him in the Kamali'i Program [at Hawaiian Canoe Club Cultural Program], which starts at 1:00 p.m., so I put him in summer school, on my lunch break I picked him up, fed him lunch and brought him to the Kamali'i program, which was free and still is free, except for excursions. He was in the Kamali'i program till 3:00 p.m. and paddled canoe after, I'd get down there at 5:00 p.m. and he'd hang out until I paddled. This was a life saver for me. The reason why I let him come here and paddle was we paddled in Kahului Harbor. I would have never let my eight year old kid go out there at [inaudible] and even though he can swim, I would have been scared..... I used to be the Executive Director [HCC], quite a while ago.

I paddle and I do the bookkeeping for the club and I'm also the Treasurer, the bookkeeping I get paid a little money for, but the Treasurer I do a lot of volunteer work. Today I'm down here because I'm in charge of the getting the new key pad locks on the doors, I had to meet the lock guy and hang out with my grandson, I had to bring him with me.

###

My name is Karen Chun, I was born (1950) in California and I've lived here for twenty years, I'm married to a Hawaiian, and I'm very much involved in paddling, and I've coached at a canoe club in the Harbor and also we have a club that comes out of Kanahā, so I spend a lot in the canoe paddling past or landing near the target property. My husband's name is Malama Chun, he's the paddle maker. He grew up in Hāili'imaile, his family is the Makena, Lono, Kailua Family. I'm a former game designer, and now do websites, but mostly I paddle. That's our passion. My first club was Malama Ula, which is now called Wailea Canoe Club, and then after I met my husband I moved to his canoe club, which is Na Kai Ewalu. Na Kai Ewalu is in the Harbor, it is part of the old Kahului Canoe Club, which was the first club in the harbor and then it split into Na Kai Ewalu and Hawaiian



Canoe Club, My husband has been with them since he was about eighteen years old. We went to Na Kai Ewalu, which in the Kahului Harbor, and Ilima Kalama invited us over to coach with him at the Kihei Canoe Club, where he was head coach. So Ilima says I don't like being head coach so you guys be head coach, so we were there for a while. Then Na Kai Ewalu invited us back to coach, so we were head coach there for a while, and then during that time we kind of established our own canoe club, which is the "un-club" North Shore Renegades. So we are not HCRA Member, we don't do regatta, we just do distance races. After coaching two different clubs we

were over the drama and the paddletics. So that's what we do now, and 1 occasionally do regatta with Lae'ula O Kai, who is a canoe club out of Kanahā.

I went to school at UC Berkeley and UC Davis in the 60s - Northern California. I got my Bachelors and Masters Degree in Mechanical Engineering. I worked in various jobs, a lot of solar monitoring and passive cooling work for various companies then Reagan cut the budgets. Then I worked for Western Area Power Administration, which is a Federal Utility that runs most of the hydro power in California, The Central Valley Project, Shasta, Folsom, Whiskey Town. It was a great job, I was the person that ran all the simulations that determined what or project dependable capacity would be which is how much you can count on generating throughout the year. You had to take into account of fish requirements, the irrigation requirements, and the municipal water requirements, stream flows; it was a fun job. After that I was a consultant for the California PUC for a while. I was married to somebody who was born in Hawai'i and we'd come back a lot and then we were separated and then I met Malama.

###

My name is Diane St. Sure Ho, I was born in Pa'ia, Maui, Hawaii. I grew up in Pa'ia and Kahului Maui. I graduated from both Baldwin and Kamehameha, long story...then to University of Hawaii. I majored in education and I have a JD from the William S. Richardson School of Law. I am a practicing attorney – for 35 years. My father is Richard St. Sure and my mother is Sarah Shaw. My father worked for HC&S, my mother worked Kahului Railroad. I started padding at twelve years old. Harry Field and David Kahanamoku moved to Maui and John Lake started Hawaiian Canoe Club and he got them to start Kahului Canoe Club so they recruited on us kids from Kamehameha.... I went off to school and so forth, I guess John Lake died in that period of time, after in the sixties, it sort of fell apart; Harry Field died and Kahanamoku moved. The sport itself died on



Maui, a little bit, it got resurrected in the early 1970s.... At first it was just kind of, we had no direction, we raced but you could race every race; we had no divisions. It became more formalized in 1975 or so, and I think they had their first championship regattas around 1975 or 1976. 1976 I went to law school and Kihei won the championship and I was at Na Kai Ewalu in 1975 when Na Kai won the championship.

###

My name is Cliff Libed, I was born (1948) and raised on O'ahu, went to Aiea High School, graduated from University of Hawaii, Manoa – majored in education and business. Been on Maui for over thirty two years, living always in the Wailuku area. Career wise I managed property for the State of Hawaii. I'm currently retired and am a substitute teacher - Baldwin and Maui High, 'Iao, Lokelani and Maui Waena Intermediate Schools. I've been involved in canoe clubs on Maui for twenty-three or twenty-four years. I was a race director for MCHCA and head coach for Na Kai Ewalu. I was also a member of Kihei Canoe Club. Commission on Culture and the Arts of Maui County - I'm a volunteer commissioner and our goal is to preserve artistic and cultural activities, I'm appointed to a five year term and we are moving into having more awareness for our cultural events and



try to preserve them with the public and connection with cultural activities. We are not a commission where we are only looking for Hawaiian but for Chinese, Japanese, etc., and we want to become a conduit for information for the community.

###

My name is Paul Ka'uhane Lu'uwai, I was born (1963) in Kanton Island, South Pacific, now known as Kiribati Islands, raised in Kula. My family is from the Makena area, we are part of the Kukahiko Clan of Makena and Kionioi'o, we own Makena Landing. I belong to Protect Kaho'olawe 'Ohana (PKO), thirty-five years; I've been coaching here for thirty-one years, pretty much my home. I went to Kula Elementary, St. Anthony High School, Chaminade University, and finished up my Bachelors and Masters and University of Hawaii, Manoa. I have a sports medicine degree, a teaching degree and Masters in Curriculum and Instructions. After college I worked for Kamehameha Schools, Kapalama Campus for five years, I moved home and taught at Baldwin High for a year, Kalama Intermediate for three years, Lahaina Luna for one year,



back to O'ahu and got my Masters. Taught at Farrington High School in health academy for two years and then back to Maui and I've been at King Kekaulike High School for the past seventeen years; I teach Health and PE. I've been coaching here (Hawaiian Canoe Club) for thirty-one years and I've been paddling for thirty-two. As far as I know we've always paddled in the harbor, we are the oldest club on Maui, fifty three years old now, my grandparents also paddled in the club - Angeline Lu'uwai and John Lu'uwai. They were friends with the Lake 'Ohana, Kumu Lake is the founder of our club and their children are still involved with our club, Merriam Lake and their siblings. They were drinking pals with them (the Lakes) back in the day, and they are all about the same age. My father did not paddle - he was in the military, was a worker, but of course I paddle, my brothers all paddle and all the children paddle here. My parents are Robert Lu'uwai and Helen Lu'uwai of Kula.

###



Photo 28. Coach Kauhane in HCC lobby



Photo 29. Coach Kauhane prepping students

My name is Mary Cameron Sanford; nicknamed "Maizie." most people call me that. I was born in 1930. I grew up in a house called *Ke Anuenue*, which is just *mauka* of Kaluanui, off of Baldwin Avenue. I did not go to Makawao School, I went to Kaunoa, which was an English-standard school and felt like a better education. I was sent away to boarding school in 1942, and came back the next year. Then I graduated from Kaunoa in 1944, and then the rest of the time I was sent to school on the mainland. That was 8th grade. But I never went to Maui High School, which most people did, because I was sent to the mainland, much to my regret. The first school I was sent to was called Tenacre School, in Wellesley, Massachusetts. It was a boarding school, and they were strict, it was a nightmare. But I got a good education. Then



after that I went to three years of high school at Dana Hall School, which was a much more pleasant experience. And since I was used to the east, I went to Smith College, Massachusetts and graduated from there in 1952. Then I came home, and basically was here. It was miserably cold! But when you're young you don't notice it that much except at Tenacre's we weren't particularly fed well. I didn't have enough blankets on the bed, for instance, so I had to pile all my clothes on the bed. Things were the way they were. But I was terribly lonesome. When the war started, a lot of children or young people were sent to the mainland to relatives or to schools because their parents thought that there was going to be a Japanese invasion. My brother was already away at a boarding school, in Deerfield, Massachusetts. He was gone in the Fall of 1941. He liked that school.

A & B was started by my great-grandfather Henry Perrine Baldwin and great-grand uncle Sam Alexander - they started the company because of the plantation. They had a partnership bringing the ditch water over to the central plain. And then there was Kahului Railroad, which was right there on the Harbor... Henry's brother Frank was the president of Kahului Railroad Co. The railroad I think was built by a Captain [Thomas] Hobron, who was married to my great-great grandmother. There were businessmen in those days who were entrepreneurs that started all of this [KRR]. It wasn't my great grandfather or his brother that did it. They owned the land and the Kahului Railroad was also the one you had to apply to, to get anything for construction. For instance when Fred Baldwin Memorial Home was built [in Makawao], Kahului Railroad was the one that brought the materials there and everything else. The Kahului Railroad was an integral part of the business community. When I knew him, William Walsh was the head of Kahului Railroad [he resigned in 1948] – he was succeeded by C. H. "Buster" Burnett.

The only ride on the train I did was to get onto the *Maizie C*, a boat, the sampan that was built at the Maui Vocational School. The train tracks were extended over to the shed where the boat had been built and the boat was hauled along in a huge open car down to the harbor where it was launched. And I christened it and you can see the picture. I was six years old. I remember it so clearly, what a day! Riding along on the boat and that picture of me with the life preserver on, that was taken on the boat. Then getting off on the big platform, and all of these people, the bands, and the flags, it was very exciting. My grandfather had named it after me. He had commissioned the sampan because he needed it to transport cattle and horses, etc. back and forth to Kahoʻolawe, where he had gone into partnership with Angus McPhee to raise cattle. Black Angus cattle were never used by Haleakalā Ranch. They were used at Grove Ranch across Kaluanui. There are so many different varieties and some do well in dry areas, like the surviving cattle from Kahoʻolawe. Before animals were at Kahoʻolawe, there was a lot more vegetation, and once the goats got there, goats (and the cattle) were destructive to grass and the little plants coming out. The trees could never grow back and without the trees to bring down the fog drip, they're not going to get any water, and it just goes dry.

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[From a previous interview Jan 30, 2013]

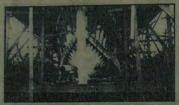
My mother is Frances Baldwin Cameron. She was the daughter of Harry (Henry) and Ethel Frances Smith Baldwin. They lived first in Hamakuapoko and then they moved to *Kaluanui*, which they built in 1917. My mother grew up there, partly, and then when my mother married my father, J. Walter Cameron, my grandparents built a house for them next door, which was named *Ke Anuenue*, very appropriately — there's lots of rainbows there, right on the edge of the rain belt. That's where I grew up. After my mother died, the house was sold to the Fords. It's out of our hands and it was remodeled.

Harry [Henry Alexander] was the son of Henry Perrine (H. P.) Baldwin. H. P. was the son of Dr. Dwight Baldwin, who was the original missionary in the family. Dr. Baldwin was stationed in Lahaina. He had a number of children, but H. P. is my direct ancestor. H. P. had a lot of energy, a lot of business sense, and a lot of aloha. He was involved with a great deal of what went on, on Maui in the 1800s. He died in 1911. Besides being a sugar grower and politician (he was in the legislature during the days of the kingdom), he also was a great philanthropist. After he and his wife Emily Alexander had eight children, one son, Fred Baldwin, died of appendicitis, and they started the Fred Baldwin Memorial Foundation in honor of him.

There were six boys. Fred died, so there were five left. Only one, Arthur*, went to the mainland and never came back. But the others stayed. Harry, my grandfather, was the oldest. He and his youngest brother Sam [Samuel Alexander] were eventually co-owners of Haleakalā Ranch. And then there was Frank who had the H C & S plantation. Will [William Dwight] was a doctor but he didn't practice terribly long. He owned land in Haiku that had been in the family, one of their first homesteads. And he planted a lot of grapefruit and avocado trees and was interested in growing those. But as a doctor, during WWI he went on a Red Cross mission from Hawai'i to Vladivostok to help with the terrible conditions there. I wrote an article about that. It was very bad, they had an epidemic. There were all kinds of epidemics, they were very bad. The Trans-Siberian railroad would be full of cars of people dying. It was really quite something. This was after the war had ended. Everything was in chaos over there. [*Arthur graduated from Yale and Harvard; law firm Garfield McGregor & Baldwin – partner James Rudolph Garfield was son of U.S. President James Abram Garfield; James was with his father when the President was killed (Wiki-HPB 2012)].

Notes from Maizie

place but most importantly as tour guide, horse handler and cook for Aiken's business of taking tourists to the top of Haleakala, an overnight trip. Idlewild was the staging area for the rugged ascent of the mountain.



A student helping to build the Maizie C at Maui Vocational School

My grandparents, Harry and Ethel Baldwin, had a vacation house at Olinda, next door to Idlewild. Ethel always loved her gardens wherever she lived. Hiroshi described in his autobiographical chapter in the "Arisumi Family Book" that in the summer Ethel hired him and his brothers Butch and John to work in her Olinda yard for 25¢ a day. "Not a bad wage," he said; in the 1920s plantation workers only got \$1.00 a day. Hiroshi stated, "It must have been her hobby to hire us and pay us 25¢ a day, although I don't think the three of us did a dime worth of work for her."

Another connection was Hiroshi's part in the building of the Maizie C. It was pretty exciting; after all these years (70), I actually got to talk to one of the talented young men who built the boat with my name on it.

Harry Baldwin commissioned the Maui Vocational School to build a new boat for the Kaho'olawe Ranch Co., a cattle-raising partnership Harry had with Angus McPhee on Kaho'olawe. The vocational school was a precursor of Maui Community College. Principal Ernest Hood was confident his students could build such a boat though nothing like it had been tackled before. It was a giant project for the

The boat had specific requirements; 65

feet long, steady in the water, room in the hold for cattle, horses and tanks of fresh water and "modern conveniences" in the cabin, as Harry reassured my mother when he invited my brother and I to go on fishing trips in it. Mr. Hood studied the fine points of designing and building such a boat, and supervised the construction hands-on. Hiroshi Arisumi was one of the carpenter students who learned woodworking and engineering skills from Mr. Hood, whom Hiroshi quoted as saying, "You can build anything after you build a boat." Every board, every rib has different measurements and they all have to fit perfectly when



Maizie Cameron christening the Maizie C at Kahului Harbor

the sections are bolted together; no leaks allowed.

After two years of construction, March 25, 1937 was the Big Day. The boat was pulled along railroad tracks laid from the school to the harbor. On the platform next to it, the County band played, speeches were spoken, and my moment of glory came when I stepped up to the mike and said, "I christen thee the Maizie C" and swung the bottle of champagne against the bow. Nothing happened; the bottle was heavily cushioned in braided red, white

continued from page 1

and blue ribbons, and my throwing arm at six years old was pretty weak. We tried it again; "I christian thee the Maizie C" and another swing. Still no smash and splash. On the third attempt, a quick-witted dock worker held up a metal pipe near the bow on which I could break the bottle. Properly christened, the boat slid down the ways into the water, a brave sight, all flags flying.

The shakedown cruise of the Maizie C carried 54 of the vocational school students to Oahu, Kauai and Hawaii. Seasickness decimated their numbers; 20 leaving the cruise after visiting the first two ports. The channel crossings were very rough, and the April 17, 1937 Maui News reported that "Many of the boys have never been to sea before, and virtually all of them were sick before the craft had passed Kahakuloa Pt. on the way out of the Kahului harbor." Auwe!

Another coincidence: what kolohe little boys figure out on their own.
According to John Arisumi's biographical section of the Arisumi book, his family would buy bread at Komoda Bakery in Makawao, and by the time they got home to Olinda, the kids would have eaten out the center of the loaves, without unduly disturbing the wrappers or the crusts. My mother used to say my brother did the same thing after she would but bread at Nashiwa Bakery in Paia. Colin would be quiet as a mouse in the back seat, hollowing out the loaf before they got home.

Delving into family histories can be amusing.

- Maizie Sanford



The Maizie C with all the flags flying

Figure 18. Notes from Maizie – about Maizie christening the Maizie C.

Land Resources and Use. Land resources and use changes over time. Evidence of these changes is often documented in archival records. Cultural remains are also often evident on the landscape and/or beneath the surface and provide information regarding land resources and use. However, oral histories can give personal glimpses of how the land was utilized over time and where the resources are or may have been.

Ms. Maizie Cameron Sanford has a long family history [Alexander-Baldwin-Cameron] to the project area and greater Kahului and shares some of that history.

A & B was started by my great grandfather and great uncle Henry Perrine Baldwin and Sam Alexander - they started the company because of the plantation. They had a partnership bringing the ditch water over to the central plain.... A & B is [now] owned by a lot of different stockholders. I don't know if there is anybody who has any connection with the family who is on the Board of Directors of A & B anymore. But their headquarters are still in Honolulu, the other Big Five are on the mainland. And H C & S (at Pu'unēnē) is still part of A & B. H C & S is still more or less considered family. It [A&B] started as a brokerage for the sugar plantations that H. P. Baldwin and Sam Alexander started. But then it was mostly H. P. because Sam moved to the mainland. And they had to have a broker to sell and shipping lines to ship the sugar and that was Matson. Now A & B just recently split Matson off. Since they've sold the Kauai plantations, H C & S is the last sugar plantation. But there's a lot of development, lands that they own and developed commercially - they do their own developing. I'm just saying these things off the top of my head; I haven't done any research [Sanford].

And then there was Kahului Railroad, which was right there on the harbor, the building is still there (the roofed concrete building). I don't know what it's used for now, but with the all the train tracks that's on these maps, it was pretty important. Henry's brother Frank was the president of Kahului Railroad Co. Kahului Railroad was the transportation for bringing in agricultural things from the outlying areas, first the sugar cane, sugar and molasses, and later on the pineapple - it also hauled merchandise to upcountry stores and building materials to various construction sites. And then it was a passenger train too - school kids went to Maui High School on the train - we all still remember that. People could get from Hāmākuapoko, Ha'ikū area, which was very populated, down to Kahului on the train. I never did - the only ride on the train I did was to get onto the Maizie C, a boat, the sampan that was built at the Maui Vocational School [see above]. The train tracks were extended over to the shed where the boat had been built and the boat was hauled along in a huge open car down to the harbor where it was launched. And I christened it and you can see the picture [see above]. I was six years old. I remember it so clearly, what a day! Riding along on the boat and that picture of me with the life preserver on, that was taken on the boat. Then getting off on the big platform, and all of these people, the bands, and the flags, it was very exciting. My grandfather had named it after me. He had commissioned the sampan because he needed it to transport cattle and horses, etc. back and forth to Kaho olawe, where he had gone into partnership with Angus McPhee to raise cattle. They [A&B] owned the land and the Kahului Railroad was also the one you had to apply to, to get anything for construction. For instance when Fred Baldwin Memorial Home was built [in Makawao], Kahului Railroad was the one that brought the materials there - and everything else. The Kahului Railroad was an integral part of the business community [Sanford].

The Kahului Railroad building is right over there; right past the fabric store going past towards Pa'ia. It's still there - it might have Kahului Railroad Building on the top, but not the fabric store, that was all A&B. My mother worked at the next building [KRR], and the tracks use to run right in front of it. Behind the railroad is pier one, the railroad building. It's just as you go out and you are making the turn, where you can go left, across from the shopping center [Ho].

Kahului had the movie theater - it was a very nice movie theater right on the corner where a Burger King is now. We loved going there, they had Saturday afternoon movies. The kids were dropped off, that was fun. You could get loge seats and regular seats. And they had glowing lights along the side. Not too much else in Kahului, a few stores and a bank. There were more places

later on, of course it got built up when Dream City started and the center of population seemed to shift to Kahului and there were a lot more commercial (enterprises) going down there. Dream City was after the war, so it would be in the late 1940s. That's when plantation camps were closing down and the workers came to Dream City. The first increment was along Pu'unēnē Avenue and the houses were half cinder bricks and half wood. There wasn't much landscaping, unlike the plantation villages which had a lot of fruit trees that people could pick off of. Kahului was very dusty but the homes were modern and so Kahului built up. And then the first shopping center was right there Kahului Shopping Center - that's where Ah Fook's was. It was very popular, there were nice big monkey pod trees and benches, and retirees would sit around and play games on tables and benches - greatly used area. And across the street, across Ka'ahumanu Avenue, which was rather narrow in those days, there were a line of shops. I remember going there with a bunch of teenagers and eating for the first time in my life a dish of tripe stew - first time. There were a lot of little shops and of course they all got pushed off during the 1946 tidal wave - destroyed [Sanford].

Further over was the Spreckelsville plantation that had been started by Spreckels. And then when Spreckels left the islands, that plantation was absorbed by H C & S, which Frank Baldwin was the head of. For a while, certainly years before he died, H. P. Baldwin was living in a house next to the Spreckelsville plantation, the Camp One area. And so he must have had something to do with buying that area [around the harbor]. You know where Stable Road is? It's on the Pā'ia side of the helicopter zone. Stable Road goes *makai* from the road to Pā'ia. Just at that intersection. If you go *mauka*, that's where Camp One is. We used to go there. There was a movie theater, there was a large building, a Japanese school, and stores. I got my first pair of rubber slippers there, which I thought were wonderful [Sanford].

So historically there is an ancient connection to a culture, secondly as far as sugar cane and agricultural products, the area was used for freight services and at the same time too, going up to Wailuku towards the cane fields and some pineapple. The surrounding area housed many small villages and eventually gave into agriculture through HC&S, which had some homes. Wailuku is the main city of Maui, at the same area too there was a train station, and the Kahului Train Company is right behind. It was used for and was a very focal point prior to the construction of the malls as not only for passenger trains, the movement of product and industrial activities [Libed].

Since the majority of the ethnographic consultants were canoe paddlers, their focus was on the Kahului Harbor and vicinity - the many activities, areas of concern and the political history of the area as it pertains to paddlers.

Kahului Canoe Clubs

We used to be down in the old area down here at the end of the road, the end of the beach. We were adjacent to the pier and we were there when we started. Initially raced in koa canoes only, we had two clubs, Hawaiian Canoe Club (HCC) and Kahului Canoe Club. Before us there was something called Kolo Clippers in here, and that was large concentration of Hawaiian families that raced flat water boats in here, in the harbor; and that kind of morphed into the canoe paddling. It grew, phenomenally, mostly, I think, because Kahanamoku was here and his influence on O'ahu, but John Lake was influential in starting this club and growing canoe paddling but I think Kahanamoku and Harry Field really attracted O'ahu to come here because they came in 1960 or 61 to race the State Race here in Kahului Harbor [Ho].

By Pier Two, this park was A&B land, a park that no one took care of it and they kind of got old and didn't take care of it and bad people were hanging out down here, it was all overgrown, it was gross and who would even go over there. We [HCC] were first to move over here and A&B leased the land to the County of Maui and the land where the *halau* is, we have a separate lease with A&B for that, but the reason we could even get that land is because this is a tidal wave

inundation zone and when you are in an inundation zone you can't even build a structures like new structures, so it would have to go way, way back. Other than being a park, what are you going to put there? Traditional *hale* are break away buildings, the way it comes it can wash away. We are on big heavy posts to withstand tsunamis [Akiona].



Photo 31. Hawaiian Canoe Club halau



Photo 32. Hawaiian Canoe Club halau



Photo 33. HCC traditional hale



Photo 34. HCC traditional hale

I went off to school and so forth, I guess John Lake died in that period of time, after in the sixties, it [canoe paddling] sort of fell apart; Harry Field died and Kahanamoku moved. The sport itself died on Maui a little bit, it got resurrected in the early 1970s. Hawaiian Canoe Club didn't die, but it just was no place to compete.... Early 1970s, a group of people from Kahului Canoe Club got together with Hawaiian Civic Club to bring back canoe paddling in Kahului and on the island of Maui. So they went out and started Na Kai Ewalu Canoe Club, which is next door to us, and then it started up again in 1971 or 1972. Mary would know better, MCHCA (Maui County Hawaiian Canoe Association) came into being - late 1970s [Ho].



Photo 35. Na Kai Ewalu Canoe Club



Photo 36. Prepping for Regatta

Gathering would be here at the hale. You can see what Hawaiian [Canoe Club] has and also us [Na Kai Ewalu], also further down there is another canoe club called La'eulu O Kai and they have a canoe *hale* like this at Kanahā. All three clubs are pretty much connected in the North Shore or Central Maui but we are heavily used because of the limitation of activities at that end of the Harbor [Libed]

We [HCC] also run in the Spring Break, leadership program for teenagers, because we have a leadership training program, not just for Hawaiian Canoe Club, but we open it up to any kids who want to come to it, like other canoe club kids. We hire kids to work as youth leaders to help, and they have to have gone to that program. It trains them, how to do a resume, how to interview for a job, how to dress for a job, not to wear rubber slippers and t-shirts. We do that during the intersessions, mostly paddling because that's what they want to do, there's some camping [Akiona].

Harbor Politics

That was the thing about the Super Ferry, we fought that too, DOT built this entire infrastructure [Pier Two] for the Super Ferry - built this entire ramp - all this extra stuff and why is my tax money paying for an independent company's infrastructure that failed, that was doomed to failure? It was a good idea but there were problems with it. There was no Environmental Impact report done, it was pushed through by the powers that may be and I understand for some people it was a

good thing but it was the way they did it; shoved down people throats. Young Brothers hated it; they had to shut down this whole area so the cars could drive off the pier. Have you ever been over there, the Young Brothers pier when they are moving stuff, it's dangerous and now they are driving cars down there; Young Brothers hated it, it was a really bad thing. I went to all those meetings, PUC Meetings, etc., we got snickered at; they knew they had it in the bag because the head guy was pushing it through [Akiona].



Photo 37. Young Bros lot.

Project Area

Around it [Hale Nanea] is industrial, surrounded by industrial lands - I would think it was A&B [owned] because the trucking firms and molasses tanks. Sugar, the processing of sugar - that area was used extensively. Before they shipped the sugar to HC&S, they didn't process it here; they prepared the sugar to be shipped to California. So the loading of sugar on barges was done here in this area here. The use of the area now is industrial [Libed].



Photo 38. Industrial structures northwest of Hale Nanea









Photos 39 - 42. Some of the businesses around Hale Nanea

Cultural Resources and Use

This category includes traditional Hawaiian cultural resources and practices and other ethnic resources and practices. Cultural Resources can be the traditional *wahi pana* or sacred places, any cultural gathering place, or the tangible remains of the ancient past. One of the most significant traditional Hawaiian cultural resources is the *heiau* or place of worship. Other places of great significance for all cultures are the burial places of loved ones. There are no known *heiau*, shrines or burials in the project parcels. However, cultural practices continue to take place in one part of the project parcels [Section B] and in the vicinity as noted below by the ethnographic consultants.

Pre-Contact History

The history of the area as I understood was the landing of Kamehameha from the Kanahā side and Kahului as they prepared to do battle on Maui. They came from the Hana side first and then moved towards Kahului area, working up towards 'lao Valley.... They came from Kahana, came to Kahului, this area was cleared prior. They may have come up to Kahului and at that time the beaches were a little different so the movement of the army came and going up to Waikapu and eventually 'Iao where they conquered the island of Maui. It was a huge fleet and the battle grounds were happening towards Kahului towards Waikapu, this entire North Shore was a place where there were some battles [Libed].

It's [Hale Nanea] been used forever, as long as I can remember, as a party place and I don't know who - The Order of Kamehameha, I think it is under Kahoohanohano, David Kahoohanohano. I don't know when they took it [building] over but they took it over and restored it and put it all together; it's still used for parties and things and it's used as a halau for people to practice hula and it's used for [inaudible] meetings of The Order of Kamehameha. I think A&B owns it [the land] but I'm not sure. The reason why I'm a little bit confused about it is in the old days the Harbor Master used to live right next door and was connected to Kahului Railroad, I thought but maybe A&B owns everything [Ho].







Photo 43. Royal Order sign.

Photo 44. Hale Nanea

Photo 45. Imu in rear of Hale

Hale Nanea is not only used by the Royal Order, we have family reunions there; the building and grounds that's on the edge of the shore. We've had reunions there where we brought our canoes to the beach, which is kind of a tiny little beach and taken people out during the summer when it's calm. They also have the salsa dances there; the Puerto Rican Club also has their dances there so there're all kinds of community events that go on. It would be a big loss to the community if we lost Hale Nanea [Chun].

They wanted to make container yards all down here more so than they have right now; moving it this way, I always wanted them to go that way and I know it impacts Hale Nanea but other than Hale Nanea it doesn't really impact the amount of people that are served by that area, like we serve our kids in the [canoe paddling] program [Akiona].

Hale Nanea was an army camp, used during the war to house soldiers. I'm not sure exactly where the airport was at the time but it was used for military encampment not necessarily training but that's what I was told it was used for initially in that area. Toward Hale Nanea here, these again are great beaches but you don't see them because of the industrial but once the [inaudible] the industrial kind of covered up the access here from the streets as it was back then. Hale Nanea was that plus a housing camp for workers [Libed].

Hale Nanea is a new building and they use for community gathering and pretty much the only community gathering areas and these canoe hale were more recent [Libed].

Hawaiian Canoe Club Cultural Programs

If you are looking for usages, when we just started out, you can ask lokepa, he can tell you he grew up along here, in Fishermen's Camp, it was a heavily used area. It was a heavily used area, and now, though, when we started back into canoe paddling it was in the 60s, but it was a real community thing and it still is, it's like growing and growing and growing. People come down to events here at Hawaiian Canoe Club and they can't believe, because it doesn't look like it from anywhere else how beautiful this area can be and they have no idea, and this is people who've lived all there life on Maui. They are always amazed when they come to events down here, how nice it is down here, because no one thinks about coming down to Kahului Harbor [Ho].

I don't want to boost us but we provide an extreme value to the community by offering a drug free place to come and learn Hawaiian culture and to learn paddling. It's more than just paddling, we like to teach them to be good young adults and be good people. I am the Program Director of our Cultural Program, we've run a Hawaiian Cultural Program for the past twenty-six summers in a row. We service about 180 youths right here in the club, the come here and learn Hawaiiana, from navigation to migration, to food preparation, hula, ole, chants, celestial navigation, wave finding, canoe paddle building, we built a Hawaiian hale out there [next to HCC] [Lu'uwai].

One summer we built a koa canoe with that group, we take our kids every summer for the past twenty-five summers to Kaho'olawe every year, we paddle to all these island with these kids, and we take about a hundred people every time we go. We go to Kaho'olawe, Moloka'i and Lana'i, all three islands every summer, kind of the focal point of what we are doing here, more than just paddling. This is where our kids can come and learn the culture and kind of live it a little bit. I've been doing that for our club for the last twenty something years, it's called the Hawaiian Kamali'i Program; I'm also an employee of the club. It's a summer Hawaiian cultural program with a lot of camping trips and excursions, we go to Ulupalakua, we have an ahu up there we've made for Kaho'olawe, a rain ahu. We do a lot of partnerships with Ulupalakua Ranch, we work in taro patches and help family in need to redo their taro patches and redo them, pull weeds. Go all over Maui, spending all of time at the Kihei fish pond lately, helping rebuild that; always breaks down. Our club is an integral part of the community, not only our club but all canoe clubs are part of the culture here in Maui. We'd just like to offer a safe place for kids to come and learn Hawaiian culture and participate in this wonderful sport of canoe paddling as well [Lu'uwai].

My children, all of them paddled, my youngest was a leader here, my second youngest and my daughter was a leader here, went through the whole program, my step daughter was a leader. Kimo, my fifth child dances hula, danced for Kumu Hula Sonny Ching when they won Merry Monarch twice, he also dances for [Kumu Hula Cody] Pueo Pata [Na Wahine O Halau Hula Ka Malama Mahilani] he comes and teaches our kids hula and the kids perform during our fundraiser called The Aha Aina, dinner, silent auction and entertainment from the Kamali'i Program. I love it, the kids are all scared but I encourage them and after they come off the stage high-fiving me, hugging me. They gain so much self-confidence by doing that, one or two performances and it just amazing me every year when I see that happen, and my son is real good at teaching kids, he just has the knack and the kids just really listen to him. Every year we do that and it's just another chance for growth that the kids have especially since the school cut backs on Art and Music and all that and it gives the kids the opportunity to learn that they can do something and that it's okay

to do that. He gets the little kids up in malo, it's amazing and they did their thing and they are so proud that they were able to do their chant or *hula* and that's the kind of stuff that goes on here [Akiona].

Ka'uhane [Paul Ka'uhane Lu'uwai] is taking them to Kaho'olawe, they leave from Makena. He calls it the Keiki Channel because the kids paddle across. We do post follow up on the trips, to write about what they learned, what they liked. One kid wrote, "we were going across to Kaho'olawe and coach told me I had jump into the water and get into the canoe", so jump off the escort boat and do a water change, of course we have adults all around, so he goes, "I was really scared but I did it and I wasn't scared anymore", and that in itself says something really special about what's happening, and with what Ka'uhane has done with our kids. He's amazing, that's thirty something years and he's still doing it, he is now taking on the Aunties, the fifty and above. He's coaching kids all afternoon during the program and staying until after we get done after we get done paddling until 7:00 pm [Akiona].

Kahului is where a lot of our local population lives, particularly those who are maybe not as rich as those people in Kihei and so on. The kids can go down to Kahului Harbor, they can surf, they can paddle, we even have a school that operates out of Hawaiian Canoe Club that is all based around the ocean but teaches them everything thing, arithmetic for marine biology kind of thing. It's all done through cultural teaching [Chun].

What we do here on this harbor is really important work, the kids that we attract, by and large are not kids that are successful in school, we attract kids that get so vested in the programs that they are not at the malls raising hell, getting into gangs and doing graffiti. They come here because they love the water and they want to get into the canoe and maybe they don't have enough money to buy surf boards, or whatever but they can get into a canoe where they are provided a canoe and paddle and they can get out on the water. That is an important resource in the community because you can't do that anymore in Hawaii, because no one can afford the insurance to provide kids program on the water. So only the canoe clubs, really, except for the lifeguard things - what twenty kids a year, are doing work on our ocean and that is critical to me in my mind. You can take them to the 'Y' and learn how to swim, take them up hiking on the mountain but who's taking them on the water? Nobody, and the issue is insurance in regular programs. Parents just don't take their kids on the water anymore, like twenty, thirty years ago when we were raising our kids, they were on the water. Kids today are not able to get in the water quite the same way. It does that and the other thing I think it does it that canoe paddling is not all one kind of person, now that we have our [inaudible] like tomorrow we are going to have seventy Tahitians and so forth and they do all these things and they'll have a cultural exchange, which is critical again to the growth and development of our kids. We've hosted a Japanese exchange students to learn how to paddle and to learn about Hawai'i culture, and they love that, and our kids love doing that. Because we are good competitively, our kids race all over the world, last year they raced in Calgary and these are kids, half of them would never go anywhere and our kids have raced Australia, New Zealand, Tahiti, Samoa, all over the place and they go to these places and see them and lucky if they ever went to Honolulu, and the education of that is immeasurable, the value of that, their growth. You can't take that away, I don't know where else you would go [Ho].

Hawaiian Celebrity Surfer

When Eddie Aikau was a kid he lived in Kahului and practiced on the surf break in the Harbor and to the West of the Harbor [Chun].

Water Resources and Use. The Hawaiian word for fresh water is wai; the Hawaiian word for wealth is wai wai. This is because of the value the ancient Hawaiians placed on fresh water, which was crucial for growing taro, the staple of the Hawaiian people using the 'auwai or irrigation system. Fresh water was also crucial in the lifecycle of stream inhabitants such as the 'o'opu and 'opae, as well as some of the marine life that depended on the benefits of brackish water areas for spawning.

Water Drainage

Toward Pier Two, it's amazing; I didn't know it was there. When the water goes out its kind of silty but you could see where the water comes out at Kahawai. Kahului is low so it has a lot of drainage places; there are a lot of drainage ditches [Akiona]

Kahului Harbor really used to be bad and then they shut down the pineapple cannery and slaughter house which was just draining straight into it. So the water has gotten much better in Kahului Harbor [Chun].

Kanahā Pond

Kanahā Pond seemed to be much bigger. And I know that when they built the Maui County Fairgrounds, which was originally a race track, they drained a lot of Kanahā Pond, so it's a lot smaller than it originally was. When I was aware of it, of course I wasn't there and I didn't know that had been drained. It was considered a swamp and they did not think about the birds in those days. It has a mustard color now and I haven't seen any birds lately. It was like a swamp; they were draining just to build out more. That part of the development was the race track, then Fairgrounds. They didn't think ecologically in those days [Sanford].

These were marsh lands and the State across the street has ecological ponds and wet lands. These are all wetlands, right now there is a National Reserve for wetlands in Kanahā toward the airport. The assumption would be that these areas were also served as the same principals as wetlands, a lot of them were cultural wetlands. You would assume that all this area before was filled was basically the same area as wetlands [Libed].





Photos 46 and 47. Kanahā Pond Wildlife Sanctuary southeast of project area.

Marine Resources and Uses. The sea can be a great resource to people with access to its bounty. Kahului Basin was part of a coastal environment settlement, the former inhabitants fished and gathered there, but they were also connected to the *mauka* lands. It was also a place of recreation and continues to be, with the many beach parks in the area. However, its biggest contribution to Maui since the 1800s is the Kahului Harbor. It continues to be a resource commercially and for the private sector, especially the canoe paddlers, but not without issues as expressed by the ethnographic consultants below.

Harbor Users

There is a lot of usage, lot of water usage, whether its wind surfer, stand up paddlers has increased a huge usage of this area because they go in and out but also it's the flattest water this side of the island to learn how to stand up paddle. So a lot of people come up recreationally on the weekend, a ton fishermen and ton of paddlers [Ho].

Of course the break water has been enlarged since I was a child. And the docks are much bigger. But along the beachside where our hotels are, I don't remember going there very much at all. I'm sure you can find photos because I've seen photos of what it looked like. And there was an old dock and that's probably where they did a little fishing. It was more protected at the Waihe'e end of the harbor, it would have been a good place to go fishing [Sanford].



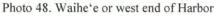




Photo 49. Paddlers heading towards Pier 1

The area is the only, currently right now, access for any kind of recreation water sport that serves Central Maui, and includes surfing, canoe paddling, mile standup paddling, fishing, gathering and other cultural activities at the canoe club; both at Hawaiian and here. The access for Central Maui and Kahului Harbor that serves Up Country, Wailuku, Kahului, Hawaiian Homes at Waiehu and adults who participate in other sports for health reason and of course sport. It is not just racing; it is a varied amount of activities that is here. Of course fishing and surfing that will be impacted should something change. There is some surfing in front here and fishing along the shore line which is accessed, and of course there is kite surfing down this area. This is waves that can break and some people can surf out in the Pier One area, canoeing of course is heavily used before we enter the harbor; this is traffic for recreation boats, outriggers, stand up paddling, one-man, two-man, and six man. We have to travel this area to come into the Harbor to finish but there's no access down the other side [Libed].

There was discussion at one point to put the super ferry down in that direction but in that regard there is no other place to put them, it's dredged [Libed].

This is the only commercial port on Maui, you can see the QE-II is here, you do have cruise ships coming in - it is the only commercial space on Maui. The expansion is needed because of the growth on Maui, we all understand that, we are hoping that they will expand in this direction [east] and affect anything towards the harbor [Libed].



Photo 50, QE II in port at Pier 1.

The Harbor is really the only sheltered place regattas can be held on the North side and many times, especially in the summer when the regattas are held, we have shore break in Kihei and Lahaina. We have actually had someone break their neck and be paralyzed because of being hit by a canoe in the shore break, and people are injured in the shore break and old people who are getting on in their years like me in my 60's who have to swim out through an overhead shore break to get into a canoe. Believe me when you get into your 60's that is not an easy or comfortable thing to do. So in the summer, a lot of times they move the regatta to Kahului Harbor and there is three scheduled regattas that are held there anyway, and we have two, one [of which is] a many time State Champion Hawaiian Canoe Club, who operated Kahului Harbor [Chun].

To me it's critical, this property [Hawaiian Canoe Club] and this harbor and the recreational facets of this harbor are absolutely critical, just like the guys on the other side, the fishing guys in their own little halau over there - the other side of the harbor - it's critical to our way of life, otherwise we may as well just move to California. I would go ballistic if we were iced out of the harbor. Even now we live in terror, because they threaten us all the time [Ho].

Harbor Rules and Policies

We do a lot of important things for the community, and we really want to see our harbor stay the way it is. We love running our regattas here, we have a regatta, so does Na Kai E Walu and sometime Lae'ulu O Kai has there's here. Being able to have a regatta here in the harbor is something we've had before when Diane was young, we don't want to see that never happening again. What we have to do is when we set the flags we kind of stick out a little bit out here so when a barge is coming through we have to stop the race. We stop it and wait for them to come into the area and then we start again, we try really hard to follow the rules. I know Diane thinks it's hard but I understand their view point too, I think that safety is the biggest thing and everyone know that when a boat is moving, if you see a ship or barge you need to get outside, on the other side of the buoys, they don't go there because it's too shallow, the turning basin is the center part [Akiona].

Harbor Restrictions

The thing that has impacted us the most about the harbor is 9-11. Because everybody is crazy about it now, we can't go from, lot of times its rough out here as you can see, so we use to go inside the harbor all the time, and go up and down here for training if there weren't any ships. We would go along side here [near the piers] and it was much better because the coach could follow you around, when we could go in here, it was so much better. Now that they are so uptight, you can't go past this, there is an imaginary line. They actually took away a really good area for training with that and it's kind of frustrating because I know we are supposed to worry about terrorist, but I don't know how many terrorist are going to come into Kahului Harbor. One time, not us, one of our crews was approached by guys with machine guns, back when it [9-11] happened. The Harbor Master is very uptight about us now and containing us, and that's difficult, pretty difficult for us to train in such a confined area. This is the North Shore of Maui, it's not like Kihei - you can jump in your canoe and go all the way around the course or Lahaina, all along the shore. We are just contained in here [Ho].

Harbor Conditions

We [canoe paddlers] are so lucky, right here this is the calmest place on the North Shore that we can paddle, and we have a lot of kids, twelve and under, the Manini Division, and there lots of these little kids and you can't send these kids out. As a parent something could happen and to me it is essential that we be allowed to stay in the Harbor; and I think a lot of the kids' parents let them come down here and paddle because they know it's safe for them. People say the harbor is polluted but it used to be a lot worse than it is, it's really, really cleaned up a lot. My son played in the harbor, he'd come here on regatta days and he'd go in the water in morning after he'd paddled, come out and eat lunch and go right back in and get back into the water and he never once, from eight years old to eighteen, got sick, had any kind of infection or sore from the water. The critical part is the safety for the kids that are paddling, maintaining our area [Akiona].

They come often to dredge because it starts to fill up; when the big ones are going out they turn up a lot of silt that means it's not that deep out there [Akiona].

Harbor Politics

Years ago, Souki said something, we had a huge battle with DOT, they wanted to expand this area here and fill in everything totally taking away the chance of us having a race course in the harbor and so now we'd be crammed further away from the pier area; right now they don't care if we go close to the pier. This is the safest, right here, is the safest, calmest water most of the time. So when you are taking out the little kids and you are teaching them when they are first learning, it's a good place to take them because it's really nice down here. So we went to all the meetings, there was a committee of us and we showed up at all the meetings, seated in the front row with our objections and they hated us. They did not know, like what we are telling you, of the impact our programs have in our community. People come to bring their kids, and they paddled here as a kid and are bringing their children to paddle and to be a part of the program and one young man told me, "Because Aunty, it was the best summers of my life down here". And how do we get kids attracted, it's because of the water, kids love the water and we have a safe place where they can train and once we get them down here, they learn about our programs and we can teach them things that can make them things that can help them become better adults. I had an intermediate school girl tell me that she never does drugs because they are so bad and 1 just felt so heart warmed. They always ask us about results when we do grant forms and how do you know when a kid made the right decisions ten years down the road because what a kid learned. You don't know that, you just hope that you instilled those values in them so that they make the right decisions in their lives. And that's the thing I see happening all the time, I know that it's working when I see the parents come back and bring their kids; and I've been here long enough for that to happen [Akiona].

I used to be the Executive Director, quite a while ago. I was terrified because we worked so hard to build what we have here, the structure to allow a place to conduct our program; so the kids can come up here and we'll have a whole room full of kids learning ukulele or learning something about navigation or the taro plant and all the different parts of the plant. We started out under the trees outside because we had nothing but we worked to build this up so we have a place for the kids to come and learn and to make it more efficient, more productive. That doesn't happen if they destroy our place to paddle and I told them, I asked them if they took every single space in this harbor and built it up for what you need for transportation. Is it going to be enough? And they said no that we'd need a second harbor. So you are going to destroy a beach that you can't put back for a band aid solution that's going to cost you way more money in the future then if you take care of it now [Akiona].

What Souki had originally wanted to do was to expand Pier One where you could have a break wall, the problem that they have at Kahului Harbor is the cruise and freight mixing up together. When you mix people and freight it's not the best scenario, so there was some talk about moving

the cruise ships, making some kind of break thing over here so they could anchor off of that, making that big lot on the other side of the pier where they could make a big visitor center but all surfers wouldn't want that because that would block them. I went to fight this and the whole thing kind of fizzled out because they had no money, it might have been 2013 Plans, by then we would have all of this but of course it didn't happen. I also went to all the second harbor meetings, the core of engineers came and did a study and they went all over the island, all the island have two harbors but we only have Kahului Harbor [Akiona].

Project Area Use (Appendix H – Annotated Map of Project Area)

The distance races, there's a few pre-season races in April. Then there's regatta season, which is in June, July, then the very first weekend in August is usually the State race, and then distance starts and ends in October. There's quite a few races, OC-6, paddle board, one-man, two-man, that go by the area where we are talking about because they start at Maliko and they go down to the Harbor, so they past the area where we are talking about. There's the Queen Ka'ahumanu, the Great Kahakuloa, which doesn't go into the Harbor, it goes from Maliko to Kahakuloa and then around. There's the Olu Kai, which is a commercial race - a whole weekend of races, goes from Maliko to Kanahā, I don't think they go to the Harbor. Like last week end we had a one-man race that was one-man stand up paddle; paddle board that went from Maliko to the Harbor. So that area that we're talking about, the target property, it's frequented by paddlers, both for practice and for races. When the surf is up the reef makes a sheltered area, so you can come out of the Harbor, around pier one and stay inside and make your way up to Spreckelsville without being wiped out, and its particularly good to be on the inside when you are going up wind because the wind regularly gets about 30 miles an hour [Chun].



Photo 51. Regatta with visiting Tahitians

Photo 52. Fisherman near Pier 2

Once in a while we'll go in, if there is surf out here. It depends on the weather, sometimes when it's really good weather, like I've gone out there in the mornings and we'll go right along the pier and we'll stay pretty close to the shore because it's calm, a lot of times it's not calm over there, you can't go over there, you got to stay out a little bit [Akiona].

Reef Resources

What we see out here are divers - there are divers, lots of guys with their kukui [Akiona].

Everywhere, big time divers, big time people getting limu. I think for fishing. People don't realize how much fishermen use the harbor, Jay ____ is organizing the fishermen, he's been monitoring with some grant [Ho].

There may be fishing villages past in the direction of Waiehu, they would appear to be calmer water - people could have moved out with the canoe. It really varies and fishing was more sharing and it's still practiced today, not as much as you used to but there is supposed to be some pretty

rich fishing grounds up in this area and this area here. This area toward Kanahā is still used for diving, there is a *tako* tournament/tournaments towards Kanahā but you can see the usage, wide open ocean people do their own diving and as we paddle we see people diving even around here, and fishing [Libed].

Once you past the pier part with the fill in all those big rocks, but it doesn't stop people from fishing [Libed].

What's really hurting the reef is the injection wells from the sewage plant come out and they are high nitrogen, so algae bloom. It seems that the whole reef, for some reason is being killed off and it probably has to do with run off because there is that river up above there that comes in. It's all concreted, it goes by Costco. Costco just paved it over; it brings all kinds of dirt and debris The Department of Beavers concreted it up. I used to be an engineer and that is what we called the Army Corp of Engineers [Chun].

Tsunami Impacts

There were a lot of little shops and of course they all got pushed off during the 1946 tidal wave - destroyed. I don't know what happened during the 1923 one. I imagine there was a lot of damage. And the 1837 one must have caused damage too, because it was written up by a missionary who was out observing. The houses were probably mostly grass houses in that time [Sanford].

I wasn't here when the bad one came, that's when things looked really different. The one that hit Japan, we came down here and heard it was really bad. People came down here at night and we showed up and we have nineteen canoes, we took almost all of our canoes to the War Memorial and we had only one trailer and it was horrible. Canoes on peoples' trucks and the cops came down to chase us out because they were closing the roads [Akiona].

The last time it came from Japan, the water came up and it went in the yard, the grass and some of it went into our weight room downstairs but not enough to ruin anything, like there was water on the bottom. It went around the front of the *hale* and you could tell where it was because it killed the grass, the salt water, the next day we brought everything back, it was weird, the harbor was so weird. There were these ebbyings, these swirling things, and they'd go between the piers, the water would come really high and it would go out further than we've ever seen it before, exposing a big rock we've never seen before [Akiona].

It's frightening because we were talking about it from the one that happened in Indonesia at that time and they were saying that we were overdue for having a big tsunami because the last one was in 1964 before I came here. I've been here since 1964 and there's never been one, there have been warnings but every time we need to call our President because it's a lot of work to evacuate everything. Some things we bring upstairs, a lot people come to help, grab computers a few hard copies of files [Akiona].

Project Area

There are a lot of divers in that area. I'm not sure how living the reef is but there's a lot of tako [Chun].

I see people fish from there; we drag a line behind the canoe and we've caught papio, but it's really fished out [Chun].

A lot of times we pull in just above there by the sewage plant there's a beach we pull into. The one thing I wanted to say is that path from the Harbor to that lagoon inside the reef is very important to one-man, stand up paddlers, paddle boarders and six-man, OC-1 and OC-2; one person on a little out-rigger canoe or two people on a little out-rigger canoe [Chun].





Photo 53. Reef/beach area north of Pier 1 and Parcel B.

Photo 54. North of "B," northeast.

Project Vicinity

From Ka'a Point, there's a whole lot of space before you formally get to Kanahā Beach Park. There's more unused land that the kites are first launched from, below Ka'a Point. Between Hale Nanea and Ka'a Point is ³/₄ mile. Ka'a Point is where the lifeguard stand is and that is where La'eulu O Kai is and from them up to where we [North Shore Renegades] are is the swim zone and that's a ¹/₄ mile, from the swim zone up to Spreckelsville, where it starts closing off with the *papa* there, the rock shelf where they fish, is another ¹/₂ mile. About a mile from La'eulu to Spreckelsville, you can get past there if it's not rough tide [Chun].

There's all these big cement pill boxes scattered along the shores [Chun].

Project Recommendations/Comments

This special section is included when ethnographic consultants make any recommendation and/or comments about the project in general.

In Favor

It [the project] doesn't affect us in the physical sense but as a person who comes from Maui County Community, I think that is a good plan to make their storage space there, I think it's smart planning to go in that area of Section B on this map. I know that there are businesses there, it will affect some businesses. I don't know. There's a kind of molasses tanks in - those metal tanks. But this is a good area, it won't affect us, it's smart planning to go that way because there is a lot of open space that way, because there is a sewage plant over here, most people would grumble [Lu'uwai]

If they were to go to that spot [NE project area] corner of it would affect that spot a lot, I know the Royal Order of Kamehameha meets there, a couple of hula halau meet there, Kapono'ai Molitau (Hula Halau - Nahanonakulike o Piilani) trains out of there. That's an old time historical place of family gatherings. I went there when I was a kid for family gatherings and luau, community center. People from Maui, before there were all the community centers, people would go there for that. It's a hall with a kitchen. It's probably from the 50s or older, before my grandparents time. We are not the only people that use our facility, two hula halau, groups that use our place for church, the Protect Kaho'olawe 'Ohana is based here when the camp before going to Kaho'olawe, they come here and use the facilities. We have Hui Malama, they have class here as well. This is not exclusively us, funerals, baby luau, weddings, not just club members. I don't see why they couldn't leave them their space, there is so much space and this is ocean front space so for these guys to develop this and go ocean they'd have to do SMA and all that other stuff, I don't know legally what they'd have to do, I can see them affecting businesses but not cultural [Lu'uwai].

I think if they are going to do it in Section B, that's good planning, and I think that's responsible planning on whoever is doing it...other than Hale Nanea, that's kind of sad that they would take that spot away as a historical meeting place [Lu'uwai].

Project Area Concerns

The things that I want to emphasize is that (1) the canoe clubs don't have another place to go besides the Harbor and that (2) they really serve our lower income local people because the kids can just walk over there, and that (3) we need a path from the Harbor to that inside reef area inside Kanahā. (4) Even though it would be a good thing to expand the Harbor to the East, not the West; there would have to be some kind of provision for a canoe path and it wouldn't be just for canoes, it would be all those stand up paddlers, etc.; a path in the water, a canoe path in the water. Canoe clubs have nowhere else to go except in the Harbor, it serves the lower income people who have nowhere else to go, they can walk to the Harbor, and you need a pathway - from the Harbor around to the subject property and pass it up to Kanahā. You need a pathway from the Harbor, around Pier One [Chun].

So that area that we're talking about, the target property, it's frequented by paddlers, both for practice and for races. When the surf is up the reef makes a sheltered area, so you can come out of the Harbor, around pier one and stay inside and make your way up to Spreckelsville without being wiped out, and its particularly good to be on the inside when you are going up wind because the wind regularly gets about 30 miles an hour [Chun].

There are a lot of divers in that area. I'm not sure how living the reef is but there's a lot of tako [Chun].

I see people fish from there; we drag a line behind the canoe and we've caught papio, but it's really fished out [Chun].

That's another thing to be aware of; there is a lot of erosion going there. With the hardening of the sewage plant which is in the tsunami zone; making hard walls along the shore to protect it from the waves. That increases the erosion in the neighboring areas and they plan on building up the wall around the sewage plant that is just to the East of the subject property. There is talk of relocating it but it would require billions of dollars and unless the Federal Government comes to their senses we'll never see that [Chun].

The Surfrider Foundation has a big campaign going on because people are getting MRSA. I've had MRSA three to five times, MRSA [Methicillin-resistant Staphylococcus aureus (MRSA) infection is caused by a strain of staph bacteria that has become resistant to the antibiotics commonly used to treat ordinary staph infections] is antibiotic resistant bacteria that "we" blame on the injection wells from the [sewage plant]. In the EIS from the sewage plant they admit that those injection wells go down in the ground and come out in the ocean. And it's only treated to R2, not R1. R2 is not disinfected to the level of R1 is so that's R2 water going to the ocean. R1 is the stuff you can put on golf courses [recycled water], it's still not something you'd want to drink. At one point I think our whole club was coming down with staph infections from it [Chun].

Project Area/Vicinity Users

I should also mention all of the other users of the other areas. Between Hale Nanea and Ka'a Point = kite surfer. Above Ka'a Point = wind surfers. BIG visitor J-row. Had to separate because beefs between kiter (loloheads) and everyone else. So between Ka'a Point and Hale Nanea is where all the kiters are confined to because when the kiters were mixing with the windsurfers and paddlers there were beefs because the kiters tend to not realized that their lines if they were to drop across your neck was going to kill you. Kiters launch from shore, and they have these huge kites and a board and they are in the water and their kites just fill with air and its attached to the board and they hold onto a bar with cording, very thin strong cording, and they don't realize that if that cord drops across the canoe, a person's neck as they buzzing them that the canoe person is fastened into half a ton of canoe and that is going to take their heads right off. So there were all these beefs and that's why they are confined to that area. But if you guys want to make the kiters go away you will not get any argument from us. They are mostly visitors, they are clueless and we have to go out and rescue them all the time. Ka'a Point is where the lifeguard stand is, the western point [Chun].

Harbor User Concerns

There's just a beautiful surf break along the west wall of the harbor, along the inside of the harbor, and that's why there was so much outcry against turning that west wall into docks. The other problem turning the west wall into docks, in order to fit the race course into the harbor without it being into the turning basin because you can't anchor the flags and it legally can't be in the turning basin because it obstructs the movement of ships. In order to have a course that is a ¼ mile long, which is the absolute minimum (some course are half mile), there is no other place to put it except for it to go all the way over the west wall by the small boat dock, and even then the course gets more of a parallelogram than more of a rectangle. So the course has to be ¼ mile and the lanes have 80' with 9 lanes, so 9 x 80 and that's how wide it is. It would be devastating, there is no way you can relocate that race course and if you tried to relocate the two big clubs it would overrun Kanahā Beach Park, because really that area is the only place where you could have canoe clubs and there's already two now, ours [North Shore Renegades] and Lae'ulu O Kai. That's us, North Shore Renegades, we have the most un-Hawaiian name but we consider ourselves to be the most Hawaiian Spirit [Chun].

Access Issues

Inevitably the only thing we were so concerned about is the access to Kahului Harbor. Very few tourists come out here and only experienced watermen come out to this area, all the locals come to this area... That's why I was telling people in that meeting that these guys have no understanding of recreational use. You got, the biggest industry on the North Shore is wind surfing, now you have stand up paddling, these are industries that affect our economy. Canoeing is our tradition but you get the one-man paddle, two-man paddling and these are new industries related to our tradition but it will impact our economy. The only safest entrance is to come into the Harbor and finish, we don't want to be like Honolulu Harbor and shut down. That would be a major travesty, all our communities that serve Central Maui, the cultural impact is tremendous and would be very devastating if access to the Harbor was eliminated because of the rule. We know that we have to be very careful and mindful of the rules in the turning basin, it's our responsibility as *kupuna* and leaders in our community to educate people, and we need to coexist with Harbors and A&B and Federal things that they have to do [Libed].

I hope I gave you enough of a picture of the impact that there is substantial concern regarding impact that will come to our community. That is a major concern and our voices need to be heard, it needs to be said that we cannot preserve our culture without the continuance of gathering rights, etc., surfing, canoeing to a Maui community; to take that away would be a travesty. I'm happy that you are doing something like this because when I first talked with them seven to eight years ago there was zero input. I was fortunately to be here and when I was at that meeting I said, "You got to, need to consider the impact you guys are going to make on the local community." We are not only Central Maui but Up Country, Pa'ia - those areas would be heavily impacted if all those things were shut down and became the Honolulu Harbor, and it would be extremely devastating. Even more now the work that you are doing is critical because of the desire to expand and need to expand, I already know that and I already knew that they were trying to put down an artificial reef. They even asked me if we could put the regatta outside the harbor and I said, "No, you can't do that because of the waves." They were willing but it's not pedestrian friendly, now you block the harbor and took away the waves and eliminated the surf but that would push everybody towards that island over here [Libed].

New Idea

Actually the State, managed by the County would be, in my dream, if done correctly, would be to make a stadium for our sport. Down the other side by the little harbor by the other side, that means you will have to do a break water to break up the surf... I would tell the surfers that reality is the amount of usage that you have all the way down the coast line. If done correctly we can coexist and I believe this place is ready for a stadium for outrigger canoe racing because that is a worldwide event. The stadium would be calm water, six hundred feet of lanes or more...that would be because outrigger canoe paddling would be considered for the Olympics because world sprints had about thirty five countries participate. So why wouldn't we look at what we can provide because we do have the constructed hotels, etc., transportation, food. And look at that we can do a stadium to do that with the correct engineering, input from the community. Some people would have to bite the bullet like the surfers but my attitude is to serve the community as a whole and provide an opportunity for more participation. We want to address obesity, we want to address cultural [inaudible] is the key, it has always been. Surfing is a more modern introduction but the canoe paddling has always been there and not that I'm being prejudicial. I've seen more usage out of what we do and maybe I am prejudicial in that regards but I look at it as where would the community be served best, and that consideration can be done and it may take a little bit of engineering. Why not? [Libed]

Anecdotal Stories. Consultants usually have many stories to share. Some of these stories are not always germane to the research categories. However, they are too precious not to share as they give a broader view of the life in Kahului.

Ms. Maize Cameron Sanford has a long family history (Alexander-Baldwin-Cameron) to the project area and greater Maui and shares some of her stories.

Well, Kahului was a pretty big town. Growing up there was the harbor and all the activities coming and going there. Before there was much in the way of airplane travel, of course, we took the boat to Honolulu overnight. And my mother remembers the Claudine, she says it was terrible. The Claudine, she hated that boat. She got so seasick. But it wasn't in service when I was going to Honolulu on each trip. We would take either the Wai'ale ale or the Hualālai and they were kind of twin ships, the same size. And my brother and I used to have a bet, which whistle was the loudest, because just before the boat left the dock it would sound its whistle and we had to close our ears. There was the outer deck but we didn't do much running around on the deck. When we got on board, we had our supper and it was time to be ready for bed. My mother tended be seasick, she didn't quite do anything else. And the cabins were cozy and they had little windows looking out onto the outer deck. And some passengers were deck passengers, they stayed out there overnight. It was sort of like the difference between regular seats and lower seats. And the next morning we'd arrive in Honolulu and get off. Going back from Honolulu, it seemed to be that the boat always went to Lahaina. I don't ever remember getting in at night at Lahaina, though some of our trips we got to Kahului in the night. I guess Lāhainā was closer. Sometimes we got off in Lähainä. The boat couldn't go to Mala Wharf, so lighters would come out, passengers would come down the gangplank and get lifted into the lighters by big, strong Hawaiian sailors. That was very comforting because the boat was going up and down and the lighter was going up and down and they knew just when to grab you and lift you. I don't know why, sometimes we went to Lāhainā, sometimes to Kahului. I was child - I had nothing to do with the scheduling. In Lāhainā we'd have somebody meet us and end up taking a drive all the way back to home. The person who met us was usually my grandmother's chauffer. Mr. Maeda. There was also tucked into the back of the car a thermos bottle of ice tea and some little bread and butter sandwiches. And that's what I remember about the boat trips; of course it was nicer when we could take airplanes because it was only an hour instead of overnight [Sanford].

The first airplanes were the sea planes, and that was in the 1930s. And then I remember my first trips were on a Sikorski but they landed on the land. You climbed up the steps on the outside of the plane; on the top, there was big *puka* in the roof of the plane, and you climbed downstairs on the inside. But the later planes, you didn't have to go in on the roof. The first ones landed at Ma'alaea next to Keālia Pond at the mudflats, and then at Pu'unēnē - that was the big airport on Maui. And it just took an hour - that was Interisland Airways, which became Hawaiian Airlines. From the 1930s were mostly those trips. In the 1940s, when the war started, planes were still going from Pu'unēnē, planes were all DC-3s. The Kahului Airport was built by the Navy, so we didn't get to use that until after the war [Sanford].

Kahului Cannery - the only cannery for the pineapple was started by a CPC - California Packing Corporation. The buildings have been torn down now. Do you know where Ka'ahumanu Shopping Center is? It's just on the Pā'ia side of that – replaced by Maui Vocational School, but now a big empty lot off of Kāne Street and Ka'ahumanu Avenue. It was a great, big cannery. It was taken over by Maui Pineapple Company - that's where Maui Pineapple Cannery was for many years, until David Cole and Steve Case decided to eliminate the Cannery after they got control of Maui Pineapple Company. Everything's been torn down, even the executive offices. It's going to be developed somehow. They have destroyed that company completely. It used to be the largest employer on Maui outside of the government. And they are down to a handful of people now. Those that are left, work out of an office over in Kapalua. The pineapple is gone. All they have is land; they're trying to sell off bits and pieces of land to keep afloat for pensions and to make money. Very sad. It made me so sick for so long, but I'm trying not to think about it. I hated the

way they hurt everybody, all those loyal people. Some of them were second generation working for Maui Pineapple Company. They're all our friends. But as soon as Case got a hold of that and Cole, they didn't like pineapple; all they wanted was control of the land, which they could sell for their own profit. And I don't care if you use that or not, I feel very strongly on the subject [Sanford].

CIA SUMMARRIES and ASSESSMENT

This cultural impact assessment (CIA) is based on two guiding documents: Act 50 and Environmental Council Guidelines (1997) [see Appendices A & C]. H.B. NO. 2895 H.D.1 was passed by the 20th Legislature and approved by the Governor on April 26, 2000 as Act 50. The following excerpts illustrate the intent and mandates of this Act:

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit' in Hawai'i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

Summary of Findings

The following summaries are based on the information presented in the previous sections: the traditional (cultural) and historical literature background review and the ethnographic data and analyses. References are not cited unless it is new information and not already cited in the text above. These summaries condense the information above, but also serve to focus on a few significant individuals and events in history in relation to the project lands of Kahului, *ahupua'a* and *moku* of Wailuku, Maui Island, as well as give a broad overview of land, water and marine resources and uses in the general area, as they reflect cultural resources (properties) and practices and access to them.

<u>Summary of Significant People and Events</u>. According to traditional and historical material, most of the land in Hawai'i has gone through modifications over time, including the lands of Kahului, and have witnessed the comings and goings of many significant people. Some of these people may have contributed substantially not only to the history of this area, but of Maui Island and the rest of the Hawaiian Islands as well. There were several people and events noted in the oral histories including legendary and historic figures. Some of these significant entities traversed these lands or vicinity.

<u>Legendary Entities</u>. There are a few *mo'olelo* about legendary entities connected to Kahului: such as Hina, mother of the deity Maui; Pele and Hi'iaka on their travels throughout the islands; and the *mo'o* deity once connected to Kanahā and Mau'oni fishponds, originally said to have been constructed under the direction of Kiha-a-Pi'ilani, son of Pi'ilani.

<u>Pre-Contact Ali'i Nui</u>. The ali'i nui or ali'i 'ai moku would have jurisdiction over all of Maui's lands, assigning lesser chiefs or konohiki to oversee each moku or ahupua'a. Most of the Maui chiefs are descendants of the 'Ulu. There were twenty generations from Kumuhonua (Foundation) to Wakea and Papa; and fourteen generations from these progenitors to the brothers Nana'ulu and 'Ulu; sixteen generations from 'Ulu to the brothers Hema and Puna; another ten generations from Hema to Huanuikalalailai, father of Paumakua-a-Huanuikalailai, the first ali'i ai moku or Ruling Chief of Maui.

Maui Ali'i Ai Moku:

- 1st Paumakua-a-Huanuikalailai
- 2nd Haho
- 3rd Palena
- 4th Hanala a (iki)
- 5th Mauiloa
- 6th Alõ
- 7th Kuhimana
- 8th Kamalo-o-Hua
- 9th Loe
- 10th Kaulahea I
- 11th Kakae (co-ruled)
- 12th Kaka'alaneo (co-ruled)
- 13th Kahekili I (son of Kakae)
- 14th Kawaokaohele (brother of Kelea)
- 15th Pi'ilani (married cousin Laielohelohe, daughter of Kelea and Kalamakua, Halawa Chief)
- 16th Lono-a-Pi'ilani
- 17th Kiha-a-Pi'ilani (usurper with help of sister Pi'ikea and her husband 'Umi-a-Liloa)
- 18th Kamalalawalu
- 19th Kauhiakama
- 20th Kalanikaumakaowakea
- 21st Lonohonuakini
- 22nd Kaulahea II (fathered royal children of all islands)
- 23rd Kekaulike
- 24th Kamehamehanui Ailuau (son of Kekaulike and half-sister Keku iapoiwa Nui)
- 25th Kahekili II (son of Kekaulike; had court at Pu'u Keka'a, but moved to Wailuku to spy on halfsister Namahana who lived at Waihe'e)
- 26th Kaeokulani (son of Kekaulike; father of Kaumuali*i)
- 27th Kalanikūpule (son of Kahekili)

Kingdom of Hawai'i Era

Kamehameha was a descendant of chiefs of Hawai'i and Maui, a nephew of Kalani'opu'u and Kalola, who was the daughter of Kekaulike and sister of Kahekili, who was said to be the biological father of Kamehameha. After the death of Hawai'i ruling chief Kalani'opu'u in 1782, civil war broke out for control for of the districts. Kamehameha as guardian of the war god, Kūka'ilimoku, methodically eliminated his rivals, his cousins, to conquer Hawai'i. In 1790 he landed his war canoes from the island of Hawai'i and landed them on the beach at Kahului before heading inland. He and his Hawai'i Island army later returned, conquering Maui, Moloka'i, Lana'i, Kaho'olawe, and O'ahu in 1795.

He placed his chiefs over all the lands and put the chiefs and their men from Hawai'i Island to help govern the islands. Kamehameha I essentially became the king of all the islands except for Kauai. When Kamehameha I died in 1819, his successor was his son Liholiho (Kamehameha II) with Ka'ahumanu as the Kuhina Nui or regent. They successfully "kidnapped" their cousin Kaumuali'i who under duress turned Kauai over to the Kamehameha rulers.

Kamehameha II was the eldest son of Kamehameha I and Keopuolani.

Kamehameha III (created new land division/Mahele; promoted the sugar industry; made Lahaina, Maui his Capitol)

Two sons of Elizabeth Kina'u, daughter of Kamehameha I became kings after the death of their uncle, Kamehameha III, Alexander Liholiho Kamehameha IV and Lot Kapuāiwa Kamehameha V; they were followed by William Charles Lunalilo, nephew of Kamehameha I and descendant of Pi'ilani through both of his parents – he was the last of the royal Kamehameha line.

David La'amea Kalākaua and later his sister Lydia Kamakeha Lili'uokalani descendants of Maui and Hawai'i Island chiefly lines were the last rulers of the Kingdom of Hawaii.

Historic People and Events. Kahului was awarded to Victoria Kamāmalu Ka'ahumanu IV (1838–1866), only daughter of Elizabeth Kīna'u, Ka'ahumanu II and younger sister of Kamehameha IV and V. She was named after her aunt, Queen Kamāmalu, wife of Liholiho-Kamehameha II. Her father Mataio Kekūanāo'a, was the royal governor of Honolulu. Victoria became monarch for a day when her brother Kamehameha IV died without an heir, since she was Kuhina Nui at the time. However, she proclaimed her brother Prince Lot, Kamehameha V. She was betrothed to William Charles Lunalilo - their parents had planned their marriage from infancy, but her brothers later forbade it. She founded the Ka'ahumanu Society in 1863 to help the sick and elderly - Ka'ahumanu was born in Hāna, was the daughter of Namahana and granddaughter of Kekaulike. Kamehameha V named Victoria his heir apparent, but she died before he did. Her lands were inherited by her father, then passed to her half-sister Princess Ruth Ke'elikōlani who willed them to their cousin Princess Bernice Pauahi Bishop.

There are several additional people significant to the historic development of Kahului and events associated with them; a list chronicling them can be found in Table 4. Of note are:

Missionary Richard Armstrong who described the tidal wave (1837) that destroyed the fishing village of 26 grass houses on Kahului shore;

Sea Captain Thomas Hobron who owned the Waihe'e Sugar Mill which was managed by Samuel T. Alexander and his field boss Henry P. Baldwin (1860s); Hobron established Grove Ranch on 3,000 acres of land he purchased in Hāli'imaile and Pā'ia; Hobron built the first narrow gauge railroad on Maui and founded (1879) the Kahului Railroad Company (KRR) partnering with his sons-in-law William O. Smith Esq. and William H. Bailey; Hobron also served as Postmaster when KRR started carrying passengers and mail along its routes to sugar mills in Spreckelsville, Pā'ia, Pu'unēnē, and Wailuku; the Kahului Railroad Station was located at Hobron Point named after the Captain; in 1884 KRR became a freight forwarder and subsidiary of the Wilder Steamship Company; in 1898 KRR began construction of the east breakwater; in 1899 A&B purchased KRR;

James Robinson & Company, Thomas Cummins, J. Fuller, and agent C. Brewer & Company who organized the Wailuku Sugar Company (1862);

Thomas Hogan built the first western building, a warehouse, near the Kahului Beach (1863);

Henry Perrine Baldwin and Samuel Thomas Alexander resigned from Waihe'e Plantation (1869) to start their own plantation in Pā'ia followed by purchasing lands in Makawao that abutted Hobron's Hāli'imaile Plantation (once owned by Stephen J. Reynolds and Alfred W. Parsons); their first sugar crop was produced in 1870; Alexander & Baldwin (A&B) formalize their company in 1883; in order to outmaneuver the Spreckels Kahului wharf blockade, the directors of A&B purchased the disputed 5.47-acre harbor-front parcel owned by Spreckels and created a

partnership of other plantations to drive Spreckels out of business in 1897; the following year (1898) A&B purchased HC&S; HC&S starts the Lowrie Ditch project, planned by William J. Lowrie and traversed 21.9 miles from East Maui to the border of Kihei bringing water to the arid lands south of Kahului; in 1899 A&B purchased KRR; Kahului Harbor development was initiated by KRR in 1904; that same year Samuel T. Alexander dies leaving H.P. Baldwin in charge of the company; in 1905 A&B bought part of Matson Navigation Company (MNC); [MNC was started by William Matson who had worked on the Spreckels family yacht – Spreckels helped finance many of Captain Matson's ships (Cushing 1951)]; A&B owned Matson outright by 1969;

The Hamakua Ditch Company was organized (1876) and owned by the Haiku Sugar Company, T. H. Hobron/Grove Ranch Plantation, Samuel Alexander, his brother James Alexander and Henry P. Baldwin;

Claus Spreckels establishes (1878) the Hawaiian Commercial & Sugar Company (HC&S); Spreckels Sugar Mill established by Claus Spreckels – the town of Spreckelsville grew around the mill; 24,000 acres of fee-simple lands in isthmus granted to Claus Spreckels (1882); the Spreckels-owned HC&S Company attempted a blockade of the Kahului wharf to drive the Wilder Steamship Company out of business (1897); in 1898 A&B purchase HC&S;

The Bubonic Plague infected Kahului and the town was deliberately burned to the ground to destroy disease-infected rats in 1900; as owner of KRR and several sugar plantations and mills, A&B, Inc. was the primary initiator in the re-building of Kahului Town and the expansion of Kahului Harbor:

Henry Perrine Baldwin dies in 1911 leaving his son Frank F. Baldwin president-manager of HC&S and KRR - subsidiaries of A&B;

Harry Alexander Baldwin, son of H. P. Baldwin becomes president of Haleakala Ranch in 1911; in 1924 the ranch grows pineapple for California Packing Company (CPC); Haleakala Ranch and Keahua Ranch Co. form as Maui Pineapple Company (MPC);

CPC builds the Kahului Cannery in 1924; MPC transports its upcountry pineapple to CPC; in 1934 MPC purchases Kahului Cannery from CPC;

Samuel A. Baldwin youngest son of H. P. Baldwin becomes president of Haleakala Ranch after the death of brother Harry A. Baldwin in 1946;

"Dream City" - the name given to the concept of a new Kahului Town was beginning to take shape in 1948:

May 14th, 1948: Dream City comes true. The Hawaiian Commercial & Sugar (HCS) and the Kahului Railroad announce that they are planning to build a new "model" city in Kahului. During the next ten years, more than 800 homes will be built on what was until then cane land. Most of the homes are offered to local workers from those cane fields, as well the railroad and some local shops. The first area to be constructed is the Kahului Shopping Center, which opens in 1951 (Maui Almanac 2011).

J. Walter Cameron, son-in-law of Harry Baldwin becomes Haleakala Ranch president after death of Samuel A. Baldwin (HR 2013) in 1950; in 1969 the Cameron family (descendants of H. P. Baldwin and Harry A. Baldwin) acquire Maui Pineapple Company, Ltd. from parent company A&B and change the name to Maui Land & Pineapple Co. Inc. (MLP); J. W. Cameron served as manager of Maui Pineapple Company for forty-four years (JWCC 2012);

Colin Campbell Cameron takes over after the death of his father, J. Walter Cameron in 1976; Colin Cameron was chairman and president of Maui Land & Pineapple Co. (MLP), president of Maui Publishing Co., which publishes The Maui News, an early developer of resorts in Kapalua in the 1960s and served on the Board of Haleakala Ranch;

Mary "Maizie" Cameron Sanford takes over as chair and CEO after the death of her brother Colin Campbell Cameron in 1992; Ms Sanford is currently Director Emeritus of Maui Land & Pineapple Co, Inc. (she served on its Board for 25 years) and on several Boards: J. W. Cameron Center, Haleakala Ranch Co., Fred Baldwin Memorial Foundation, and The Gorilla Foundation, and writes two columns for Maui News (TGF 2012; ZoomInfo 2013).

A&B Properties, Inc. is the current owner of Parcels B-1 and B-2; A&B, owners of HC&S into which Maui Agricultural Co. merged, is now a major corporation with no ties to the family – the same is true for Maui Land & Pineapple Co., originally a venture in the 1920s by Harry and Sam Baldwin – the main Baldwin lands left is Haleakala Ranch (Murphy 2013).

Cultural Impact Assessment

According to the Environmental Council Guidelines, the types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, religious and spiritual customs. The following actions were taken to meet the EC Guidelines Criteria for conducting this cultural impact assessment based on the SOW:

conduct historical and other culturally related documentary research;

Documentary research, particularly on identifying traditional and cultural uses of the area, was completed. Much of what is known about the traditional and cultural uses of the area comes from written records that tell of its prehistory (e.g., mo 'olelo; 19th century ethnographic works); the stories and reports associated with early coastal and upland area uses by early Hawaiians and the historic early developers of Kahului; and the many studies of Kahului Harbor and vicinity (i.e., archaeological, botanical, geological, and biological), as well as master and development plans, and previous environmental assessments.

2) identify individuals with knowledge of the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua a; or with knowledge of the area potentially affected by the proposed action (e.g., past/current oral histories);

The project lands, Parcel B-1 (TMK [2]3-7-011:017) and Parcel B-2 (TMK [2]3-7-011:023) have been greatly modified over the last 500 years, starting with the construction of the nearby fishponds of Kanahā and Mau'oni by Kiha-a-Pi'ilani in the 1500-1600s; likely part of the King's Trail started by Pi'ilani around the same period – this trail would have been used during the Makahiki season connecting ahupua'a to collect taxes; as part of a coastal environ it was at the least an access point for fishing and gathering over the centuries; historically it was modified by coral fill with the dredging of Kahului Bay in the mid-1800s to early-1900s and later creation of Pier 1 and the east breakwater; it was also modified as part of the railroad system beginning in 1879 – the railroad station was located at Hobron Point just northwest of the project lands; the modification continued with the historic construction of molasses tanks, fuel tanks, garages, and other businesses; one wooden building is currently used by the Royal Order of Kamehameha, Chapter V and other community groups; several canoe clubs use the water

pathway offshore of the project lands for training and racing runs from the Harbor basin to Kanahā Beach and Maliko Landing and back.

The ethnographic consultants were selected for their knowledge and/or use of the project lands and vicinity. Five people, members one of three canoe clubs who use the water pathway were interviewed. One person interviewed was a descendant of the Alexander & Baldwin families, long time users and owners of the project lands.

 identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and

Archival research in Chapter 3 (Cultural and Historical Background Review) and ethnographic research in Chapter 4 (Ethnographic Data Review and Analysis) identified only one cultural resource, and associated practices and beliefs within the project lands (Figure 19; see also Appendix H):

- Hale Nanea is the meeting house of the Royal Order of Kamehameha; there are two imu or cooking hearths in the back of the building; coconut trees are also on the property;
- Other cultural resources were identified canoe paddling, fishing, and gathering *limu*; these practices are outside the boundaries of the project lands.
- assess the impact of the proposed action on the cultural resources, practices and beliefs identified.

The acquisition of Parcels B-1 and B-2 and the follow-up transition to storage facilities will have an adverse impact on a building associated with the Royal Order of Kamehameha, Chapter V, and their cultural practices; it is also used by a *hula halau* for practice and other cultural groups for various celebrations. The meeting house has been on a month-to-month lease. The ethnographic consultants expressed sentimental and cultural value of the meeting house. However, efforts to contact an official spokesperson from the Royal Order were not successful.

Five members of three canoe clubs in the vicinity were interviewed; they expressed concerns regarding the canoe paddling water path fronting the project area on the north (see Figure 19). It is part of the training, practicing and racing pathway. The dirt road on the eastern border of the project parcel is also used as an access for fishermen, *limu* gatherers, and other beach goers. It also serves as access to the meeting house and other current businesses in Parcels B-1 and B-2.

Recommendations include forming a small cultural advisory group to help with transition plans for cultural users of the Hale Nanea meeting house, beach and offshore resources, regarding future access and use of the area. The harbor expansion plans for the parcels will include removal of existing structures, and would include Hale Nanea and its traditional *imu* or cooking hearths. Perhaps part the cultural mitigation could be the relocation of the Hale Nanea meeting house and *imu* paraphernalia to Hoaloha Park, but this should be worked out with the Royal Order. Since the dirt road is not part of the acquisition, access should remain available to fishermen and gatherers. Currently there are no restrictions for canoe paddlers accessing the area fronting (north) Pier 1. It is recommended that the parcel acquisition continue to allow unrestricted use of this area by paddlers.

The project site is an area that has been heavily modified by historic activities spanning over 150 years and currently is in use by several *lessees*. However, the "fill" portion of the project area does not include the entire Parcel B-1 and B-2, therefore any subsurface excavating or trenching activity should have an archaeologist monitoring the activity for any potential cultural or historic remains, with a cultural advisor identified for consultation. This report has met the goals and objectives set forth for this CIA study.



Figure 19. Cultural locations and practices identified in the present study.

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APPENDIX A

Act 50 — 2000 A BILL FOR AN ACT RELATING TO ENVIRONMENTAL IMPACT STATEMENTS [UNOFFICIAL VERSION]

HOUSE OF REPRESENTATIVES H.B. NO, 2895 H.D.1 TWENTIETH LEGISLATURE, 2000 STATE OF HAWAI'I

A BILL FOR AN ACT RELATING TO ENVIRONMENTAL IMPACT STATEMENTS.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAI'I:

SECTION 1. The legislature finds that there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights.

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit' in Hawai'i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

SECTION 2. Section 343-2, Hawai'i Revised Statutes, is amended by amending the definitions of "environmental impact statement" or "statement"

and "significant effect", to read as follows:

"Environmental impact statement" or "statement" means an informational document prepared in compliance with the rules adopted under section 343-6 and which discloses the environmental effects of a proposed action, effects of a proposed action on the economic [and] welfare, social welfare, and cultural practices of the community and State, effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.

The initial statement filed for public review shall be referred to as the draft statement and shall be distinguished from the final statement which is the document that has incorporated the public's comments and the responses to those comments. The final statement is the document that shall be evaluated for acceptability by the respective accepting authority.

"Significant effect" means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic [or] welfare, social welfare [.], or cultural practices of the community and State."

SECTION 3. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 4. This Act shall take effect upon its approval.

Approved by the Governor as Act 50 on April 26, 2000

APPENDIX B

Guidelines for Assessing Cultural Impacts

Adopted by the Environmental Council, State of Hawai'i

November 19, 1997

I. INTRODUCTION

It is the policy of the State of Hawai'i under Chapter 343, HRS, to alert decision makers, through the environmental assessment process, about significant environmental effects which may result from the implementation of certain actions. An environmental assessment of cultural impacts gathers information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, and promotes responsible decision making.

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project.

The Environmental Council encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area. The Council provides the following methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources.

II. CULTURAL IMPACT ASSESSMENT METHODOLOGY

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

Such information may be obtained through scoping, community meetings, ethnographic interviews and oral histories. Information provided by knowledgeable informants [consultants], including traditional cultural practitioners, can be applied to the analysis of cultural impacts in conjunction with information concerning cultural practices and features obtained through consultation and from documentary research.

In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. Thus, for example, a proposed action that may not physically alter gathering practices, but may affect access to gathering areas would be included in the assessment. An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices.

The types of cultural resources the historical period studied in a cultural impact assessment should commence with the initial presence in the area of the particular group whose cultural practices and features are being assessed. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs.

The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

- identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua'a;
- identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
- identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Interviews and oral histories with knowledgeable individuals may be recorded, if consent is given, and field visits by preparers accompanied by informants are encouraged. Persons interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible. For example, the precise location of human burials is likely to be withheld from a cultural impact assessment, but it is important that the document identify the impact a project would have on the burials. At times an informant [consultant] may provide information only on the condition that it remains in confidence. The wishes of the informant should be respected.

Primary source materials reviewed and analyzed may include, as appropriate: Mahele, land court, census and tax records, including testimonies; vital statistics records; family histories and genealogies; previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs; and other archival documents, including correspondence, newspaper or almanac articles, and visitor journals. Secondary source materials such as historical, sociological, and anthropological texts, manuscripts, and similar materials, published and unpublished, should also be consulted. Other materials which should be examined include prior land use proposals, decisions, and rulings which pertain to the study area.

III. CULTURAL IMPACT ASSESSMENT CONTENTS

In addition to the content requirements for environmental assessments and environmental impact statements, which are set out in HAR §§ 11-200-10 and 16 through 18, the portion of the assessment concerning cultural impacts should address, but not necessarily be limited to, the following matters:

 A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.

- A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
- Ethnographic and oral history interview procedures, including the circumstances under which
 the interviews were conducted, and any constraints or limitations which might have affected
 the quality of the information obtained.
- 4. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
- 5. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
- A discussion concerning the cultural resources, practices and beliefs identified, and, for
 resources and practices, their location within the broad geographical area in which the
 proposed action is located, as well as their direct or indirect significance or connection to the
 project site.
- A discussion concerning the nature of the cultural practices and beliefs, and the significance
 of the cultural resources within the project area, affected directly or indirectly by the proposed
 project.
- An explanation of confidential information that has been withheld from public disclosure in the assessment.
- A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
- 10. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- A bibliography of references, and attached records of interviews which were allowed to be disclosed.

The inclusion of this information will help make environmental assessments and environmental impact statements complete and meet the requirements of Chapter 343, HRS. If you have any questions, please call 586-4185.

APPENDIX C Scope of Work (SOW)

Cultural Impact Assessment [in accordance with OEQC Guidelines]

- identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or ahupua'a;
- identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- conduct ethnographic, historical, and other culturally related documentary research;
- identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Methods

The specific tasks listed below expand on the above scope of work:

- Conduct historical and cultural background research (i.e., business records, land records; archival documents, literature, reports, letters, photographs, journals, or newspaper files) to locate material that will provide broad patterns of the history of the project area such as subsistence, religious, recreational, and commercial uses of the land; as well as settlement and residential patterns of the area and region; major family groups that inhabited, used or controlled lands within the project area and region; documented legends, myths, or traditional histories associated with the area; and descriptions of traditional practices, customs and beliefs associated with identified traditional cultural practices;
- Prepare a semi-structured ethnographic research instrument that will include questions that will generate general biographical information, association with and knowledge of the project area, its history and use;
- Prepare a consent form to be used as written agreement with any individual interviewed concerning the review of content and use of information recorded during the interview
- Identify individuals knowledgeable with the project area.
- Conduct and record ethnographic interviews with knowledgeable individuals. If feasible individuals shall participate in field inspections (Makana to be given)
- Transcribe recorded interviews (Approximate time, 6-8 hrs/per hr of recording)
- Prepare a report that will include an overview of the archival material, and an analysis of the ethnographic data.

APPENDIX D

Agreement to Participate in Ethnographic Survey

Project Title: Kahului Harbor Acquisition CIA (TMK: (2)3-7-011-017 and (2)3-7-011-023)

Kahului, Wailuku, Maui

Interviewer: Maria "Kaimi" Orr, M.A.

Kaimipono Consulting Services, LLC

You are being asked to participate in an ethnographic survey conducted by an independent interviewer from Kaimipono Consulting Services LLC (KCS) contracted by International Archaeological Research Institute, Inc. (IARII) to prepare a Cultural Impact Assessment (CIA) as part of an environmental compliance document prepared by Edward K. Noda and Associates, Inc. (EKNA). The interviewer will explain the purpose of this survey/CIA project, the procedures to be used, the potential benefits and possible risks of participating. You may ask the interviewer any question(s) in order to help you to understand the process. If you then decide to participate, please sign on the second page of this form. You will be given a copy of this form.

I. Nature and Purpose of the Study

The purpose of this ethnographic survey is to gather information about the project lands through interviews with individuals who are knowledgeable about the area and/or about the history of these lands. The objective of this survey is to provide ethnographic data for the CIA report.

II. Explanation of Procedures

After you have voluntarily agreed to participate and have signed the consent page, the interviewer will tape record your interview and have it transcribed later. The interviewer may also need to take notes and/or ask you to spell or clarify terms or names that are unclear.

III. Discomforts and Risks

Foreseeable discomforts and/or risks may include, but are not limited to the following: having to talk loudly for the recorder and video; being recorded and/or interviewed; providing information that may be used in a report; knowing that the information you give may conflict with information from others; your uncompensated dedication of time; possible miscommunication or misunderstanding in the transcribing of information; loss of privacy; and worry that your comment(s) may not be understood in the same way you understand them. It is not possible to identify all potential risks.

IV. Benefits

This survey will give you the opportunity to express your thoughts/knowledge (mana'o), which will be listened to and shared; your knowledge may be instrumental in the preservation of significant historic information.

V. Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected **if you so desire**. You may request, for example, that your name and/or sex not be mentioned in write-ups, such as field notes, on tape, on files (disk or folders), drafts, reports, and future works; or you may request that some of the information you provide remain "off-the-record." In order to ensure protection of your privacy, confidentiality and/or anonymity, you should immediately advise the interviewer of your

desires. The interviewer will ask you to specify the method of protection, and note it on this form below.

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

a "Kaimi" Orr, an independent interviewer contracted by will be conducting oral history interviews with individuals or. The oral history interviews are being conducted in order
ew my interview to ensure that it accurately depicts what I rn the revised transcripts after two weeks from date of information for the CIA report. I also understand that ing the draft review process.
Date
Phone
Zip Code
Zip Code

	, have been interviewed by Maria "Kaimi" Orr of Kaimipono Consulting
. I have review complete and	dependent interviewer contracted by International Archaeological Research Institute, the transcripts of tape recordings of the interview and agree that said documentation accurate except for those matters specifically set forth below the heading OR CORRECTIONS" below.
ormation, both	KCS, IARII and/or EKNA may use and release my identity and other interview all and written, for the purpose of using such information in a report to be made specific objections, to release as set forth below:
ECIFIC COND	IONS TO RELEASE OF INTERVIEW TRANSCRIPT:
Signature	Date
Signature Print Name	Date
	-
Print Nam	-

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APPENDIX E

Ethnographic Survey Basic Research Instrument for Oral History Interviews

This research instrument includes basic information as well as research categories which will be asked in the form of open primary questions which allow the individual interviewed (Ethnographic Consultant) to answer in the manner he/she is most comfortable. Secondary or follow-up questions are asked based on what the Consultant has said and/or to clarify what was said. The idea is to have an interview based on a "talk-story" form of sharing information. Questions will NOT be asked in an interrogation style/method, NOR will they necessarily be asked in the order presented below. This research instrument is merely a guide for the interviewer and simply reflects general categories of information sought in a semi-structured format. Questions will be asked more directly when necessary.

The Consultants were selected because they met one or more of the following criteria:

- Had/has Ties to Project Area/Vicinity
- Known Hawaiian Cultural Resource Person
- * Referred By Other Cultural Resource People
- · Referred By Other People

[NOTE: Introduction of Kahului Harbor Acquisition CIA Project is done before the Ethnographic Consultant signs the Consent Form, usually during the initial phone call to make interview appointments.]

[NOTE: This part of the interview, #1-4 is mutual sharing and rapport building. Most of the information for research categories "Consultant Background" and "Consultant Demographics" come from this section, but not exclusively.]

1. To start please tell me about yourself...Name? Where/When you were born?

[This information can be addressed in a couple of ways. After the interviewer first turns on the tape recorder, the following information will be recorded: Day/Date/Time/Place of Interview; Name of Consultant (if authorized by Consultant); Name of Interviewer; Initial Questions: Have you read the Agreement to Participate? Do you have any questions before we begin? Will you please sign the Consent Form? The interviewer will explain again the purpose of the interview.

The interviewer will then ask the Consultant to "Please tell me about yourself—when/where were you born? Where did you grow up? Where did you go to school?" This general compound question allows the Consultant to share as much or as little as he/she wants without any pressure. Some of the information for #1 may already be known to the interviewer.]

2. History: Your 'ohana/family background; Hawaiian connection (if any)?

[Much of the information for questions #2, 3, and 4 usually comes from the "monologue" answer to Question #1. If it does not, then these questions will be asked. The answers in this section usually establish how the Consultant meets the criteria; how the Consultant developed his/her information base, etc.]

- 3. Youth: Where lived? Grew up? [This may have been answered in #1]
- 4. Schooling? Where? When? [This may have been answered in #1]

[NOTE: The next part of the interview, #5-7 reflects information sought for the following research categories: Land, Cultural, Water, and Marine Resources and Use as well as Significant People and Events. The questions are open-ended so as NOT to "put words in the mouths" of the Consultants. The answers will help in assessing if any cultural properties or practices (or access to them) will be impacted by the proposed project.]

Please tell me what you know about the lands of the Project Area?

[NOTE: Generally when people share information about a specific topic/place, they usually state where their information came from. If it isn't volunteered, it is asked as a follow-up question(s). A map of the project area should be available to confirm that interviewer and consultant are talking about the same place. Photos would also help if a field trip is not possible. The best scenario would be to be "on-site" at some part of the interview...although this is not always practical.]

- 6. What are your recollections and/or personal experiences of this area?
- 7. Do you know any stories/legends/songs/chants associated with these areas?

[NOTE: Possible follow-up questions if information not in their answers:

- · How are you or your family connected to the Project lands?
- What year(s) were you and/or your family associated with these lands?
- What was this place called when you were growing up or working here?
- Can you describe what the area looked like—natural and/or man made things?
- To your knowledge what kind of activities took place in this location?
- Do you know of any traditional gathering of plants, limu etc. in the area?
- Please describe any other land/water use? Resources?
- What was the historic land use? Agriculture?
- [Have map ready for marking.]
- Do you know about any burials in the project area? [last resort question]
- Do you know of any cultural sites in the project area or vicinity? [last resort question]
- 8 Is there anyone you know who can also tell me about the project area?

[NOTE: Usually in the course of the interview, Consultants suggest other people to interview.]

- 9. As soon as the tape of this interview is transcribed I will send you two sets. Please review your transcript and make any corrections and/or additions, then sign both copies of the Release Forms thereby allowing the information to be used by the interviewer, and other Project Partners. Then mail one set back in the enclosed stamped-addressed envelope (or email corrected version).
- 10. If your revised transcript is not returned within two weeks of date of receipt, it will be assumed that you are in concurrence with the transcript material and your information will then be incorporated into any draft reports. However, you can still make changes during the draft review process.

APPENDIX F Signed Consent Forms

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

A I am willing to participate.

I, MARY AKIONA, understand that Maria "Kaimi" Orr, an independent interviewer contracted by International Archaeological Research Institute, Inc. will be conducting oral history interviews with individuals knowledgeable about the project lands adjacent to Kahului Harbor. The oral history interviews are being conducted in order to collect information of the area.

I understand I will be provided the opportunity to review my interview to ensure that it accurately depicts what I meant to say. I also understand that if I don't return the revised transcripts after two weeks from date of receipt, my signature below will indicate my release of information for the CIA report. I also understand that I will still have the opportunity to make revisions during the draft review process.

Mary L Signature	abiona	3 -6-13 Date
MARY	L AKIONA	385-0629
Print Name	Kilihan	Phone
675	KILLHAY ST	WAILUKY HI 967
Address		ZipCode

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

I.	Karen	Chun	, understand that Maria "Kaimi" Orr, an	independent
			International Archaeological Research Institute,	Inc. will be

Part I: Agreement to Participate

Email Address

conducting oral history interviews with individuals knowledgeable about the project lands adjacent to Kahului Harbor. The oral history interviews are being conducted in order to collect information of the area.

I understand I will be provided the opportunity to review my interview to ensure that it accurately depicts what I meant to say. I also understand that if I don't return the revised transcripts after two weeks from date of receipt, my signature below will indicate my release of information for the CIA report. I also understand that I will still have the opportunity to make revisions during the draft review process.

Kun Ch	_		3-4-13	
Signature			Date	
KAREN CHUN			283-3049	(do not phone public
Print Name			Phone	
87 Lae St	Para	H.	96779	
Address			ZipCode	

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

I, DiA L. H. understand that Maria "Kaimi" Orr, an independent
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interviewer contracted by international Archaeological Research institute, inc. with be
conducting oral history interviews with individuals knowledgeable about the project
lands adjacent to Kahului Harbor. The oral history interviews are being conducted in order to collect information of the area.

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I am willing to participate.	2_	6-13
Signature	Date	1.00
Diane Ho	28	1-1051
Print Name	Pho	
96 Central Con	Waileha.	96793
Address /	ZipC	
dholaw A. grail, c	04	
Email Address		

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

order to collect information of the area.

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Lam willing to participate.	
Signature Signature	3/7/2013 Date
Cuff R. L.	4000
Print Name	Phone
P.O. Bay 935	Wailuka 96793
Address	ZipCode
crlibed @ hos	trail. com
Email Address	

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

I,			ia "Kaimi" Orr, an indepe	
conducting or	al history intervi	ews with individuals k	Research Institute, Inc. wanowledgeable about the p	rojeci
	to Kahului Harl information of th		terviews are being conduc	ted in
accurately dep revised transc	icts what I mean	nt to say. I also under weeks from date of re	ew my interview to ensure in estand that if I don't retur esceipt, my signature below I also understand that I wi	n the
		visions during the draft		
I am v	villing to participe	atg.)		
Parl	K /	Juman	3/6/13	
Signature			Date	
Paul	K	Lu'uwai	3/6/1	3
Print Name			Phone	
34	A Kuli	a lone	96768	
Address	1	2	ZipCode	
1	1 /	F) hawaii		

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

I, Mary C. Santo J., understand that Maria "Kaimi" Orr, an independent interviewer contracted by International Archaeological Research Institute, Inc. will be conducting oral history interviews with individuals knowledgeable about the project lands adjacent to Kahului Harbor. The oral history interviews are being conducted in order to collect information of the area.

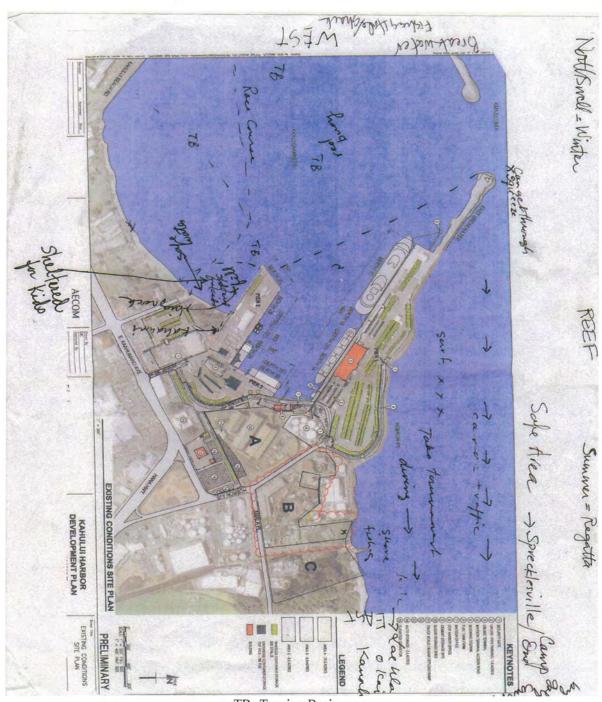
I understand I will be provided the opportunity to review my interview to ensure that it accurately depicts what I meant to say. I also understand that if I don't return the revised transcripts after two weeks from date of receipt, my signature below will indicate my release of information for the CIA report. I also understand that I will still have the opportunity to make revisions during the draft review process.

X I am willing to participate.

Mary C. Sanjor	March 18	5,2013
Signature	Date	
Mary C. Sanford Print Name	(808) 988.	2182
Print Name	Phone	
3694 Woodlawn Terrace Pl.	Honolula	96822
Address	ZipCode	
maizie la hawaii. rr. com		
Frank Address		

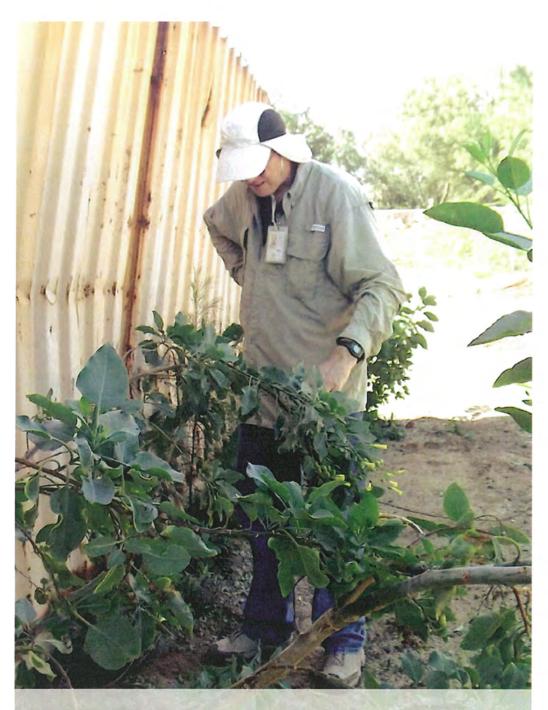
APPENDIX G Signed Release Form (None returned)

APPENDIX H
Annotated Map of Project Area
(By ethnographic consultants)



TB=Turning Basin

APPENDIX F
Flora and Fauna Inventory



BIOLOGICAL SURVEY ON A 10-ACRE PARCEL Flawaii
AND ADJACENT AREAS, PROPOSED LAND
ACQUISITION, KAHULUI, MAUI, HAWAII

Hawaii Biological Survey—

Final Report

February 2014

BIOLOGICAL SURVEY ON A 10-ACRE PARCEL AND ADJACENT AREAS, PROPOSED LAND ACQUISITION, KAHULUI, MAUI, HAWAII

FINAL REPORT

Prepared for:

EKNA Services, Inc. 615 Piikoi Street, Suite 300 Honolulu, HI 96814

Prepared by:

David Preston and Clyde Imada Hawaii Biological Survey Bishop Museum 1525 Bernice Street Honolulu, Hawaii 96817

February 2014

Contribution No. 2014-001 to the Hawaii Biological Survey

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APPENDIX VII: Photographs

EXECUTIVE SUMMARY

In April 2013 a request was made by the U.S. Fish and Wildlife Service (USFWS) to EKNA Services, Inc., to conduct surveys for the possible presence of the endangered Blackburn's sphinx moth [Manduca blackburni (Butler 1880)] on properties located in the Kahului Harbor area. In December 2013 the Bishop Museum, Department of Natural Sciences, was contracted by EKNA Services, Inc., to conduct biological surveys on a 10 acre industrial-use site adjacent to the Maui Electric Company power plant located at Kahului Harbor. On 8-12 December 2013 a biological reconnaissance of the harbor area property was conducted, as well as adjacent properties to the east (State Department of Land and Natural Resources [DLNR] storage yard and the Maui County Wastewater Treatment Plant) up to the boundary with Kanahā Beach Park, and to the west (State Harbors Division) up to Pu'unene Avenue and the coastal beaches fronting them, comprising roughly 22 additional acres. In conjunction with the Blackburn's sphinx moth surveys, it was deemed necessary to inventory all the plant and invertebrate species found within the selected survey sites, with particular attention being paid to the alien tree tobacco (Nicotiana glauca), the primary host plant for the endangered moth in this area. Host plants that could serve as adult food (flower nectar) for the moth were also searched for and documented. GPS coordinates for all Manduca host plants found were recorded, and the presence of Manduca eggs, larvae, and adults, as well as evidence of chewing damage that may have been caused by Manduca, was searched for, Chewing damage was photographed and the locations of damaged host plants recorded. The Bishop Museum team also searched for federally listed endangered or threatened plant, animal, or insect species, a possibility especially with birds, given the close proximity to Kanahā Pond Wildlife Sanctuary, where several native endangered wetland bird species make their home. Bishop Musem also provided complete inventories of plants, invertebrates, birds, and mammals seen within the survey areas, and conducted vegetation and hydrological analyses for wetland sites noted in the survey areas.

INTRODUCTION

Staff from the Bishop Museum, Department of Natural Sciences, on 8–12 December 2013 conducted a biological reconnaissance of 10 acres of industrial-use land adjacent to the Maui Electric Company power plant in the vicinity of Kahului Harbor (Tax Map Keys (2) 3-7-11:17, (2) 3-7-11:23), currently owned by Alexander & Baldwin, Inc., and proposed for acquisition by the State of Hawai'i Department of Transportation, Harbors Division. The parcel is located in the Kahului Harbor area of north-central Maui in an industrial-use zone, and is bounded on the west by Hobron Lane, on the north by Amala Place, on the east by Amala Road, and to the south *(makai)* by the power plant (see Map 2, p. 33).

While there are no immediate plans to develop the site, looking ahead to potential development, the Pacific Island Office of the U.S. Fish and Wildlife Service (USFWS) in April 2013 noted that the Blackburn's sphinx moth (Manduca blackburni), a federally listed endangered Hawaiian moth, was known to inhabit the general vicinity. The USFWS thus recommended that a biological survey be conducted in the project area, as well on adjacent properties, to confirm the presence or absence of adult and/or larval Manduca, as well as the known host plants the species needs to survive. At the request of client EKNA Services, Inc., the survey area was thus expanded to include adjacent properties to the east (State Department of Land and Natural Resources [DLNR] storage yard and the Maui County Wastewater Treatment Plant) up to the boundary with Kanahā Beach Park, and to the west (State Harbors Division) up to Pu 'unēnē Avenue and the coastal beaches fronting them, totaling approximately 22 acres (see Map 1, p. 32). The expanded survey perimeter also included water features that were investigated in a preliminary wetland analysis.

Elevation at the site ranged from sea level to 20 feet. Average annual rainfall for the area is around 18 inches. The soil substrates in the survey area fall into three classifications in Foote et al. (1972): 1) Beaches (BS), light-colored sands derived from coral and seashells; 2) Fill Land (Fd), usually consisting of low-lying wetlands along coastal flats, coral sand, coral limestone, or areas shallow to bedrock, filled with bagasse and slurry from sugar mills; and 3) Jaucas sand, saline, 0 to 12 percent slopes (JcC), consisting of calcareous soils occurring as narrow strips on coastal plains, developed in wind- and water-deposited sand derived from coral and seashells. The Jaucas sands are saline, with a water table near the soil surface, and are poorly drained in depressions but excessively drained on knolls. Typical vegetation on JcC soils includes kiawe (*Prosopis pallida*), koa haole

(Leucaena leucocephala), fingergrass (Chloris spp.), Bermuda grass (Cynodon dactylon), and Australian saltbush (Atriplex spp.). Typical land use on JcC soils is pastureland, wildlife habitat, or urban development.

The primary objectives of the survey were to 1) record GPS coordinates of all plant hosts reported to be associated with the adult or larval stages of the endangered Hawaiian moth, *Manduca blackburni*, and briefly describe the habitat types in the survey area; 2) record physical presence of *Manduca* adults or larvae, or any physical evidence of their presence (e.g., leaf chew, droppings), also recording photographic evidence and GPS coordinates; 3) provide an inventory of plants, arthropods, birds, and mammals seen; 4) report on locations and numbers of any federally listed endangered or threatened plant, animal, or insect species; and 5) provide vegetation and hydrological analyses for any wetland areas noted (excluding soil analysis).

SURVEY METHODS

Prior to initiation of fieldwork, the authors searched for pertinent literature on previous biological surveys conducted in the general vicinity to familiarize themselves with historical findings in the area (Howarth et al. 2012; Funk 1999; Char 1990, 1997). Literature relating to the endangered Hawaiian moth, *Manduca blackburni*, was also reviewed, especially with regard to its distribution and biology, and the U.S. Fish and Wildlife Service (USFWS) designation of critical habitats and a management unit in the general vicinity of the project site (U.S. Fish and Wildlife Service 2003, 2005; Amidon et al. 2009; Rubinoff & San Jose 2010).

A walkthrough survey method was used, with two biologists systematically combing the survey area, taking field notes, and georeferencing all targeted plant or animal species. The existing roadways and perimeter fences provided reliable reference points for location within the parcel. Garmin GPS units were used for georeferencing, and coordinate location points were recorded using the WGS 84 datum. Plant and animal identifications were largely made in the field; those that could not be positively identified were photographed or collected for later identification at Bishop Museum. Five days of fieldwork were conducted on 8–12 December 2013.

The species recorded reflects the season and environmental conditions at the time of the survey. In their response to the consultant EKNA Services, Inc., the USFWS recommended that the search

for evidence of the endangered Blackburn's sphinx moth take place during the wettest portion of the year, preferably 4–8 weeks after a significant rainfall event. One such significant rainfall event took place during Hawai'i's rainy season on 10 November 2013, when the *Maui News* reported that 3.52 inches of rainfall had been recorded during a 24-hour period at Kahului Airport, shattering the previous Kahului record of 1.78 inches set in 1955. The survey was conducted 4 weeks after this event.

Botanically, the focus was on locating all occurrences of the non-native tree tobacco (Nicotiana glauca) in the survey area, the main host plant in the area for the endangered moth, Manduca blackburni. The USFWS advisory letter also noted that adult moths fed on the nectar of the native pōhuehue or beach morning glory (Ipomoea pes-caprae subsp. brasiliensis), 'ilie'e (Plumbago zeylanica), and maiapilo (Capparis sandwichiana), and that the larvae fed on the native tree, 'aiea (Nothocestrum latifolium) and tree tobacco. Other sources (USFWS 2003, 2005) list the native koali 'awa (Ipomoea indica) as another preferred adult nectar host. All of these plants were searched for during the survey.

Also included in the search were other documented or suspected host plants of *Manduca* adults and larvae, including commercial tobacco (*N. tabacum*), eggplant (*Solanum melongena*), tomato (*Lycopersicon esculentum*), and Jimson weed (*Datura stramonium*). The presence of any other members of the tomato family (Solanaceae) or morning-glory family (Convolvulaceae) were also noted as potential larval or adult *Manduca* hosts.

SURVEY FINDINGS

Objective 1: Manduca plant host census and habitat types

Conservatively, 80+ plants of *Nicotiana glauca*, ranging from seedlings to trees 10 feet tall, were noted during the survey (Fig. 5, p. 41). GPS points were taken for most of the sightings (see Map 1, p. 32 for distributions; Appendix IV, p. 29, for GPS points). Very few of the *Nicotiana* plants were located within Alexander & Baldwin's 10-acre parcel; a few plants were noted in a fenced parcel referred to as the "notch" parcel (SSFM International, Inc. 2012) (see Map 2, p. 33). The largest concentration of tree tobacco plants ranged from the fenceline between the DLNR and wastewater plant to the undeveloped lands on the western end of the treatment facility proper (see Map 4, p. 35).

Although widespread and apparently supporting a population of *Manduca blackburni* in this coastal habitat, the USFWS does not consider the non-native *Nicotiana glauca* to be a *primary constituent element* (defined as those physical or biological features considered essential for the conservation of the species) for *Manduca*, for the following reasons: 1) *Nicotiana* is short-lived and drought-intolerant, and can disappear from an area during prolonged droughts, while *Nothocestrum* is more stable and persistent in dry to mesic forest habitats; 2) because of its susceptibility to droughts, *Nicotiana* is considered a suboptimal food for sphinx moth larval growth, which consume more food when it has a high water content; 3) *Nicotiana* is an established weed that land managers might prefer to control if native host plants are available; and 4) because *Nicotiana* inhabits weedy environments, potentially harmful alien insect predators are more likely to occur there (USFWS 2003, 2005).

In the surveyed lands, several other members of the Solanaceae besides tree tobacco were noted, but only in small quantities: Jimson weed (*Datura stramonium*), two plants less than 18 inches tall (see Fig. 2, p. 38); groundcherry (*Physalis angulata*), one plant, 6 inches tall; and pōpolo (*Solanum americanum*), several plants, 1 foot tall. The *Datura* and *Physalis* were found on the wastewater plant property, the *Solanum* on the DLNR site.

Among adult *Manduca* host plants, the beach morning-glory (*Ipomoea pes-caprae* subsp. brasiliensis) was an occasional element along the coasts, growing primarily in beach sand (Fig. 6, p. 41). Three additional members of the morning-glory family (*Ipomoea obscura*, *I. triloba*, *Jacquemontia sandwicensis*) were noted and may potentially serve as nectar sources for feeding, but all have small corolla tubes relative to the larger beach morning-glory flower. These were all infrequent in the survey area. Other documented adult hosts (*Capparis sandwichiana*, *Plumbago zeylanica*, *Nothocestrum latifolium*) were not seen during the survey.

Following are short descriptions of the main vegetation habitat types noted during the survey (complete species lists can be found in Appendix I, p. 17):

a) Coastal dunes (Fig. 8, p. 42). The substrate in this zone is primarily unconsolidated beach sand, and it occurs in mostly undisturbed habitats adjacent to the ocean, beginning at the high tide mark. Strong onshore breezes, constant salt spray, intense sunlight, high temperatures, low rainfall, and shifting sands are the norm in this zone. The best examples along this coast are found in Kanahā Beach Park, adjacent to the east. In its most undisturbed native expression, clumps of naupaka

kahakai (Scaevola taccada) form thickets at the high water mark, while the beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis) trails along the sand, rooting at each node, intermingling with 'aki'aki grass (Sporobolus virginicus). Other occasional native elements include the tree milo (Thespesia populnea), the shrub 'āweoweo (Chenopodium oahuense), and the herbs 'ākulikuli (Sesuvium portulacastrum), kīpūkai (Heliotropium curassavicum), and alena (Boerhavia repens). The most common weedy elements include the trees common ironwood (Casuarina equisetifolia) and tree heliotrope (Tournefortia argentea); the shrubs Indian fleabane (Pluchea indica) and P. xfosbergii; the herbs golden crown-beard (Verbesina encelioides), Heliotropium procumbens var. depressum, saltbush (Atriplex suberecta), goosefoot (Chenopodium murale), and silky jackbean (Canavalia sericea); and the grasses buffelgrass (Cenchrus ciliaris) and Bermuda grass (Cynodon dactylon). Examples of coastal dune vegetation in the survey area are best developed on the east margin of the wastewater treatment plant property and a section of the beach fronting the treatment plant. Tree tobacco was occasionally found in this zone, but toward the inland, more sheltered side.

- b) Coastal forest (Fig. 7, p. 41; Fig. 12, p. 43). This zone occurs mainly on the DLNR property, mostly growing on the banks of Mau'oni Pond, readily visible on the Google Earth © maps as thickly vegetated zones (see Map 3, p. 34). These forests are dominated by the non-native trees common ironwood and kiawe (*Prosopis pallida*), with sections of hau (*Hibiscus tiliaceus*), milo, and false kamani (*Terminalia catappa*), and scattered date palms (*Phoenix dactylifera*). Very little grows under the ironwood, as it thrives on nutrient-poor coastal sands, and the needle litter is said to leach chemicals that restricts plant growth underneath it. Tree tobacco was uncommon in this habitat. In the extreme western end of the survey properties, adjacent to Pier 2, is a tall, thick common ironwood forest adjacent to a drainage channel leading to the ocean.
- c) Ruderal vegetation (Fig. 9, p. 42). This zone is broadly defined as all areas not in a forested habitat, a natural coastal habitat, or a wetland. It includes all roadside areas with non-woody vegetation, weedy sections of industrial properties, and purposefully cultivated plantings. The entire 10-acre Alexander & Baldwin property is included here, as well as the entire interior fenced wastewater treatment plant property. Among the most common weeds in the ruderal zone were Heliotropium procumbens var. depressum, the aggressive legume vine Macroptilium atropurpureum, saltbush, buffelgrass, swollen fingergrass (Chloris barbata), Sida ciliaris, and the possibly indigenous 'uhaloa (Waltheria indica). Almost all of the tree tobacco plants seen during the survey grew in this habitat type, concentrated on the treatment plant property and the interface with the

adjoining DLNR land to the west.

d) Wetlands (Fig. 7, p. 41; Figs. 10–12, p. 43). Several waterways and wetland sites were examined during the survey, mostly on the DLNR property (see Map 3, p. 34), and one on the western end of the State Harbors Division property adjacent to Pier 2 (see Map 5, p. 36). Mau'oni Pond on the DLNR property is the remnant of an ancient royal Hawaiian fishpond complex, along with Kanahā Pond, now partially filled in for present-day industrial usage. The present-day water features are likely fed by the adjoining Kanahā Pond complex and drain into Kahului Bay during high-water events. At the time of our visit none of the channels were filled enough to connect to the ocean. Only one wetland feature, on the DLNR property, contained what would be considered typical wetland vegetation. This wetland is located in a sandy depression on the property, fronted on the Amala Place side by an unpaved vehicle lot and small dumpsite, and oceanside by sand dunes fronting Kahului Bay. Adjacent parts of the property have been bulldozed and currently are sparsely vegetated, but the vicinity of the wetland appears to have been little disturbed. The wetland is small and oval-shaped, measuring about 150 feet by 95 feet. The substrate was completely flooded, with about half of the acreage dominated by kaluhā (Schoenoplectus californicus), a bulrush with stems up to 7 feet tall. A smaller section was dominated by a smaller sedge, makai (Bolboschoenus maritimus subsp. paludosus), and a raised section in the middle of the wetland was colonized primarily by the shrubs Indian fleabane (Pluchea indica), sourbush (P. carolinensis), and marsh fleabane (P. xfosbergii). Other wetland indicator plants present included makaloa (Cyperus laevigatus), 'ae'ae (Bacopa monnieri), and duckweed (Landoltia punctata). A steep, sandy slope on the makai and western side of the wetland was thickly covered mostly with P. xfosbergii.

Objective 2: Entomological evidence of Manduca blackburni presence

Known Manduca blackburni plant hosts were visually inspected for the presence of the endangered Blackburn's sphinx moth as well as for other invertebrates that were present while walking between sites. An insect sweep net and small handheld aspirator were used to capture specimens. Leaves and branches of Nicotiana glauca were examined for the presence of M. blackburni eggs and larvae. Chewing damage seen on N. glauca was noted and photographed. Locations for general collecting and Manduca host searching are listed in Appendix IV (p. 29). Non-Manduca species were captured incidentally while walking between sites. Specimens identified in

the field and not retained were recorded. All material collected were placed in vials containing 95% ethanol, labeled, and brought back to the Bishop Museum for identification. A list of identified species are listed in Appendix II (p. 23).

Objective 3: Biological census

a) Plants

A total of 137 plant species were recorded during the survey, including 5 endemic (3 of which were solely cultivated), 14 indigenous (including "questionably indigenous"), 3 Polynesian introductions (all solely cultivated), 87 naturalized weeds, and 28 cultivated plants. A complete plant species list can be found in Appendix I (p. 17). Excluding the 34 solely cultivated species noted, the low percentage of natives among the naturally occurring vegetation (17 of 103 species, 16.5%) is attributable to the highly modified nature of the site (industrial development on coastal fill land). None of the 16 naturally occurring native (endemic + indigenous) plants is a federally protected endangered or threatened species. The more common natives, by habitat type, were:

Coastal dune: kīpūkai (Heliotropium curassavicum), 'āweoweo (Chenopodium oahuense), põhuehue (Ipomoea pes-caprae subsp. brasiliensis), naupaka kahakai (Scaevola taccada), alena (Boerhavia repens)

Coastal forest: hau (Hibiscus tiliaceus), milo (Thespesia populnea)

Ruderal/industrial: 'uhaloa (Waltheria indica)

Wetlands: 'ākulikuli (Sesuvium portulacastrum), 'ae'ae (Bacopa monnieri), makai (Bolboschoenus maritimus subsp. paludosus), makaloa (Cyperus laevigatus)

b) Arthropods

A total of 52 species were collected while searching on and near the alien tree tobacco (Nicotiana glauca). The main objective of this survey was to determine if the endangered Blackburn's sphinx moth was present on the properties surveyed. While no eggs, larvae, or adults were observed on the tree tobacco, several plants showed signs of feeding damage on their leaves. Although N. glauca is a known host species for the Blackburn's sphinx moth, we can only speculate

on what caused some of the feeding damage. Damage caused by the chrysomelid beetle *Lema trilinea* was evident on many of the tree tobacco plants growing within the Kahului wastewater treatment plant (Fig. 1, p. 37)). The larvae of this beetle resemble small slugs and will feed from the edges of the leaves and also cause shot-holes in the leaves. The chewing damage caused by this beetle is characterized by irregular, jagged edges. This beetle will also feed on *Datura* spp. (Fig. 2, p. 38). At least 2 sphinx moths other than *Manduca blackburni* are known to feed on the alien tree tobacco in Hawai'i. Although tree tobacco is not their preferred host plant, the sweet potato hornworm (*Agrius cingulata*) and the white-lined sphinx (*Hyles lineata*) will feed on tree tobacco. The white-lined sphinx is roughly half the size of the other two. The feeding damage caused by the larger moths can be much more significant, with even the largest leaves being chewed to their bare stems (Fig. 3, p. 39). Because no sphingid larvae were seen during this survey, it was not possible to determine what moth species was feeding on the tree tobacco.

c) Birds and feral mammals

A total of 12 bird species and 1 mammal were observed during the 5-day walkthrough surveys in the Kahului Harbor area. No endangered or threatened species were seen in the area, although the survey sites were in close proximity to the Kanahā Pond State Wildlife Sanctuary, where three endangered waterbirds reside. The Black-crowned Night-Heron (Nycticorax nycticorax) was the only native bird species recorded from the survey area. A complete list of species can be found in Appendix III, p. 27.

Objective 4: Endangered or Threatened taxa

None of the 16 naturally occurring native (endemic + indigenous) plants noted during the survey is a federally protected endangered or threatened species. *Hibiscus clayi* is federally listed as endangered, but occurs only as a single cultivated plant in the wastewater plant landscaping.

As explained in objective 3b above, because no eggs, larvae, or adults of *Manduca blackburni* were observed on *Nicotiana glauca*, the obvious chewing damage on tobacco plants noted cannot be conclusively attributed to *M. blackburni*. Otherwise, no endangered or threatened arthropods were seen.

Although three endangered species of waterbirds—Black-necked Stilt (*Himantopus mexicanus knudseni*), Koloa (*Anas wyvilliana*), Hawaiian Coot (*Fulica alai*)—are known to reside at the nearby 235-acre Kanahā Pond State Wildlife Sanctuary, just adjacent to the south, none of them were noted in any of the wetland habitats on the surveyed properties. At the time of our survey in December 2013, the wastewater treatment plant catchment pond was completely dried up; anecdotal evidence indicates that the endangered Black-necked Stilt can be found there when the pond is filled.

Objective 5: Wetland analysis

Wetlands, as defined in the Environmental Protection Agency's regulations (40 CFR 230.3), are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." To qualify as a wetland, a site must meet three criteria. First, there must be a predominance of hydrophytic vegetation on the site, plants typically adapted to life in water or saturated soils. The *National Wetland Plant List* (Lichvar 2013) provides recent wetland ratings of over 7,900 native and naturalized species throughout the United States, ranging from "obligate" (OBL) plants that almost always occur only in wetlands, to "upland" (UPL) plants that almost never are found in wetlands. "Facultative wetland" (FACW) plants are usually found in wetlands, but may occur in non-wetlands, while "facultative upland" (FACU) lean the other way. In the middle are "facultative" (FAC) plants that are equally adapted to both wetlands and non-wetlands. For purposes of wetland delineation, in simplified terms, the vegetation passes the wetland test if the majority of the biomass is rated OBL, FACW, or FAC.

A second criterion is the presence of wetland hydrology. It may be self-evident during the wettest part of the year, but in drier periods can be the least precise of the criteria, as it can involve relying on reading clues in the environment, such as drainage patterns, water marks, drift lines, and sediment deposits. The final criterion is the presence of hydric soils, which involves digging pits and analyzing soil profiles, textures, and colors to determine whether they are wetland soils.

For this survey, Bishop Museum agreed to analyze the presence of hydrophytic vegetation and wetland hydrology, but deferred on analyzing the presence of hydric soils. No wetland delineations were performed. Most of the water features in the survey area seaward of the adjacent Kanahā Pond Wildlife Refuge appeared to be drainage channels to the ocean exiting from Kanahā Pond. At the

time of the survey none of drainages actually connected to the ocean, and the water quality in the shallower water bodies was murky. Only one of the saturated sites actually met the three conditions required of a wetland habitat. This site occurred on the DLNR property in a depression backed on the ocean side by a steep sand dune, as described in the wetland zone description on pages 6–7 (see Map 3, p. 34). Here all of the primary vegetation within the wetland was rated as hydrophytic: Schoenoplectus (OBL), Bolboschoenus (OBL), Pluchea indica/P. carolinensis/P. xfosbergii (FAC), Cyperus (OBL), Bacopa (OBL), Landoltia (OBL), and seashore paspalum (Paspalum vaginatum) (FACW), and there was obvious standing water in the depression. In the Google Earth © photo used for the maps in this report, dated 25 April 2013, it does not appear that there is any standing water in the wetland, supporting reports that Maui had been suffering through prolonged drought conditions during this time.

The other water features on the DLNR property include a drainage channel about 600 feet long, 20-30 feet wide (see Fig. 10, p. 43). Soil has been mounded along both banks for its entire length, apparently relatively recently, as it is currently sparsely vegetated with young trees of kiawe, milo, date palm, Christmas berry (Schinus terebinthifolius), and larger trees of coconut (Cocos nucifera) and common ironwood at the seaward end. A sand berm blocks access to Kahului Bay, and at this end there is a thick growth of the native groundcover, 'ākulikuli (Sesuvium portulacastrum), along with scattered 'aki 'aki grass (Sporobolus virginicus), both FAC wetland species. Also on the DLNR property are two small water-filled depressions. Pool A (see Fig. 11, p. 43) is about 60 x 20 feet, and is shallow with a thick growth of green algae. Pool B is about 40 x 15 feet, and is shaded by 30 foot tall mile and kiawe trees, with sapling date palms on its margin. Neither pool has wetland vascular plants growing in it, and these water features are probably ephemeral elements resulting from the heavy rains that fell a month prior. The final water feature on the DLNR property is Mau'oni Pond (see Fig. 12, p. 43). This body of water is also landlocked until it reaches the level of the cement drainage pipes on the seaward end. The banks of the pond are mostly steep and covered with coastal forest trees, mostly common ironwood. In places, there are flat pond banks that support hydrophytic species such as torpedo grass (Panicum repens, FAC), makai (Bolboschoenus maritimus subsp. paludosus, OBL), and 'ae'ae (Bacopa monnieri, OBL), but in general the steep banks prevent development of wetlands on this site.

A drainage channel adjacent to Pier 2 (see Fig. 13, p. 44) was examined. The source of this water is unclear. Although the mouth of this waterway is within several feet of the ocean, it, too, was

separated from the ocean by a berm of sand, and was somewhat stagnant. The distance inland to where it becomes channelized was about 75 yards, and its width was about 20 feet. A tall forest of common ironwood (FACU) grows on either bank, and the banks are covered with thick grass, tentatively identified as seashore paspalum (*Paspalum vaginatum*), a hydrophytic non-native species (FACW). Also in the vicinity were false kamani (*Terminalia catappa*, FAC) and 'ākulikuli groundcover (FAC). If the site is being considered for development, a complete wetland delineation is suggested.

DISCUSSION

A recounting of the conservation history of *Manduca blackburni* is an interesting story and reveals that there is still much to learn about the life history and distribution of this endemic sphinx moth, distinguished for becoming the first Hawaiian insect to achieve Federal endangered status in 2000. The moth was first collected by Rev. T. Blackburn near Honolulu, Oʻahu, and was originally described in 1880 by Butler as *Protoparce blackburni*, a species unique to the Hawaiian Islands. The species was subsequently recorded on 6 of the 8 major islands (excluding Niʻihau and Lānaʻi), and was considered somewhat widespread and abundant, based on accounts of early European naturalists, mostly from coastal or lowland dry forest habitats receiving less that 50 inches of rain (USFWS 2003). Since 1899, though, taxonomists decided that the species was actually either no different from the tobacco hornworm (now called *Manduca quinquemaculatus*), a widespread New World species, or only an endemic subspecies of it (Riotte 1986).

Historically, *Manduca* appears to have been most common on Maui, with collections in Kahului as far back as 1919, Spreckelsville in 1922, West Maui in 1929, and Wailuku in 1937 (Riotte 1986), but between 1940 and 1970 the moth was recorded statewide only a handful of times, and was presumed extinct after extensive field surveys in the mid-1970s failed to locate any *Manduca* (Rubinoff et al. 2012). During this time, the moth larvae had only been observed feeding on nonnative members of the Solanaceae, including tomato, eggplant, and tree tobacco, but in 1984 the larvae were discovered feeding on a rare, endemic tomato relative, 'aiea (*Nothocestrum latifolium*) in a dry forest on the southwest slope of East Maui. This rediscovery on a new, endemic plant host spurred Riotte (1986) to conduct extensive research and restore the moth's taxonomic status as a fully recognized species, under the name *Manduca blackburni*. Rubinoff et al. (2012) used molecular

techniques to confirm that *M. blackburni* is a distinct species from the closely related, widespread *M. quinquemaculatus*. The species was subsequently rediscovered on Kahoʻolawe, in the Kanahā-Spreckelsville coastal zone on Maui—both where tree tobacco grows but not *Nothocestrum*—and on the Big Island.

Because of its low population size and the rarity of its newly discovered endemic larval host plant, the U.S. Fish and Wildlife Service (USFWS) made *Manduca blackburni* a priority for listing, and it was federally listed as endangered in 2000. This was followed by USFWS critical habitat designation in 2003. Critical habitats are comprised of specific designated geographic areas that contain those physical or biological features considered essential for the conservation of the species ("primary constituent elements"); these areas may be subject to special management considerations or protection until such time that the species is no longer considered endangered and can be delisted. Following public review of the proposed critical habitat designations for *Manduca*, the USFWS settled on 9 critical habitat units totaling over 55,000 acres on the islands of Moloka'i, Maui, Kaho'olawe, and Hawai'i (USFWS 2003). Two of these critical habitats occur in the survey vicinity.

As originally proposed, the Kanahā Pond—Spreckelsville critical habitat unit totaled 559 acres, stretching along the Kahului coast and including a portion of the DLNR property and the county wastewater treatment plant. The USFWS final ruling settled on two smaller, separate critical habitat units, Kanahā Pond (139 acres) and Kanahā Park (62 acres), a reduction of 358 acres (USFWS 2003). Both sites contain managed native habitats appropriate for *Manduca* conservation. The discarded acreage was considered inessential for the conservation of *Manduca* either because it was found to be more seriously degraded than previously thought, or the primary constituent elements needed by the adults or larvae were not present. As discussed under Objective 1, the USFWS does not consider *Nicotiana glauca* to be a primary constituent element for *Manduca* conservation.

In 2005, the USFWS designated 13 management units on 7 islands totaling over 138,000 acres to aid in the recovery of *Manduca* populations. The selected lands include the best remaining tracts of contiguous habitats suitable for *Manduca* conservation. One unit of 1,184 acres called the Kanahā Pond—Spreckelsville management unit encompasses all of the originally proposed critical habitat in the area (USFWS 2005). This small habitat is considered important for *Manduca* recovery, despite the lack of naturally occurring plants of *Nothocestrum*, primarily as a way station and refuge for the moth populations, which are strong fliers and are believed to be able to fly many kilometers to travel

between their now distantly separated primary habitats. Small, geographically isolated populations can become weaker because of inbreeding depression, but can gain vitality if there is genetic exchange between separated populations. The management unit at Kanahā Pond—Spreckelsville is billed to help bridge the gaps between these separate populations.

It remains uncertain whether *Manduca blackburni* has always inhabited the coastal zone before the arrival of humans to Hawaiian shores. In the Bishop Museum plant collection, there is no documentation of *Nothocestrum*, its preferred host plant, ever having been collected in the coastal zone on any island. If so, which native plants served as hosts for *Manduca* larvae in pre-human times in this habitat? Presently documented larval hosts in this zone are mostly post-Cook introductions, such as commercial tobacco (first collected in 1825), tree tobacco (1864–1865), and tomato (possibly mid-1800s (Wagner et al. 1999).

In view of the depleted statewide populations of the endemic *Nothocestrum* spp., its preferred host plant, there is some management concern that *Manduca* is shifting its host dependence towards *Nicotiana glauca*, presenting something of a dilemma for land managers preferring to remove the invasive species from their lands. Rubinoff and San Jose (2010) conducted laboratory tests to explore whether alternate native and non-native members of the tomato family (Solanaceae) would serve as acceptable hosts for *Manduca* larvae. In limited trials, they found success using the endemic pōpolo 'aiakeakua (*Solanum sandwicense*), the indigenous pōpolo (*Solanum americanum*), and the non-native tomato (*Lycopersicon esculentum*) and eggplant (*Solanum melongena*) as hosts. This provides some possibilities for land managers hoping to remove the invasive tree tobacco in favor of suitable alternate native or introduced larval host plants.

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APPENDIX I: Alexander & Baldwin 10-acre parcel plant checklist

Staff from the Bishop Museum, Department of Natural Sciences, on 8–12 December 2013 conducted a biological reconnaissance of 10 acres of industrial-use land adjacent to the Maui Electric Company power plant in the vicinity of Kahului Harbor (Tax Map Keys (2) 3-7-11:17, (2) 3-7-11:23), currently owned by Alexander & Baldwin, Inc., and proposed for acquisition by the State of Hawai'i Department of Transportation, Harbors Division. The parcel is located in the Kahului Harbor area of north-central Maui in an industrial-use zone, and is bounded on the west by Hobron Lane, on the north by Amala Place, on the east by Amala Road, and to the south (makai) by the power plant. In addition, the coastal strip fronting the Maui Electric Company power plant was surveyed.

A total of 65 taxa were noted during the survey, including 5 indigenous (including "ind?"), 1 Polynesian introduction (solely cultivated), 49 naturalized weeds, and 10 cultivated plants. There were no endemic plants noted in the parcel. Four of the 5 native species were found only along the coastal strip: 'ākulikuli (Sesuvium portulacastrum), kīpūkai (Heliotropium curassavicum), alena (Boerhavia repens), 'aki'aki (Sporobolus virginicus), while 'uhaloa (Waltheria indica) was found both along the coast and in inland ruderal habitats. None of the 5 naturally occurring native indigenous plants noted in the parcel is a federally protected endangered or threatened species, nor were any wetland habitats noted.

The only spot within the A&B parcel where *Nicotiana glauca* plants were located was in the "notch" parcel (see Map 2); at least one, but possibly several, plants were seen at the base of large tank fenced from access. No GPS point was taken, but Google Earth coordinates place it at N 20.896211, W 156.462755. Seven additional small plants were noted along the coastal strip outside of the A&B parcel (waypoints 934–937 in Appendix IV).

In the A&B parcel, no other members of the Solanaceae that might serve as alternate hosts of Manduca larvae were noted. Among adult Manduca host plants, no plants of the beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis) were seen. Two other members of the morning-glory family (Ipomoea obscura, I. triloba) were noted and may potentially serve as nectar sources for feeding, but both have small corolla tubes relative to the larger beach morning-glory flower. These were infrequent in the survey area. Other documented adult hosts (Capparis sandwichiana, Plumbago zeylanica, Nothocestrum latifolium) were not seen during the survey.

The following is a list of vascular plant species noted during a walk-through survey of the 10-acre Alexander & Baldwin parcel on 8–12 December 2013. In the following table, plants are divided into two main groups, dicots and monocots. Within these groups, plants are arranged alphabetically by family, genus, and species. Each entry includes scientific name with author citation, common name in English and/or Hawaiian (if available), biogeographic status, and presence or absence in the designated parcel. Taxonomy follows Wagner et al. (1999) for native and naturalized plants; Staples and Herbst (2005) for cultivated plants; Palmer (2003) for ferns; and Imada (2012) for current updates of plant names. An explanation of abbreviations used in the list follows.

Biogeographic Status (from Wagner et al. 1999)

cult Cultivated plant; purposefully grown

end Endemic: native, occurring only in the Hawaiian Archipelago

ind Indigenous: native, occurring naturally in the archipelago but also outside of Hawai'i

ind? Questionably indigenous: probably indigenous, possibly naturalized

nat Naturalized: introduced to the archipelago directly or indirectly by humans since Western contact and

reproducing and spreading vegetatively or by seed

nat? Questionably naturalized: probably naturalized, but possibly indigenous pol Likely introduced during Polynesian migrations, now naturalized

Parcel

A&B Alexander & Baldwin parcel (including "notch" Coast Coastel strip makai of Maui Electric Company

Relative frequency

e Common

Occasional

r Rare

One-of-a-kind

Absent

Scientific name	0	Status	Parcel		
Scientific name	Common name	Status	A&B	Coast	
DICOTS			1		
AIZOACEAE (ice plant family)					
Sesuvium portulacastrum (L.) L.	'ākulikuli, sea purslane	ind	3 mg 4	X	
AMARANTHACEAE (amaranth family)					
Amaranthus spinosus L.	spiny amaranth	nat	x	(-1	
Amaranthus viridis L.	slender amaranth	nat	X	1161	
APIACEAE (parsley family)					
Centella asiatica (L.) Urb.	Asiatic pennywort	nat	X	120	
APOCYNACEAE (dogbane family)					

Scientific name	Common name	Status	Parcel		
	Common name	Status	A&B	Coast	
Plumeria obtusa L.	Singapore plumeria	cult	X		
ASTERACEAE (sunflower family)					
Emilia sonchifolia var. javanica (Burm.f.) Mattf.	Flora's paintbrush	nat	х	-	
Pluchea carolinensis (Jacq.) G.Don	sourbush, marsh fleabane	nat	х	1.74	
Pluchea indica (L.) Less.	Indian fleabane, Indian pluchea	nat		х	
Tridax procumbens L.	coat buttons	nat	x	-	
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	nat	x		
BIGNONIACEAE (catalpa family)					
Tecoma capensis (Thunb.) Lindl.	cape-honeysuckle	cult	х	-	
BORAGINACEAE (borage family)					
Cordia sebestena L.	geiger tree, kou haole	cult	х	-	
Heliotropium curassavicum L.	kīpūkai, nena	ind	14	x	
Heliotropium procumbens Mill. var. depressum (Cham.) Fosberg		nat	х	-	
CAPPARACEAE (caper family)					
Cleome gynandra L.	wild spider flower	nat	x	-	
CASUARINACEAE (ironwood family)					
Casuarina equisetifolia L.	common ironwood	nat	х	х	
CHENOPODIACEAE (goosefoot family)					
Atriplex suberecta I.Verd.	saltbush	nat	х	х	
Chenopodium murale L.	goosefoot, pigweed	nat	х		
CLUSIACEAE (clusia family)					
Clusia rosea Jacq.	autograph tree	nat	x	1.4	
CONVOLVULACEAE (morning-glory family)					
pomoea obscura (L.) Ker Gawl.	morning glory	nat	x		
pomoea triloba L.	little bell	nat	x		
Merremia aegyptia (L.) Urb.	hairy merremia	nat?	-	x	
CUCURBITACEAE (gourd family)					
Cucumis dipsaceus Ehrenb. ex Spach	hedgehog gourd, teasel gourd	nat	х	-	
EUPHORBIACEAE (euphorbia family)					
Euphorbia hirta L.	hairy spurge, garden spurge	nat	х		
Euphorbia hypericifolia L.	graceful spurge	nat	X	-	
Euphorbia prostrata Aiton	prostrate spurge	nat	X		
Ricinus communis L.	castor bean	nat	х		
FABACEAE (bean family)					
Caesalpinia pulcherrima (L.) Sw.	dwarf poinciana	cult	х	-	
Crotalaria pallida Aiton	smooth rattlepod	nat	X	12	
Desmanthus pernambucanus (L.) Thell.	slender mimosa	nat	х		
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	nat	X	-	
ndigofera spicata Forssk.	creeping indigo	nat	X	-	
Leucaena leucocephala (Lam.) de Wit	koa haole	nat	x	х	

Scientific name	Scientific name Common name Status	Status	Pa	rcel
		Status	A&B	Coast
Macroptilium lathyroides (L.) Urb.	wild bean, cow pea	nat	x	1
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	algaroba, mesquite, kiawe	nat	Х	- 24
MALVACEAE (hibiscus family)				
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	nat	x	X
Hibiscus rosa-sinensis L.	red hibiscus	cult	х	
Malva parviflora L.	cheese weed	nat	X	-
Malvastrum coromandelianum (L.) Garcke subsp. coromandelianum	false mallow	nat	х	-
Sida rhombifolia L.		nat?	x	-
MORACEAE (mulberry family)				
Ficus microcarpa L.f.	Chinese banyan	nat	х	-
NYCTAGINACEAE (four-o'clock family)		İ		
Boerhavia coccinea Mill.		nat	х	х
Boerhavia repens L.	alena	ind	11-11	х
Bougainvillea glabra Choisy	bougainvillea	cult	х	-
PORTULACACEAE (moss-rose family)				
Portulaca oleracea L.	pigweed	nat	x	-
SOLANACEAE (tomato family)				
Nicotiana glauca Graham	tree tobacco	nat	х	х
STERCULIACEAE (cacao family)				
Waltheria indica L.	'uhaloa, hi'aloa	ind?	X	х
ZYGOPHYLLACEAE (lignum-vitae family)				
Γribulus terrestris L.	puncture vine	nat	х	12
MONOCOTS		T		
ALOEACEAE (aloe family)				
Aloe vera (L.) Burm.f.		cult	х	1
ARECACEAE (palm family)				
Cocos nucifera L.	niu, coconut	pol/cult	X	X
Phoenix hybrid	date palm	nat	х	-
CYPERACEAE (sedge family)				
Cyperus rotundus L.	nut grass	nat	х	- 1
LILIACEAE (lily family)				
Crinum sp.	spider lily	cult	х	
POACEAE (grass family)				
Bambusa sp.	bamboo	cult	х	-
Cenchrus ciliaris L.	buffelgrass	nat	х	х
Cenchrus echinatus L.	common sandbur	nat	х	-
Chloris barbata Sw.	swollen fingergrass	nat	х	X
Cynodon dactylon (L.) Pers.	Bermuda grass	nat	х	X
Dactyloctenium aegyptium (L.) Willd.	beach wiregrass	nat	х	
Eleusine indica (L.) Gaertn.	wiregrass	nat	х	
Eragrostis pectinacea (Michx.) Nees var.	Carolina lovegrass	nat	x	-

Scientific name		Contract	Parcel		
	Common name	Status	A&B	Coast	
pectinacea					
Setaria verticillata (L.) P.Beauv.	bristly foxtail	nat	x	-	
Sporobolus pyramidatus (Lam.) Hitchc.		nat	х	-	
Sporobolus virginicus (L.) Kunth	'aki'aki, seashore rushgrass	ind	-	х	
Stenotaphrum secundatum (Walter) Kuntze	St. Augustine grass, buffalo grass	cult	Х	-	

APPENDIX II: Plant checklist

The following is a list of vascular plant species noted during a walk-through survey of approximately 32 acres of surveyed land on 8–12 December 2013. A total of 137 taxa were noted during the survey, including 5 endemic (3 of which were solely cultivated), 14 indigenous (including "ind?"), 3 Polynesian introductions (all solely cultivated), 87 naturalized weeds, and 28 cultivated plants.

In the following table, plants are divided into four main groups: dicots, monocots, gymnosperms, and ferns. Within these groups, plants are arranged alphabetically by family, genus, and species. Each entry includes scientific name with author citation, common name in English and/or Hawaiian (if available), biogeographic status, and frequency in designated vegetation zones. Taxonomy follows Wagner et al. (1999) for native and naturalized plants; Staples and Herbst (2005) for cultivated plants; Palmer (2003) for ferns; and Imada (2012) for current updates of plant names. An explanation of abbreviations used in the list follows.

Biogeographic Status (from Wagner et al. 1999)

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ind? Questionably indigenous: probably indigenous, possibly naturalized

nat Naturalized: introduced to the archipelago directly or indirectly by humans since Western contact and

reproducing and spreading vegetatively or by seed

nat? Questionably naturalized: probably naturalized, but possibly indigenous pol Likely introduced during Polynesian migrations, now naturalized

Vegetation zones

Cd Coastal dunes
Cf Coastal forest
Ri Ruderal & industrial
Ww Wetlands & waterways

Relative frequency

c Common o Occasional

r Rare

1 One-of-a-kind

Absent

Scientific name	Common name	Status	Vegetation zones				
			Cd	Cf	Ri	Ww	
DICOTS							
AIZOACEAE (ice plant family)							
Sesuvium portulacastrum (L.) L.	'ākulikuli, sea purslane	ind	0	-	r	0	

Sesuvium verrucosum Raf	Common name	Status	Vegetation zones				
			Cd	Cf	Ri	Ww	
Sesuvium verrucosum Raf.		nat	-	-	r	-	
AMARANTHACEAE (amaranth family)							
Alternanthera pungens Kunth	khaki weed	nat	-	-	r	-	
Amaranthus spinosus L.	spiny amaranth	nat	- 1	-	0	-	
Amaranthus viridis L.	slender amaranth	nat	-	-	r	r	
ANACARDIACEAE (cashew family)							
Mangifera indica L.	mango	cult	-	-	r	1 -	
Schinus terebinthifolius Raddi	Christmas berry	nat	r	-	r	-	
APIACEAE (parsley family)			7				
Centella asiatica (L.) Urb.	Asiatic pennywort	nat	-	-	r	-	
APOCYNACEAE (dogbane family)							
Plumeria obtusa L.	Singapore plumeria	cult	-	-	1	-	
Plumeria rubra L.	plumeria	cult	-	-	1	-	
ASTERACEAE (sunflower family)						T	
Bidens pilosa L.	Spanish needle, beggartick	nat	-	-	r	-	
Calyptocarpus vialis Less.		nat	-	-	r	-	
Conyza bonariensis (L.) Cronquist	hairy horseweed	nat	-	-	r	1 -	
Eclipta prostrata (L.) L.	false daisy	nat	-	-	r	1 -	
Emilia sonchifolia var. javanica (Burm.f.) Mattf.	Flora's paintbrush	nat	-	-	r	0	
Flaveria trinervia (Spreng.) C.Mohr	1	nat	-	-	r	-	
Pluchea carolinensis (Jacq.) G.Don	sourbush, marsh fleabane	nat	-	-	0	0	
Pluchea indica (L.) Less.	Indian fleabane, Indian	nat	0	-	r	0	
N. 1	pluchea					-	
Pluchea x_fosbergii Cooperr. & Galang	marsh fleabane	nat	0	0	-	c	
Sonchus asper (L.) Hill	prickly sow thistle	nat	-	-	r	-	
Sonchus oleraceus L.	sow thistle	nat	-	65	r	-	
Synedrella nodiflora (L.) Gaertn.	nodeweed	nat	r	-	r	-	
Tridax procumbens L.	coat buttons	nat	-	-	0	-	
Verbesina encelioides (Cav.) Benth. & Hook.	golden crown-beard	nat	0	-	0	-	
Xanthium strumarium L. var. canadense (Mill.) Torr. & A.Gray	cocklebur	nat	•	-	r	,	
BIGNONIACEAE (catalpa family)							
Tecoma capensis (Thunb.) Lindl.	cape-honeysuckle	cult	-	-	1	-	
BORAGINACEAE (borage family)							
Cordia sebestena L.	geiger tree, kou haole	cult	-	-	1	-	
Heliotropium curassavicum L.	kīpūkai, nena	ind	0	-	0	-	
Heliotropium procumbens Mill. var. depressum (Cham.) Fosberg		nat	0	0	С	-	
Tournefortia argentea L.f.	tree heliotrope	nat	0	-	r	-	
BRASSICACEAE (mustard family)	January V				-		
Coronopus didymus (L.) Sm.	swinecress	nat	-	-	r	-	
CACTACEAE (cactus family)		nut.				-	
Opuntia sp.		cult			1	-	

Scientific name		(and	Vegetation zones				
	Common name	Status	Cd	Cf	Ri	Ww	
CAPPARACEAE (caper family)							
Cleome gynandra L.	wild spider flower	nat	-	-	r	-	
CARICACEAE (papaya family)		İ					
Carica papaya L.	papaya	cult	7-1	-	1	-	
CARYOPHYLLACEAE (pink family)							
Polycarpon tetraphyllum (L.) L.		nat	-	-	r	-	
CASUARINACEAE (ironwood family)							
Casuarina equisetifolia L.	common ironwood	nat	0	С	0	r	
CHENOPODIACEAE (goosefoot family)							
Atriplex suberecta I.Verd.	saltbush	nat	c	-	0	-	
Chenopodium murale L.	goosefoot, pigweed	nat	0	0	0	-	
Chenopodium oahuense (Meyen) Aellen	'āheahea, 'āweoweo	end	0	-	0	-	
CLUSIACEAE (clusia family)							
Clusia rosea Jacq.	autograph tree	nat	-	-	1	-	
COMBRETACEAE (combretum family)							
Terminalia catappa L.	tropical almond, false kamani	nat	-	0	r	r	
CONVOLVULACEAE (morning-glory family)							
Ipomoea obscura (L.) Ker Gawl.	morning glory	nat	-	12	r	-	
Ipomoea pes-caprae (L.) R.Br.subsp. brasiliensis (L.)	pōhuehue, beach morning	ind	С	r	0	-	
Ooststr.	glory						
Ipomoea triloba L.	little bell	nat	-	-	r	-	
Jacquemontia sandwicensis A.Gray	pā'ū-o-Hi'iaka	end	-	-	r	-	
Merremia aegyptia (L.) Urb.	hairy merremia	nat?	-	-	r	120	
CUCURBITACEAE (gourd family)							
Cucumis dipsaceus Ehrenb. ex Spach	hedgehog gourd, teasel gourd	nat	-	-	r	-	
EUPHORBIACEAE (euphorbia family)							
Codiaeum variegatum (L.) Blume	croton	cult	-	1-1	1	-	
Euphorbia hirta L.	hairy spurge, garden spurge	nat	-	-	0	-	
Euphorbia hypericifolia L.	graceful spurge	nat	- 1	-	r	-	
Euphorbia hyssopifolia L.	spurge	nat		-	r	-	
Euphorbia prostrata Aiton	prostrate spurge	nat	-		0	-	
Ricinus communis L.	castor bean	nat	-		r	-	
FABACEAE (bean family)							
Caesalpinia pulcherrima (L.) Sw.	dwarf poinciana	cult	2	-	1	-	
Canavalia sericea A.Gray	silky jackbean	nat	0	4	-	-	
Crotalaria pallida Aiton	smooth rattlepod	nat	-	-	1	-	
Desmanthus pernambucanus (L.) Thell.	slender mimosa	nat	r	-	r	-	
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	nat	-	-	r		
Indigofera spicata Forssk.	creeping indigo	nat	r	-	0	-	
Leucaena leucocephala (Lam.) de Wit	koa haole	nat	r	5.	0	-	
Macroptilium atropurpureum (DC.) Urb.		nat	-	0	c	-	
Macroptilium lathyroides (L.) Urb.	wild bean, cow pea	nat	-		r	-	

0.1.10	Common name		Vegetation zones				
Scientific name		Status	Cd	Cf	Ri	Ww	
Prosopis pallida (Humb. & Bonpl. ex Willd.) Kunth	algaroba, mesquite, kiawe	nat	r	С	r	r	
Vigna unguiculata (L.) Verdc.	yard-long bean	cult	-	-	1	-	
GOODENIACEAE (naupaka family)						İ	
Scaevola taccada (Gaertn.) Roxb.	naupaka kahakai	ind	c	-	0	-	
LAMIACEAE (mint family)							
Leonotis nepetifolia (L.) R.Br.	lion's ear	nat	-	-	r	-	
MALVACEAE (hibiscus family)							
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	nat	-	-	r	-	
Hibiscus clayi O.Deg. & I.Deg.	aloalo	end/cult	-	-	1	-	
Hibiscus rosa-sinensis L.	red hibiscus	cult	-	-	1	-	
Hibiscus tiliaceus L.	hau	ind?	-	0	r	1 -	
Malva parviflora L.	cheese weed	nat	r	-	0	1-	
Malvastrum coromandelianum (L.) Garcke subsp. coromandelianum	false mallow	nat	r	-	r	-	
Sida ciliaris L.		nat	-	-	0	-	
Sida rhombifolia L.		nat?	-	-	r	-	
Thespesia populnea (L.) Sol. ex Corrêa	milo	ind?	0	0	-	0	
MORACEAE (mulberry family)							
Ficus microcarpa L.f.	Chinese banyan	nat	-	-	r	1-	
MYOPORACEAE (naio family)							
Myoporum sandwicense A.Gray	naio	ind	r	-	-	-	
NYCTAGINACEAE (four-o'clock family)							
Boerhavia coccinea Mill.		nat	r	-	0	1-	
Boerhavia repens L.	alena	ind	0	-	-	-	
Bougainvillea glabra Choisy	bougainvillea	cult		-	1	-	
PAPAVERACEAE (poppy family)	1						
Argemone mexicana L.	Mexican poppy	nat	r	-	-	-	
POLYGONACEAE (buckwheat family)							
Coccoloba uvifera (L.) L.	sea grape	nat	-	r	r	-	
PORTULACACEAE (moss-rose family)							
Portulaca oleracea L.	pigweed	nat	r	-	1	r	
RUBIACEAE (coffee family)							
Morinda citrifolia L.	noni, Indian mulberry	pol/cult	-	-	1	1-	
RUTACEAE (citrus family)		1					
Citrus aurantiifolia (Christm.) Swingle	lime	cult	S-S	-	1		
Citrus sp.		cult	-	-	1	-	
SCROPHULARIACEAE (snapdragon family)							
Bacopa monnieri (L.) Wettst.	'ae'ae	ind	-	-	-	0	
SOLANACEAE (tomato family)							
Datura stramonium L.	jimson weed	nat	-	-	1	-	
Nicotiana glauca Graham	tree tobacco	nat	0	r	c	-	
Physalis angulata L.	groundcherry	nat	-		г	-	

0.1	0		Ve	getati	on ze	ones
Scientific name	Common name	Status	Cd	Cf	Ri	Ww
Solanum americanum Mill.	glossy nightshade, pōpolo	ind?	r	-	- 1	-
STERCULIACEAE (cacao family)						
Waltheria indica L.	'uhaloa, hi'aloa	ind?	r	0	c	-
THYMELAEACEAE ('akia family)						
Wikstroemia uva-ursi A.Gray var. uva-ursi	'ākia	end/cult	-	-	1	-
VERBENACEAE (verbena family)						İ
Vitex trifolia L.		nat	-		r	-
ZYGOPHYLLACEAE (lignum-vitae family)						
Tribulus terrestris L.	puncture vine	nat	-	-	r	-
MONOCOTS						
AGAVACEAE (agave family)						
Cordyline fruticosa (L.) A.Chev.	kī, ti	pol/cult	-	-	1	-
ALOEACEAE (aloe family)		Î				
Aloe vera (L.) Burm.f.		cult	-	-	1	-
ARACEAE (aroid family)						
Xanthosoma robustum Schott	'ape	cult	-	-	1	-
ARECACEAE (palm family)						
Cocos nucifera L.	niu, coconut	pol/cult		-	0	-
Dypsis lutescens (H.Wendl.) Beentje & J.Dransf.	areca palm	cult	-2	-	1	-
Hyophorbe lagenicaulis (L.H.Bailey) H.E.Moore	bottle palm	cult	-	-	1	-
Phoenix hybrid	date palm	nat	-	0	-	r
Pritchardia thurstonii F.Muell. & Drude	The second secon	cult	-	-	1	-
Pritchardia sp.	loulu	end/cult	-2	-	1	-
Thrinax radiata J.A.Schultes & J.H.Schultes	thatch palm	cult	_	-	1	-
Vietchia merrillii (Becc.) H.E.Moore	Manila palm	cult	-	-	1	-
Washingtonia sp.		cult	-	-	-	1
BROMELIACEAE (bromeliad family)		Cuit				1
Ananas comosus (L.) Merr.	pineapple	cult	-	-	1	-
CYPERACEAE (sedge family)	pineappre	Cunt			Ė	
Bolboschoenus maritimus (L.) Palla subsp. paludosus (A.Nelson) T.Koyama	makai, kaluhā	ind	-	-	-	0
Cyperus laevigatus L.	makaloa	ind	-	-	-	0
Cyperus rotundus L.	nut grass	nat	-	-	0	-
Schoenoplectus californicus (C.A.Mey.) Palla	kaluhā	nat?	-	-	-	c
LEMNACEAE (duckweed family)		1				<u> </u>
Landoltia punctata (G.Mey.) Les & D.J.Crawford		nat	-	-	-	0
LILIACEAE (lily family)		1				۳
Allium fistulosum L.	green onion	cult	-		1	-
Crinum sp.	spider lily	cult	-	-	1	-
POACEAE (grass family)	P-P-see my	- Lunt			1	
Bambusa sp.	bamboo	cult			1	-
Cenchrus ciliaris L.	buffelgrass	nat	0	0	c	-

0.1.00	Commence and the second	Cut	Vegetation zones				
Scientific name	Common name	Status	Cd	Cf	Ri	Ww	
Cenchrus echinatus L.	common sandbur	nat	-	-	r	-	
Chloris barbata Sw.	swollen fingergrass	nat	r	0	c	r	
Chloris divaricata R.Br. var. divaricata	stargrass	nat		-	r	-	
Cynodon dactylon (L.) Pers.	Bermuda grass	nat	0	-	0	0	
Cynodon nlemfuensis Vanderyst		nat	-	-	r	-	
Dactyloctenium aegyptium (L.) Willd.	beach wiregrass	nat	r	-	0	-	
Digitaria ciliaris (Retz.) Koeler	Henry's crabgrass	nat	-	0	r	-	
Eleusine indica (L.) Gaertn.	wiregrass	nat	-	-	-	r	
Eragrostis amabilis (L.) Wight & Arn.	lovegrass	nat	r	-	-	r	
Eragrostis pectinacea (Michx.) Nees var. pectinacea	Carolina lovegrass	nat	-	-	0	-	
Panicum repens L.	torpedo grass	nat	-	-	-	0	
Paspalum vaginatum Sw.	seashore paspalum	nat	-	-	-	0	
Setaria verticillata (L.) P.Beauv.	bristly foxtail	nat	-	-	r	-	
Sporobolus pyramidatus (Lam.) Hitchc.		nat	-	r	0	-	
Sporobolus virginicus (L.) Kunth	'aki'aki, seashore rushgrass	ind	c	-	r	r	
Stenotaphrum secundatum (Walter) Kuntze	St. Augustine grass, buffalo grass	cult	-	-	1	-	
Urochloa distachya (L.) T.Q.Nguyen		nat	r	-	-	-	
Urochloa maxima (Jacq.) R.D.Webster	Guinea grass	nat	-	0	0	-	
GYMNOSPERMS							
CYCADACEAE (cycad family)							
Cycas revoluta Thunb.	Japanese sago-palm	cult		-	1	-	
FERNS							
NEPHROLEPIDACEAE (Boston fern family)							
Nephrolepis brownii (Desv.) Hovenkamp & Miyam.		nat	-	-	1	-	

APPENDIX III: Arthropod checklist

The following is a list of arthropods found during a 5-day survey conducted in the Kahului Harbor area. A total of 58 species were collected while searching on and near the alien tree tobacco (Nicotiana glauca).

NAME	STATUS IN HAWAII	INCIDENCE
ARACHNIDA: ARANEAE (Spiders) Araneidae		
Argiope appensa (Walckenaer 1841) yellow garden spider	adv	Common
Gasteracantha mammosa C.L. Koch 1844 Asian spinybacked spider	adv	Common
Oxyopidae		
Oxyopes sp. A [Kumashiro et. al. 1990] lynx spider	adv	Common
Salticidae		
Hasarius adansoni (Audouin 1826)	adv	Local
BLATTODEA (Cockroaches)		
Blaberidae		
Pycnoscelus indicus (Fabricius 1775) Surinam cockroach	adv	Common
Blatellidae		
Blatella lituricollis (Walker 1868) false German cockroach	adv	Common
INSECTA: COLEOPTERA (Beetles)		
Anthicidae (ant-like flower beetles)		
Anthicus recens Werner 1967	adv	Local
Chrysomelidae		
Diachus auratus (Fabricius 1801)	adv	Common
Lema trilinea White 1981	adv	Scarce
Stator pruininus (Horn 1873) pruinose bean weevil	adv	Common
Coccinellidae		
Coelophora inaequalis (Fabricius 1775) Common Australian lady beetle	pur	Local
Diomus notesens (Blackburn 1889)	pur	Local
Curculionidae		
Lixus mastersi Pascoe 1874	adv	Local
Hydrophilidae		
Tropisternus salsamentus Fall 1901	adv	Common wetland species

NAME	STATUS IN HAWAII	INCIDENCE
Scarabaeidae		
Protaetia fusca (Herbst 1790)	adv	Common
mango flower beetle		Common
Tenebrionidae		
Ammophorus insularis (Boheman 1858)	adv	Common
INSECTA: DIPTERA (True flies)		
Agromyzidae		
Pseudapomyza spicata (Malloch)	adv	Local
Anthomyidae		
Anthomyia vicarians Schiner 1868	adv	Common
Chironomidae		
Chironomus sp.	unk	Local
Chloropidae		
Monochaetoscinella anonyma (Williston, 1896)	adv	Local
Dolichopodidae		
Chrysosoma globiferum (Wiedemann 1830)	adv	Common
Dolichopus exsul Aldrich 1922	adv	Common
Ephydridae		
Ceropsilopa coquilletti Cresson, 1922	adv	Local
Clasiopella uncinata Hendel, 1914	adv	Local
Psilopa girschneri Von Roeder, 1889	adv	Local
Scatella hawaiiensis (Grinshaw)	end	Common
Scatella sexnotata (Cresson)	ind	Common
Muscidae		
Atherigona orientalis Schiner 1868	adv	Common
Syrphidae		
Eristalinus aeneus (Scopoli 1763)	adv	Common
INSECTA: HEMIPTERA: HETEROPTERA		
(True bugs)		
Corixidae		
Trichocorixa reticulata (Guerin-Meneville 1857)	adv	Local
Lygaeidae		
Pseudopachybrachius vinctus (Say 1832)	adv	Common
Miridae		
Coridromus variegatus (Montrouzier 1861)	adv	Common
Trigonotylus tenuis (Reuter 1895)	adv	Common
Nabidae		
Nabis capsiformis (Germar 1837)	adv	Uncommon

NAME	STATUS IN HAWAII	INCIDENCE
Pentatomidae		
Eysarcoris ventralis (Westwood 1837)	adv	Common
Reduviidae		
Zelus renardii Kolenati 1856	adv	Local
Tingidae		
Corythucha morrilli Osborn & Drake 1917	adv	Local
Leptodictya tabida (Herrich-Schaeffer 1840)	adv	Common
INSECTA: HEMIPTERA: HOMOPTERA		
(Hoppers, scales & relatives) Cicadellidae		
Balclutha incisa hospes (Kirkaldy 1910)	adv	Common
Carneocephala sagittifera (Uhler 1895)	adv	Common
Empoasca solana DeLong 1931	adv	Common
Spanbergiella quadripunctata Lawson 1932	adv	Common
Delphacidae		
Sardia rostrata pluto (Kirkaldy 1906)	adv	Common
Flatidae		
Melormenis basalis (Walker 1851)	adv	Common
Margarodidae		
Icerya purchasi Maskell 1878 cottony cushion scale	adv	Common
INSECTA: HYMENOPTERA (Bees & wasps)		
Apidae		
Apis mellifera Linnaeus 1758	adv	Common
Ichneumonidae		
Casinaria infesta (Cresson 1872)	adv	Common
Diplazon laetatorius (Fabricius 1781)	adv	Common
Sphecidae		
Sceliphron caementarium (Drury 1770)	adv	Local
Vespidae		
Polistes aurifer Saussure 1853	adv	Local
INSECTA: LEPIDOPTERA (Moths & butterflies)		
Lycaenidae		
Brephidium exilis (Boisduval 1852)	adv	Common
Lampides boeticus (Linnaeus 1767	adv	Common
Nymphalidae		
Danaus plexippus (Linnaeus 1758)	adv	Common

INSECTA: MANTODEA (Praying mantis) Mantidae Hierodula patellifera (Serville 1839) adv Local	
Hierodula patellifera (Serville 1839) adv Local	
INSECTA: ODONATA (Dragonflies &	
damselflies)	
Coenagrionidae	
Ischnura ramburii (Selys-Longchamps 1850) adv Common	
Libellulidae	
Orthemis ferruginea (Fabricius 1775) adv Local	
Pantala flavescens (Fabricius 1798) adv Common	
INSECTA: ORTHOPTERA (Grasshoppers,	
crickets & katydids)	
Acrididae	
Oedaleus abruptus (Thunberg 1815) adv Common	
Pyrgomorohidae	
Atractomorpha sinensis Bolivar 1905 adv Common	
CRUSTACEA: ISOPODA (Pillbugs & sowbugs)	
Porcellio laevis Latreille 1804 adv Common	

^{1 =} Names and arrangement follow Nishida (2002).

^{2 =} Biogeographic Status: end=endemic to HIs, ind=indigenous to HIs, adv=adventive, pur=purposefully introduced. 3 = Incidence: A subjective measure of commonness within the Kahului Harbor area environs.

APPENDIX IV: Bird and feral mammal checklist

The following is a list of 12 birds and a single feral mammal observed during a 5-day survey conducted in the Kahului Harbor area. The record for Axis deer was made on the observation of multiple deer tracks along the southern boundary chain-link fence outside the Kahului wastewater treatment plant (Fig. 4, p. 46). No endangered or threatened bird species were observed in the areas surveyed.

NAME	STATUS IN HAWAII	INCIDENCE
AVES:		
PHASIANIDAE		
Francolinus pondicerianus	- 2	1.7.2
Grey Francolin	N	Local
ARDEIDAE		
Bubulcus virescens	V, N	Local
Cattle Egret		
Nycticorax nycticorax	R (Indigenous)	Uncommon
Black-crowned Night-Heron		
CHARADRIIDAE		
Pluvialis fulva	W	Local
Pacific Golden-Plover		Docum
SCOLOPACIDAE		
Tringa incana	W	Uncommon
Wandering Tattler	"	Chedimion
COLUMBIDAE		
Streptopelia chinensis	N	Common
Spotted Dove		Common
Geopelia striata	N	Common
Zebra Dove		Common
ZOSTROPIDAE		
Zosterops japonicus	N	Common
Japanese White-eye		Common
STURNIDAE		
Acridotheres tristis	N	Common
Common Myna		27000000
EMBERIZIDAE		
Paroaria coronata	N	Local
Red-crested Cardinal		
PASSERIDAE		
Passer domesticus	N	Common
House Sparrow		
4.00		

NAME ESTRILIDAE

Padda oryzivora Java Sparrow STATUS IN HAWAII

INCIDENCE

N

Common

MAMMALIA:

ARTIODACTYLA: CERVIDAE

Axis axis

Chital deer, Spotted deer, Axis deer

N

Local

Names follow Pyle and Pyle (2009) http://hbs.bishopmuseum.org/birds/rlp-monograph/PrimaryChecklist.htm

R = Resident (Endemic or Indigenous)

N = Naturalized (non-native) resident (established and breeding)

W = Winter resident (some may migrate through the islands)

APPENDIX V: Selected GPS localities (WGS 84 datum, maximum error 4m)

Site abbreviations: A&B (Alexander & Baldwin); DLNR (State Department of Land and Natural Resources); MECO (Maui Electric Company); WTP (Maui County Wastewater Treatment Plant)

Nicotiana glauca waypoints

Waypt#	Date	Coordinate	Notes
none	09-DEC-13	None taken	1+ plants in "notch" parcel, A&B
855	09-DEC-13	N20.89588 W156.45381	1 plant, WTP
857	09-DEC-13	N20.89589 W156.45375	1 plant, WTP
858	09-DEC-13	N20.89592 W156.45372	1 plant, 12 ft tall, WTP
864	09-DEC-13	N20.89679 W156.45483	1 plant, WTP
866	09-DEC-13	N20.89655 W156,45516	1 plant, WTP
867	09-DEC-13	N20.89688 W156.45634	1 plant, 10 ft tall, WTP
868	09-DEC-13	N20.89693 W156.45690	1 plant, WTP
870	09-DEC-13	N20.89672 W156.45732	1 plant, WTP
871	09-DEC-13	N20.89651 W156.45787	6 plants, WTP
873	09-DEC-13	N20.89615 W156.45813	1 plant, 6 ft tall, WTP
874	09-DEC-13	N20.89607 W156.45784	2 plants, WTP
875	09-DEC-13	N20.89594 W156.45789	2 plants, WTP
877	09-DEC-13	N20.89585 W156.45754	1 plant, WTP
878	09-DEC-13	N20.89575 W156.45748	2 plants, WTP
879	09-DEC-13	N20.89574 W156.45740	6+ plants, WTP
880	09-DEC-13	N20.89567 W156.45734	4+ plants, WTP
883	09-DEC-13	N20.89576 W156.45729	1 plant, WTP
884	09-DEC-13	N20.89585 W156.45732	1 plant, WTP
885	09-DEC-13	N20.89587 W156.45738	6 plants, WTP
886	09-DEC-13	N20.89604 W156.45738	1 plant, WTP
887	09-DEC-13	N20.89539 W156.45784	1 plant, WTP
888	09-DEC-13	N20.89540 W156.45800	2 plants, WTP
893	10-DEC-13	N20.89679 W156.45478	11+ plants, WTP
895	10-DEC-13	N20.89687 W156.45636	1 plant, WTP
897	10-DEC-13	N20.89693 W156.45687	3 plants, WTP
934	10-DEC-13	N20.89695 W156.46149	4 plants, MECO
935	10-DEC-13	N20.89707 W156.46155	1 plant, MECO
936	10-DEC-13	N20.89715 W156.46259	1 plant, MECO
937	10-DEC-13	N20.89714 W156.46271	1 plant, MECO
942	10-DEC-13	N20.89532 W156.45803	10+ plants, DLNR
943	11-DEC-13	N20.89629 W156.45732	6+ plants, WTP
944	11-DEC-13	N20.89614 W156.45731	6+ plants, WTP
945	11-DEC-13	N20.89609 W156.45772	1 plant, WTP

Ipomoea pes-caprae subsp. brasiliensis waypoints

Waypt#	Date	Coordinate	Notes	
860	09-DEC-13	N20.89603 W156.45373	east end, WTP	
861	09-DEC-13	N20.89627 W156.45379	east end, WTP	
869	09-DEC-13	N20.89691 W156.45710	NE corner, WTP	
872	09-DEC-13	N20.89638 W156.45814	NW corner, WTP	
890	10-DEC-13	N20.89599 W156.45365	outside east end, WTP	
894	10-DEC-13	N20.89668 W156.45556	outside coast fence, WTP	
928	10-DEC-13	N20.89712 W156.45867	scattered on dunes, DLNR	
930	10-DEC-13	N20.89709 W156.46012	on beach, DLNR	

Datura stramonium waypoint

Waypt#	Date	Coordinate	Notes	
876	09-DEC-13	N20.89591 W156.45781	2 plants, 18 inches tall, WTP	

Wetland perimeter, DLNR property

Waypt#	Date	Coordinate	Notes	
901	10-DEC-13	N20.89679 W156.45832	wetland perimeter, clockwise	
902	10-DEC-13	N20.89674 W156.45832	wetland perimeter	
903	10-DEC-13	N20.89669 W156.45833	wetland perimeter	
904	10-DEC-13	N20.89664 W156.45834	wetland perimeter	
905	10-DEC-13	N20.89660 W156.45836	wetland perimeter	
906	10-DEC-13	N20.89658 W156.45840	wetland perimeter	
907	10-DEC-13	N20.89659 W156.45845	wetland perimeter	
908	10-DEC-13	N20.89657 W156.45851	wetland perimeter	
909	10-DEC-13	N20.89658 W156.45857	wetland perimeter	
910	10-DEC-13	N20.89660 W156.45861	wetland perimeter	
911	10-DEC-13	N20.89660 W156.45866	wetland perimeter	
912	10-DEC-13	N20.89659 W156.45869	wetland perimeter	
913	10-DEC-13	N20.89667 W156.45872	wetland perimeter	
914	10-DEC-13	N20.89669 W156.45872	wetland perimeter	
915	10-DEC-13	N20.89672 W156.45869	wetland perimeter	
916	10-DEC-13	N20.89675 W156.45867	wetland perimeter	
917	10-DEC-13	N20.89677 W156.45861	wetland perimeter	
918	10-DEC-13	N20.89677 W156.45858	wetland perimeter	
919	10-DEC-13	N20.89680 W156.45854	wetland perimeter	
920	10-DEC-13	N20.89682 W156.45851	wetland perimeter	
921	10-DEC-13	N20.89684 W156.45846	wetland perimeter	
922	10-DEC-13	N20.89684 W156.45840	wetland perimeter	
923	10-DEC-13	N20.89682 W156.45836	wetland perimeter	
924	10-DEC-13	N20.89682 W156.45832	wetland perimeter	
925	10-DEC-13	N20.89678 W156.45830	wetland perimeter	

Mau'oni Pond waypoints, DLNR property

Waypt#	Date	Coordinate	Notes	
940	10-DEC-13	N20.89550 W156.46055	west bank	
971	11-DEC-13	N20.89513 W156.45939	east bank, mauka end	
972	11-DEC-13	N20.89537 W156.45925	east bank	
973	11-DEC-13	N20.89551 W156.45932	east bank	
974	11-DEC-13	N20.89564 W156.45928	east bank	
976	11-DEC-13	N20.89587 W156.45942	east bank	
977	11-DEC-13	N20.89599 W156.45945	east bank	

Mau'oni Pond waypoints, DLNR property (cont.)

Waypt#	Date	Coordinate	Notes
978	11-DEC-13	N20.89610 W156.45950	east bank
979	11-DEC-13	N20.89629 W156.45956	east bank
980	11-DEC-13	N20.89646 W156.45956	east bank
981	11-DEC-13	N20.89664 W156.45964	east bank
982	11-DEC-13	N20.89670 W156.45971	east bank
983	11-DEC-13	N20.89685 W156.45973	east bank, makai end

Drainage channel, DLNR property

Waypt#	Date	Coordinate	Notes	
948	11-DEC-13	N20.89513 W156.45866	east end of Amala Place bridge	
949	11-DEC-13	N20.89512 W156.45871	west end of Amala Place bridge	
950	11-DEC-13	N20.89526 W156.45880	west bank, mauka end	
951	11-DEC-13	N20.89537 W156.45885	west bank	
952	11-DEC-13	N20.89552 W156.45891	west bank	
953	11-DEC-13	N20.89574 W156.45899	west bank	
954	11-DEC-13	N20.89592 W156.45907	west bank	
955	11-DEC-13	N20.89611 W156.45913	west bank	
956	11-DEC-13	N20.89622 W156.45918	west bank	
957	11-DEC-13	N20.89640 W156.45923	west bank	
958	11-DEC-13	N20.89663 W156.45927	west bank, makai end	

Water-filled depression A, DLNR property

Waypt#	Date	Coordinate	Notes	
959	11-DEC-13	N20.89564 W156.45903	Pond perimeter, clockwise	
960	11-DEC-13	N20.89560 W156.45905	Pond perimeter	
961	11-DEC-13	N20.89554 W156.45903	Pond perimeter	
962	11-DEC-13	N20.89546 W156.45900	Pond perimeter	
963	11-DEC-13	N20.89541 W156.45900	Pond perimeter	
964	11-DEC-13	N20.89540 W156.45901	Pond perimeter	
965	11-DEC-13	N20.89542 W156.45902	Pond perimeter	
966	11-DEC-13	N20.89545 W156.45905	Pond perimeter	
967	11-DEC-13	N20.89549 W156.45907	Pond perimeter	
968	11-DEC-13	N20.89553 W156.45909	Pond perimeter	
969	11-DEC-13	N20.89557 W156.45908	Pond perimeter	
970	11-DEC-13	N20.89559 W156.45908	Pond perimeter	

Water-filled depression B, DLNR property

Waypt#	Date	Coordinate	Notes
985	11-DEC-13	N20.89565 W156.45907	Pond perimeter, clockwise
986	11-DEC-13	N20.89568 W156.45911	Pond perimeter
987	11-DEC-13	N20.89571 W156.45917	Pond perimeter
988	11-DEC-13	N20.89574 W156.45917	Pond perimeter
989	11-DEC-13	N20.89578 W156.45918	Pond perimeter
990	11-DEC-13	N20.89578 W156.45912	Pond perimeter
991	11-DEC-13	N20.89575 W156.45911	Pond perimeter
992	11-DEC-13	N20.89571 W156.45908	Pond perimeter
993	11-DEC-13	N20.89566 W156.45907	Pond perimeter

APPENDIX VI: Tracks and points of interest Map 1. Kahului Harbor, overall view of survey area.



Jimson weed (Datura stramonium)

Water feature/wetland

MAP 2. Alexander & Baldwin property (10 acres)



- Tree tobacco (Nicotiana glauca) locality
- P Beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis) locality
- Survey track
- Property boundary

MAP 3. DLNR property



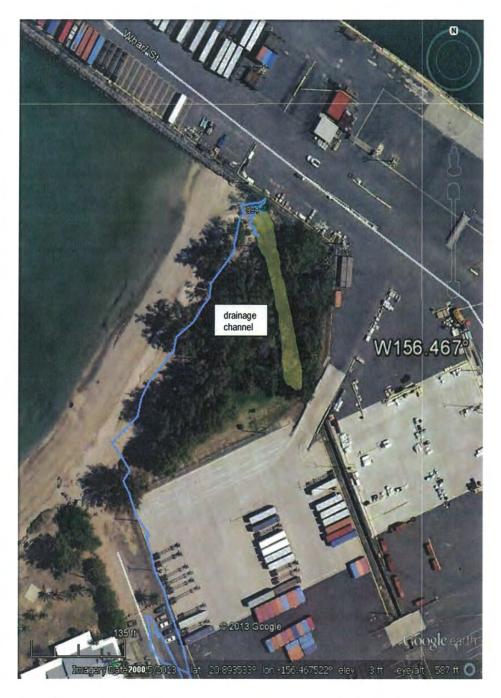
- Tree tobacco (Nicotiana glauca) locality
- P Beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis) locality
- ₱ Jimson weed (Datura stramonium)
- Property boundary
- Survey track
- Water feature/wetland

Map 4. Maui County Wastewater Treatment Plant.



- Tree tobacco (Nicotiana glauca) locality
- Beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis) locality
- Jimson weed (Datura stramonium)
- Survey track
- Property boundary

MAP 5. State Harbors Division property, Pier 2.

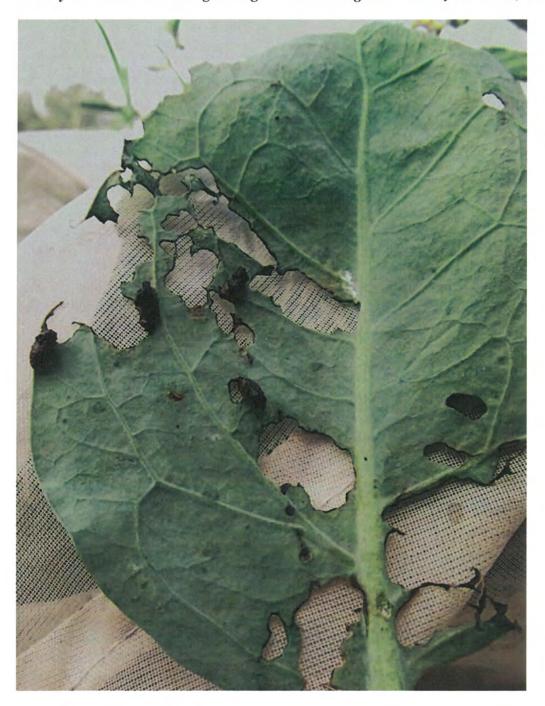


Survey track

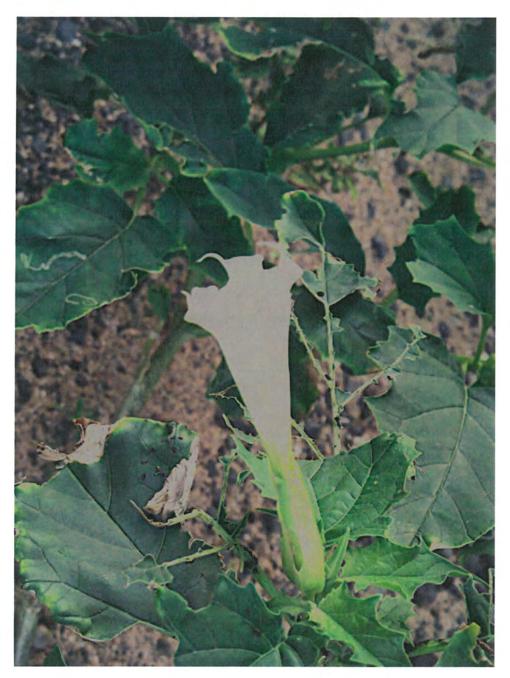
Water feature/wetland

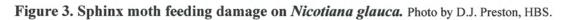
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Figure 1. Chrysomelid beetle feeding damage on Nicotiana glauca. Photo by D.J. Preston, HBS.









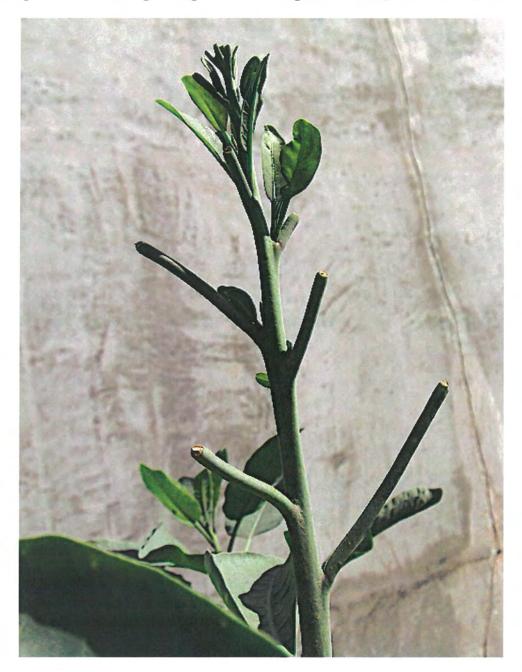
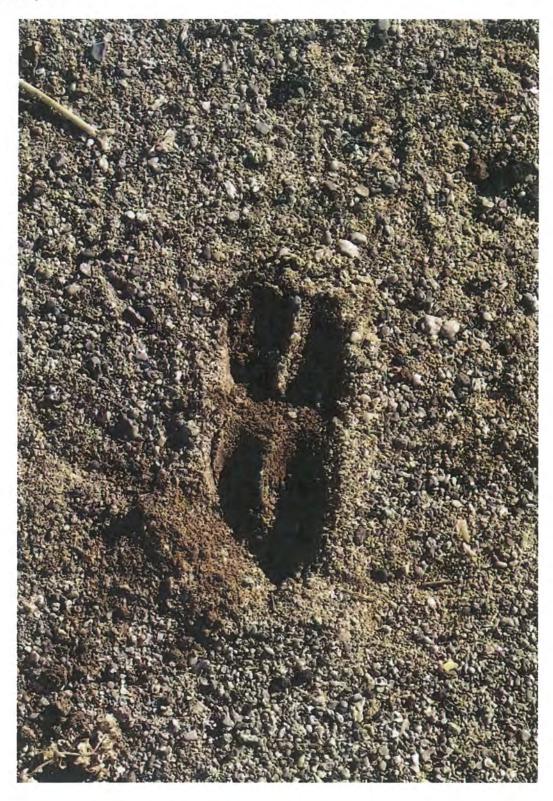


Figure 4. Axis deer tracks observed outside the Kahului wastewater treatment plant. Photo by D.J. Preston, HBS.



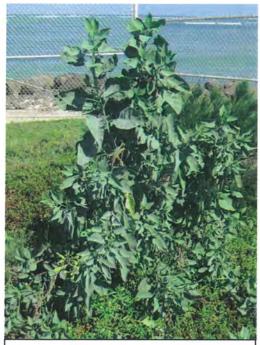


Figure 5. Tree tobacco (Nicotiana glauca). Photo by C. Imada, HBS.

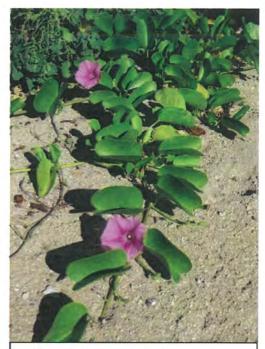


Figure 6. Beach morning-glory (Ipomoea pes-caprae subsp. brasiliensis). Photo by C. Imada, HBS.



Figure 7. Wetland on DLNR property, backed by dump area and coastal forest zone. Photo by C. Imada, HBS.



Figure 8. Coastal dune habitat, makai of wastewater treatment plant. Photo by C. Imada, HBS.

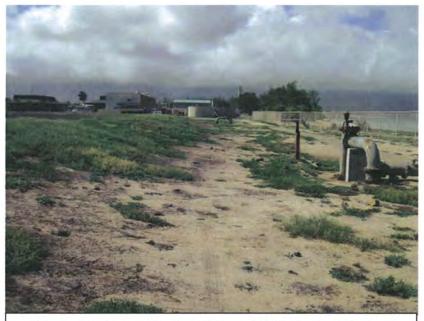


Figure 9. Ruderal/industrial vegetation type, makai of wastewater plant settling pond. Photo by C. Imada, HBS.

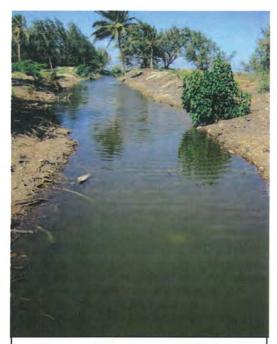


Figure 10. Drainage channel on DLNR property. The *makai* end in the distance is blocked from the ocean by a sandbar. Photo by C. Imada, HBS.

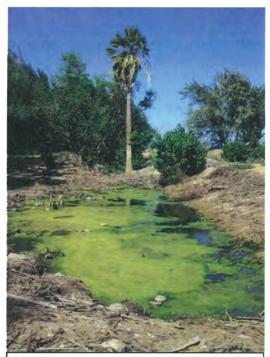


Figure 11. Water-filled depression A on DLNR property. Photo by C. Imada, HBS.



Figure 12. Mau'oni Pond on DLNR property, with coastal forest and patches of wetland vegetation on flat sections of pond bank.

Photo by C. Imada, HBS.

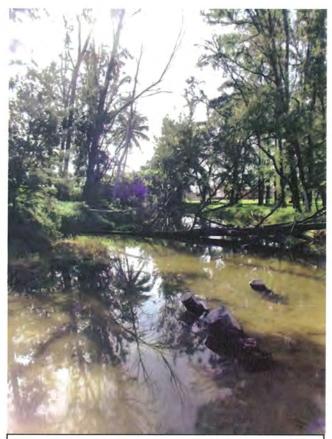


Figure 13. Drainage channel west of Pier 2. Photo by D.J. Preston, HBS.

APPENDIX G Phase I – Environmental Site Assessment

January 13, 2012 KSK-2008-029

Mr. Jared Chang SSFM International, Inc. 501 Sumner St., Suite 620 Honolulu, HI 96817

Subject:

Phase I Environmental Assessment Report A&B Acquisition Parcel B at Kahului Harbor 180 Hobron Ave., Kahului, Maui, Hawaii

TMK: (2) 3-7-011: 017

Dear Mr. Chang:

Kevin S. Kennedy Consulting, LLC is pleased to present the attached Phase I Environmental Site Assessment Report to SSFM International for the A&B Acquisition Parcel B at Kahului Harbor, 180 Hobron Avenue, Kahului, Maui, Hawaii. The attached report documents our site reconnaissance, review of federal and state environmental records; county tax and permit files; historical maps, reports and aerial photographs and interviews with knowledgeable persons.

I greatly appreciate the opportunity to provide this report to SSFM and look forward to continuing to assist you with your environmental due diligence efforts.

Please call me at 286-5786 if you have any questions.

Sincerely

Kevin S. Kennedy Consulting, LLC

Kevin Kennedy

4.		

Phase I Environmental Assessment Report

A&B Acquisition Parcel B at Kahului Harbor

180 Hobron Ave., Kahului, Maui, Hawaii 96732 TMK: (2) 3-7-011: 017

> Latitude: 20° 53' 44.03" N Longitude: 156° 27' 43.71" W



KSK-2008-029

Prepared For:



Prepared By:

Kevin S. Kennedy Consulting, LLC 808-286-5786

January 13, 2012

TMK: (2) 3-7-011: 017

Latitude: 20° 53' 44.03" N Longitude: 156° 27' 43.71" W

KSK-2008-029

Prepared for:



Prepared By:

Kevin Kennedy

Kevin S. Kennedy Consulting, LLC

25 Kaneohe Bay Dr., Suite 208 Kailua, Hawaii 96734 www.kevinskennedyconsultingllc.com

January 13, 2012



www.i-wvmskennedyconsultinglic.com

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EXECUTIVE SUMMARY

This report documents Kevin S. Kennedy Consulting, LLC's (KSK's) Phase I Environmental Site Assessment (ESA) of the 9.9-acre parcel known as the Alexander & Baldwin (A&B) Parcel B (Site) located near Kahului Harbor, Kahului, Maui, Hawaii. The A&B Parcel B Site is located at 180 Hobron Avenue in Kahului, Maui, Hawaii and is denoted by TMK: (2) 3-7-011 Parcel 17. This report was prepared in conformance with the scope and limitations of ASTM E 1527-05 and consists of a review of historical and regulatory records, site geology and hydrogeology, interviews with persons knowledgeable of the Site and a physical reconnaissance of the Site.

Parcel B comprises 9.9 acres and is a roughly "W"-shaped parcel bounded by the Maui Electric power generation facility and Kahului Bay to the North, Mauoni Ponds (ancient fish ponds) and associated drainage channel to the east, Amala Place and the Chevron bulk fuel storage terminal (across Amala Place) to the south, Hobron Avenue and Kahului Trucking and Storage (KTS) bulk sugar storage facility to the west (Figure 4).

Parcel B contains Kahului Trucking and Storage (KTS), a trucking and shipping company associated with the storage and transport of molasses manufactured at the HC&S Puunene mill. KTS occupies about two thirds of the parcels and leases the remaining portion to various other businesses. The KTS facility is comprised of the main KTS building which houses KTS business and accounting offices, the KTS truck maintenance and repair shop and KTS parts, a Molasses Plant and associated four bulk molasses above ground storage tanks (only two in use). The reminder of Parcel B is occupied by several tenant businesses. Parcel B contains the following:

- KTS main office and shop building. This building contains the following:
 - KTS offices:
 - KTS Truck Maintenance & Repair Shop;
 - KTS truck parts department;
 - KTS bulk sugar operations supervisor officer;
 - Fed Ex Ground parcel loading/sorting area; and
- KTS Penske Truck Rental.

- KTS truck wash area.
- KTS truck wash sludge drum storage area.
- KTS Paint Shed with small item touch-up paint work area.
- Two KTS active 10,000 ton bulk molasses above ground storage tanks.
- Two KTS inactive (empty) bulk molasses above ground storage tank.
- KTS molasses plant and associated pump works station for pumping liquid molasses.
- One KTS active partially buried molasses bulk storage tank.
- · KTS molasses truck off-loading pad.
- One KTS inactive (empty) and partially open former bulk molasses storage tank – containing four sail boats.
- One KTS inactive, open toped, partially demolished above ground aphalt storage tank with residual asphalt.
- Various tenant businesses and associated buildings/structures including:
 - DeCoite Trucking open parking of several front-end loaders, shipping containers, mobile office and a cement works area;
 - BEI Hawaii bulk liquid fertilizer storage tank farm;
 - Hale Nanea Community Center;
 - LenGo Construction (construction business) with the following sub-tenants:
 - Cruiser Phil's volcano bike ride tourism business;
 - Aloha Limousine;
 - BioBeetle Eco Rental (eco car rental service);
 - A&D Transportation (transportation and taxi service);
 - Aloha Maui Limousine (limousine service) and associated car wash and parking area;
 - Maui Crane Service (Industrial mobile crane service & rental);
 - BEI Hawaii tank farm (seven above ground storage tanks with agrichemicals and fertilizers); and
 - Reynolds Aluminum Recycling

KSK's review of State and Federal environmental records, previous environmental reports, State and County property records, historical maps and aerial photographs, personnel interviews and Site reconnaissance conducted December 20, 2011 have revealed evidence of the following RECs at and near Parcel B:

Parcel B RECS

KSK identified the following RECs at Parcel B:

- Current and historic truck repair activities and bulk oil, lube oil, paint and solvent (parts cleaning) use and storage inside the KTS Service Shop.
- The storage and use of bulk fuel/petroleum products at Parcel B for several decades at the former Standard Oil AST.
- Oil storage and truck maintenance and repair activities at both Maui Crane and DeCoite Trucking areas of Parcel B.
- 500-gallon used oil AST inside KTS Truck Maintenance & Repair Shop.
- 55-gallon drums of lube oil, oil, spent filters and other inside KTS Truck Maintenance & Repair Shop.
- Truck wash and associated oil/water separator located at the KTS Truck Wash Area.
- Former bulk fuel storage and pipeline operations at the fuel loading rack/station the Molasses Tank area of Parcel B associated with the off-Parcel Tosco Black Oil AST, which are likely still present and may contain residual fuel are current and historic RECs.
- Stockpiled petroleum-impacted soil in the KTS Open Storage Area just southeast of the Molasses Tank Area.
- Miscellaneous buckets and containers of unknown liquids/petroleum throughout the KTS Open Storage and Maui Crane areas.
- Oil-impacted soil stored in two 55-gallon drums stored in the Olekoi area.
- The three 288-gallon and approximately 350-gallon oil/fuel ASTs in the KTS Open Storage Area behind (north of) the KTS Storage Sheds.

- Former asphalt plant operations, spilled asphalt tar still present in soil and the remnant asphalt tar within the remains of the smaller, partially demolished AST within the former Hawaiian Bitumuls Area.
- 55-gallon drums of sludge collected from KTS Truck Wash Area.
- Bulk liquid fertilizer ASTs at the BEI Hawaii fertilizer tank farm.
- Buried fuel pipelines running beneath the western wing of Parcel B associated with the former off-site Tosco Black Oil Tank.
- Oil-impacted soil at the former fuel loading rack associated with the off-Parcel Tosco Black Oil AST located on Parcel B near the molasses ASTs.
- Buried Chevron fuel line running along the western boundary, parallel to Hobron Avenue.
- Former junk car disposal at the LenGo construction area may have resulted in petroleum-impacted soil.
- Possible heavy metal in soil at former sandblasting in Olekoi area.
- Possible impacted soil from petroleum products from solid/hazardous waste, leaking drums and junk vehicle storage at the Olekoi area.
- Unlabeled poly drums of unknown liquid at Maui Crane.
- RECs identified in 2009 by KSK (KSK, 2009) including:
 - The storage of 55-gallon drums of used oil at the KTS used oil storage area.
 - Former auto engine repair tenant business.
 - The above ground fuel storage tank at the tenant business Rainbow Hauling and Excavation.
 - The parking of the Action Fuel petroleum tanker trucks near the BEI Hawaii tank farm.
- The possible existence of "comingled [petroleum product] plumes" believed to exist, by HDOH, in the Kahului Harbor area.

Historic RECs

 Former use of the site for truck repair for over 60 years which probably used and stored bulk petroleum products and solvents.

- Former Hawaiian Bitumuls asphalt plant operations and tar storage/spill.
- Former bulk fuel storage at the Parcel in multiple ASTs. Large former oil AST at the northern central portion of the Parcel shown on 1927, 1945, 1975, 1980 and 1990 historic Sanbourn maps.
- Former oil spill/leak at former fuel loading rack (on-Parcel) associated with off-parcel Tosco Black Oil AST.

Off-Site RECs

KSK has identified Off-Site RECs adjacent to or near Parcel B. Off-Site RECs identified are:

- Off-site DHOH SHW site listed in Section 4.5.
- Off-site HDOH HEER release site listed in Section 4.6.
- Tosco Black Oil Storage tank area and associated buried fuel pipelines near the molasses tanks.
- Tosco Maui Bulk Plant and associated pipelines 0323, 76 Hobron Avenue, Kahului, Maui.
- Tesoro Hawaii Corporation bulk fuel storage, fuel loading rack and associated pipelines, 140 Hobron Avenue Unit A, Kahului, Maui.
- MECO Kahului Generating Station bulk fuel storage, past releases and pipelines, 200 Hobron Avenue, Kahului, Maui.
- Shell Oil Products US Kahului Terminal bulk fuel storage and associated pipelines, 60 Hobron Avenue, Kahului, Maui.
- Chevron Products Company bulk fuel storage, releases, loading rack and associated pipelines, Kahului Terminal, 100 Hobron Avenue, Kahului, Maui.
- Buried pipelines running north-south along the western side of the Site along Hobron Avenue and extends beyond the northern and southern boundaries of Parcel B is therefore both an on- and offsite REC.
- HDOH SHWS listed site: VIP Warehouse, 74 Hobron Avenue, Kahului, Maui.
- HDOH SHWS and Release List listed site: Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui.

 HDOH SHWS and Release List listed site: Young Brothers Kahului, 65 Wharf Street, Kahului, Maui.

Other Items of Environmental Concern

A few items/areas were observed at or near Parcel B that do not necessarily constitute a REC and pose no real environmental risk or threat to the Site but are worth noting. These additional items are as follows:

- The site is located within the County of Maui's Special Management Area (SMA) due to its proximity to Kanaha ponds and other shoreline areas. Special Management Areas are subject to a Special Management Area Use permit from Maui County is required for development within the SMA.
- Kanaha Pond Waterbird Sanctuary is located just 500 feet to the southeast of the Site. The pond is home to two endangered species, the Hawaiian Stilt and the Hawaiian Coot, and provides sanctuary to several migrant shorebirds and waterfowl. Kanaha Pond was designated a registered natural landmark in late 1971 by the Department of the Interior.
- The Site is adjacent to National Wetland designated sites (Mauoni Ponds).
- The Site is located within the 100-year flood zone.
- Several septic/cesspool systems are present on Parcel B.
- Numerous older trucks, heavy equipment and miscellaneous equipment stored and/or abandoned throughout the A&B Parcel B may contain fuel. KSK was not able to discern if these items were in use or if they were abandoned.
- Several shipping containers used at various tenant businesses throughout Parcel B. KSK was not able to gain access to the interior of most of these containers and therefore has no knowledge of the contents.
- Several of the tenant businesses on Parcels B are industrial in nature and therefore may employ, and possibly store, even if not observed by KSK, various chemicals, paints and petroleum products in such quantities that if spilled or leak could result in an environmental release.
- Given the age of the buildings on the parcel there is a possibility they may contain asbestos and lead-based paint.

> Possible buried construction debris at the Hale Nanea area of Parcel B.

1.0 INTRODUCTION

This report documents Kevin S. Kennedy Consulting, LLC's (KSK's) Phase I Environmental Site Assessment (ESA) of the 9.9-acre parcel known as the Alexander & Baldwin (A&B) Parcel B ("Parcel" or "Site") located near Kahului Harbor, Kahului, Maui, Hawaii. The A&B Parcel B Site is located at 180 Hobron Avenue in Kahului, Maui, Hawaii (Figures 1 - 3) and is denoted by TMK: (2) 3-7-011 Parcel 17. Photographs 1 through 52 (Appendix A) show the site and surrounding area as it appeared during KSK's Site reconnaissance on December 20, 2011.

KSK's assessment of the Site has been performed by a qualified environmental professional as defined by, and in general accordance with, the EPA's "All Appropriate Inquiry" (40 CFR Part 312), as well as ASTM E 1527-05 (ASTM, 2005). The purpose of this assessment was to evaluate, on the basis of readily available information, the presence of recognized environmental conditions (RECs) at and surrounding the Site. ASTM E 1527-05 defines a REC as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property (ASTM, 2005). This ESA report includes the following:

- A review of pertinent, available documents and maps regarding local geology and hydrogeology.
- A review of publicly available federal, state, and local databases of known or potential hazardous waste sites, landfills, and sites currently under investigation for environmental violations within the ASTM recommended search distance of the Site.
- A review of relevant environmental reports and documents provided by A&B Properties (the current owner of Parcel B).
- A review and interpretation of available historical sources, such as Sanborn Fire Insurance map library, archival topographic maps, and aerial photographs and Google Earth® images. Maps and photographs of the area surrounding the Site were examined to obtain information regarding historical land use that may or could have involved the manufacture, generation, use, storage and/or disposal of hazardous substances. This review also includes the gathering of information regarding past and/or current Site

development and/or land use provided by the County of Maui's web site.

- Discussion of the Parcel and adjoining property boundary areas as observed during KSK's reconnaissance conducted on December 20, 2011 to make visual observations of existing Parcel conditions, improvements, and/or operations; types of land use; and nature of site activities
- A discussion of interviews held with current and historical property representatives, current owner, and persons knowledgeable of the property, who are familiar with the Parcel, and who are likely to have material information regarding the potential for contamination in order to obtain specialized site knowledge and evaluate site land use, site history, site operations, and Site maintenance procedures.
- A compilation of all the information gathered, identification of RECs and summary of findings. This report describes the research performed, KSK's findings, professional opinions and conclusions.

2.0 SITE DESCRIPTION

This section describes Parcel B's location and general environmental characteristics based on review of available published records and state and county agency web site information. Detailed descriptions of Site conditions observed during the Site reconnaissance are provided in Section 6.

2.1 General Site and Vicinity Characteristics and Zoning

Parcel B comprises 9.9 acres and is a roughly "W"-shaped parcel bounded by the Maui Electric power generation facility and Kahului Bay to the North, Mauoni Ponds (ancient fish ponds) and associated drainage channel to the east, Amala Place and the Chevron bulk fuel storage terminal (across Amala Place) to the south, Hobron Avenue and Kahului Trucking and Storage (KTS) Bulk Sugar Storage facility to the west (Figure 4). The Tax Map Key (TMK) designation for the Parcel is (2) 3-7-011: 17 (Figure 5).

Parcel B contains Kahului Trucking and Storage (KTS), a trucking company associated with the storage and transport of molasses manufactured at the HC&S Puunene sugar mill. Molasses storage operations have been present at Parcel B since at least 1914. KTS occupies about two thirds of the parcel and leases the remaining portion to various other tenant businesses. The KTS portion of Parcel B is comprised of the main KTS building which houses KTS business and accounting offices, the KTS Truck Maintenance and Repair shop and KTS parts warehouse, a Molasses Plant and associated four bulk molasses above ground storage tanks (ASTs) (only two in use). The remainder of Parcel B is occupied by several tenant businesses. Parcel B contains the following businesses/activities, each of which is discussed in detail in Section 6 below:

- KTS main office and shop building. This building contains the following:
 - KTS offices:
 - KTS Truck Maintenance & Repair Shop;
 - KTS truck parts department/warehouse;
 - KTS bulk sugar operations supervisor officer;
 - Fed Ex Ground parcel loading/sorting area (tenant); and
- KTS Penske Truck Rental.

- KTS truck wash area and associated oil/water separator.
- KTS Paint Shed with small item touch-up paint work area.
- Two KTS active 10,000 ton bulk molasses above ground storage tanks.
- Two KTS inactive (empty) bulk molasses above ground storage tank.
- KTS molasses plant and associated pump works station for pumping liquid molasses.
- One KTS active partially buried molasses bulk storage tank.
- KTS molasses truck off-loading pad.
- One inactive (empty) and partially open former bulk molasses storage tank – containing four sail boats (former Standard Oil AST, Olekoi Area).
- One inactive, open top, partially demolished above ground aphalt storage tank with residual asphalt (former Hawaiian Bitumuls Asphalt Area).
- Various tenant businesses and associated buildings/structures including:
 - DeCoite Trucking open parking of several front-end loaders, shipping containers, mobile office and a cement works area;
 - BEI Hawaii bulk liquid fertilizer storage tank farm with several ASTs;
 - Hale Nanea Community Center;
 - LenGo Construction (construction business) with the following sub-tenants:
 - Cruiser Phil's Volcano Ride (volcano bike ride tourism business;
 - Aloha Limousine (limousine service);
 - BioBeetle/Maui Recycling (eco car rental and recycling service);
 - Maui Skimmers (a surf and skim board manufacturer);
 - Maui Crane Service (Industrial mobile crane service & rental);
 - BEI Hawaii tank farm (seven above ground storage tanks with agrichemicals and fertilizers); and

Reynolds Aluminum Recycling.

The various items and business operations/facilities comprising Parcel B are discussed in detail in Section 6 below.

According to the Maui County Real Property Assessment Division (Maui County), the Site is currently owned by A&B Properties, Inc.

2.2 Physical Setting

This section presents a summary of the Parcel's physical environment based on published information and site observations.

2.2.1 Topographic Review

The 1997 United States Geological Survey (USGS) Topographic Map of the area (see Figure 3) and the Google Earth® images (see Figures 2 & 4) show the Site as developed with several buildings and above ground storage tanks.

The Site sits at an average elevation of just three feet above mean sea level (msl) and is essentially flat. The Pacific Ocean (Kahului Bay, outside the breakwater) is immediately north of the eastern side of the site and the Mauoni Pond is adjacent to the Parcel to the east. Kahului Harbor is located about 500 feet immediately to the northwest of the Parcel and Kanaha Pond (a state wildlife sanctuary for endangered and migratory birds) is located approximately 500 feet southeast of the Site.

2.2.2 Geologic Review

KSK reviewed published geologic and hydrogeological reports and maps to obtain available information regarding subsurface conditions in the general area of the Site.

Geology

The island of Maui consists of two main shield volcanoes. The older one is West Maui and the younger one is Haleakala, or East Maui.

West Maui volcano is the older of these two volcanoes and has eroded considerably to form the peaks of the West Maui Mountains. Puu Kukui is the highest of these peaks at an elevation of 5,788 feet. The larger, younger volcano to the east, Haleakala, rises to more than 10,000 feet above sea level and measures five miles high from seafloor to summit (Stearns, 1985).

Haleakala volcano is composed of *pahoehoe* and *a`a* flows of tholeite and tholeitic olivine basalt known as the Honomanu Volcanic Series. The Honomanu Series is overlain by the younger Kula Volcanic Series, composed primarily of hawaiite with lesser amounts of alkalic olivine basalt, basalt and ankaramite. West Maui volcano may be extinct and Haleakala is considered dormant, having last erupted in 1790.

The broad gently sloping plain connecting the two volcanoes, the Maui Isthmus, was formed when lavas of the younger Haleakala volcano banked against the already existing West Maui volcano. The isthmus is comprised of thinly to thickly bedded a a and pahoehoe lava flows of late Pliocene and early Pleistocene age as well as overlying alluvium washed from the slopes of West Maui and Haleakala to the east. Parcel B is located on the northern portion of the gently sloping coastal alluvial plain.

Soil

Soil in the Site area is primarily designated as "Fill Land", comprised of silty clay loam. The soil is "well drained" with "slow infiltration rates with layers impeding downward movement of water, or soils with moderately fine or fine textures" (EDR, 2011c). Soil layers at the Site and surrounding area are generally segregated as follows:

- 0 11 inches silty clay loam.
- 11 29 inches silty clay loam.
- 29 59 inches sand.
- 59 63 inches bedrock.

Other soil types, found in the immediate shoreline area Site include "Beachs", comprised of coarse sand with high infiltration rates that are "excessively drained" (EDR, 2011c).

Hydrogeology

The Site falls within the Central Aquifer Sector of Maui, which encompasses the central portion of Maui and extends from the isthmus on the western end to the summit of Haleakala and to the North and Southwest Rift Zones of the volcano. The Central Aquifer Sector is comprised of four aquifer systems: Kahului, Paia, Makawao and Kamaole. According to Mink and Lau (Mink and Lau, 1990), the A&B Parcel B is underlain by the Kahului Aquifer System which extends as a narrow corridor along the Maui isthmus between West Maui and Haleakala (Figure 6).

Two aquifers underlie the Site, an upper and lower aquifer. Mink and Lau assigned aquifer code 60301116 (12211) to the upper aquifer. The first part of the upper aguifer code number, 60301116, indicates that the aquifer is basal (fresh water in contact with seawater), unconfined, i.e. the water table is the upper surface of the saturated aquifer and is present in sedimentary i.e. non-volcanic, rock. The second part of the aquifer code number, 12211, is the aquifer Status Code which in this case indicates that the aquifer is currently used and is ecologically important. The aquifer is comprised of low salinity water (chloride concentration 250 - 1,000 mg/l), is irreplaceable and has a high vulnerability to contamination (Mink and Lau, 1990). The lower aquifer, aquifer code 60301111 (12212) is an unconfined basal aguifer present in horizontally extensive flank layas of the Haleakala volcano. The aguifer status code for this lower aguifer (12212) indicates that the aquifer is currently used, is ecologically important, contains moderately saline water (chloride content is 1,000 -5,000 mg/l), is irreplaceable and has a moderate vulnerability to contamination. The Mink and Lau aguifer map for the Site area is shown in Figure 6.

2.2.3 Wells and Drinking Water Sources

The Hawaii State Department of Health (HDOH) underground injection control (UIC) line runs north-south in the area of Parcel B and is located about 2.5 miles to the west. The UIC line was established by the HDOH to protect groundwater resources. Groundwater landward (mauka) of the UIC line is generally considered a potential drinking water source and groundwater seaward (makai) of the UIC line is generally considered as non-potable and saline. Injection wells are prohibited above (mauka of) the UIC line. Figure 7 is a reproduction of the HDOH UIC map and shows the site relative to the UIC line.

There are no drinking water wells located within one mile of the Site, based on HDOH UIC information up to July 6, 1984. The Physical Setting Source Summary within the EDR report (see Appendix B) shows 38 water wells within one mile of the Parcel. The following seven water wells are located within 1/8 mile of Parcel B and are all used for cooling by the Maui Electric Company power plant.

- Well ID HI6000000001467 (date drilled 1949).
- Well ID HI6000000001468 (date drilled 1949).
- Well ID HI6000000001465 (date drilled 1946).
- Well ID HI6000000001466 (date drilled 1947).
- Well ID HI6000000001471 (date drilled 1953).

- Well ID HI6000000001470 (date drilled 1953).
- Well ID HI6000000001469 (date drilled 1953).

2.3 Past Land Use of Site and Surrounding Properties

The following sections discuss KSK's findings regarding the Parcel and surrounding area history from review of historic building permits, aerial photographs, maps, tax records, and tax assessment records.

2.3.1 Property Title Report

The Site is listed on the Maui County website as having the address 180 Hobron Avenue, Kahului, Maui. The Site is located on Hobron Point at Kahului Harbor. Kahului Harbor is a deep draft harbor that has historically served as the island's major commercial, industrial, and transportation center. Kahului Harbor is located on the north shore of the isthmus connecting East and West Maui and is centrally positioned in Kahului Bay. The northeastern portion of the Parcel meets the sea, but the majority of the Parcel is just inland of the harbor.

The "W"-shaped Parcel is identified as Tax Map Key (TMK) (2) 3-7-11: 017. The Parcel has historically housed a molasses bulk storage and pumping plant since at least 1917. Standard Oil of California had a large oil tank and associated appurtenances on the Parcel as well. The property is currently occupied by Kahului Trucking & Storage (KTS), a trucking and molasses storage company, a liquid fertilizer above ground storage tank farm and other tenant business discussed in Section 6 below. The Maui county website lists the entire parcel as fee owned by A & B Properties, Inc.

Parcel B and the immediate vicinity are classed as Industrial. No other zoning information is listed on Maui County website.

2.3.2 Building Permits

Building permits for the Parcel and adjacent properties were examined on the Maui County website. The permit records were examined in order to identify RECs associated with the Site and adjacent properties. There was only one building permit issued for the Site (Permit no. B910791, for \$300,000). No reason was given for this permit.

Adjacent Properties

Information available on the Maui County web site for adjacent properties is summarized below. Adjacent properties and their currently-listed owners are shown in Figure 8.

- TMK (2) 3-7-11, Parcel 13 (A&B Parcel C) Mouoni Ponds and several small business operations, 63 Amala Place, adjacent the Site to the east.
 - This 8.6 acre parcel is listed by the Maui County website as fee-owned by A & B Properties., Inc., 11 South Puunene Avenue, Kahului, Hawaii;
 - The property is classed industrial;
 - The site contains a variety of small businesses.
- TMK (2) 3-7-11, Parcel 19 Cash n'Carry Warehouse and associated parking area. Amala Place, adjacent the Site to the south.
 - This 3.8 acre parcel is listed by the Maui County website as fee-owned by A&B Hawaii, Inc. and Alexander and Baldwin, Inc, 11 South Puunene Avenue, Kahului, Hawaii. The property is classed as Industrial.
- TMK (2) 3-7-11, Parcel 20 Maui Electric Company, 200 Hobron Avenue, adjacent to the Site to the north.
 - This 4-acre parcel is listed by the Maui County website as fee-owned by Maui Electric Company, LTD, P.O. Box 398, Kahului, Hawaii;
 - The property is classed industrial;
 - There is one permit for a truss/roof, permit no. 1804, on file for this property in 2001.
- TMK (2) 3-7-11, Parcel 23 Former Tosco Black Oil AST area Hobron Avenue, the Site surrounds this property on three sides;
 - This 22,330 square foot parcel is listed as fee-owned by A & B Properties, Inc., 11 South Puunene, Kahului, Hawaii, and also reads "Tosco Corporation".
 - The property is classed industrial.
- TMK (2) 3-7-11, Parcel 12 Chevron Tank Farm, 100 Hobron Avenue;
 - This 3.4 acre parcel is listed as fee-owned by Chevron USA, Inc, P.O. Box 285, Houston, Texas.

- The property is classed industrial;
- There are two building permits for this property.
 - Permit number B893024, no reason given. Issued 1989:
 - Permit number B892148, no reason given. Issued 1989:
- TMK (2) 3-7-10, Parcel 9 KTS Bulk Sugar Storage 101 E Kaahumanu Ave;
 - This 10.5 acre parcel is listed as fee-owned by A&B Properties, Inc, 11 South Puunene Avenue, Kahului, Hawaii 96790.
 - The property is classed industrial;
 - There are four building permits for this property.
 - Permit number B20091327, no reason given. Issued 2009;
 - Permit number B20020128, no reason given. Issued 2002;
 - Permit number B990437, new commercial building. Issued 1999;
 - Permit number B940774, no reason given. Issued 1994.
- TMK (2) 3-7-10, Parcel 13 Unimproved parcel. No address listed.
 - This 8.7 acre parcel is listed as fee-owned by the State of Hawaii
 - The property is classed as industrial
- TMK (2) 3-7-10, Parcel 16 Tesoro Fuel Tank Farm & Loading Rack - Hobron Avenue;
 - This 1.7 acre parcel is listed as fee-owned by The Harry and Jeanette Weinberg Foundation, 3660 Waialae Avenue # 400, Honolulu, Hawaii.
 - The property is classed as industrial
 - There is one permit (no reason given), permit no. B930134, on file for this property in 1993.

2.3.3 Aerial Photographs and Maps

Past land use was evaluated by reviewing historical topographic maps (dates 1922, 1955, 1961, 1983, and 1997), aerial photographs (dates 1950, 1975 and 1992) and Google Earth historical images (March 13, 2000,

April 12, 2000, and, 2011– no month listed) (EDR, 2011a and b; Appendix B). These maps, photos and images are discussed below.

Historical Topographic Maps

A 1922 historical topographic map shows large ASTs at the Parcel and no other structures. The area surrounding the harbor is largely rural. Numerous narrow gauge rail ways (Kahului Rail Road Company) leading from the harbor to the south, west and east are shown. Several pipelines are marked, however the pipeline closest to Parcel B is approximately one mile away at the Central Power Plant to the southeast. An alfalfa mill is shown approximately one mile away to the south. The area to approximately ³/₄ mile to the south and south west of the Site is fairly congested with rails and railway appurtenances, as well as large buildings and large tanks. The Hana Highway which leads away from the Site to the southeast, is identified as Kula Road. Kanaha Pond is also shown.

A 1955 historical topographic map shows the Y-shaped KTS building, railroad tracks and several ASTs labeled "Oil Tanks" at Parcel B. The Kahului Airport boundary abuts the Site to the east and includes the Kanaha Pond Waterfowl Refuge to the southeast. Kula Road (currently Hana Highway) is labeled as Haleakala Highway. Puunene Road is labeled and other roads have been constructed along Puunene Road. Maui Vocational School is shown approximately one mile to the southwest. The Site appears to look must as it did in 1922 although Hobron Point (where the Site is located) appears to have been enlarged. Some railways tracks still remain at the point and on the coast.

A 1961 historical topographic map shows "Oil" tanks and railroad tracks on the Parcel. Kahului town is shown as larger than on the 1955 map. Several major roads appear to the east. Main Street runs north along the coast to the west and Kaahumanu Avenue leads away from the Site to the west. The airport boundary is no longer shown. Formerly Haleakala Highway, Hana Highway leads away from the Site to the east.

A 1983 historical topographic map shows the Parcel as relatively unchanged with oil tanks and the KTS building but railroad tracks are no longer shown. The Kahului Airport boundary is labeled and a sewage disposal plant is shown adjoining the Parcel to the east. Maui Vocational school is now called Maui Community College and the Maui Zoological and Botanical Gardens is shown adjoining the Community College to the northwest. All of the railroad tracks in the area and beyond have been removed and replaced with roadways.

A 1997 historical topographic map shows several more ASTs and other large structures on the Parcel and surrounding the Site. Maui Zoological and Botanical Gardens is now Keopulani Park. Hoaloha Park is shown approximately ½ mile to the southwest in the harbor.

Aerial & Satellite Photographs

Aerial photography for the years 1950, 1975, and 1992 reveal very little other than what was previously described in the topographic map analysis above and the Sanborn analysis below with one exception: an additional AST is shown just to the south of the molasses pumping station. This tank does not show up in any of the Sanborn maps, and may have been built after 1990.

Only one good Google Earth® image is available for Parcel B from April 2000. This image shows the entire Parcel with the KTS building, molasses ASTs, Hale Nanea Community Center and the BEI Hawaii liquid fertilizer tank farm discernible. The former Standard Oil AST (Tosco Black Oil Tank) and the MECO power plant are clearly visible. This is the image used in Figures 4 and 9.

Sanborn Fire Insurance Maps

Six Sanborn Fire Insurance Maps were available in the Sanborn Library for the property and adjacent properties and include maps from the years 1914, 1927, 1945, 1975, 1980 and 1990 (EDR, 2011d; Appendix B).

A 1914 Sanborn map shows three molasses ASTs and the associated pump house at a Molasses Pumping Station, with four narrow gauge rail road tracks running to the pump house and around and to the tanks. Off site to the south the "Kahului Rail Road Club House" is shown.

A 1927 Sanborn map shows only approximately 2/3 of the Parcel (west side). Three steel molasses tanks are shown as well as a steam powered pump house. To the east of the molasses pumping station a large 55,364-gallon crude oil tank is shown belonging to Standard Oil Company of California. A "sand dyke" is shown surrounding the tank, but there is no scale or volume of sand is noted. Several railroad tracks run to and around the Molasses Pumping Station and between the oil tank and the pumping station. An oil pump house is shown on the west side of the tracks south of the tanks. A "territorial right of way" borders the Site to the west. Off Site, on the west side of the Right of Way, a "round house", "machine shop" and "car building" is shown as well as numerous rail road tracks. Adjacent the Site at the southern border, Standard Oil Company of

> California has an area of gasoline and oil tanks, an oil warehouse, two 40gallon chemical carts.

> A 1945 Sanborn map shows the Parcel much as it was shown in the 1927, Sanborn map; however, several buildings associated with trucks and automobiles have been added to the southern portion of Parcel B, and these buildings remain today. Two 40,000-gallon steel oil ASTs with a five feet high "sand embankment" are shown on the property adjoining the Parcel to the west across the territorial right of way (currently named Hobron Avenue).

A 1975 Sanborn map, shows Parcel B and surrounding properties much as they were in 1945; however, a small AST appears to the west of the large Standard Oil crude oil tank on property owned by Maui Light and Power Company that adjoins and is surrounded on two sides (west and east) by Parcel B. A concrete wall separates the two properties (and ASTs), and a "dirt dike" surrounds the smaller AST. Maui Light and Power Company's steam-driven turbine generators, several steel tanks, boiler room and machine shop are shown and a switch yard building is shown to the north of the molasses pumping station adjoining the Site.

The 1980 and 1990 Sanborn maps are essentially identical and show no discernible changes from the 1975 map with the exception of the name change to the adjoining Standard Oil tank farm to the south, which is now called Chevron U.S.A, Inc.

The large bulk "oil" ASTs located on and adjacent to Parcel B indicated on the historic maps and photos since at least 1927 are RECs.

2.3.4 Environmental Liens

Searching for environmental liens is a user responsibility (Section 3.0). KSK did not conduct an environmental lien search (ELS). The User (State of Hawaii, Department of Transportation) was not aware of any environmental liens on the property.

2.3.5 Tax Records

The Site is currently fee-owned by A&B Properties, Inc.

2.4 Previous Environmental Reports

Several reports/documents have been prepared regarding environmental issues associated with, and adjacent to, the A&B Parcel B Site. The

following reports/documents were provided to KSK by A&B Properties, Inc. (other documents/files on record with HDOH are discussed below in Section 4):

- Letter Report from Harding Lawson Associates (HLA) to A&B Properties, dated October 13, 1999 - Discusses the release of "asphalt bitumen" in the Hale Nanea area
- Site Assessment Work Plan, Walker Consultants (WCL), dated August, 2000 – Lays out approach for soil and groundwater sampling at Tosco Black Oil AST area.
- Internal A&B Memo, dated August 18, 2000. Status report on Tosco Black Oil Tank soil and groundwater sampling.
- Site Assessment Report, WCL, dated October 2000 Documents soil and groundwater sampling at Tosco Black Oil AST area and associated fuel loading rack at Parcel B boundary.
- Site Assessment and Remedial Action Work Plan, WCL, dated December 2000. Work plan for additional soil sampling at Tosco Black Oil Tank.
- Supplemental Site Assessment Report, WCL, dated April 2001 -Documents additional soil sampling at Tosco Black Oil Tank.
- Letter from WCL to HDOH HEER, dated September 1, 2001 -Proposes on-site reuse of petroleum-impacted soil at Tosco Black Oil AST.
- Hazardous Substance Release Report Hale Nanea Asphalt Spill, January 24, 2006 (report included HDOH Notice of Interest (NOI) dated October 17, 1998, A&B response to NOI (November 5, 1998) and 10/13/1999 HLA report.
- Letter from KTS to Olekoi Corp (Parcel B tenant) dated July 14, 2009 - Identifies environmental "issues of concern" abandoned by Olekoi at former Olekoi Area of Parcel B.
- Letter from A&B to Solid & Hazardous Waste Branch's (SHW) dated October 23, 2009 - Notifies HDOH SHW of planned waste cleanup activity at the Olekoi area.
- HDOH SHW to A&B, October 29, 2009 Issuance of provisional RCRA ID number for "Olekoi Area" solid waste cleanup.
- A&B to HDOH HEER, December 17, 2009 Reports release of unknown petroleum to soil at former Olekoi area of Parcel B.
- Letter report from A&B's Sean O'Keefe to HDOH Solid & Hazardous Waste Branch's (SHW) Steven Chang dated May 4, 2010 - Documents removal of solid waste from Olekoi area of Parcel B.

- Letter report from A&B's Sean O'Keefe to HDOH SHW's Steven Chang dated July 8, 2010 – Updates on removal of solid waste from Olekoi area of Parcel B.
- NOI from HDOH SHW to A&B dated February 9, 2011 Notice of interest and non-compliance due to solid waste accumulation at Parcel B.
- Letter from A&B to HDOH SHW, dated July 7, 2011 Documents completion of removal and disposal of solid waste from Olekoi Area of Parcel B.
- Letter of No Further Action (NFA) ruling from HDOH SHW to A&B dated July 22, 2011.

The following additional report was prepared by KSK in 2009:

 Limited Site Assessment Report, Alexander & Baldwin Acquisition Parcels A, B & C at Kahului Harbor. A: 101 E. Kaahumanu Ave., B: 180 Hobron Ave., C: 63 Amala Place, Kahului, Maui, Hawaii. Kevin S. Kennedy Consulting, LLC, June 5, 2009.

These Parcel B and adjacent site reports are discussed below.

2.4.1 Letter Report HLA to A&B Properties, 10/13/1999.

This letter report discusses the release of "asphalt bitumen" in the "Hale Nanea area", located in the northern end of the center of Parcel B. HLA reported asphalt material was released to the soil from older ASTs operated by Hawaiian Bitumuls and Paving. Hawaiian Bitumuls, which formerly operated two 12-feet diameter asphalt ASTs in this area of Parcel B, one five feet tall and one 20 feet tall. The release occurred from a tank licensed to Rainbow Sand Blasting & Hauling. "Pits and berms were dug to control the spill". HLA also reported that "in the past, there have been previous spills of the bitumen or similar materials from the tanks at the Hale Nanea Site"

On October 19, 1998 HLA collected samples of the spilled asphalt tar for laboratory analysis and reported that total petroleum hydrocarbons (TPH) as diesel (TPH-D) and as oil (TPH-O) were detected at 45,000 mg/kg and 2230,000 mg/k, respectively but that none of the four HDOH-regulated

.

¹ The remains of one of these tanks is still present at Parcel B and still contains remnant bulk asphalt/tar. The other tank has been demolished and is no longer present at Parcel B.

² HLA refers to the Hale Nanea area. This area of Parcel B is the former location of Hawaiian Bitumuls and Paving asphalt plant and bulk asphalt tar storage located to the west of the current Hale Nanea Area, in the center of the northern end of Parcel B.

polynuclear aromatic hydrocarbons (PAHs) were detected. HLA therefore concluded that the asphalt material spilled "was generally non-hazardous according to EPA classifications".

From November 4 - 11, 1998 Hawaiian Bitumuls "excavated and removed the spilled bitumen, the bitumen remaining in the leaking tank, removed the tank and re-graded and surfaced the area with crushed rock." The excavated spilled bitumen and affected soil were mixed with 250 tons of imported soil and transported, along with the demolished tank, to the Ameron International Corporation Quarry where it was recycled in Hawaiian Bitumuls asphalt batch plant. HLA concluded that the spill and impacted soil "had been satisfactorily cleaned up".

2.4.2 Site Assessment Work Plan, WCL, 8/2000

This work plan was prepared by Walker Consultants for the Tosco Refining Company and lays out the approach for the collection of 18 soil and one groundwater grab samples at Tosco Black Oil AST area, located immediately north of Parcel B at the Parcel boundary, between the western and central "wings" of the W-shaped Parcel B apparently in response to a tank or associated pipeline release.

2.4.3 Internal A&B Memo, 8/18/2000

This internal A&B memo provided a status report on WCL's Tosco Black Oil Tank soil and groundwater sampling. The memo reported that the Tosco Black Oil tank than been "emptied, cleaned and inspected". This memo also noted that additional surface and subsurface oil contamination was found at the loading rack associated with the Tosco Black Oil tank that is located on Parcel B, near the molasses tanks.

2.4.4 Site Assessment Report, WCL, 10/2000

This Site Assessment Report, prepared by WCL for Tosco Refining Co., documented the collection of 53 soil samples from 28 locations (10 within and 17 outside of the AST) and two groundwater samples from areas of visibly stained soil at the off-Parcel Tosco Black Oil AST and at the associated fuel loading rack, located on Parcel B. The samples were analyzed for TPH as fuel oil. Fifteen of the soil samples "with the highest TPH results" were further analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) and PAHs.

WCL did not encounter free-phase oil and concluded that "impacted surface soil areas are apparently related to minor leak/spills associated

with the AST" and suspected that an associated buried pipeline may be responsible for the subsurface oil-impacted soil.

2.4.5 Site Assessment & Remedial Action Work Plan, WCL, 12/2000

The work plan proposed the collection of an additional three soil and one additional groundwater samples at the Tosco Black Oil AST. This work plan also called for the excavation and off-site disposal and on-site stockpiling of oil-impacted soil.

2.4.6 Supplemental Site Assessment Report, WCL, 4/2001

This supplemental site assessment report documents the collection and laboratory analysis of five additional soil samples at the Tosco Black Oil Tank. WCL concluded that TPH as fuel oil exceeded the HDOH Soil Action Level (SAL) in five samples and the PAHs benzo(a)pyrene and fluoranthene exceeded their respective HDOH SALs in one of the soil samples. WCL attributed the shallow oil-impacted soil to minor surface and near surface leakage/spillage associated with previous black oil AST operation and that "deeper impacts are attributed to a source unrelated to the Black Oil AST"

2.4.7 Letter from WCL to HDOH HEER, 9/1/2001

This letter from WCL proposed the on-site reuse, as an earthen berm at the "tank farm" of petroleum-impacted soil at excavated at the Tosco Black Oil AST.

2.4.8 Hazardous Substance Release Report - 1/24/2006

This report included an HDOH Notice of Interest (NOI) dated October 17, 1988, A&B response to the NOI (November 5, 1998) and the 10/13/1999 HLA report. This release report discusses the "release of asphalt bitumen in the Hale Nanea Area³ of Kahului in October 1998" from the 17,000 barrel Tosco Black Oil AST located just north of Parcel B boundary between the Parcel B molasses tanks and former Olekoi AST.

KSK-2008-029

³ See foot note No. 2, Page 15.

2.4.9 Letter from KTS to Olekoi Corp., 7/14/2009

This KTS letter identifies environmental "issues of concern" abandoned by Olekoi Corporation at the former Olekoi Area of Parcel B. Issues of concern cited included:

- 18 55-gallon drums, unlabeled, some leaking/leaked.
- Improperly stored cans of paints, solvents, resins, hardeners.
- · Improperly stored "corrosive materials".
- Various hazardous waste materials boat batteries, fluorescent light ballast potentially containing PCBs, TV/computer monitors and over 100 fluorescent light bulbs.
- 400 500 used appliances (refrigerators, freezers, A/C units).
- Various solid waste items including derelict vehicles and tires.

KTS demanded that Olekoi clean up these items within 60 days.

2.4.10 Letter from A&B to HDOH SHW, 10/23/2009

This letter from A&B notified HDOH SHW of A&B's planned solid waste cleanup activity at the Olekoi area of Parcel B.

2.4.11 HDOH SHW to A&B, RCRA ID, 10/29/2009

This letter from HDOH SHW, in response to A&B's October 23, 2009 notification of planned solid waste cleanup activity of the Olekoi area of Parcel B. HDOH SHW issued a provisional RCRA ID number HIP 000139451 for the planned cleanup activity.

2.4.12 A&B to HDOH HEER, Release Report, 12/2009

This Hazardous Substance Release Report submitted to HDOH HEER by Sean O'Keefe of A&B. The Release Notice documents the release of more than 25 gallons of "unknown petroleum" drum and reports that "soil visibly impacted by petroleum excavated and placed in two 55-gallon drums for storage pending disposal".

2.4.13 Letter report from A&B to HDOH SHW, 5/4/2010

This letter report documents "corrective action", consisting of the removal and offsite disposal/recycling of 400 – 500 used appliances, 86 used tires and a large industrial battery from the Olekoi area of Parcel B.

2.4.14 Letter report from A&B's HDOH SHW, 7/8/2010

This report provides an update to HDOH on the solid waste removal activities at the Olekoi area of Parcel B. The update indicated the additional removal of a boat and trailer.

2.4.15 NOI from HDOH SHW to A&B 2/9/ 2011

This NOI (Notice of Interest) was issued by HDOH SHW to A&B due to solid waste accumulation at Parcel B. The NOI indicated the illegal accumulation/storage/disposal of four vehicles, 10 refrigerators and approximately 100 cubic yards of scrap metal/lumber and miscellaneous debris

2.4.16 Letter from A&B to HDOH SHW, removal action, 7/7/2011

This letter documents that "Kahului Trucking & Storage has completed the removal and proper disposal of all solid waste from 59 Amala Place (Parcel B). The letter included recycling receipts from Schnitzer Steel and Maui Tire Recycling and disposal receipts from Central Maui Landfill and Maui Demolition and Construction Landfill.

2.4.17 NFA ruling from HDOH SHW to A&B, 7/22/2011

This NFA was issued by HDOH SHW to A&B for the solid waste cleanup activities at the Olekoi area of Parcel B.

2.4.18 Limited Site Assessment Report, A&B Parcels A, B & C, Kahului Harbor. KSK, 6/5/2009

This report, prepared by Kevin S. Kennedy Consulting, LLC (KSK) in 2009 for SSFM International, was conducted on three adjacent parcels, Parcels A, B and C at Kahului Harbor. The report presents the results (KSK's limited site assessment of three parcels of land in the Kahului Harbor area of Kahului, Maui, owned by Alexander and Baldwin (A&B). The three adjacent parcels were located in Kahului, Hawaii on the Island of Maui and were referred to as Parcels A, B and C and are all located in Kahului, Hawaii at the following addresses:

- Parcel A 101 E. Kaahumanu Avenue; TMK (2) 3-7-010 Parcel 9.
- Parcel B 180 Hobron Avenue; TMK (2) 3-7-011 Parcel 17, the same Parcel B that is the subject of this ESA.
- Parcel C, located at 63 Amala Place; TMK (2) 3-7-11 Parcel 13.

KSK's limited site assessment, conducted on May 13, 2009, consisted of "a visual site reconnaissance of the property only and was not a Phase I Environmental Site Assessment (ESA) and was not performed in general accordance with the United States Environmental Protection Agency (EPA) 'All Appropriate Inquiry Final Rule' (40 Code of Federal Regulations (CFR) Part 312), or the American Society for Testing and Materials (ASTM) 'Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process'" (ASTM E1527-05). KSK reported that they did not have access to the interior of many of the site's structures and tenant businesses and no personnel interviews were conducted and no historic records were researched regarding current or past operations or activities at any of the three parcels.

KSK's limited site assessment revealed evidence of recognized environmental conditions (RECs) on all three parcels. The RECs identified by KSK on Parcel B included:

- Bulk petroleum product storage and use inside the KTS Service Shop
- The storage of 55-gallon drums of used oil at the KTS used oil storage area.
- Former auto engine repair tenant business.
- The above ground fuel storage tank at the tenant business Rainbow Hauling and Excavation.
- The BEI Hawaii agrichemical above ground storage tank farm.
- The parking of the Action Fuel petroleum tanker trucks near the BEI Hawaii tank farm.
- The north-south buried petroleum pipelines running along the eastern side of Hobron Avenue.

The following RECs were identified by KSK on adjacent parcels A (to the West of Parcel B, across Hobron Avenue) & C (to the east of Parcel B) and would therefore constitute off-site RECs relative to Parcel B:

Parcel A

 A pad-mounted electrical transformer adjacent to the Center Bulk Sugar Storage Warehouse.

- The Tesoro bulk fuel loading rack located in the northeast corner of Parcel A.
- A pad-mounted electrical transformer located at the base of the sugar conveyor trestles at the extreme northwest corner of Parcel A.

Parcel C

- An above ground (possibly fuel) storage tank at the Maui Crane Service storage area.
- Sandblasting and spent sandblast grit at the Maui Sandblasting tenant business.
- Petroleum fuel tanker parked at the Maui Sandblasting tenant business.
- The 500-gallon above ground fuel storage tank at the Aloha Recycling tenant business.
- Engine tooling machine shop at Pat's Cylinder Head Repair and Tire tenant business.
- · Stored generators.

KSK identified RECs on properties immediately adjacent to the three Parcels. These identified off-site RECs included:

- The Tesoro bulk petroleum product storage tank farm north of Parcel A.
- The buried pipelines running north-south along the eastern side of Hobron Avenue extend beyond the northern and southern boundaries of Parcel B and are therefore an off-site REC.
- The Maui Electric Kahului Power Plant located to the north of Parcel B contains large above ground bulk fuel storage tanks and associated above ground fuel pipelines. These fuel tanks and associated pipelines are an off-site REC.

KSK identified a few other items/areas at the three parcels that did "not necessarily constitute a REC and pose no real environmental risk or threat to the Site but are worth noting". These additional items identified by KSK were:

 Numerous older trucks, heavy equipment and miscellaneous equipment stored and/or abandoned throughout Parcel B. KSK was not able to discern if these items were in use or abandoned.

- Several shipping containers used at various tenant businesses throughout Parcel B and C. KSK was not able to gain access to the interior of most of these containers and therefore has no knowledge of the contents.
- Several of the tenant businesses on Parcels B and C are industrial in nature and therefore may employ, and possibly store, even if not observed by KSK, various chemicals, paints and petroleum products in such quantities that if spilled or leak could result in an environmental release.

These on- and off-site RECs reported by KSK constitute current on- and off-site RECs.

2.4.19 Report Review Summary

The previous environmental documents and reports for Parcel B discussed above indicated the presence of following current and historic RECs at and near Parcel B:

- Bulk fuel storage and fuel oil pipelines at the off-Parcel Tosco Black Oil thank that run to a former fuel loading rack on Parcel B.
- Former operation of, past oil releases and oil-impacted soil at the former fuel loading rack on Parcel B associated with the adjacent, off-parcel, Tosco Black Oil AST.
- Former asphalt plant operations and current asphalt bitumols/tarimpacted soil and the tar-containing remnant partial AST in the former Hawaii Bitumols area.
- Possible soil contaminants from appliance waste piles, junked vehicles, "leaking drums, improperly stored cans of paints and solvents and various hazardous media" in the Olekoi area of Parcel B (KTS, 2009).
- Possible heavy metal contaminants due to sand blasting at a former Rainbow Hauling and Sand Blasting business located in the Olekoi area.
- Those RECs listed by KSK in 2009 (KSK, 2009) identified in Section 2.4.18 above including:
 - Bulk petroleum product storage and use inside the KTS Service Shop;
 - The storage of 55-gallon drums of used oil at the KTS used oil storage area;

- Former auto engine repair tenant business;
- The above ground fuel storage tank at the tenant business Rainbow Hauling and Excavation;
- The BEI Hawaii agrichemical above ground storage tank farm;
- The parking of the Action Fuel petroleum tanker trucks near the BEI Hawaii tank farm;
- The north-south buried petroleum pipelines running along the eastern side of Hobron Avenue.

3.0 USER PROVIDED INFORMATION

ASTM E1527-05 outlines the responsibilities of the user (i.e. the user of this Phase I ESA report, in context of completing a Phase I ESA. A user is defined as the party seeking to use the Phase I ESA to complete an environmental site assessment of a property. A user may include a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager (ASTM E 1527-05). In line with this definition, KSK regards the user as the person/organization hiring KSK to conduct this Phase I ESA. In the case of this Phase I ESA, The State of Hawaii, Department of Transportation, Harbors Division, represented by DOT Harbors Project Manager Ms. Sharilyn Ikeda, is the User. As part of completing a Phase I ESA, the User has the following duties:

- Review title and judicial records to identify environmental liens or Activity and Use Limitations (AULs), if any, that are currently recorded against the property.
- Communicate to KSK, in advance of the site reconnaissance, any specialized knowledge or experience of the user that is material to RECs.
- Communicate to KSK, in advance of the site reconnaissance, any actual knowledge or any environmental lien or AULs encumbering the property or in connection with the property.
- Consider the relationship of the purchase price of the property to the fair market value of the property if the property was not affected by hazardous substances or petroleum products.
- Communicate to KSK, in advance of the site reconnaissance, any
 commonly known or reasonably ascertainable information within
 the local community about the property that is material to RECs in
 connection with the property.
- Make known to KSK the reason why the user wants to have the Phase I ESA performed.

The State of Hawaii Department of Transportation, Harbors Division is the ultimate User of the ESA. KSK interviewed DOT Harbors Project Manager Ms. Sharilyn Ikeda as the User and completed a User questionnaire regarding user responsibilities associated with the Phase I ESA. As a Project Manager for DOT Harbors, Ms. Ikeda qualifies as the

"User." A copy of Ms. Ikeda's User (client) interview form is included in Appendix C.

Ms. Ikeda reported to KSK that the reason for conducting the Phase I ESA was part of DOT Harbors due diligence prior to potentially purchasing the property from A&B Properties as part of the State of Hawaii's expansion of the state's Kahului Harbor facilities.

Ms. Ikeda reported to KSK that she was not aware of any environmental issues or concerns with the property, other than the Parcel's current and past use for heavy industrial activities.

Ms. Ikeda was not aware of any environmental Cleanup Liens or Activity and Use Limitations associated with the property and was not aware of any indications of possible contamination at the Site other than what may possibly be associated with heavy industrial activity.

None of Ms. Ikeda's interview responses, other than her indication of the Site's former use industrial properties indicated a recognized environmental condition, or REC.

Searching for environmental liens is a user responsibility, and KSK did not order an Environmental Lien Search (ELS) report. Ms. Ikeda's interview responses indicated that she was not aware of any environmental liens associated with the property.

It is KSK's opinion that the user (client), State of Hawaii, Department of Transportation, Harbors Division., represented by Ms. Sharilyn Ikeda, met all user responsibilities for this Phase I ESA, as described in ASTM E 1527-05.

4.0 RECORDS REVIEW

KSK reviewed state and federal regulatory agency records for information on known or potential sources of hazardous waste, petroleum products, or other RECs at or near the Site. The following records and lists were reviewed for sites within the ASTM specified minimum search distance from the A&B Parcel B Site located at 180 Hobron Avenue, Kahului, Maui, Hawaii at the coordinates Latitude: 20° 53' 44.03" N, Longitude: 156° 27' 43.71" W. A detailed discussion of each of the types of records/lists shown below is provided in the EDR federal and state environmental database report included as Appendix B.

Sites Within One Mile of Parcel B

- Environmental Protection Agency (EPA) National Priority List (NPL).
- Proposed NPL sites.
- · Delisted NPL Sites.
- Resource Conservation and Recovery Act (RCRA) Corrective Action Site (CORRACTS) List.
- DOD (Department of Defense) facilities.
- FUDS (Formerly Used Defense Sites).
- Sites with Superfund Consent Decrees.
- Sites with EPA Records of Decisions.
- Hawaii State Department of Health (HDOH) State Hazardous Waste Sites (SHWS).
- HDOH Release List.

Sites Within 0.5 Mile of Parcel B

- Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List.
- CERCLIS No Further Remedial Action Planned (NFRAP) List.
- EPA Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and/or Disposal (TSD) Facilities List.
- Land Use Control Information System.

- · Open Dump Inventory.
- HDOH Landfill and/or Solid Waste Disposal Site Lists.
- · HDOH leaking underground storage tank (LUST) List.

Sites within 0.25 Mile of Parcel B

- RCRA Large Quantity Generators List.
- · RCRA Small Quantity Generators List.
- Mines Master Index File.
- RCRA Conditionally Exempt Small Quantity Generators.
- RCRA Non-generators.
- HDOH Underground Storage Tank (UST) list.

On Parcel B and Adjoining Properties

- CERCLA Lien Information.
- HDOH Registered UST List.
- RCRA Generators List.

On Parcel B

- Federal Emergency Response Notification System (ERNS) List.
- Federal Superfund Liens Sites.
- EPA Institutional Controls and Engineering Controls Lists.
- HDOH Institutional Control and Engineering Control Lists.
- HDOH Voluntary Response Program List.
- HDOH Brownfields List.

4.1 EPA NPL

There are no NPL, proposed NPL or delisted NPL sites listed on or within one mile of Parcel B (EDR, 2011c; Appendix B).

4.2 EPA RCRA CORRACTS Facilities List

There are no RCRA CORRACTS facilities listed on the EDR as being within one mile of Parcel B (EDR, 2011c; Appendix B).

4.3 DOD/FUDS Sites

There are no listed DOD or FUD sites on or within one mile of the Site (EDR, 2011c; Appendix B).

4.4 Federal Consent/ROD Sites

There are no Superfund Consent Decrees or EPA Record of Decision sites on or within one mile of Parcel B (EDR, 2011c; Appendix B).

4.5 HDOH SHWS List

The state HDOH SHWS list indicated that there are two SHWS sites listed within one mile of the Parcel B. The attached EDR report (Appendix B) lists 17 SHWS sites listed in the attached EDR report. The following are sites listed within ½ mile of Parcel B (EDR, 2011c, Appendix B):

- Aloha Glass Recycling, Inc, 75 Amala Place, Kahului, Maui:
 - Permit for solid waste on file.
- Reynolds Recycling, Inc, 140 Hobron, Kahului, Maui:
 - Permit for solid waste on file.
- Chevron Products Company Kahului Terminal, 100 Hobron Avenue, Kahului, Maui:
 - Case number: 19880111-2;
 - Transmix (petroleum) spill (250-gallons);
 - No cleanup. No Further Action determination (NFA) not on file;
 - Case number: 19950413;
 - Underground diesel leak found during excavation (50-gallons);
 - No NFA on file;
 - Case number 19941104;
 - Diesel fuel spill from pipe flange onto soil (500-gallons);
 - Cleanup initiated. No NFA on file;
 - Case number: 19960105-1339;

- Gasoline spill (80-gallons);
- No NFA on file;
- Case number: 19960105-1340;
- Gasoline spill (SHWB reports 294-gallons, EDR reports 400-gallons);
- No NFA on file.
- · Bird Builders, Amala Place, Kahului, Maui:
 - Site status is 'on-going', but no other information was available for this site.
- · Kanaha Pond East, Amala Place, Kahului, Maui:
 - Aka, King's Towing, F&M Contractors, E & E Black Contractors, Smile's Junkyard;
 - NFA Unrestricted Residential Use 7/2/2001.
- Tosco Bulk Plant Number 0323, 76 Hobron Avenue, Kahului, Maui:
 - NFA (type undetermined) 3/10/2004;
 - No other information was available for this site.
- VIP Warehouse, 74 Hobron Avenue, Kahului, Maui:
 - Release number: 900004, date 10/9/89;
 - Crude oil spill (amount unknown);
 - Status 'on-going' (no NFA on file);
 - Case number: 19920426;
 - Diesel fuel spill (unknown amount);
 - No other information on file for this site (no NFA on file).
- Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui:
 - Case number: 19941103-2;
 - Aka Shell Terminal Kahului;
 - Diesel fuel spill (500-gallons);
 - No NFA on file.
- IMF (Intermediate Maintenance Facility), 261 Amala Place, Kahului, Maui:
 - Site status is 'on-going' -no other information was available for this site.

- Honey Bee Infestation, 281 Amala Place, Kahului, Maui.
 - Release number: 990117, case number: 19980721-1400;
 - The environmental interest is listed by EDR as Kahului Wastewater Reclamation facility 30-gallon diesel release;
 - SHWB records indicate that the release was discovered during UST removal operations and it believed to be due to tank overfills:
 - There may be two incidents, but this cannot be definitively be determined;
 - NFA 8/29/2000 (SHWB) and 2/28/2001 (EDR).
- Young Brothers Kahului, 65 Wharf Street, Kahului, Maui:
 - Case number: 19990923-1741;
 - Solvent spill (780-gallons);
 - No NFA on file:
 - Case number: 19981014-1725;
 - Diesel release (50-gallons);
 - Assignment end date 10/16/1998;
 - Case number: 20020826-1000;
 - Used oil release (350-gallons);
 - Assignment end date 3/24/2003;
 - Case number: 20090123-0921;
 - Diesel fuel release (ten gallons);
 - No NFA on file;
 - Release number 000089;
 - Gasoline release discovered during UST removal operations;
 - NFA 5/16/2003;
 - May 2003, a tar-like substance was found during closure of ground water monitoring well, but not believe to be related to prior UST release;
 - NFA (type undetermined) 8/6/2004.

Given the location of these SHWS sites relative to Parcel B, the lack of information in the HDHO files and the lack of NFA rulings KSK considers the following SHWS sites as off-site RECs that could potentially pose an environmental risk to Parcel B via groundwater transport:

- Chevron Products Company Kahului Terminal, 100 Hobron Avenue, Kahului, Maui.
- Tosco Bulk Plant Number 0323, 76 Hobron Avenue, Kahului, Maui.
- VIP Warehouse, 74 Hobron Avenue, Kahului, Maui.
- Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui.
- Young Brothers Kahului, 65 Wharf Street, Kahului, Maui.

4.6 HDOH HEER Release List

There are six sites with releases listed on the HDOH Release List within 1/2 mile of the Site (HEER, 2011).

- Chevron Products Company Kahului Terminal, 100 Hobron Avebnue, Kahului, Maui:
 - Case number: 19880111-2;
 - Transmix (petroleum) spill (250-gallons);
 - No cleanup. No Further Action determination (NFA) not on file;
 - Case number: 19950413;
 - Underground diesel leak found during excavation (50-gallons);
 - No NFA on file;
 - Case number: 19941104;
 - Diesel fuel spill from pipe flange onto soil (500-gallons);
 - Cleanup initiated. No NFA on file;
 - Case number: 19960105-1339;
 - Gasoline spill (80-gallons);
 - No NFA on file;
 - Case number: 19960105-1340;
 - Gasoline spill (SHWB reports 294-gallons, EDR reports 400-gallons);
 - No NFA on file.
- Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui:
 - Case number: 19941103-2;

- Aka Shell Terminal Kahului;
- Diesel fuel spill (500-gallons);
- No NFA on file.
- Kahului Wastewater Reclamation Facility, 281 Amala Place, Kahului, Maui:
 - Release number: 990117, case number: 19980721-1400;
 - 30-gallon diesel release;
 - SHWB records indicate that the release was discovered during UST removal operations and it believed to be due to tank overfills;
 - There may be two incidents, but this cannot be definitively be determined;
 - NFA 8/29/2000 (SHWB) and 2/28/2001 (EDR).
- · Young Brothers Kahului, 65 Wharf Street, Kahului, Maui:
 - Case number 19990923-1741;
 - Solvent spill (780-gallons);
 - No NFA on file:
 - Case number: 19981014-1725;
 - Diesel release (50-gallons);
 - Assignment end date 10/16/1998;
 - Case number 20020826-1000;
 - Used oil release (350-gallons);
 - Assignment end date 3/24/2003;
 - Case number: 20090123-0921;
 - Diesel fuel release (ten gallons);
 - No NFA on file.
- Maui Electric Company, 200 Hobron Lane, Kahului, Hawaii:
 - Case number: 19960608-2302;
 - Oil leaked into containment structure due to tank corrosion (100-gallons);
 - No NFA on file.

Although all of the listed releases occurred more than 12 years ago, most have no NFA ruling on file indicating possible on-going cleanup activities. KSK considers the following off site releases as off-site RECs that could potentially impact Parcel B via groundwater transport:

- Chevron Products Company Kahului Terminal, 100 Hobron Avenue, Kahului, Maui.
- Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui.
- · Young Brothers Kahului, 65 Wharf Street, Kahului, Maui.
- · Maui Electric Company, 200 Hobron Lane, Kahului, Hawaii.

4.7 EPA CERCLIS/NFRAP Sites

There are seven listed CERCLIS or NFRAP sites on or within one half a mile of Parcel B (EDR, 2011c; Appendix B):

- · King's Towing, Amala Place, Kahului, Maui.
- · Smile's Junk Yard, Amala Place, Kahului, Maui.
- Kanaha Pond East, Amala Place, Kahului, Maui.
- · Rainbow Hauling, Amala Place, Kahului, Maui.
- · E & E Black Contractors, Amala Place, Kahului, Maui.
- Kanaha Pond West, 261 Amala Place, Kahului, Maui.
- · Bird Builders, 261 Amala Place, Kahului, Maui.

Given the NFRAP status and relative location to Parcel B KSK does not consider these listings as posing environmental threats to Parcel B.

4.8 EPA RCRA TSD Facilities List

There are no listed RCRA TSD facilities located on or within half a mile of Parcel B (EDR, 2011c; Appendix B).

4.9 HDOH Landfill and/or Solid Waste Disposal Site Lists

There are no permitted landfills or solid waste disposal sites located on or within half a mile of Parcel B (EDR, 2011c; Appendix B).

4.10 HDOH Leaking UST List

The state HDOH LUST list indicated that there are nine LUST sites located within ½ mile of the subject Site (EDR, 2011c; Appendix B).

- Tropical Rent A Car, 41 Hana Highway, Kahului, Maui:
 - Release number: 940046;

- Two gasoline USTs (1000-gallon and 3000-gallon) and two diesel USTs (4000-gallon and 6000-gallon);
- Permanently out of use 12/14/1993;
- NFA 10/7/1994.
- VIP Food Service, (address unknown):
 - Release number: 900004; date 10/9/89;
 - Cude oil release (unknown amount);
 - No other records or documentation available for this site.
- Alamo Rent a Car Incorporated, 40 South Hana Highway, Kahului, Maui:
 - Release number: 920021;
 - Two used oil USTs (1000-gallon and 550-gallon) and one 2000-gallon gasoline UST;
 - Permanently out of use 10/21/1991;
 - NFA 2/11/1994.
- Kahului Wastewater Reclamation Facility, 281 Amala Place, Kahului, Maui:
 - Release number: 990117;
 - One 12,000-gallon diesel UST and one 700-gallon used oil UST:
 - Permanently out of use in 1998;
 - NFA 8/29/2000.
- Kahului Sewer Pump Station, Hana Highway and Hobron Avenue, Kahului, Maui:
 - Release number: 990039;
 - One 1500-gallon diesel UST;
 - Permanently out of use 10/9/1998;
 - NFA 4/19/2001.
- Island Dodge Honda, 110 South Hana Highway, Kahului, Maui:
 - Release number: 930067;
 - Two gasoline USTs (1000-gallon and 2000-gallon), one 2000-gallon used oil UST and one 500-gallon UST containing a 'hazardous substance.';
 - All permanently out of use by 1997;
 - NFA 9/25/1998.

- AMFAC Distribution Hawaii, Inc, 150 Hana Highway, Kahului, Maui:
 - Release number: 900073;
 - One diesel UST and one Gasoline UST of unknown capacity;
 - Permanently out of use 5/8/1990;
 - NFA 10/19/2001.
- Goodyear Auto Service Center, 121 Alamaha Street, Kahului, Maui:
 - Release Number: 950128;
 - One 250-gallon used oil UST;
 - Permanently out of use 8/20/1995;
 - NFA 7/5/1996.
- Island Movers, Inc, 172 Alamaha Street, Kahului, Maui:
 - Release number: 960047;
 - Two 1000-gallon gasoline USTs and one 1000-gallon diesel USTs;
 - Permanently out of use 6/25/1996;
 - NFA 5/9/2000.
- Young Brothers, LTD, Pier 2, Kahului Maui:
 - Release number: 000089;
 - One 1000-gallon gasoline UST;
 - Permanently out of use 9/30/1989;
 - NFA 5/16/2003.

Due to the location of the listed LUST site and/or a NFA ruling from HDOH for all but one of the sites, KSK does not consider any of the listed LUST sites as posing an environmental threat to Parcel B.

4.11 HDOH UST Section Database Listing

There are no known USTs on Parcel B nor were any listed with HDOH. The following two listed USTs are located within one-quarter mile Parcel B (EDR, 2011c; Appendix B):

Maui Oil Company, Inc, 16 Hobron Avenue, Kahului, Maui:

- Two 6000-gallon gasoline USTs, one 8000-gallon diesel UST, two 4000-gallon USTs of unknown contents, and one 280-gallon UST of unknown contents;
- The 280-gallon UST and one 4000-gallon UST of unknown contents is permanently out of use. The remaining tanks are currently in use.
- Tropical Rent A Car, 41 Hana Highway, Kahului, Maui:
 - Release number: 940046;
 - Two gasoline USTs (1000-gallon and 3000-gallon) and two diesel USTs (4000-gallon and 6000-gallon);
 - Permanently out of use 12/14/1993;
 - NFA 10/7/1994.

Given the location of these UST sites relative to Parcel B and/or closed status or NFA ruling, KSK does not consider either of the two listed UST sites as posing an environmental threat to Parcel B.

4.12 EPA RCRA Generators List

There are no small or large, conditionally exempt or non-generator RCRA generators on site.

There are four small quantity generators listed within one quarter mile of the Parcel (EDR, 2011c; Appendix B):

- Tosco Maui Bulk Plant 0323, 76 Hobron Avenue, Kahului, Maui.
- Kahului Trucking and Storage, 140 Hobron Avenue, Kahului, Maui.
- Tesoro Hawaii Corporation, 140 Hobron Avenue Unit A, Kahului, Maui.
- Kahului Generating Station, 200 Hobron Avenue, Kahului, Maui.

There is one conditionally exempt small quantity generator listed within one quarter mile of the Site (EDR, 2011c; Appendix B):

 Shell Oil Products US Kahului Terminal, 60 Hobron Avenue, Kahului, Maui.

There is one large quantity generator listed within one quarter mile of the site (EDR, 2011c; Appendix B):

 Chevron Products Company Kahului Terminal, 100 Hobron Avenue, Kahului, Maui.

KSK considers all of these facilities, with the exception of the Kahului Trucking & Storage (this is the bulk sugar storage facility across Hobron Avenue from the Parcel) as off-site RECs, relative to the Parcel.

4.13 EPA ERNS List

Parcel B was not listed on the ERNS list (EDR, 2011c; Appendix B).

4.14 Federal Lien Information

There were no Superfund liens listed for Parcel B (EDR, 2011c; Appendix B).

4.15 EPA Institutional Controls and Engineering Controls Lists

Parcel B was not listed on the EPA Institutional Controls or EPA Engineering Controls List (EDR, 2011c; Appendix B).

4.16 HDOH Voluntary Response Program List

There are no Voluntary Response Program facilities listed on the EDR as located on or within a half mile of Parcel B (EDR, 2011c; Appendix B).

4.17 HDOH Brownfields List

There are no Brownfields properties located on or within a half mile of Parcel B (EDR, 2011c; Appendix B).

4.18 HDOH Waste Water

There is no HDOH-listed waste water facility on Parcel B though there are multiple septic and cesspool systems.

5.0 INTERVIEWS

KSK conducted interviews with the User of this ESA, a representative of the Parcel owner, several of the Parcel tenants and representatives from the Hawaii Department of Health regarding the Parcel.

5.1 Interviews with Persons Currently Familiar with the Site

5.1.1 Current Site Owner – A&B Properties, Inc. – Sean O'Keefe

Sean O'Keefe is the Director of Environmental Affairs for A&B Properties. He has been with A&B for 18 years. KSK interviewed Mr. O'Keefe during the Parcel reconnaissance on December 20, 2011 and followed up with additional questions by phone on January 5, 2012. All of Mr. O'Keefe's comments and answers to interview questions were recorded on an Environmental Site Assessment Questionnaire (copy included in Appendix B). Mr. O'Keefe also provided several environmental documents and reports relative to Parcel B for KSK to review on December 20, 2011(discussed in Section 2.4, above).

Mr. O'Keefe reported that he was unsure of the exact age of the facilities at Parcel B but he believed the KTS building and facilities were built after 1941⁴. He noted that there is no hook-up to the county sewer system at the Parcel and the septic and cesspool systems are in place.

Mr. O'Keefe reported that there are no USTs on the parcel but that there are the following current and former ASTs:

- Four molasses ASTs (two out of use).
- The currently empty former oil/molasses AST in the Olekoi Area (former Standard Oil AST).
- Two asphalt tar ASTs, one now gone and one currently partially demolished, SE of the Olekoi Area of Parcel B (former Hawaiian Bitumuls and Paving ASTs).
- Tosco Black Oil AST (this AST is immediately adjacent to, but not on, Parcel B). The former fuel loading rack and pipelines associated with this AST are located on Parcel B.
- BEI Hawaii liquid fertilizer ASTs in the SE corner of the Parcel.

⁴ The earliest Sanborn map (Appendix B) showing the KTS building is 1945.

 500-gallon used oil AST within KTS Truck Maintenance & Repair Shop.

Mr. O'Keefe also reported that the following items are currently, or formerly, if noted, present on Parcel B:

- One oil/water separator currently adjacent to the KTS Truck Wash Area.
- Former junk yard (mostly refrigerators, appliances and some car bodies at the Olekoi AST area, since cleaned up by A&B.
- Paints, solvents, used oil and lubricants currently in use at the KTS Truck Maintenance and Repair Shop.
- · Oil and fuel formerly stored in the Olekoi Area.
- Tar/asphalt formerly stored and remnant tar currently at the former Hawaiian Bitumuls asphalt plant area.
- Loose free tar still in the soil at the former Hawaiian Bitumuls asphalt plant.
- Oil-impacted soil currently stockpiled near the molasses tanks.
- Two 55-gallon drums of oil-impacted soil currently stored near the Olekoi AST.
- Fuel pipelines at the Tosco Black Oil Tank and associated fuel loading rack and along Hobron Avenue.

Mr. O'Keefe reported that there are no electrical transformers or hydraulic lifts at Parcel B. He also reported that in addition to the truck maintenance and repair work at the KTS Truck Maintenance and Repair Shop, repair work is probably conducted on cranes at the Maui Crane area of Parcel B and possibly also at the DeCoite Trucking area. He reported that there were no environmental law suits or active or on-going investigations at the Parcel. He reported that he was aware of past off-site releases of petroleum product at both the Chevron and Tesoro fuel tank farms/loading racks.

The current and former oil and asphalt ASTs, pipelines, the KTS Truck Maintenance and Repair Shop activities and usage petroleum product, paint and solvents there, the asphalt spill at the former Hawaiian Bitumuls area, stockpiled/stored oil-impacted soil, former junk yard, Maui Crane and DeCoite Trucking vehicle repair/maintenance operations and the offsite releases of petroleum reported by Mr. O'Keefe are all RECs on and relative to Parcel B.

5.1.2 Parcel B Tenant - Kahului Trucking & Storage (KTS) - Mr. Glen Wilbourn

Mr. Wilbourn is the Executive Vice President and General Manager of KTS and has worked at KTS for six years. KSK interviewed Mr. Wilbourn by telephone on December 16, 2011 and recorded all comments and answers to interview questions on an Environmental Site Assessment Questionnaire (copy included in Appendix B).

Mr. Wilbourn reported that KTS occupies the entire western half of Parcel B (see Figure 4). KTS is a trucking and storage company whose primary business is the trucking and transportation of molasses. The KTS maintenance/repair shop located at the Parcel also performs commercial truck maintenance and repair for paying customers in addition on its own trucks. Mr. Wilbourn reported that the KTS site at Parcel B has been in operation for over 100 years and provided railroad car maintenance and repair services for the Kahului railroad back in the 1930s⁵.

KTS has the following operations/facilities at Parcel B:

- Business operation and accounting offices.
- Truck Maintenance and Repair shop:
 - Bulk engine and lube oil storage;
 - Two solvent parts washing stations;
 - Hydraulic lifts (above grade, electric; no sub-grade lift cylinders).
- Truck wash area.
- · Used oil storage.
- Two 10,000-ton molasses above ground storage tanks (ASTs)
- Two empty ASTs.
- Molasses pump and transfer station.
- Open areas for parking/storing truck and transport container chassis.

Mr. Wilbourn reported that there are no environmental reports for KTS but that they maintain environmental permits, a Spill Prevention and Countermeasures and Control Plan (SPCC) and material safety data sheets (MSDS) on site for the use and storage of used oil and petroleum products. He reported that KTS is connected to the Maui county water and uses a cess pool at the molasses tank area and a septic system at the service shop

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⁵ Sanborn maps (Appendix B) indicate that railroad operations (roundhouse) were conducted to the west of Parcel B across Hobron Avenue on A&B's Parcel A.

area. Mr. Wilbourn reported that there was no storm water or other discharge from KTS. He reported that KTS has no grease traps, floor drains, sub-grade hydraulic lifts (above grade electric lifts only). Mr. Wilbourn reported that KTS has an oil-water separator in the truck wash area to catch any oil washed off trucks. He reported that KTS also has electrical transformers on site but he was unaware of the PCB status of the transformer oil.

Mr. Wilbourn reported that the KTS area of Parcel B was currently used for, and had been for the past 100 years, mechanical maintenance and auto repair. He was not aware of any spills of the engine oil, lube oil or solvents used at KTS and was not aware of any ponds or lagoons, soil stockpiles, waste debris or environmental cleanup or remedial actions or any environmental law suits associated with the Parcel. He reported that there is a 12-inch buried molasses pipeline in the molasses storage tank area and that he was aware of a buried Chevron fuel line that ran along Hobron Avenue.

Mr. Wilbourn's comments indicate RECs at the site in the form of current use and storage of bulk petroleum products, current and past truck maintenance and repair practices and the Chevron fuel pipeline running along Hobron Avenue.

5.1.3 Parcel B Tenant - Fed Ex Ground - Mr. Steven Okada

Mr. Okada is the Station Manager for a small Federal Express Ground (FedEx) delivery/package warehouse. The FedEx facility at Parcel B is located within a small, roughly 10,000 square feet area, within the eastern wing of the KTS main building. KSK did not speak to Mr. Okada but was provided with his completed Questionnaire on December 21, 2011 by KTS personnel. Mr. Okada listed that he has been Station Manager for year and that he is only familiar with the warehouse space FedEx rents from KTS. Mr. Okada completed his questionnaire on December 16, 2011 (copy included in Appendix B).

Ms. Okada answered "not known", "not to my knowledge" or "not that I've seen" to almost every question on the KSK environmental questionnaire. Mr. Okada did report; however, that there are no floor drains in the FedEx leased space and wrote that "floor drain filled with concrete" and that there was an SPCC plan for the property ("yes, for FedEx protocol"). None of Mr. Okada's comments indicate a REC at the FedEx Ground area of Parcel B.

5.1.4 Parcel B Tenant - BEI Tank Farm - Ms. Shirley Zhai.

Ms. Zhai is Regulatory Compliance Officer for BEI Hawaii and has responsibility for environmental affairs/issues for the company. Ms. Zhai has been in this role for the last 10 years. KSK interviewed Ms. Zhai by telephone on December 14, 2011 and recorded all comments and answers to interview questions on an Environmental Site Assessment Questionnaire (copy included in Appendix B).

Ms. Zhai reported that BEI tank farm, located in the extreme southeast corner of Parcel B is a bermed, AST farm used for storing liquid fertilizer, only. The tank farm contains three 15,000-gallon, one 17,000-gallon and three 110,000-gallon ASTs; however, only two tanks are in use. One of the 15,000-gallon tanks holds 10,000 gallons of "10-34-0" (ammonium phosphate fertilizer) and one of the 110,000-gallon tanks holds 25,000 gallons of "UAN 32" (ammonium nitrate and urea mix fertilizer).

Ms. Zhai reported that no environmental reports or permits are prepared for the regarding the tank farm other than the annual EPCRA (Emergency Preparedness and Community Right to Know Act) reporting to HDOH on what fertilizers and volume are stored there. Ms. Zhai reported that the BEI Tank Farm is connected to Maui county water but there is no sewer system connection there. All Tank Farm storm water runoff is contained because the Tank Farm is enclosed within a 4-feet high cinder block berm. Ms. Zhai reported that the Tank Farm has no grease traps, floor drains, hydraulic lifts, sumps, oil-water separators, electrical transformers. She was not aware of past use of the Site for mechanical maintenance, repair or construction shops or auto repair, junk yard or any other commercial operation.

Ms. Zhai was not aware of any pits, ponds, lagoons, soil or waste piles or wetlands at the Site. She reported that the only chemicals stored at the Site were the liquid fertilizers discussed above.

Ms. Zhai stated that runoff from other properties onto the BEI Hawaii area of Parcel B and was not likely because of the berm surrounding the Tank Farm. Also, Ms. Zhai was not aware of any past environmental violations, lawsuits or cleanup or removal actions related to the Site.

KSK considers the 35,000 gallons of liquid fertilizer stored at the BEI Hawaii area a REC due to its location relative the adjacent Mauoni Ponds.

5.1.5 Parcel B Tenant - DeCoite Trucking - Mr. Richard DeCoite

Mr. DeCoite is the owner of DeCoite Trucking, a small trucking and construction company that uses a portion of Parcel B to park trucks, loaders and associated parts and construction equipment. KSK interviewed Mr. DeCoite by telephone on December 14, 2011 and recorded all comments and answers to interview questions on an Environmental Site Assessment Questionnaire (copy included in Appendix B).

Mr. DeCoite reported that DeCoite uses their area of Parcel B, located at the southeastern portion of Parcel B, to store and service trucks, loaders and other construction equipment. DeCoit has a few shipping containers at their area of Parcel B to store parts and equipment. DeCoite stores 200- to 300-gallons of oil and an additional 200- to 300-gallons of used oil in small above ground storage tanks for/from their equipment.

Mr. DeCoite reported that there are no environmental reports or permits related to their area of Parcel B. Mr. DeCoite reported that there is a connection to the Maui county water but there is no county sewer system connection in this area of Parcel B (DeCoite uses porta-potties). There is storm water runoff from the DeCoite area after heavy rain fall. Mr. DeCoite reported that DeCoite Trucking area has no grease traps, floor drains, hydraulic lifts, sumps, oil-water separators, electrical transformers. He was not aware of past use of the Site for mechanical maintenance, repair or construction shops or auto repair, junk yard or any other commercial operation, but reported that Kahului Trucking has been at the Parcel B area for years.

Mr. DeCoite was not aware of any pits, ponds, lagoons, soil or waste piles or wetlands at the Site and that no chemicals were stored at DeCoite Trucking other than oil and used oil.

Mr. DeCoite was not aware of storm water or spill runoff from other properties or of any past environmental violations, lawsuits or cleanup or removal actions related to the parcel.

DeCoite's oil storage and truck maintenance and repair activities at Parcel B are considered RECs.

5.1.6 Parceo B Tenant - Maui Crane - Paul Kirby

Paul Kirby is the name provided to KSK by A&B as the contact for Maui Crane. KSK contacted Mr. Kirby by phone on multiple occasions but was

unable to schedule an interview with him or any other representative of Maui Crane.

5.1.7 Parcel B Tenant - Hale Nanea, Royal Order of Kamehameha I – Clifford Alakai'i

Clifford Alakai'i is the President of the Royal Order of Kamehameha I, a community/cultural organization that operates the Hale Nanea Community Center, a single story building and surrounding grounds, located at the water's edge at the extreme northeast corner of Parcel B. KSK interviewed Mr. Alakai'i by telephone on December 14, 2011 and recorded all comments and answers to interview questions on an Environmental Site Assessment Questionnaire (copy included in Appendix B).

Mr. Alakai'i reported that the Hale Nanea Community Center is a meeting place for community and cultural activities, hula classes, mens groups, Hawaiian culture classes and community group meetings. He reported that the building was used by the U.S. military as an officer's club during WWII.

Mr. Alakai'i reported that there are no environmental reports or permits related to the Hale Nanea area of Parcel B. He reported that there is a connection to the Maui county water and that the community center is connected to an on-site septic system. He reported that there is occasional minor flooding at portions of the area after heavy rain fall.

Mr. Alakai'i reported that the Hale Nanea area has no grease traps, fuel storage tanks, pipelines, floor drains, hydraulic lifts, sumps, oil-water separators, electrical transformers. He was not aware of past use of the area for mechanical maintenance, repair or construction shops or auto repair, junk yard or any other commercial operation, other than as an officer's club during WWII. He was not aware of any pits, ponds, lagoons or wetlands at the site but mentioned that there was drainage ditch/ponds adjacent to Hale Nanea to the east. He reported that there were no soil or waste piles at the Site and that no chemicals were stored at the site but believed that the site may have, at least partially, old construction debris buried as fill material.

Mr. Alakai'i was not aware of storm water or spill runoff from other properties or of any past environmental violations, lawsuits or cleanup or removal actions related to the parcel but thought it was possible that the community center building may contain lead based paint and asbestoscontaining material since it is more than 60 years old.

None of Mr. Alakai'I's comments indicate a REC at the Hale Nanea area of Parcel B.

5.1.8 Parcel B Tenant - Lengo Construction - Len Gomes

Mr. Gomes is the president/owner of Lengo Construction, located just south of the Hale Nanea Community Center at the eastern side of Parcel B. Mr. Gomes operates an office at the site where he manages his construction business. He also maintains a single shipping container for storage of construction material. Mr. Gomes subleases part of this area of Parcel B to the following four additional businesses:

- Cruiser Phil a downhill bicycle rental business with associated bicycle repair shop.
- Maui Skimmer a custom surf- and skim board manufacturer.
- Aloha Limousine A limousine and taxi service (no auto repair or maintenance activities).
- BioBeetle/Maui Recycling BioBeetle rents biofuel-powered Volkswagons (no repair or servicing activity). Maui Recycling accepts and stores recycled cans, bottles, paper for preparation for off-site recycling.

Mr. Gomes reported that there are no environmental reports or permits associated with this area of Parcel B. He reported that there is a connection to the Maui county water and that there is an on-site cesspool.

Mr. Gomes reported that there no grease traps, floor drains, hydraulic lifts, sumps, oil-water separators, electrical transformers or pipelines at his or sub-tenant businesses. He was not aware of past use of the area for mechanical maintenance, repair or construction shops or auto repair, junk yard, above- or below-ground fuel tank or any other commercial operation, other than those conducted by his sub-tenants. He was not aware of any pits, ponds, lagoons or wetlands. He reported that there were no soil or waste piles at the Site and that no chemicals were stored at the site but reported that junk cars were formerly dumped in the area and that he personally has hauled off and removed over 200 junk vehicles.

Mr. Gomes was not aware of storm water or spill runoff from other properties or of any past environmental violations, lawsuits or cleanup or removal actions related to his area of the Parcel.

None of Mr. Gomes comments indicate a REC at the LenGo Construction area of Parcel B, other than the former junk car disposal.

5.1.9 Parcel B Tenant - Reynolds Recycling, Inc. - Georgie Juan

Georgie Juan is a Buyer for Reynolds Recycling. Reynolds Recycling occupies a small area in the southeast corner of Parcel B between the eastern end of the KTS main building and the BEI tank farm. KSK did not speak to Ms. Juan but was provide with her completed Questionnaire on December 21, 2011 by KTS personnel. Ms. Juan did not list what a Buyer position is or how long she has been associated with Reynolds Recycling. Ms. Juan completed her questionnaire on December 16, 2011 (copy included in Appendix B).

Ms. Juan answered "I don't know" or "not to my knowledge" to every question so no new information was provided in her completed questionnaire.

None of Ms. Juan's comments indicate a REC at the Reynold's Recycling area of Parcel B.

5.2 Interviews with Regulatory and Other Agencies

KSK called persons at various departments within the Hawaii Department of Health and other agencies to inquire about current agency involvement and/or concerns at or near the Site.

5.2.1 Hazardous Waste Section, SHWB, HDOH – Ms. Grace Simmons.

Ms. Simmons, Supervisor of the Hazardous Waste Section of the Solid and Hazardous Waste Branch of the Hawaii Department of Health was not aware of any ongoing investigations or current interest in Parcel B or Parcel B area by the Hazardous Waste Section of the Solid and Hazardous Waste Branch of HDOH.

5.2.2 HEER Branch, HDOH - John Peard

John Peard, is a Remediation Project Manager with the Hazard Evaluation and Emergency Response Branch (HEER) of the Hawaii Department of Health. Mr. Peard reported that HDOH is aware of bulk fuel storage and numerous fuel pipelines in and around Parcel B, and the entire harbor area, and reported that HEER is in the early stages of gathering information on properties around Kahului Harbor and believes there is a strong possibility that "co-mingled [fuel/oil] plumes" may be present on the shallow

groundwater in the area. Mr. Peard reported that HDOH has no immediate plans to investigate properties in the harbor area but that they are beginning to get organized to that end.

HDOH's belief and interest in the possible existence of "comingled [petroleum product] plumes" in the Kahului Harbor area is a REC relative to Parcel B.

5.2.3 Maui Fire Department – Capt. Paul Haake

KSK submitted a written request to the Maui Fire Department (MFD) requesting any records they may have on file for Parcel B regarding USTs, ASTs or other environmental issues or incidents. Captain Paul Haake provided KSK, via USPS Mail, copies of three Incident Reports relating to Parcel B. None of the three incidents cited in the MFD Incident Reports were on Parcel B. All were located across Hobron Ave on or near A&B Parcel A. The three incidents were:

- Incident 2001-0002527-000 This incident, which occurred on August 7, 2001, at the Tesoro fuel storage facility (140A Hobron Avenue) and was a MFD response "for a smoke detector activation in rear lab area. No property damage. This incident was not on Parcel B and located at the "Tesoro fuel storage facility".
- Incident 2002-0001137-000 This incident, which occurred on April 11, 2002, was a "fuel burner/boiler malfunction, fire confined" at 140B Hobron Avenue which was reported as the "warehouse area for HSI Electric". The incident was a small fire due caused when curing epoxy in an oven. No property damage. This incident was not on Parcel B. The Incident Report indicated that the incident was at HIS Electric at Tesoro at 140B Hobron Avenue.
- Incident 2007-0009358-000 This incident, which occurred on December 11, 2007, was an "incinerator overload or malfunction, fire contained" at 140 Hobron Avenue. MFD dispatched fire engines to a "smoke alarm activation at Tesoro, upstairs". MFD found smoke coming out of a furnace at American Electric due to a "smoldering motor". Damage was estimated at \$30,000. This incident was not on Parcel B. The Incident Report indicated that the incident was at American Electric at Tesoro at 140 Hobron Avenue (which Google maps shows as being the location of the Matson shipped car parking lot.

None of the MFD off-site incidents constitute a REC at Parcel B.

6.0 SITE RECONNAISSANCE

KSK conducted a physical reconnaissance of Parcel B on December 20, 2011. Permission to access the Site, via a Right-Of-Entry agreement, was given by Mr. Glenn Wilbourn of KTS and Mr. Charles Loomis of A&B Properties, Inc. KSK was escorted by A&B's Director of Environmental Affairs Mr. Sean O'Keefe, A&B Properties representative Mr. Jason Koga and KTS's Mr. Mike Mendoza. All observations reported here are based on the Site's condition at the time of KSK's reconnaissance on December 20, 2011. All areas of the Site were accessible to KSK except the interiors of a few storage sheds and several shipping containers parked on Site used by KTS and the various other tenants for storage. The Site layout and surrounding area are shown in Figure 9. Specific items observed by KSK during the December 20, 2011 reconnaissance are shown in Figure 10. Photographs of the Site, taken during KSK's reconnaissance are included in Appendix A.

On December 20, 2011 KSK observed Parcel B to be an active industrial property that included KTS facilities and various subtenants. The primary KTS facilities and tenant operations included the following:

- KTS main building and operations which includes:
 - KTS business offices:
 - KTS Penske truck rental operations.
 - KTS Truck Maintenance and Repair Shop, truck wash and paint shop;
 - KTS truck parts storage;
 - Tenant business warehouse Federal Express Ground.
- KTS bulk molasses above ground storage tanks and associated pump station (with sub tenant Kaiwaa, a fiberglass ocean canoe manufacturer).
- Tenant businesses/operations which included:
 - DeCoite Trucking a construction and trucking operation;
 - Maui Crane a mobile crane service;

- Reynolds Recycling a drop off and loading area for paper, plastic and cans recycling;
- BEI Hawaii liquid fertilizer AST tank farm;
- LenGo construction with the following sub-tenants:
 - Cruiser Phils a down-hill bicycle tour business;
 - Aloha Limosine a limousine service:
 - Maui Skimmers a surf and skim board manufacture;
 - BioBeetle/Maui Recycling a Volkswagen car rental and recycling business.
- Hale Nanea a community center.

These business and tenant operations are discussed in detail below.

6.1 Kahului Trucking and Storage (KTS)

KTS operations occupy the entire western half of Parcel B. The various KTS operations and activities are discussed separately below.

6.1.1 KTS Penske Rental Truck Parking

Three Penske rental trucks were parked on a paved area at the extreme southwest corner of Parcel B, located near the corner of Hobron Avenue and Amala Place. These trucks are rented to paying customers and serviced in the KTS Truck Maintenance and Repair Shop (see below).

6.1.2 KTS Main Office and Service Shop Building

This KTS office and Truck Maintenance and Repair Shop are located in the V-shaped steel-framed building in the extreme southwest corner of Parcel B, fronting both Hobron Avenue and Amala Place (Photos 1 & 2). The building contains administrative offices, the KTS truck Maintenance & Repair shop, parts warehouse, storage and tenant business Federal Express Ground.

6.1.3 KTS Offices

The KTS offices are located in the center part of main KTS building and include administrative offices for KTS, the service shop, adjacent parcel bulk sugar operations and other administrative functions. The offices

contained typical office set ups of work space desks, chairs, computer systems, and conference and break rooms.

6.1.4 KTS Truck Maintenance & Repair Shop

The KTS Truck Maintenance and Repair Shop is located at the northern end of the KTS building and occupies about one third of the building (Photos 3 - 9). The Shop is where KTS and paying customer's trucks are serviced and both light and heavy maintenance and repair work is done. The Shop is a large, open garage area with a concrete floor and seven service bays (Photos 3 & 4) on the eastern side of the building and three service bays on the northern end. A long work bench runs along the western interior wall of the shop (Photo 5). The shop has five electric truck hoists/lifts (without subgrade hydraulics) and a compressed air system to power pneumatic tools. The shop had all the equipment, tools and appurtenances of a typical heavy equipment and truck maintenance shop. KSK observed the following items within the KTS Truck Repair & Maintenance Shop:

- Several trucks, a front-end loader and a heavy tractor, within service bays undergoing maintenance or repair work (see Photo 4).
- Heavy-duty forklift (Photo 6).
- Welding equipment and associated acetylene tanks (Photo 7).
- Large air compressor.
- · Portable truck battery jumper station.
- Several portable truck jacks.
- Used oil drain rack (Photo 8).
- Parts washing/cleaning rack with solvent collection tray (Photo 8).
- A 55-gallon steel drum labeled "KT&S Crushed Used Oil Filters" (Photo 8).
- One 55-gallon drum of lube grease (Photo 8).
- One approximately 500-gallon steel double-walled used oil tank (Photo 9).
- Fenced-in storage area with boxes of motor oil and antifreeze and 5-gallon poly containers of gasoline/diesel fuel.
- An elevated mezzanine with a single office space and parts storage cage.

KSK considers the current and historic use and storage of bulk petroleum products and solvent washers in the Service Shop a REC.

6.1.5 KTS Truck Wash Area

The KTS Truck Wash Area is adjacent to the open covered work/truck parking area (Photo 10), located just to the east of the Truck Maintenance & Repair Shop. It is an open, uncovered concrete area surrounded on two sides by a concrete berm to direct wash water to an oil-water separator (Photo 11). A heated water pressure water is located in a shed just off to the side of the Wash Area and is used for washing trucks. Dirt and sludge washed from trucks is shoveled from the wash area and stored in drums kept within a caged area at the Truck Wash (Photo 12). KSK considers the Truck Wash Area and associated oil/water separator a REC.

6.1.6 KTS Touch-Up Paint Work Shed

The KTS Paint Work Shed is a partially open corrugated aluminum shed across from the Truck Wash Area where small touch up work and truck wheels are painted after repair work.

6.1.7 KTS Storage Sheds

The KTS Storage Sheds are a series of long, narrow interconnected corrugated aluminum storage shed building with several separate storage bays located directly behind the eastern arm of the KTS Main Office Building (Photo 13). Wooden pallets were stacked in this area. The southeastern end of the storage sheds are in disrepair and collapsing (Photo 14). KSK did not have access to the interior of the storage sheds.

6.1.8 KTS Truck Parts Department and Parts Storeroom

The KTS Truck Parts Department is located in center of main KTS building adjacent to the Parts Store Room at the eastern arm of the building (Figure 5). The Parts Storeroom is a large open high-roof storage warehouse with rows of shelving and open storage areas for hundreds of truck parts. The Parts Store Room contained the following:

- Several shelves of neatly stored and organized truck parts such as air hoses, clamps, seals, oil filters, springs, values, air filters and hundreds of miscellaneous small parts (Photo 15).
- Shelves of new truck wheel rims, headlights and brake pads (Photo 16).

- Truck batteries (within a controlled access fenced/cage area) (Photo 17).
- Pallet with 30+ 50-pound bags of oil absorbent.
- Pallet with cases of antifreeze (within a controlled access fenced/cage area).
- Engine/transmission parts.
- Miscellaneous truck equipment, parts and mechanic health & safety gear.

6.2 FedEx Ground Parcel Loading/Sorting Area

The Fed Ex Ground Parcel Loading/Sorting Area is located in the center of the southern wing of the main KTS building between the Parts Storage Warehouse (Photo 18, Appendix A). It is an open warehouse space where Fed Ex parcels are temporarily stored, sorted and loaded on trucks for distribution on Maui.

6.3 Open Storage Area

The KTS Open Storage Area exists behind (north of) both wings of the KTS building. This area is used for parking trucks, storing parts and equipment and has the long row of interconnected storage sheds. This area also provides the access route to the FedEx Ground warehouse portion of the KTS building (Photo 18). The KTS Open Storage Area extends to north beyond the northern end of the western wing of the KTS building towards the Molasses Tanks/Plants. Dozens of Matson container chassis are parked/stored in this northern open storage area (Photo 19). A stockpile of reportedly (A&B's Sean O'Keefe) petroleum-impacted soil, covered with plastic sheeting, is present in this area pending future off-site disposal (Photo 20).

The Open Storage Area also extends to the area just north of the western end of the KTS Storage Sheds (Photo 21) and includes miscellaneous equipment, parts, a work bench (Photo 22), storage container, junk piles, a trailered sail boat, fuel/oil storage including two 288-gallon oil ASTs and an approximately 350-gallon AST, (oil or fuel), contained inside a roll-off bin that is functioning as secondary containment and another fuel tank labeled "empty" (Photo 23).

KSK considers the stockpiled petroleum-impacted soil in the KTS Open Storage Area just southeast of the Molasses Tank Area is a REC as well as the fuel/oil ASTs.

6.4 Former Olekoi & Hawaiian Bitumuls Area

The former Olekoi and Hawaiian Bitumuls Area is located at the northern end of the center of Parcel B and includes a large (100 feet diameter and 30 to 40 feet high) open and empty former oil/molasses AST (fomer Standard Oil AST) (Photo 24) and the remains of smaller (50 feet diameter, 20 feet high) AST with no top about one fourth of the AST wall missing (Photo 25). The large AST was empty but had four large sail boats stored in side. The smaller partially demolished AST (former asphalt tar AST used by Hawaiian Bitumuls) was an apparent former asphalt tank as three to four feet of asphalt was still present in the bottom. A spill of asphalt apparently occurred in the past as asphalt is present in a low-lying portion of this area near the asphalt AST.

The shed and several smaller objects nearby shown in this area of Parcel B in the Google Earth image (Figure 4 & 9) were not present at the time of KSK's site reconnaissance. The area between the two ASTs appeared recently cleared with open, exposed sandy soil.

The former Standard Oil (Olekoi) AST, the spilled asphalt in soil and the remnant asphalt within the remains of the smaller, partially demolished AST are RECs in this area of Parcel B.

6.5 KTS Molasses Plant and Storage Tank Area

The Molasses Plant and Storage Tank Area is located at the extreme northwestern corner of Parcel B. This area contains four large (cylindrical above ground storage tanks (ASTs) (two 10,000-ton molasses ASTs⁶ approximately 100 feet in diameter, 30-40 feet high), in use (Photo 26 & 27), two smaller empty ASTs that were not in use and one cubical, partially buried molasses transfer tank where the molasses-carrying trucks off-load molasses transported from the sugar mill (Photo 28). The ASTs are located adjacent to the Molasses Plant. A fiberglass canoe manufacture (Kaiwaa) leases a portion of the Molasses Plant (Photo 29).

Surface fuel piping from a former fuel loading rack associated with the adjacent, off-Parcel, former Tosco Black Oil AST is located adjacent to the southern-most molasses AST (Photo 30), at the Parcel boundary. A&B reports/documents (see Section 2.4,) show buried fuel lines running

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⁶ Sean O'Keefe reported to KSK during the December 20, 2011 site reconnaissance that one of the large molasses ASTs had ruptured several years ago and molasses flowed onto the ground and covered a large portion of the molasses tank area.

from the Tosco Black Oil AST to the on-Site former loading rack and beyond beneath the northwestern wing of Parcel B (Figure 10).

This former fuel loading rack/station and associated pipelines which are likely still present and may contain residual fuel are current and historic RECs at the Parcel.

6.6 DeCoite Trucking

DeCoite Trucking – DeCoite Trucking uses a large open area in the center of Parcel B, just north of the KTS Storage Shed, for parking various trucks and pieces of heavy equipment, shipping containers used for equipment/materials storage and a cement works area. On December 20, 2011 the area contained four heavy-duty front-end loaders (Photo 31), seven shipping containers used for equipment and material storage (Photo 32) (see DeCoite interview discussion, section 5.1.6), a portable office building, a large boat hull and scattered miscellaneous junk, trash, buckets, engine blocks, engine parts, truck tires/wheels, wooden pallets etc. The DeCoite cement works area contained a storage shed, stockpiled pallets and lumber/forms, portable cement mixer, fork lift, stockpiled sand and gravel and freshly formed concrete piers and other concrete building structures (Photo 33)

6.7 Maui Crane

Maui Crane leases a small portion of the eastern corner of Parcel B, just north of the BEI Hawaii Liquid Fertilizer Tank Farm (Figure 10). At the time of KSK's site reconnaissance there were three large mobile cranes, a flat-bed truck and miscellaneous junk piles in the area (Photo 34). The area had an open covered work/equipment storage area and portable office building (Photo 35). The area also had eight 55-gallon unlabeled poly drums stored on pallets, three large portable generators stacks of wooden pallets, miscellaneous equipment and a large (approximately 1,000-gallon) apparently empty AST (Photo). Miscellaneous equipment and parts such as crane tires/wheels, lumber, cables, scrap metal, trash cans/drums and trash were scattered randomly throughout the area. KSK considers the unlabeled 55-gallon poly drums and crane maintenance activities as RECs.

6.8 LenGo Construction and Sub-Tenant Area

LenGo Construction is located along the eastern boundary of Parcel B, just north of Maui Crane. The LenGo Construction area includes LenGo Construction offices and LenGo sub-tenants Maui Skimmers, Cruiser Phils', Aloha Limousine and BioBeetle/Maui Recycling.

6.8.1 LenGo Construction

LenGo Construction operates a small office used in the operation of the business and a single small storage shed and a portion of the gravel-covered parking lot (Photo 36).

6.8.2 Cruiser Phil's Volcanoe Riders

Cruiser Phil's is a bicycle touring business that takes tourists to the top of Haleakala for downhill bicycle rides and operates a small office, logo sales shop (Photo 37), bicycle storage and repair shop. The company also parks tourist transport buses and several trailers used for hauling bicycles at the parking lot outside the office/shop area (Photo 38).

6.8.3 Aloha Limousine

Aloha Limousine area maintains an office, storage shed and laundry room and parks several taxis and limousines in the area (Photo 39). Aloha Limousine personnel on site at the time of KSK's site reconnaissance reported that no auto maintenance or repair work is conducted at the site and that taxis are only parked and dispatched from the area.

6.8.4 BioBeetle/Maui Recycling

This area, located immediately south of Aloha Limousine along the eastern portion of Parcel B, contained an office building and parking area for rental cars (BioBettle rents out bio-diesel-powered Volkswagens) (Photo 40). This area also had dozens of recycling bins stored in the back of the area (Photo 41).

6.8.5 Maui Skimmers

Maui Skimmers is located in a small shop at the back of the Aloha Limousine area. Maui Skimmers manufactures custom surf and skim boards. The shop has two shaping rooms and a glassing room (Photo 42). The facility had cans and containers of resin and paint stored and in use within the shop.

6.9 Hale Nanea Community Center

The Hale Nanea Community Center is located at the northern end of the eastern-most arm of Parcel B. It is operated by the Royal Order of Kamehameha I and consists of a single low-roofed wooden building used for community meetings, hula classes and organized events (Photo 43). It

contains a large meeting hall, kitchen and various other associated rooms and has a large gravel parking lot on the south side and a well-maintained grassy area to the north of the building for outdoor events that extends to beach. An imu (Hawaiian barbeque pit) is located in the open grassy area.

6.10 BEI Hawaii Liquid Fertilizer Tank Farm

This BEI Hawaii area has seven large above ground storage tanks in the extreme southeast corner of Parcel B, three 15,000-gallon, one 17,000-gallon and three 110,000-galon ASTs. The seven ASTs are located within a four-feet high concrete-bermed secondary containment fence (Photo 44). According to BEI personnel (see Interviews, Section 5.1.5) only one of the 15,000-gallon ASTs is in use and contains 10,000 gallons of 10-34-0 ammonium phosphate fertilizer, and only one of the 110,000-gallon ASTs is in use and contains 25,000 gallons of UAN 32, an ammonium nitrate and urea fertilizer. All other ASTs are reportedly empty and not in use. KSK considers the liquid fertilizer tank farm a REC.

6.11 Reynolds Recycling Center

The Reynolds Recycling Center is located at the southern boundary of Parcel B along Amala Place, just to the west of the BEI Hawaii Fertilizer Tank Farm. The recycling redemption center contained a tented office space, three shipping containers and a trash compactor (Photo 45). The recycling center reportedly redeems plastic bottles and aluminum cans for cash.

6.12 Amala Place KTS/Open Storage Area

This open storage/parking area is located along southern boundary of Parcel B, just off Amala Place, immediately adjacent to the eastern end of the KTS Building and west of the Reynolds Recycling Area. A boat, two cars and three large dump trucks were parked in this area and piles of aluminum siding and framework were stockpiled (Photo 46).

KSK was not able to inspect the interior of any of the containers or the KTS Storage Shed on the Parcel to assess the presence of RECs. KSK could also not discern if some of the older vehicles parked in the open areas of Parcel B were abandoned or in use.

Buried petroleum pipeline(s), running north-south is/are present along western boundary of Parcel B along Hobron Avenue. KSK was not able to discern if the pipeline is located on Parcel B property or is within an easement immediately adjacent to the Parcel boundary. If the pipeline is

located off-site in a public utility easement, it is only a few feet off site. A sign posted at the side of Hobron Avenue, at about the center of the western arm of the main KTS Service Shop building read: "Warning Petroleum Pipelines, Chevron USA". KSK considers these buried pipelines both an on- and off-site REC.

6.13 General Site Observations

Utilities and Services

Site water is provided by Maui County Department of Water multiple septic and cesspool systems are present throughout the Parcel.

Hazardous Chemical Containing Materials and Used Oil

There a few miscellaneous small quantity potentially hazardous items at the Site, generally in the various locations within the Parcel as discussed above. Miscellaneous chemical/waste items observed by KSK included the following:

- Paints and resins at the Maui Skimmers and Kaiwaa surfboard shops
- Truck batteries in the KTS Truck Repair & Maintenance Shop and parts warehouse
- Cases of new oil and antifreeze stored within the KTS Truck Repair & Maintenance Shop and parts warehouse.
- Used oil/sludge storage in KTS Truck Maintenance and Repair Shop Truck Wash Area, Open Storage Area
- Fuel at the KTS open storage area in buckets, fuel cans.
- Miscellaneous cans, containers, buckets of fuel and/or oil throughout the KTS open storage and Maui Crane areas.

USTs, ASTs, Oil/Water Separators, Pipelines

KSK observed several areas with ASTs, fuel tanks and other petroleum product storage areas:

- 500-gallon used oil AST inside KTS Truck Maintenance & Repair Shop.
- 55-gallon drums of lube oil, oil, spent filters and other inside KTS Truck Maintenance & Repair Shop.

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- 55-gallon drums of used oil and sludge collected from KTS Truck Wash Area.
- Oil/water separator located behind the KTS Truck Wash Area.
- 288-gallon used oil/fuel ASTs in the KTS open area.
- Partially demolished asphalt tar AST in the center of the parcel with asphalt still present.
- Bulk molasses storage tanks at the Molasses Plant/Tank Area.
- Bulk liquid fertilizer ASTs at the BEI Hawaii fertilizer tank farm.
- Buried fuel pipelines running beneath the western wing of Parcel B associated with the former off-site Tosco Black Oil Tank.
- Buried Chevron fuel line running along the western boundary, parallel to Hobron Avenue.

All of these items were discussed above and with the exception of the molasses tanks, are RECs

Drains

No drains were observed at Parcel B.

Indication of PCB Containing Materials

KSK did not observe any transformers at the Parcel.

Chlorofluorocarbons (CFCs)

KSK observed no signs of any equipment or structures on Site that would contain chlorofluorocarbons although there are possible CFC-containing air conditioners within the KTS office building.

Stains and Chemical Odors

No stains were observed and there were no noticeable odors during KSK's site reconnaissance.

Stressed Vegetation

There were no signs of stressed vegetation at or adjacent to the Site, other than dead ironwood trees (next to live ones) growing within the partially demolished former asphalt AST.

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6.14 Adjacent Properties

KSK was able to walk the public areas of the adjacent properties, the Site's entire boundary and was able to perform an offsite visual inspection of the properties located immediately adjacent to the Parcel to observe visible environmental conditions. The boundary and surrounding areas of the Site are shown in Figure 9 and in Photos 47 - 52, Appendix A.

The ocean shoreline borders Parcel Bat the extreme northeast corner. The eastern side of the Parcel is border by Mauoni Ponds and associated drainage canal (A&B Parcel C) (Photo 47). Maui Crane has cranes and other equipment stored along the western banks of the drainage canal close to Amala Place.

The Cash n'Carry Warehouse (a Valley Isle Produce retail outlet) is located kitty-corner to Parcel B, across Amala Place, to the southeast (Photo 48). Directly south of Parcel B, across Amala Place, is a parking lot for the Cash n'Carry Warehouse, directly behind which is a large bulk fuel storage facility, with a fuel truck loading rack and associated fuel piping, operated by Chevron with at least 14 large ASTs (Photo 49).

A Matson-owned parking lot, where vehicles shipped on Matson ocean transport ships were parked, was located kitty-corner to Parcel B, across Amala Place.

KTS large Bulk Sugar Storage warehouses and associated facilities occupy the large lot located west of Parcel B, across Hobron Avenue (A&B Parcel A) (Photo 50). Just north of the Bulk Sugar Storage facility, immediately west of the Molasses Plant/ASTs portion Parcel B, across Hobron Avenue, is the Tesoro fuel tank farm and associated fuel truck loading rack (Photo 51). This tank farm has eight large bulk fuel ASTs and associated fuel piping.

The Port of Kahului is located kitty-corner to Parcel B to the northwest and the Maui Electric Company (MECO), with electrical generators, bulk fuel storage tanks and associated fuel pipelines is located immediately north of the Site, between the Parcel and the ocean shoreline (Photo 52).

KSK's Site reconnaissance conducted on December 20, 2011 indicated the following RECs at Parcel B:

- KTS Truck Maintenance and Repair Shop.
- 500-gallon used oil AST inside KTS Truck Maintenance & Repair Shop.

- 55-gallon drums of lube oil, oil, spent filters and other inside KTS Truck Maintenance & Repair Shop.
- 55-gallon drums of used oil and sludge collected from KTS Truck Wash Area.
- KTS Truck Wash area and associated oil/water separator located behind the KTS Truck Wash Area.
- Three 288-gallon used oil/fuel ASTs in the KTS open area.
- Stockpiled petroleum-impacted soil at KTS open area.
- Former Hawaiian Bitumuls partially demolished asphalt tar AST in the center of the parcel with asphalt still present and asphalt tarimpacted soil.
- Former bulk fuel storage at the former Standard Oil AST (Olekoi Area) that may have released oil to the soil/groundwater.
- Bulk liquid fertilizer ASTs at the BEI Hawaii fertilizer tank farm.
- Buried fuel pipelines running beneath the western wing of Parcel B and former fuel loading rack associated with the former off-site Tosco Black Oil Tank.
- Buried Chevron fuel line running along the western boundary, parallel to Hobron Avenue.
- 55-gallon poly drums of unknown liquid contents at Maui Crane area.
- Truck repair activities at Maui Crane and DeCoite Trucking areas.
- Miscellaneous buckets, containers of unknown liquids and petroleum products throughout the KTS Open Storage and Maui Crane areas.

KSK's Site reconnaissance conducted on December 20, 2011 indicated the following RECs at adjacent off-site properties:

- Bulk fuel ASTs and pipelines at the Chevron Tank Farm and loading rack south of Parcel B.
- Bulk fuel ASTs and pipelines at the Tesoro Tank Farm and loading rack west of the northwest end of Parcel B.
- Bulk fuel ASTs, pipelines and industrial electrical generators at the MECO power generation facility immediately north of Parcel B.

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7.0 DATA GAPS

In performing this Phase I ESA, KSK identified certain data gaps. A data gap is a lack or inability to obtain information required by ASTM E 1527-05 despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice (ASTM E 1527-05). KSK identified the following data gaps relating to this Phase I ESA:

- KSK, after multiple attempts, was not able to interview a
 representative of Parcel B tenant Maui Crane and therefore could
 not obtain information on their operations at Parcel B; however,
 KSK had excess to the Maui Crane portion of Parcel B and was
 able to inspect the area. KSK does not consider this data gaps as
 significant.
- KSK did not have access to the interior of several shipping containers parked throughout the Parcel and reportedly used by various tenants for storage. KSK does not consider this data gaps as significant.

8.0 VAPOR ENCROACHMENT SCREENING

As part of the ESA for the Parcel B property KSK conducted a Tier 1 Vapor Encroachment Screening (VES) to identify the likelihood that current or past activities at or near the Site may have resulted in the presence or likely presence of contaminant vapors in the subsurface at the Site that could potentially create a Vapor Encroachment Condition (VEC). To that end, KSK considered the following factors during the ESA review of environmental records and files and their influence on the possibility and/or likelihood of volatile contaminant soil vapors originating on, or migrating to, the Site:

- The future planned use of the Site industrial.
- Possible contaminant sources (numerous active bulk fuel storage facilities with past releases, ASTs, pipelines on and adjacent to the Parcel).
- Location of suspect contaminated properties.
- On-Site soil properties and conditions –sandy loam.
- Depth to groundwater two to three feet.
- Preferential vapor pathways the presence of pipelines, utility corridors, septic/cesspool systems.
- Cleanup status of known contaminated properties.

KSK believes that a VEC likely exists at and near the Parcel and cannot be ruled out, given the presence of the numerous on- and offsite current and former bulk fuel storage tanks, associated buried pipelines on and upgradient of, and adjacent to/near, the Parcel and past releases of petroleum product as discussed in Sections 6.0 and 7.0 above. Although there are no active contaminant releases on file with HDOH at the various Parcel ASTs, off-site bulk fuel storage facilities and pipelines, RECs on, or are located close enough to the Parcel that if unreported release(s) occurred resulting in contaminants reaching the groundwater, contaminants could migrate via the shallow water table to the Parcel and create a VEC.

9.0 CONCLUSIONS AND OPINIONS

KSK has performed this Phase I ESA in conformance with the scope and limitations of ASTM E 1527-05 of the A&B Parcel B Site in Kahului, Maui, Hawaii (TMK: (2) 3-7-011: 017). There were no exceptions to, or deletions from, this practice. KSK's qualifications as an Environmental Professional are included in Appendix D.

Our research consisted of a review of historical and regulatory records, archival maps and aerial photographs, site geology and hydrogeology, interviews with persons knowledgeable of the Site and a physical Site reconnaissance.

The Site is an active industrial site that includes a trucking company and associated maintenance garage with decades of operations with bulk fuel and chemical storage and other industrial tenant businesses adjacent to water's edge of Kahului Bay in Kahului, Maui.

9.1 Recognized Environmental Conditions

KSK's review of State and Federal environmental records, previous environmental reports, State and County property records, historical maps and aerial photographs, personnel interviews and Site reconnaissance conducted December 20, 2011 have revealed evidence of the RECs at and near the Site. These RECs are listed below. Locations of the RECs are shown in Figure 11.

9.1.1 Parcel B RECs

KSK identified the following RECs at the Site:

- Current and historic truck repair activities and bulk oil, lube oil, paint and solvent (parts cleaning) use and storage inside the KTS Service Shop ([1] in Figure 11).
- The storage and use of bulk fuel/petroleum products at Parcel B for several decades at the former Standard Oil AST ([2] in Figure 11).
- Oil storage and truck maintenance and repair activities at both Maui Crane and DeCoite Trucking areas of Parcel B ([3] in Figure 11).
- 500-gallon used oil AST inside KTS Truck Maintenance & Repair Shop ([4] in Figure 11).

- 55-gallon drums of lube oil, oil, spent filters and other inside KTS Truck Maintenance & Repair Shop ([4] in Figure 11).
- Truck wash and associated oil/water separator located at the KTS Truck Wash Area ([5] in Figure 11).
- Former bulk fuel storage and pipeline operations at the fuel loading rack/station the Molasses Tank area of Parcel B associated with the off-Parcel Tosco Black Oil AST, which are likely still present and may contain residual fuel are current and historic RECs ([6] in Figure 11).
- Stockpiled petroleum-impacted soil in the KTS Open Storage Area just southeast of the Molasses Tank Area ([7] in Figure 11).
- Miscellaneous buckets and containers of unknown liquids/petroleum throughout the KTS Open Storage and Maui Crane areas ([8] in Figure 11).
- Oil-impacted soil stored in two 55-gallon drums stored in the Olekoi area ([9] in Figure 11).
- The three 288-gallon and approximately 350-gallon oil/fuel ASTs in the KTS Open Storage Area behind (north of) the KTS Storage Sheds ([10] in Figure 11).
- Former asphalt plant operations, spilled asphalt tar still present in soil and the remnant asphalt tar within the remains of the smaller, partially demolished AST within the former Hawaiian Bitumuls Area ([11 in Figure 11).
- 55-gallon drums of sludge collected from KTS Truck Wash Area ([12] in Figure 11).
- Bulk liquid fertilizer ASTs at the BEI Hawaii fertilizer tank farm ([13] in Figure 11).
- Buried fuel pipelines running beneath the western wing of Parcel B associated with the former off-site Tosco Black Oil Tank ([6] in Figure 11).
- Oil-impacted soil at the former fuel loading rack associated with the off-Parcel Tosco Black Oil AST located on Parcel B near the molasses ASTs ([6] in Figure 11).
- Buried Chevron fuel line running along the western boundary, parallel to Hobron Avenue ([14] in Figure 11).

- Former junk car disposal at the LenGo construction area may have resulted in petroleum-impacted soil.
- Possible heavy metal in soil at former sandblasting in Olekoi area ([15] in Figure 11).
- Possible impacted soil, soil vapor and groundwater from petroleum products from solid/hazardous waste, leaking drums and junk vehicle storage at the Olekoi area ([15] in Figure 11).
- Unlabeled poly drums of unknown liquid at Maui Crane ([16 in Figure 11).
- RECs identified in 2009 by KSK (KSK, 2009) including:
 - The storage of 55-gallon drums of used oil at the KTS used oil storage area.
 - Former auto engine repair tenant business.
 - The above ground fuel storage tank at the tenant business Rainbow Hauling and Excavation.
 - The parking of the Action Fuel petroleum tanker trucks near the BEI Hawaii tank farm.
- The possible existence of "comingled [petroleum product] plumes" believed to exist, by HDOH, in the Kahului Harbor area.

9.1.2 On-Site Historic RECs

- Former use of the site for truck repair for over 60 years which probably used and stored bulk petroleum products and solvents.
- Former Hawaiian Bitumuls asphalt plant operations and tar storage/spill.
- Former bulk fuel storage at the Parcel in multiple ASTs. Large former oil AST at the northern central portion of the Parcel shown on 1927, 1945, 1975, 1980 and 1990 historic Sanbourn maps.
- Former oil spill/leak at former fuel loading rack (on-Parcel) associated with off-parcel Tosco Black Oil AST.

9.1.3 Off-Site RECs

KSK has identified Off-Site RECs near the A&B Parcel B Site. Off-Site RECs identified are:

Off-site DHOH SHW site listed in Section 4.5.

- Off-site HDOH HEER release site listed in Section 4.6.
- Tosco Black Oil Storage tank area and associated buried fuel pipelines near the molasses tanks.
- Tosco Maui Bulk Plant and associated pipelines 0323, 76 Hobron Avenue, Kahului, Maui.
- Tesoro Hawaii Corporation bulk fuel storage, fuel loading rack and associated pipelines, 140 Hobron Avenue Unit A, Kahului, Maui.
- MECO Kahului Generating Station bulk fuel storage, past releases and pipelines, 200 Hobron Avenue, Kahului, Maui.
- Shell Oil Products US Kahului Terminal bulk fuel storage and associated pipelines, 60 Hobron Avenue, Kahului, Maui.
- Chevron Products Company bulk fuel storage, releases, loading rack and associated pipelines, Kahului Terminal, 100 Hobron Avenue, Kahului, Maui.
- Buried pipelines running north-south along the western side of the Site along Hobron Avenue and extends beyond the northern and southern boundaries of Parcel B is therefore both an on- and offsite REC.
- HDOH SHWS listed site: VIP Warehouse, 74 Hobron Avenue, Kahului, Maui.
- HDOH SHWS and Release List listed site: Hobron Avenue Area (Kahului), 60 Hobron Avenue, Kahului, Maui.
- HDOH SHWS and Release List listed site: Young Brothers Kahului, 65 Wharf Street, Kahului, Maui.

9.2 Other Items of Environmental Concern

A few items/areas were observed at or near the Site that do not necessarily constitute a REC and pose no real environmental risk or threat to the Site but are worth noting. These additional items are as follows:

- The site is located within the County of Maui's Special Management Area (SMA) due to its proximity to Kanaha ponds and other shoreline areas. Special Management Areas are subject to a Special Management Area Use permit from Maui County is required for development within the SMA.
- Kanaha Pond Water bird Sanctuary is located just 500 feet to the southeast of the Site. The pond is home to two endangered species,

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the Hawaiian Stilt and the Hawaiian Coot, and provides sanctuary to several migrant shorebirds and waterfowl. Kanaha Pond was designated a registered natural landmark in late 1971 by the Department of the Interior.

- The Site is adjacent to National Wetland designated sites (Mauoni Ponds).
- The Site is located within the 100-year flood zone.
- Several septic/cesspool systems are present on Parcel B.
- Numerous older trucks, heavy equipment and miscellaneous equipment stored and/or abandoned throughout the A&B Parcel B may contain fuel. KSK was not able to discern if these items were in use or if they were abandoned.
- Several shipping containers used at various tenant businesses throughout Parcel B. KSK was not able to gain access to the interior of most of these containers and therefore has no knowledge of the contents.
- Several of the tenant businesses on Parcels B are industrial in nature and therefore may employ, and possibly store, even if not observed by KSK, various chemicals, paints and petroleum products in such quantities that if spilled or leak could result in an environmental release.
- Given the age of the buildings on the parcel there is a possibility they may contain asbestos and lead-based paint.
- Possible buried construction debris at the Hale Nanea area of Parcel B.

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10.0 LIMITATIONS

KSK has based its conclusions and recommendations on interpretation of the available historical and regulatory information and documents reviewed, interviewee responses and a visual Site inspection performed on December 20, 2011. KSK cannot guarantee or warrant that the Site is free of contamination. KSK does warrant that our services are performed with the usual competence and thoroughness of the consulting profession, in accordance with the standard operating procedures of this time. KSK does not provide any other guarantee or warranty.

This Phase I ESA is not a comprehensive site characterization and should not be construed as such. It is not exhaustive and uncertainty regarding the Site cannot be entirely eliminated. The opinions presented in this report are based on findings derived from a Site reconnaissance and a review of specified regulatory records and historical sources available for public record. This Phase I ESA did not include any investigation with respect to lead, asbestos, arsenic, radon, methane, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, wetlands, indoor air quality, biological agents, mold or site geotechnical concerns. All information on UST and LUST sites is based on information reported to the HDOH Solid and Hazardous Waste Branch and present in their on-line files at the time of our review. All information reported to the HDOH HEER Office and contained in their files at the time of our review.

There are no exceptions or deletions to ASTM practice in this Phase I ESA.

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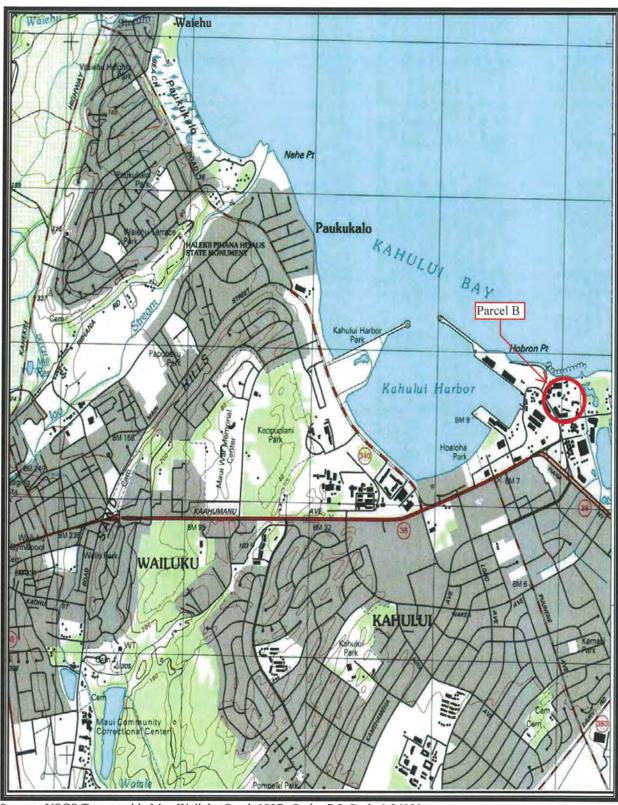
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FIGURES

A&B Acquisition Parcel B Location Kahului Harbor Development Plan Kahului, Maui, Hawaii

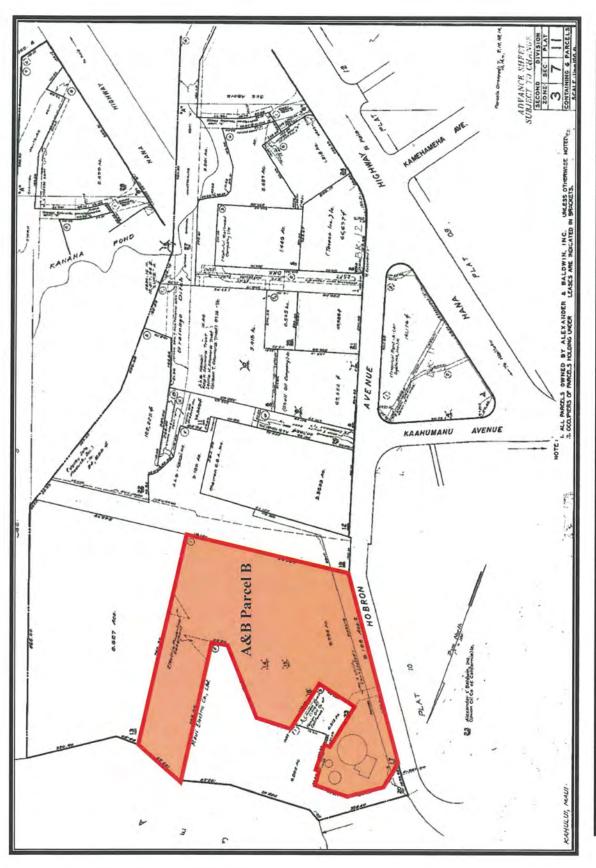


Source: USGS Topographic Map Wailuku Quad, 1997. Series 7.5, Scale 1:24000

Figure
3 Topographic Map
A&B Acquisition Parcel B
Kahului Harbor Development Plan
Kahului. Maui. Hawaii

A&B Acquisition Parcel B Kahului Harbor Development Plan Kahului, Maui, Hawaii





KSK-2008-029 Kahului, Maui, Hawaii - TMK: (2) 3-7-011:017 Kahului Harbor Development Plan A&B Acquisition Parcel B TMK Map Figure 5

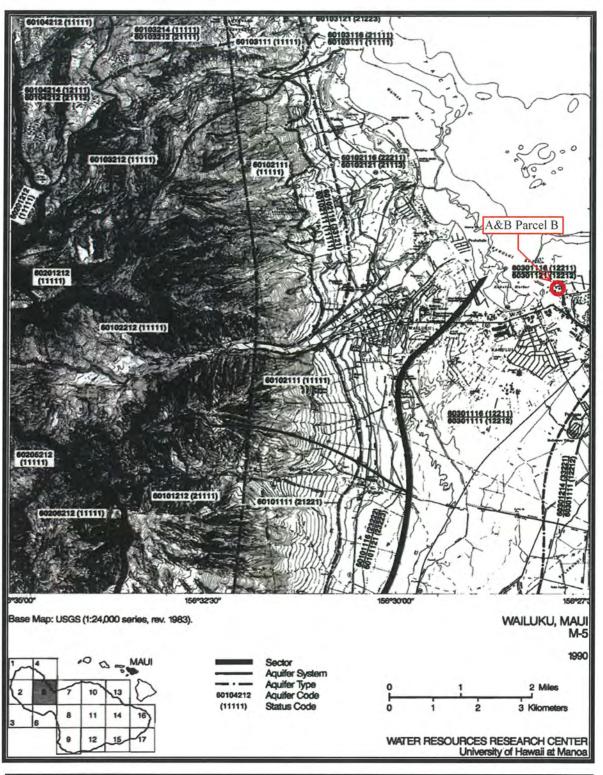


Figure 6

Aquifer Map A&B Acquisition Parcel B Kahului Harbor Development Plan Kahului, Maui, Hawaii

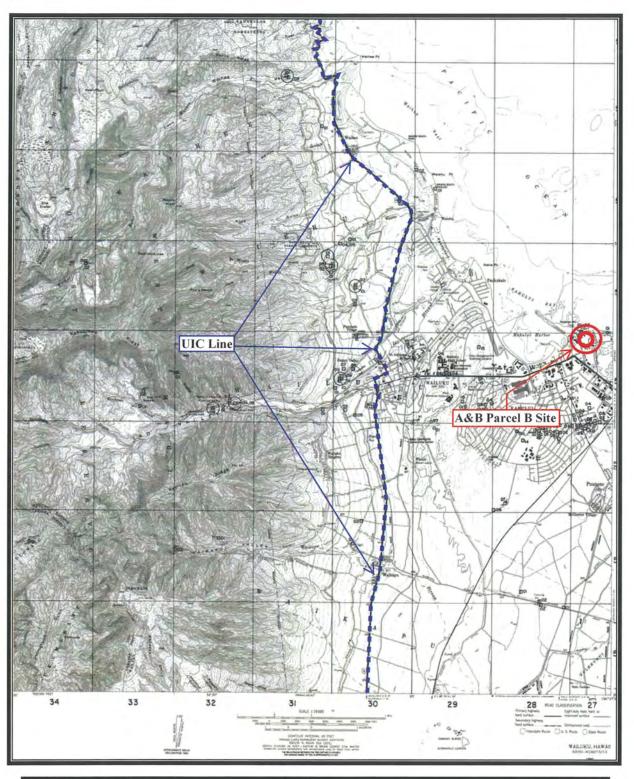
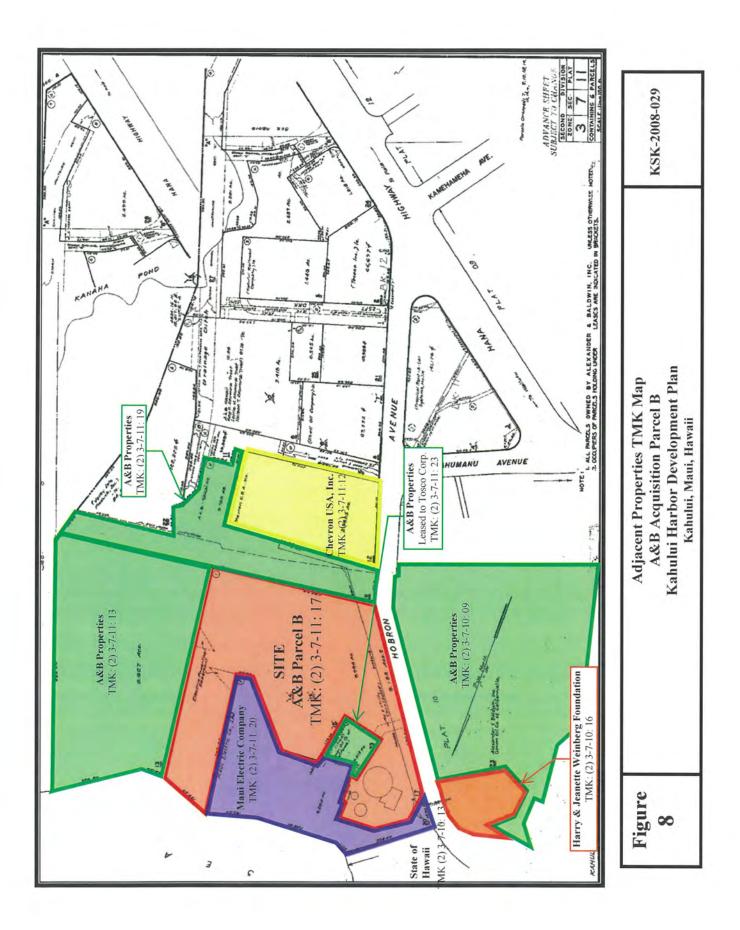


Figure 7

UIC Map
A&B Acquisition Parcel B
180 Hobron Avenue., Kahului, Maui, Hawaii
TMK: (2) 3-7-11: 017



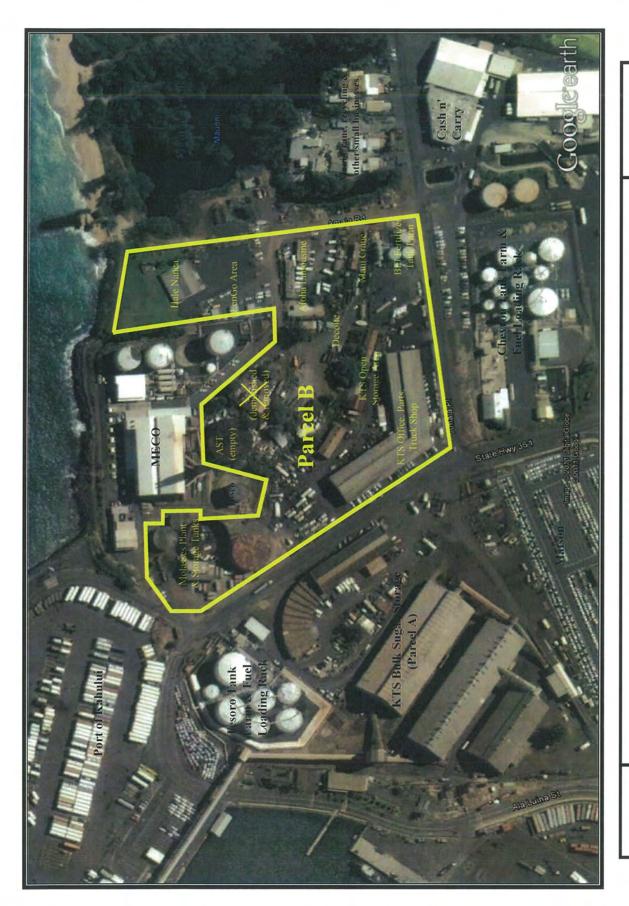
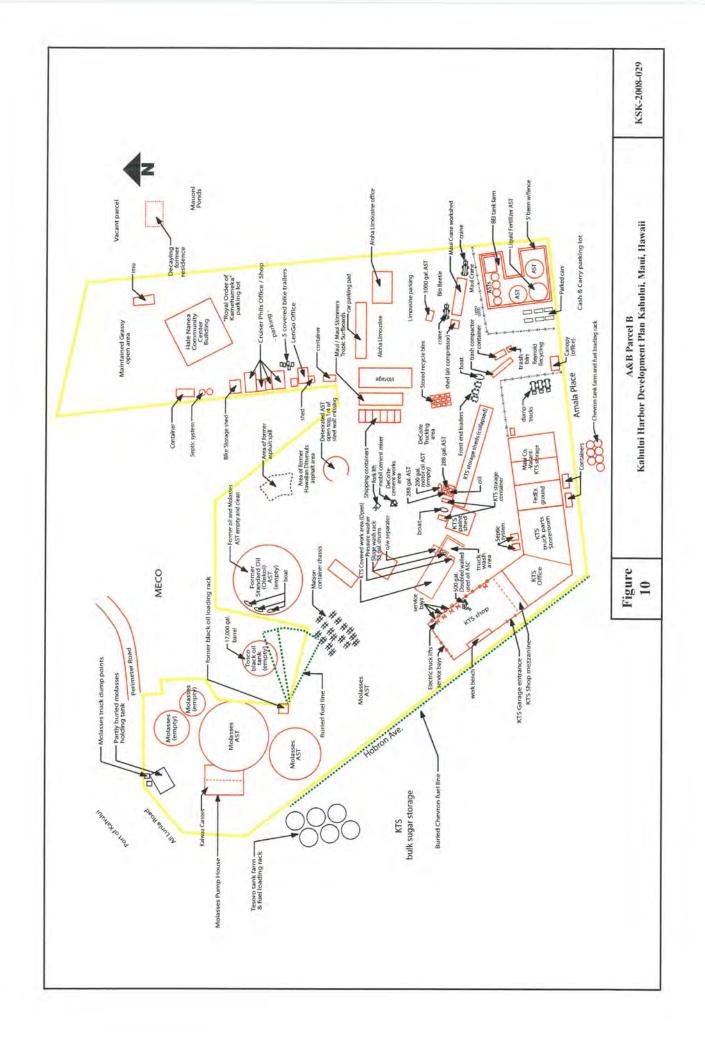


Figure 9

Parcel B and Surrounding Properties
A&B Acquisition Parcel B
Kahului Harbor Development Plan
Kahului, Maui, Hawaii



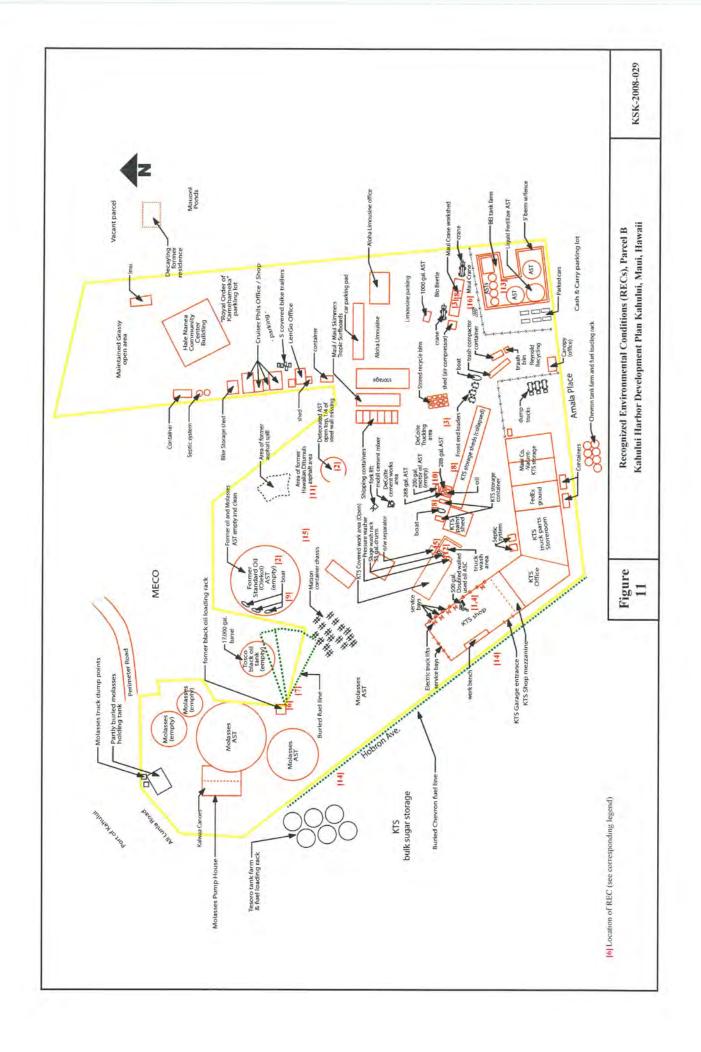


Figure 11 Legend

RECs A&B Parcel B

A&B Farcel B
180 Hobron Avenue, Kahului, Hawaii

Shop.
, KTS Shop
storage
oil
Truck repair activities,
repair
Truck
_

2. Former bulk fuel/petroleum/tar storage.

3. Truck repair, DeCoit & Maui Crane.

4. Used oil, lube oil, filters, oil storage at KTS Shop.

5. Oil/water separator, KTS Truck Wash.

6. Former fuel loading rack, pipelines from Tosco AST.

7. Stockpile oil-impacted soil.

8. Buckets, small containers oil, gasoline

9. Oil-impacted soil in Olekoi AST.

10. 288-gallon oil/fuel ASTs

11. Former asphalt plant, tar in soil.

12. 55-gallon drums of truck wash sludge.

13. BEI Hawaii liquid fertilizer ASTs.

14. Buried Chevron fuel line.

15. Sandblasting area, solid waste disposal area.

16. 55-gallon poly drums, unknown liquid.

APPENDIX A

Photographs

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 1 – KTS Maintenance & Repair Shop and main Office Building, Hobron Ave.



Photo 2 – West side of KTS Maintenance & Repair Shop building, Hobron Ave.

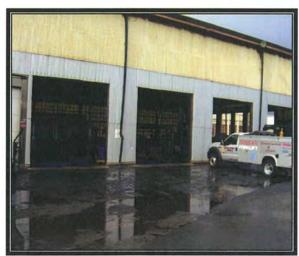


Photo 3 – Service bay entrances on back (east) side of KTS Shop.



Photo 4 –Eastern service bay are of KTS Shop interior.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii TMK: (2) 3-7-011: 017

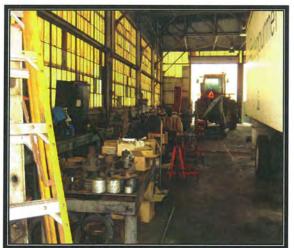


Photo 5 – Workbench area along western wall of Truck Maintenance & Repair Shop



Photo 6 – Service bay in SE corner of Truck Maintenance & Repair Shop.



Photo 7- Welding area in NE corner of Truck Maintenance & Repair Shop.



Photo 8 – Lube oil and waste filter drum storage inside Truck Maintenance & Repair Shop.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 9 – Used oil storage tank inside KTS Truck Maintenance & Repair Shop.



Photo 10 – Cover work/parking area outside (east of) KTS Truck Maintenance & Repair Shop.

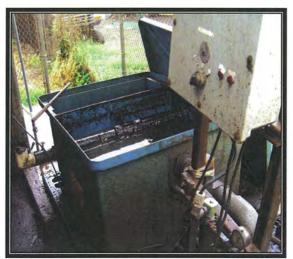


Photo 11- Oil/water separator behind KTS Truck Wash Area.



Photo 12 – Truck wash sludge containment & storage.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 13 - KTS Storage Sheds, south side.

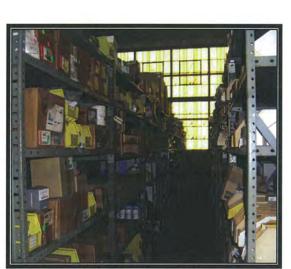


Photo 15-KTS Parts Storeroom.



Photo 14 – Back (north) side of KTS Storage Shed (eastern end), seen from the KTS Open Storage Area near DeCoite.



Photo 16 – New truck wheels in KTS Parts Storeroom.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 17 – New truck battery storage within the KST Pars Storeroom.

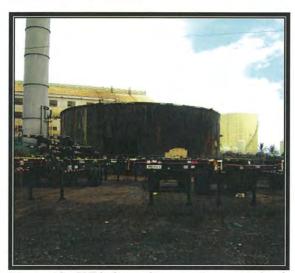


Photo 19– KTS Open Storage Area, north of western wing of KTS building.



Photo 18 – FedEx Ground warehouse in eastern wing (north side) of KTS building.

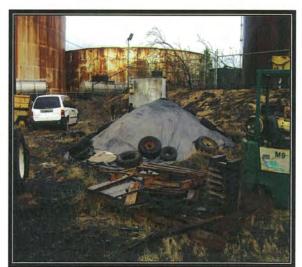


Photo 20 – Stockpiled petroleum-impacted soil in KTS Open Storage Area, near molasses tanks.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 21 – KTS Open Storage Area north of KTS Storage Sheds.



Photo 22 – Work bench & miscellaneous storage in KTS Open Storage Area.



Photo 23 – Oil/fuel ASTs stored in roll-off container in KTS Open Storage Area.



Photo 24 – Abandoned (empty) former oil/molasses AST (Standard Oil AST).

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii



Photo 25 – Partially demolished asphalt tar AST in former Hawaiian Bitumuls Area.



Photo 26 – One of the in use molasses ASTs with the Molasses Plant & Storage Tank Area.

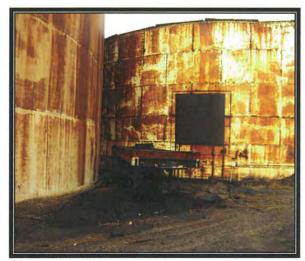


Photo 27 - Molasses ASTs.



Photo 28 – Partially buried molasses transfer tank at Molasses Plant.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii TMK: (2) 3-7-011: 017

Photo 29 – Kaiwaa canoe manufacturer within a portion of the Molasses Plant.



Photo 30 – Former fuel loading rack by Molasses Tanks associated with off-Parcel Tosco Black Oil AST.



Photo 31 – Frontend loaders at DeCoite Trucking Area, center of Parcel B.



Photo 32 – Storage containers used for storage in DeCoite Trucking Area.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii TMK: (2) 3-7-011: 017

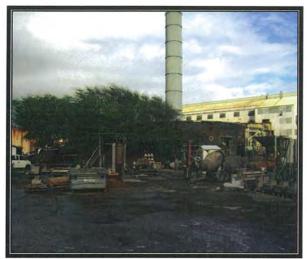


Photo 33 – DeCoite Trucking cement works area.



Photo 34 – Crane and junk piles at Maui Crane Area.



Photo 35 – Maui Crane covered work area (left) and portable office (right).

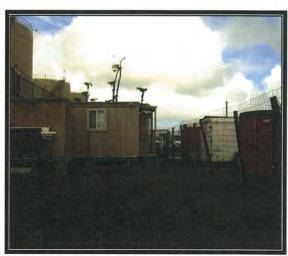


Photo 36 – LenGo construction office. Cruiser Phil's bike trailers to the right.

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TMK: (2) 3-7-011: 017



Photo 37 - Cruiser Phil's bike tours office.



Photo 38 – Bike trailers in Cruiser Phil's bike tours parking lot area.



Photo 39 – Aloha Limousine taxi parking area.



Photo 40 – Rental Volkswagens at BioBeetle.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii TMK: (2) 3-7-011: 017

Photo 41 – Recycling bins at Maui Recycling next to Aloha Limousine.



Photo 42 – Shop area within Maui Skimmers, in back of Aloha Limousine.



Photo 43 – Hale Nanea Community Center, NE corner of Parcel B.

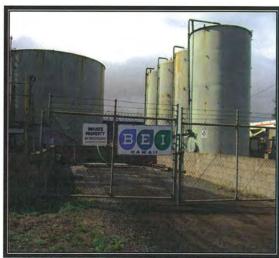


Photo 44 – BEI Hawaii liquid fertilizer tank farm, SE corner of Parcel B.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii TMK: (2) 3-7-011: 017



Photo 45 – Reynolds Recycling area at southern end of Parcel B.



Photo 46 – Amala Place KTS Open Storage Area.



Photo 47 – Drainage channel and Mauoni Ponds area, adjacent to eastern boundary of Parcel B.



Photo 48 – Cash n'Carry and associated parking lot across Amala Place to the SE of Parcel B.

Phase I Environmental Site Assessment A&B Parcel B Kahului, Maui, Hawaii

TMK: (2) 3-7-011: 017

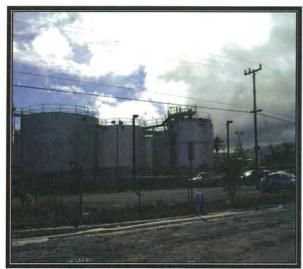


Photo 49 – Chevron bulk fuel tank farm, south of Parcel B, across Amala Place.



Photo 50 – KTS bulk sugar storage facility, across Hobron Ave. to the West.



Photo 51 – Tesoro fuel loading rack and fuel tank farm (background) across Hobron Ave. to the west.

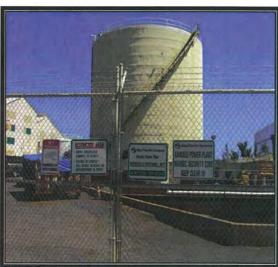


Photo 52 – MECO power plant immediately north of Parcel B.

APPENDIX B

State and Federal Environmental Database Records EDR

A&B Parcel B 180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.2s

December 05, 2011

The EDR Radius Map™ Report with GeoCheck®



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Thank you for your business.

Please contact EDR at 1-800-352-0050

with any questions or comments.

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A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

180 HOBRON AVE. KAHULUI, HI 96732

COORDINATES

Latitude (North): 20.895600 - 20° 53' 44.2" Longitude (West): 156.462100 - 156° 27' 43.6"

Universal Tranverse Mercator: Zone 4 UTM X (Meters): 764012.9 UTM Y (Meters): 2312543.5

Elevation: 3 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 20156-H4 KAHAKULOA, HI

Most Recent Revision: Not reported

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List

Proposed NPL.....Proposed National Priority List Sites

NPL LIENS_____ Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY...... Federal Facility Site Information listing

Federal RCRA CORRACTS facilities list

CORRACTS...... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

US ENG CONTROLS..... Engineering Controls Sites List US INST CONTROL...... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF.....Permitted Landfills in the State of Hawaii

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST...... Underground Storage Tank Listing

State and tribal institutional control / engineering control registries

ENG CONTROLS..... Engineering Control Sites INST CONTROL...... Sites with Institutional Controls

State and tribal voluntary cleanup sites

INDIAN VCP......Voluntary Cleanup Priority Listing VCP.....Voluntary Response Program Sites

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9.......... Torres Martinez Reservation Illegal Dump Site Locations Open Dump Inventory

Local Lists of Hazardous waste / Contaminated Sites

US CDL Clandestine Drug Labs

US HIST CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information LUCIS_____Land Use Control Information System

Records of Emergency Release Reports

HMIRS_____ Hazardous Materials Information Reporting System SPILLS Release Notifications

Other Ascertainable Records

DOT OPS...... Incident and Accident Data DOD...... Department of Defense Sites FUDS..... Formerly Used Defense Sites

CONSENT..... Superfund (CERCLA) Consent Decrees

ROD...... Records Of Decision UMTRA Uranium Mill Tailings Sites MINES Mines Master Index File

TRIS...... Toxic Chemical Release Inventory System

TSCA...... Toxic Substances Control Act

Act)/TSCA (Toxic Substances Control Act)
HIST FTTS______FIFRA/TSCA Tracking System Administrative Case Listing

SSTS..... Section 7 Tracking Systems

ICIS...... Integrated Compliance Information System PADS...... PCB Activity Database System

MLTS..... Material Licensing Tracking System RADINFO...... Radiation Information Database
FINDS...... Facility Index System/Facility Registry System

RAATS......RCRA Administrative Action Tracking System

UIC...... Underground Injection Wells Listing DRYCLEANERS....... Permitted Drycleaner Facility Listing

AIRS.....List of Permitted Facilities INDIAN RESERV.....Indian Reservations

SCRD DRYCLEANERS...... State Coalition for Remediation of Drycleaners Listing COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List

FINANCIAL ASSURANCE___ Financial Assurance Information Listing COAL ASH DOE...... Sleam-Electric Plan Operation Data PCB TRANSFORMER...... PCB Transformer Registration Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants.... EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and man identification numbers refer to the EDB Radius Man report where detailed

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in bold italics are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 02/25/2011 has revealed that there are 2 CERCLIS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KANAHA POND WEST	261 AMALA PLACE	E 1/4 - 1/2 (0.271 mi.)	E25	44
BIRD BUILDERS	261 AMALA PLACE	E 1/4 - 1/2 (0.271 mi.)	E26	46

Federal CERCLIS NFRAP site List

CERC-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 02/25/2011 has revealed that there are 5 CERC-NFRAP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KING'S TOWING	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	В3	11
SMILE'S JUNK YARD	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	B4	12
KANAHA POND EAST	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	B6	13
RAINBOW HAULING	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	B7	14
E & E BLACK CONTRACTORS	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	B8	15

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/15/2011 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CHEVEON PROPUSES OF KAMULUITE	100 11000001 11/5	14(0)14(0) 4(0) (0) 050(1)	40	
CHEVRON PRODUCTS CO KAHULUI TE	100 HOBRON AVE	WSW 0 - 1/8 (0.050 mi.)	A2	9

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/15/2011 has revealed that there are 4 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TOSCO MAUI BULK PLANT 0323	76 HOBRON AVE	W 0 - 1/8 (0.069 mi.)	C9	16
KAHULUI TRUCKING AND STORAGE	140 HOBRON AVE	SSW 0 - 1/8 (0.073 mi.)	B12	19
TESORO HAWAII CORPORATION	140 HOBRON AVE UNIT A	SSW 0 - 1/8 (0.073 mi.)	B13	22
KAHULUI GENERATING STATION	200 HOBRON LANE	S 0 - 1/8 (0.105 mi.)	18	32

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 06/15/2011 has revealed that there is 1 RCRA-CESQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SHELL OIL PRODUCTS US KAHULUI	60 HOBRON AVE	WNW 0 - 1/8 (0.089 mi.)	C14	24

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 12/01/2009 has revealed that there are 17

SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance Map ID		Page
KAHULUI TERMINAL	100 HOBRON AVE	WSW 0 - 1/8 (0.050 mi.)	A1	7
BIRD BUILDERS	AMALA PL	SSW 0 - 1/8 (0.069 mi.)	B5	13
KANAHA POND EAST	AMALA PLACE	SSW 0 - 1/8 (0.069 mi.)	B6	13
TOSCO BULK PLANT NUMBER 0323	76 HOBRON AVE	W 0 - 1/8 (0.069 mi.)	C10	18
VIP WAREHOUSE	74 HOBRON AVE	W 0 - 1/8 (0.071 mi.)	C11	18
HOBRON AVE AREA (KAHULUI)	60 HOBRON AVE	WNW 0 - 1/8 (0.089 mi.)	C15	27
IMF (INTERMEDIATE MAINTENANCE	261 AMALA PL	E 1/4 - 1/2 (0.271 mi.)	E24	43
HONEY BEE INFESTATION	281 AMALA PL	E 1/4 - 1/2 (0.291 mi.)	E27	48
YOUNG BROTHERS KAHULUI	65 WHARF ST	SW 1/4 - 1/2 (0.330 mi.)	30	50
32 LONO AVENUE	32 LONO AVE	SW 1/2 - 1 (0.665 mi.)	36	57
ALII LINEN SERVICE (FKA SNOW W	312 ALAMAHA PL	SSE 1/2 - 1 (0.668 mi.)	37	58
MAUI TOYOTA FKA HI WOOD PRESER	356 HANAKAI STREET	SSE 1/2 - 1 (0.683 mi.)	38	58
KAHULUI SERVICE, INC DBA LLOYD	130 W KAMEHAMEHA AVE	SW 1/2 - 1 (0.753 mi.)	39	64
MAUI DISPOSAL COMPANY	221 LALO PL	SSE 1/2 - 1 (0.794 mi.)	40	65
BEHIND SEA ISLAND	65 KAHULUI BEACH RD	WSW 1/2 - 1 (0.826 mi.)	41	67
PACIFIC MACHINERY, INC MAUI	470 S HANA HWY	SE 1/2 - 1 (0.849 mi.)	42	68
MAUI BUSINESS PARK OIL CONTAMI	370 DAIRY RD	SSE 1/2 - 1 (0.981 mi.)	43	68

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 09/06/2011 has revealed that there are 9 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TROPICAL RENT A CAR Facility Status: Site Cleanup Completed (ICAL RENT A CAR 41 HANA HWY ility Status: Site Cleanup Completed (NFA)		22	40
ALAMO RENT A CAR INCORPORATED 40 SOUTH HANA HIGHWA Facility Status: Site Cleanup Completed (NFA)		S 1/4 - 1/2 (0.269 mi.)	23	41
WAILUKU-KAHULUI WWRF 281 AMALA PL Facility Status: Site Cleanup Completed (NFA)		E 1/4 - 1/2 (0.291 mi.)	E28	49
KAHULUI SPS Facility Status: Site Cleanup Completed (HANA HWY/HOBRON AVE NFA)	S 1/4 - 1/2 (0.299 mi.)	29	50
ISLAND DODGE HONDA 110 SOUTH HANA HIGHWA Facility Status: Site Cleanup Completed (NFA)		SSE 1/4 - 1/2 (0.345 mi.)	32	53
AMFAC DISTRIBUTION HI. INC 150 HANA HWY Facility Status: Site Cleanup Completed (NFA)		SSE 1/4 - 1/2 (0.389 mi.)	33	55
GOODYEAR AUTO SERVICE CENTER # 121 ALAMAHA ST Facility Status: Site Cleanup Completed (NFA)		S 1/4 - 1/2 (0.413 mi.)	34	56
ISLAND MOVERS, INC. Facility Status: Site Cleanup Completed (172 ALAMAHA ST NFA)	S 1/4 - 1/2 (0.452 mi.)	35	56
Lower Elevation	Address	Direction / Distance	Map ID	Page
YOUNG BROTHERS, LTD. PIER 2 Facility Status: Site Cleanup Completed (NFA)		W 1/4 - 1/2 (0.335 mi.)	31	52

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 09/06/2011 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Address Direction / Distance		Page
MAUI OIL CO. INC.	16 HOBRON AVE.	WNW 1/8 - 1/4 (0.155 mi.)	D21	39
TROPICAL RENT A CAR	41 HANA HWY	S 1/8 - 1/4 (0.240 mi.)	22	40

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

RCRA-NonGen: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

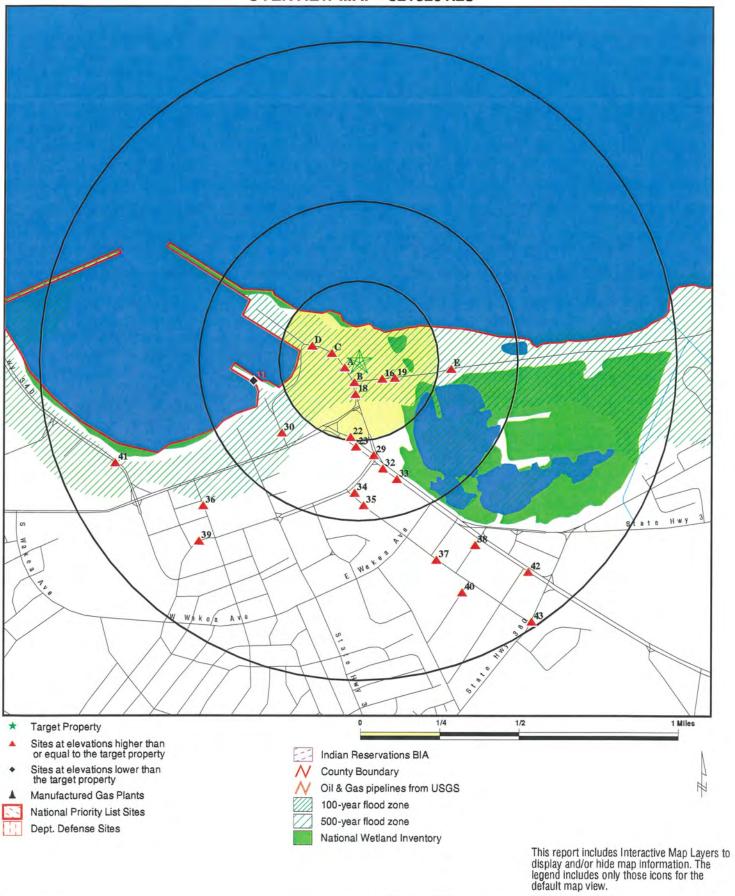
A review of the RCRA-NonGen list, as provided by EDR, and dated 06/15/2011 has revealed that there are 4 RCRA-NonGen sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OLEKOI CORPORATION LICENSE ARE	59 AMALA PL	SE 0 - 1/8 (0.092 mi.)	16	29
UNITEK SOLVENT SVCS INC MAUI	140 G HOBRON AVE	SSW 0 - 1/8 (0.095 mi.)	B17	30
VIP FOODSERVICE	90 AMALA PLACE	ESE 0 - 1/8 (0.125 mi.)	19	34
T SNIFFEN AND SONS LLC	30 HOBRON AVE	WNW 1/8 - 1/4 (0.134 mi.)	D20	36

Due to poor or inadequate address information, the following sites were not mapped. Count: 18 records.

Site Name	Database(s)
MAUI MEAT COMPANY FACILITY (FORMER	SHWS, SPILLS
HOBRON AVE AREA (KAHULUI)	FINDS, SHWS
FONG CONSTRUCTION	SHWS
MAUI PALMS HOTEL UST	SHWS
MCC-AUTOMOTIVE TECHNOLOGY BUILDING	FINDS, SHWS, SPILLS
A&B DUMP SITE	FINDS, SHWS
WAIKAPU DUMP-MAUI COUNTY DUMP	FINDS, SHWS
PAIA SUGAR MILL	SHWS
ILIMA SHELL	LUST, UST, FINANCIAL ASSURANCE
PORT TOWN CHEVRON	LUST, UST, FINANCIAL ASSURANCE
DAVID PICO CESSPOOL DIGGING	LUST, UST
TROPICAL RENT A CAR KAHULUI	RCRA-NonGen, FINDS
SHELL OIL COMPANY	RCRA-CESQG, FINDS
A&B PARCEL	FINDS
A&B ABOVE-GROUND STORAGE TANK	FINDS
A&B ABOVE-GROUND STORAGE TANK	FINDS
A&B DUMP SITE	FINDS
A&B PROPERTY, 55-GALLON DRUMS BY H	SPILLS

OVERVIEW MAP - 3218291.2s



SITE NAME: A&B Parcel B CLIENT: Kevin S. Kennedy Consulting, LLC Kevin Kennedy ADDRESS: 180 Hobron Ave. CONTACT:

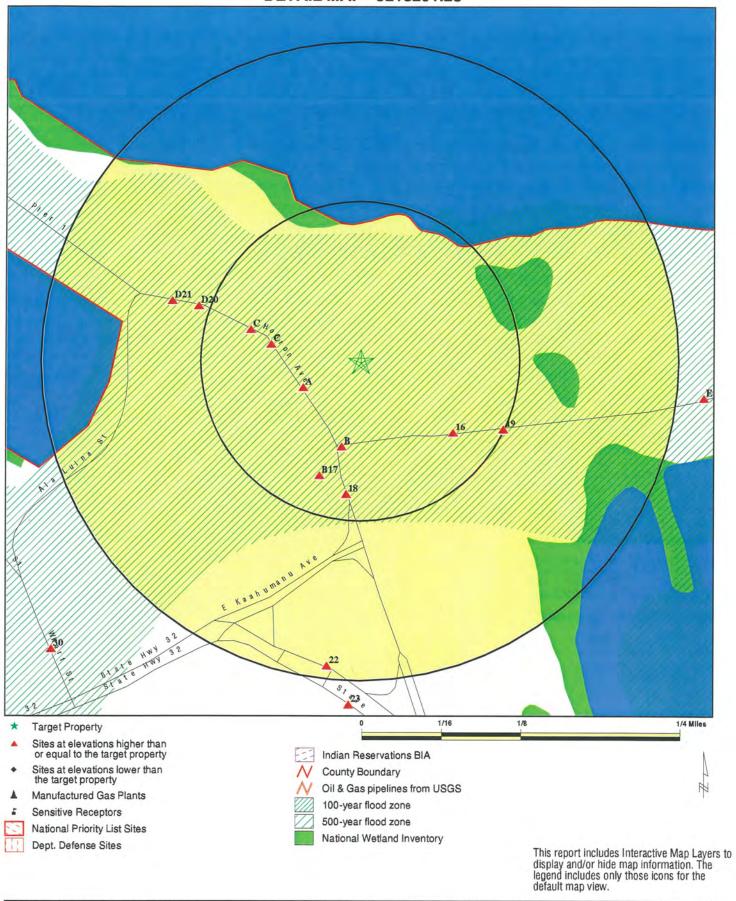
LAT/LONG:

Kahului HI 96732 INQUIRY #: 3218291.2s 20.8956 / 156.4621 DATE:

December 05, 2011 12:44 pm

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DETAIL MAP - 3218291.2s



SITE NAME: A&B Parcel B
ADDRESS: 180 Hobron Ave.
Kahului HI 96732
LAT/LONG: 20.8956 / 156.4621

CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY #: 3218291.2s

DATE: December 05, 2011 12:44 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMEN	NTAL RECORDS							
Federal NPL site list								
NPL Proposed NPL NPL LIENS		1.000 1.000 TP	0 0 NR	0 0 NR	0 0 NR	0 0 NR	NR NR NR	0 0 0
Federal Delisted NPL s	ite list							
Delisted NPL		1.000	0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS FEDERAL FACILITY		0.500 1.000	0	0	2	NR 0	NR NR	2
Federal CERCLIS NFRA	AP site List							
CERC-NFRAP		0.500	5	0	0	NR	NR	5
Federal RCRA CORRAC	CTS facilities li	st						
CORRACTS		1.000	0	0	0	0	NR	0
Federal RCRA non-COI	RRACTS TSD f	acilities list						
RCRA-TSDF		0.500	0	0	0	NR	NR	0
Federal RCRA generate	ors list							
RCRA-LQG RCRA-SQG RCRA-CESQG		0.250 0.250 0.250	1 4 1	0 0	NR NR NR	NR NR NR	NR NR NR	1 4 1
Federal institutional co engineering controls re								
US ENG CONTROLS US INST CONTROL		0.500 0.500	0	0	0	NR NR	NR NR	0
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equiv	alent CERCLIS	3						
SHWS		1.000	6	0	3	8	NR	17
State and tribal landfill solid waste disposal sit	716-127-3-5							
SWF/LF		0.500	0	0	0	NR	NR	0
State and tribal leaking	storage tank li	ists						
LUST INDIAN LUST		0.500 0.500	0	1	8	NR NR	NR NR	9
State and tribal register	red storage tan	k lists						
UST		0.250	0	2	NR	NR	NR	2

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN UST FEMA UST		0.250 0.250	0	0	NR NR	NR NR	NR NR	0
State and tribal institu control / engineering		es						
ENG CONTROLS INST CONTROL		0.500 0.500	0	0	0	NR NR	NR NR	0
State and tribal volun	tary cleanup sit	es						
INDIAN VCP VCP		0.500 0.500	0	0	0	NR NR	NR NR	0
State and tribal Brown	nfields sites							
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONM	MENTAL RECORD	s						
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
Local Lists of Landfill Waste Disposal Sites	/ Solid							
DEBRIS REGION 9 ODI INDIAN ODI		0.500 0.500 0.500	0 0	0 0	0 0 0	NR NR NR	NR NR NR	0 0
Local Lists of Hazardo Contaminated Sites	ous waste /							
US CDL CDL US HIST CDL		TP TP TP	NR NR NR	NR NR NR	NR NR NR	NR NR NR	NR NR NR	0 0
Local Land Records								
LIENS 2 LUCIS		TP 0.500	NR 0	NR 0	NR 0	NR NR	NR NR	0
Records of Emergence	y Release Repo	rts						
HMIRS SPILLS		TP TP	NR NR	NR NR	NR NR	NR NR	NR NR	0
Other Ascertainable R	Records							
RCRA-NonGen DOT OPS DOD FUDS CONSENT ROD UMTRA MINES TRIS		0.250 TP 1.000 1.000 1.000 1.000 0.500 0.250 TP	3 NR 0 0 0 0 0 0 0 0 NR	1 NR 0 0 0 0 0	NR NR O O O O O O NR NR	NR NR 0 0 0 NR NR NR	NR NR NR NR NR NR NR NR	4 0 0 0 0 0 0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
INDIAN RESERV		1.000	0	0	0	0	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
COAL ASH EPA		0.500	0	0	0	NR	NR	0
FINANCIAL ASSURANCE		TP	NR	NR	NR	NR	NR	0
COAL ASH DOE		TP	NR	NR	NR	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY RECOR	DS							
EDR Proprietary Records								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance

Elevation Site

Database(s)

SHWS

SPILLS

EDR ID Number EPA ID Number

S106817657

N/A

A1 KAHULUI TERMINAL
WSW 100 HOBRON AVE
< 1/8 KAHULUI, HI 96732

0.050 mi.

262 ft. Site 1 of 2 in cluster A

Relative:

Actual:

3 ft.

SHWS:

Equal Organization:

Supplemental Location Text:

Island: Environmental Interest:

Hid Number:

Facility Registry Identifier: Lead Agency:

Program:
Project Manager:
Hazard Priority:
Site Status:
Action:

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document: Chevron Products Company

No FRS Number Match Unit A.

Maui Chevron Kahului Bulk Terminal

Not reported 110001764083 HEER State Kelton Otsuka Low

Ongoing Response Hazard Present Not reported Not reported

HI SPILLS:

Island: Maui

Supplemental Loc. Text: No FRS Number Match Unit A

Case Number: 19880111-2
HID Number: Not reported
Facility Registry Id: 110001764083
Lead and Program: HEER EP&R
ER: Not reported
Units: Chevron Terminal
Substances: Transmix (Petroleum)

Less Or Greater Than: Not reported Numerical Quantity: 250 Units: Gallons Activity Type: Response Activity Lead: Chris Takeno Assignment End Date: Not reported

Result:

File Under: Chevron Products Company

Island: Maui

Supplemental Loc. Text: No FRS Number Match Unit A

Case Number: 19950413
HID Number: Not reported
Facility Registry Id: 110001764083
Lead and Program: HEER EP&R
ER: Not reported

Units: Chevron Kahalui Terminal Substances: Diesel Fuel High Sulfur

Less Or Greater Than: >
Numerical Quantity: 50
Units: Gallons
Activity Type: Response
Activity Lead: Terry Corpus
Assignment End Date: Not reported

Result:

File Under: Chevron Products Company

Map ID Direction Distance **Elevation**

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI TERMINAL (Continued)

S106817657

Maui

Supplemental Loc. Text:

No FRS Number Match Unit A 19941104

Case Number: HID Number:

Not reported 110001764083

Facility Registry Id: Lead and Program: ER:

HEER EP&R Not reported

Units:

Chevron Terminal Above Ground

Substances:

Diesel Fuel High Sulfur

Less Or Greater Than:

Numerical Quantity:

Not reported 500 Gallons

Units: Activity Type: Activity Lead:

Response Terry Corpus Not reported

Assignment End Date: Result:

File Under:

Chevron Products Company

Island:

Maui

Supplemental Loc. Text:

No FRS Number Match Unit A

Case Number: HID Number: Facility Registry Id: Lead and Program: 19960105-1339 Not reported 110001764083 HEER EP&R

ER:

Units:

Chevron Terminal (See 960105-0140)

Substances: Less Or Greater Than: Gasoline Not reported

Numerical Quantity: Units: Activity Type: Activity Lead:

Assignment End Date:

Gallons Response Bill Perry Not reported

Result:

80

File Under:

Chevron Products Company

Island:

Supplemental Loc. Text:

No FRS Number Match Unit A

Case Number: HID Number: Facility Registry Id: Lead and Program: 19960105-1340 Not reported 110001764083 HEER EP&R

ER:

Yes

Units:

Chevron Terminal Bulk Storage (See 960105-0139)

Substances: Less Or Greater Than: Numerical Quantity: Units:

Not reported 400 Gallons Response

Gasoline

Activity Lead: Assignment End Date: Terry Corpus Not reported

Result:

File Under:

Activity Type:

Chevron Products Company

Click this hyperlink while viewing on your computer to access 1 additional HI SPILLS: record(s) in the EDR Site Report.

Map ID MAP FINDINGS

Direction Distance

Elevation Site Database(s)

EDR ID Number EPA ID Number

CHEVRON PRODUCTS CO KAHULUI TERMINAL A2

RCRA-LQG 1000434551

HIT000615336

WSW < 1/8

100 HOBRON AVE KAHULUI, HI 96732

0.050 mi.

262 ft. Site 2 of 2 in cluster A

Relative:

RCRA-LQG:

Equal

Date form received by agency: 04/11/2011

Facility name: Facility address: CHEVRON PRODUCTS CO KAHULUI TERMINAL

Actual: 3 ft.

100 HOBRON AVE KAHULUI, HI 96732 HIT000615336

EPA ID: Contact: Contact address: HUDH MESHELL 100 HOBRON AVE KAHULUI, HI 96732

Contact country:

US

Contact telephone:

(808) 877-5012

Contact email: NAWTDESK@CHEVRON.COM EPA Region: Land type:

Classification:

Private Large Quantity Generator

Description:

Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time, or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name: Owner/operator address:

CHEVRON PO BOX 6004

SAN RAMON, CA 94583

Owner/operator country:

Owner/operator telephone: Legal status:

(877) 386-6044 Private Owner/Operator Type: Operator Owner/Op start date: 03/10/1988 Owner/Op end date: Not reported

US

Owner/operator name: Owner/operator address:

CHEVRON USA INC. PO BOX 6004

SAN RAMON, CA 94583 US

Owner/operator country:

Owner/operator telephone: Legal status:

(877) 386-6044 Private

Owner/Operator Type: Owner/Op start date: Owner/Op end date:

Owner 03/10/1988 Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: Mixed waste (haz, and radioactive): No Map ID Direction Distance Elevation

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

CHEVRON PRODUCTS CO KAHULUI TERMINAL (Continued)

1000434551

Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Historical Generators:

Date form received by agency: 01/20/1997

Facility name: CHEVRON PRODUCTS CO KAHULUI TERMINAL

Classification: Small Quantity Generator

Date form received by agency: 03/31/1994

Facility name: CHEVRON PRODUCTS CO KAHULUI TERMINAL

Site name: CHEVRON U.S.A. PRODUCTS CO

Classification: Large Quantity Generator

Hazardous Waste Summary:

Waste code: D001

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D018
Waste name: BENZENE

Facility Has Received Notices of Violations:

Regulation violated: Not reported

Area of violation: Generators - Manifest

Date violation determined: 03/06/1986 01/28/1987 Date achieved compliance: Violation lead agency: State Enforcement action: Not reported Not reported Enforcement action date: Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: Not reported

Proposed penalty amount: 0 Final penalty amount: 0 Paid penalty amount: 0

Regulation violated: Not reported

Area of violation: Generators - General

Date violation determined: 03/06/1986
Date achieved compliance: 01/28/1987

Map ID Direction Distance Elevation

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

CHEVRON PRODUCTS CO KAHULUI TERMINAL (Continued)

1000434551

Violation lead agency:

Enforcement action:

Enforcement action date: Enf. disposition status: Enf. disp. status date:

Not reported Not reported Not reported Enforcement lead agency: Not reported

Not reported

State

Proposed penalty amount: 0 Final penalty amount: 0 Paid penalty amount: 0

Evaluation Action Summary:

Evaluation date:

01/23/2007

Evaluation:

COMPLIANCE EVALUATION INSPECTION ON-SITE Not reported

Area of violation: Date achieved compliance: Evaluation lead agency:

Not reported State

Evaluation date:

03/06/1986

Evaluation:

COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Generators - General

Date achieved compliance:

01/28/1987

Evaluation lead agency:

State

Evaluation date:

03/06/1986

Evaluation:

COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Generators - Manifest

Date achieved compliance:

Evaluation lead agency:

01/28/1987 State

B3 SSW KING'S TOWING AMALA PLACE

CERC-NFRAP

1003879927 HID000149708

< 1/8

KAHULUI, HI 96732

0.069 mi.

362 ft.

Site 1 of 9 in cluster B

Relative: Equal

CERC-NFRAP:

Site ID: Federal Facility: 0904992

Actual:

NPL Status:

Not a Federal Facility Not on the NPL

3 ft.

Non NPL Status:

NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID:

13037584.00000

Person ID:

9000059.00000

Contact Sequence ID:

13087092.00000

Person ID:

13002167.00000

CERCLIS-NFRAP Assessment History:

Action:

DISCOVERY

Date Started:

Not reported 03/18/1994

Date Completed: Priority Level:

Not reported

Action:

PRELIMINARY ASSESSMENT

Date Started:

Not reported

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

KING'S TOWING (Continued)

1003879927

HID984470088

Priority Level:

NFRAP-Site does not qualify for the NPL based on existing information

Action: Date Started: ARCHIVE SITE Not reported

Date Completed: Priority Level:

01/23/1996 Not reported

B4 SMILE'S JUNK YARD SSW AMALA PLACE

CERC-NFRAP 1003879871

< 1/8 0.069 mi. 362 ft.

KAHULUI, HI 96732

Site 2 of 9 in cluster B

Relative: Equal

CERC-NFRAP:

Site ID:

0904877

Federal Facility: Actual: NPL Status:

Not a Federal Facility Not on the NPL

3 ft.

Non NPL Status:

NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: Person ID:

13037175.00000 9000059.00000

Contact Sequence ID:

Person ID:

13086678.00000 13002167.00000

CERCLIS-NFRAP Site Alias Name(s):

SMILE'S AUTO SPECIALISTS Alias Name:

Alias Address: Not reported

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY Not reported Date Started: Date Completed: 07/20/1993 Priority Level: Not reported

Action:

PRELIMINARY ASSESSMENT

Date Started: Not reported Date Completed: 05/19/1995

Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: ARCHIVE SITE Date Started: Not reported Date Completed: 01/23/1996 Priority Level: Not reported

Map ID MAP FINDINGS

Direction Distance

Distance Elevation Site EDR ID Number Database(s) EPA ID Number

B5 BIRD BUILDERS SHWS \$106816558 SSW AMALA PL N/A

< 1/8 KAHULUI, HI 96732

0.069 mi.

362 ft. Site 3 of 9 in cluster B

Relative: SHWS:

Equal Organization: State of Hawaii, Department of Land and Natural Resources

Supplemental Location Text: Not reported
Actual: Island: Maui
3 ft. Environmental Interest: Bird Builders

Hid Number: HID000149674
Facility Registry Identifier: 110009278833
Lead Agency: HEER

Program: State
Project Manager: Richard Palmer
Hazard Priority: Medium
Site Status: Ongoing
Action: Response

Potential Hazards And Controls: Hazard Present
Closure Document Title: Not reported
Date Of Closure Document: Not reported

 B6
 KANAHA POND EAST
 CERC-NFRAP
 1001475719

 SSW
 AMALA PLACE
 SHWS
 HISFN0905464

< 1/8 0.069 mi.

362 ft. Site 4 of 9 in cluster B

KAHULUI, HI 96732

Relative: CERC-NFRAP:
Equal Site ID: 0905464

Equal Site ID: 0905464
Federal Facility: Not a Federal Facility
Actual: NPL Status: Not on the NPL

3 ft. Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: 13037339.00000 Person ID: 9000059.00000

Contact Sequence ID: 13086844.00000 Person ID: 13002167.00000

CERCLIS-NFRAP Site Alias Name(s):

Alias Name: KING'S TOWING
Alias Address: AMALA PLACE

KAHULUI, HI 96732

Alias Name: F&M CONTRACTORS
Alias Address: AMALA PLACE
KAHULUI, HI 96732

Alias Name: E & E BLACK CONTRACTORS

Alias Address: AMALA PLACE KAHULUI, HI

Alias Name: SMILE'S JUNKYARD Alias Address: AMALA PLACE

KAHULUI, HI

Map ID Direction Distance

MAP FINDINGS

Elevation Site

Database(s)

EDR ID Number EPA ID Number

KANAHA POND EAST (Continued)

1001475719

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY Date Started: Not reported 03/18/1994 Date Completed: Priority Level: Not reported

Action: SITE INSPECTION Date Started: Not reported Date Completed: 09/25/2001

Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

ARCHIVE SITE Action: Date Started: Not reported 09/27/2001 Date Completed: Not reported Priority Level:

SHWS:

State of Hawaii, Department of Land and Natural Resources Organization:

Supplemental Location Text: Not reported

Island: Maui

Environmental Interest: Kanaha Pond Industrial East Site

HISFN0905464 Hid Number: Facility Registry Identifier: 110013787465

ACOE Lead Agency: Program: State

Project Manager: Melody Calisay Hazard Priority: NFA Site Status: NFA

Action: Response Potential Hazards And Controls: No Hazard

Closure Document Title: NFA Letter - Unrestricted Residential Use

Date Of Closure Document: 7/2/2001 1:11:51 AM

B7 RAINBOW HAULING CERC-NFRAP 1003879928 SSW AMALA PLACE HID000149716

KAHULUI, HI 96732 < 1/8 0.069 mi.

362 ft. Site 5 of 9 in cluster B

CERC-NFRAP: Relative:

Site ID: 0904994 Equal Federal Facility: Not a Federal Facility Actual: NPL Status: Not on the NPL

3 ft. Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: 13037333.00000 9000059.00000 Person ID:

Contact Sequence ID: 13086838.00000 Person ID: 13002167.00000

CERCLIS-NFRAP Assessment History:

Action: DISCOVERY Date Started: Not reported Date Completed: 03/18/1994

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

1003879928

RAINBOW HAULING (Continued)

Priority Level:

Not reported

Action: Date Started: Date Completed:

Priority Level:

ARCHIVE SITE Not reported 10/07/1994 Not reported

Action:

PRELIMINARY ASSESSMENT

Date Started: Date Completed:

Not reported 10/07/1994

Priority Level:

NFRAP-Site does not qualify for the NPL based on existing information

B8

E & E BLACK CONTRACTORS

CERC-NFRAP

1003879870 HID984470070

SSW < 1/8 AMALA PLACE KAHULUI, HI 96732

0.069 mi.

KAHULUI, HI 96/32

0.069 MI.

362 ft.

Site 6 of 9 in cluster B

Relative:

CERC-NFRAP:

Equal

Site ID:

0904876

Actual:

Federal Facility: NPL Status: Not a Federal Facility Not on the NPL

3 ft.

Non NPL Status:

NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID:

13037313.00000

Person ID:

9000059.00000

Contact Sequence ID: Person ID: 13086818.00000 13002167.00000

CERCLIS-NFRAP Assessment History:

Action:

DISCOVERY

Date Started:

Not reported

Date Completed: Priority Level: 07/20/1993 Not reported

Action:

PRELIMINARY ASSESSMENT

Date Started:

Not reported 05/19/1995

Date Completed: Priority Level:

NFRAP-Site does not qualify for the NPL based on existing information

Action:

ARCHIVE SITE

Date Started:

Not reported 01/23/1996 Not reported

Date Completed: Priority Level:

TC3218291.2s Page 15

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

RCRA-SQG

FINDS

EDR ID Number EPA ID Number

1000337332

HID044297042

C9 **TOSCO MAUI BULK PLANT 0323**

West < 1/8

76 HOBRON AVE KAHULUI, HI 96732

0.069 mi.

365 ft. Site 1 of 5 in cluster C

Relative:

RCRA-SQG:

Equal

Date form received by agency: 03/10/1997

Facility name: Facility address: TOSCO MAUI BULK PLANT 0323 76 HOBRON AVE

Actual: 3 ft.

KAHULUI, HI 96732

EPA ID: HID044297042 DON ESPERSON Contact: Contact address: P O BOX 52085

PHOENIX, AZ 85072 US

Contact country:

Contact telephone: (602) 437-0600 Contact email: Not reported EPA Region: 09

Land type: Private Classification:

Small Small Quantity Generator

Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of

hazardous waste at any time, or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: TOSCO CORP

Owner/operator address: 72 CUMMINGS PT RD

STAMFORD, CT 06902

Owner/operator country: Owner/operator telephone:

Not reported (602) 437-0600 Private

Legal status: Owner/Operator Type: Owner/Op start date: Owner/Op end date:

Owner Not reported Not reported

Owner/operator name: Owner/operator address: NOT REQUIRED NOT REQUIRED

NOT REQUIRED, ME 99999 Not reported

Owner/operator country: Owner/operator telephone:

Legal status:

(415) 555-1212 Private

Owner/Operator Type: Owner/Op start date: Owner/Op end date:

Operator Not reported Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Map ID Direction Distance Elevation

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

TOSCO MAUI BULK PLANT 0323 (Continued)

1000337332

Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 02/05/1996

Facility name: TOSCO MAUI BULK PLANT 0323
Site name: 76 PRODUCTS CO MAUI TERMINAL

Classification: Large Quantity Generator

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 03/04/1986

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

FINDS:

Registry ID: 110007501881

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This

Map ID Direction Distance Elevation

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

TOSCO MAUI BULK PLANT 0323 (Continued)

1000337332

information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

C10 **TOSCO BULK PLANT NUMBER 0323**

76 HOBRON AVE West KAHULUI, HI 96732 < 1/8

0.069 mi.

Actual:

Site 2 of 5 in cluster C 365 ft.

SHWS: Relative:

Equal

Organization:

Supplemental Location Text:

Island:

Environmental Interest:

Hid Number: Facility Registry Identifier: Lead Agency:

Program: Project Manager:

Hazard Priority: Site Status: Action:

Potential Hazards And Controls:

Closure Document Title: Date Of Closure Document:

N/A

SHWS S106820640

SHWS

SPILLS

S106820926

N/A

TOSCO Bulk Plant Number 0323 Maui

TOSCO Bulk Plant Number 0323

Not reported 110007501881 HEER State

TOSCO Corporation

Eric Sadoyama NFA

NFA Response No Hazard

NFA - Type Undetermined 3/10/2004 1:13:22 AM

VIP WAREHOUSE C11 West 74 HOBRON AVE < 1/8 KAHULUI, HI 96732

0.071 mi. 376 ft.

Site 3 of 5 in cluster C

Relative:

Actual:

Organization: Equal

Supplemental Location Text:

Island:

SHWS:

3 ft. Environmental Interest: Hid Number:

Facility Registry Identifier:

Lead Agency: Program: Project Manager: Hazard Priority: Site Status: Action:

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document:

Shell Oil Company

VIP Foodservice Warehouse

Maui VIP Warehouse

Not reported 110013773265 HEER

State Kelton Otsuka Low Ongoing Assessment Hazard Present Not reported

Not reported

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

VIP WAREHOUSE (Continued)

S106820926

RCRA-SQG 1004689004

HIR000074492

FINDS

HI SPILLS:

Island: Maui

Supplemental Loc. Text: VIP Foodservice Warehouse

Case Number: 19920426
HID Number: Not reported
Facility Registry Id: 110013773265
Lead and Program: HEER EP&R
ER: Not reported

Units: Valley Isle Produce Food Service at TMK # 3-7-11-6

Substances: Diesel Fuel
Less Or Greater Than: Not reported
Numerical Quantity: Not reported
Units: Not reported
Activity Type: Response
Activity Lead: Kevin Wood
Assignment End Date: Not reported

Result:

File Under: Shell Oil Company

B12 KAHULUI TRUCKING AND STORAGE

140 HOBRON AVE

< 1/8 KAHULUI, HI 96732

0.073 mi.

SSW

383 ft. Site 7 of 9 in cluster B

Relative:

RCRA-SQG:

Equal Date form received by agency: 06/05/2000

Facility name: KAHULUI TRUCKING AND STORAGE

Actual: 3 ft. Facility address: 140 HOBRON AVE KAHULUI, HI 96732

EPA ID: HIR000074492
Contact: JOHN JACKSON
Contact address: 140 HOBRON AVE
KAHULUI, HI 96732

Contact country: US
Contact telephone: (808) 877-5001
Contact email: Not reported
EPA Region: 09

Land type: Private

Classification: Small Small Quantity Generator

Description: Handler; generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: ALEXANDER AND BALDWIN INC

Owner/operator address: 822 BISHOP ST HONOLULU, HI 96801

Owner/operator country: Not reported
Owner/operator telephone: (808) 525-6611

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Map ID Direction Distance Elevation

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI TRUCKING AND STORAGE (Continued)

1004689004

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Hazardous Waste Summary:

Waste code:

D001

Waste name:

IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

WHICH WOOLD BE CONSIDERED AS IGNITY

Waste code:

D002

Waste name:

A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS, HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code:

D007

Waste name: CHROMIUM

Waste code: Waste name. D008 LEAD

Waste code: Waste name:

D018 BENZENE

Waste code:

D039

Waste name: TETRACHLOROETHYLENE

Waste code:

F001

Waste name:

THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING; TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED

FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED

IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI TRUCKING AND STORAGE (Continued)

1004689004

SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code:

F002

Waste name:

THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE,

CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND

1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND

SPENT SOLVENT MIXTURES.

Waste code:

F003

Waste name:

THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL

ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT
MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT
NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS
CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED
SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR
MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL
BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT

MIXTURES.

Waste code:

F005

THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL

KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE,

2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF

THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status:

No violations found

Evaluation Action Summary:

Evaluation date:

05/13/2004

Evaluation:

FOLLOW-UP INSPECTION

Area of violation: Date achieved compliance: Not reported

Evaluation lead agency:

Not reported State

FINDS:

Registry ID:

110009360360

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants.

Site

MAP FINDINGS

Database(s)

RCRA-SQG

FINDS

EDR ID Number EPA ID Number

KAHULUI TRUCKING AND STORAGE (Continued)

1004689004

1000906710

HI0000146365

properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

TESORO HAWAII CORPORATION B13

140 HOBRON AVE UNIT A SSW

KAHULUI, HI 96733 < 1/8

0.073 mi.

383 ft. Site 8 of 9 in cluster B

Relative:

RCRA-SQG:

Equal

Date form received by agency: 03/10/2009

Facility name: Facility address: TESORO HAWAII-MAUI TERMINAL 140 A HOBRON AVENUE

Actual: 3 ft.

> EPA ID: HI0000146365

> Mailing address: 431 KUWILI STREET

> > 2ND FLOOR

HONOLULU, HI 96817

KAHULUI, HI 96732

Contact: ROSE I CHU

Contact address: 431 KUWILI STREET 2ND FLOOR US

HONOLULU, HI 96817

Contact country:

Contact telephone: (808) 547-3817

Contact email: RCHU@TSOCORP.COM

EPA Region: 09 Private Land type:

Classification: Small Small Quantity Generator

Description: Handler: generates more than 100 and less than 1000 kg of hazardous

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: TESORO HAWAII CORPORATION Owner/operator address: KUWILI STREET, 2ND FLOOR

US

HONOLULU, HI 96817

Not reported

Owner/operator country:

Owner/operator telephone: Not reported Legal status: Private Owner/Operator Type: Owner Owner/Op start date: 05/29/1998

Owner/Op end date: Owner/operator name:

TESORO HAWAII CORPORATION

Map ID MAP FINDINGS
Direction

Distance
Elevation Site Database(s)

TESORO HAWAII CORPORATION (Continued)

1000906710

EDR ID Number

EPA ID Number

Owner/operator address:

HOBRON AVENUE

KAHULUI, HI 96732

Owner/operator country:

US

Owner/operator telephone: Legal status: Not reported Private

Owner/Operator Type; Owner/Op start date:

Operator 05/29/1998

Owner/Op end date:

Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No

Used oil fuel marketer to burner:
Used oil Specification marketer:
Used oil transfer facility:
Used oil transporter:
No

Historical Generators:

Date form received by agency: 03/12/2007

Facility name: TESORO HAWAII-MAUI TERMINAL

Classification: Large Quantity Generator

Date form received by agency: 02/28/2006

Facility name: TESORO HAWAII-MAUI TERMINAL

Classification: Large Quantity Generator

Date form received by agency: 03/01/2004

Facility name: TESORO HAWAII-MAUI TERMINAL Site name: TESORO HAWAII MAUI TERMINAL

Classification: Large Quantity Generator

Date form received by agency: 03/28/2002

Facility name: TESORO HAWAII-MAUI TERMINAL Site name: TESORO HAWAII - MAUI TERMINAL

Classification: Large Quantity Generator

Date form received by agency: 06/03/1998

Facility name: TESORO HAWAII-MAUI TERMINAL Site name; TESORO HAWAII MAUI TERMINAL

Classification: Small Quantity Generator

Hazardous Waste Summary:

Waste code: D018
Waste name: BENZENE

Waste code: D018
Waste name: BENZENE

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

TESORO HAWAII CORPORATION (Continued)

1000906710

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 02/05/2009

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:
Date achieved compliance:
Evaluation lead agency:
Not reported
State

Evaluation date: 01/23/2007

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

FINDS:

Registry ID: 110001412481

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

SHELL OIL PRODUCTS US KAHULUI TERMINAL

RCRA-CESQG 1000288044

HID000631713

WNW 60 HOBRON AVE < 1/8 KAHULUI, HI 96732

0.089 mi.

C14

472 ft. Site 4 of 5 in cluster C

Relative: RCRA-CESQG:

Date form received by agency: 07/12/2010

Date form received by agency:07/1

Facility name: SHELL OIL PRODUCTS US KAHULUI TERMINAL

Actual: 3 ft.

Equal

Facility address: 60 HOBRON AVE KAHULUI, HI 96732

EPA ID: HID000631713
Mailing address: PO BOX 2648

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

SHELL OIL PRODUCTS US KAHULUI TERMINAL (Continued)

1000288044

HOUSTON, TX 77252-2648

Contact: RAY WALDING

Contact address: PO BOX 2648

HOUSTON, TX 77252-2648

Contact country:

Contact telephone: (713) 241-7008

Contact email: RAY.WALDING@SHELL.COM

EPA Region: 09 Land type: Private

Classification: Conditionally Exempt Small Quantity Generator

Description: Handler: generates 100 kg or less of hazardous waste per calendar

month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

the cleanup of a spill, into or on any land of water, of a

hazardous waste

Owner/Operator Summary:

Owner/operator name: EQUILON ENTERPRISES LLC DBA SHELL OIL PR

Owner/operator address: PO BOX 2648

HOUSTON, TX 77252 US

Owner/operator country:

Owner/operator telephone: Not reported Legal status: Private

Owner/Operator Type: Operator
Owner/Op start date: 07/01/1998
Owner/Op end date: Not reported

Owner/operator name: EQUILON ENTERPRISES LLC DBA SHELL OIL PR

Owner/operator address: PO BOX 2648

HOUSTON, TX 77252

Owner/operator country; US

Owner/operator telephone: Not reported Private
Owner/Operator Type: Owner
Owner/Op start date: 07/01/1998
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: Mixed waste (haz, and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

SHELL OIL PRODUCTS US KAHULUI TERMINAL (Continued)

1000288044

Used oil processor:
User oil refiner:
No
Used oil fuel marketer to burner:
No
Used oil Specification marketer:
No
Used oil transfer facility:
No
Used oil transporter:
No

Universal Waste Summary:

Waste type: E
Accumulated waste on-site: No
Generated waste on-site: No

Waste type: Batteries
Accumulated waste on-site: No
Generated waste on-site: Not reported

Waste type: Lamps

Accumulated waste on-site: No Generated waste on-site: Not reported

Waste type: Pesticides
Accumulated waste on-site: No

Generated waste on-site: Not reported

Waste type: Thermostats

Accumulated waste on-site: No

Generated waste on-site: Not reported

Historical Generators:

Date form received by agency: 10/08/2009

Facility name: SHELL OIL PRODUCTS US KAHULUI TERMINAL

Classification: Small Quantity Generator

Date form received by agency: 05/28/2004

Facility name: SHELL OIL PRODUCTS US KAHULUI TERMINAL

Classification: Small Quantity Generator

Date form received by agency: 03/06/2000

Facility name: SHELL OIL PRODUCTS US KAHULUI TERMINAL Site name: SHELL OIL COMPANY/ KAHULUI TERMINAL

Classification: Large Quantity Generator

Date form received by agency: 08/15/1993

Facility name: SHELL OIL PRODUCTS US KAHULUI TERMINAL

Site name: SHELL OIL CO KAHULUI PLANT

Classification: Not a generator, verified

Hazardous Waste Summary:

Waste code: D00

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

SHELL OIL PRODUCTS US KAHULUI TERMINAL (Continued)

1000288044

Waste code:

D008

Waste name:

LEAD

Waste code: Waste name: D018 BENZENE

Violation Status:

No violations found

Evaluation Action Summary:

Evaluation date:

02/21/2007

Evaluation:

COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Not reported

Date achieved compliance: Evaluation lead agency:

Not reported State

Evaluation date:

03/04/1986

Evaluation:

COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Not reported Not reported

Date achieved compliance: Evaluation lead agency:

State

C15

HOBRON AVE AREA (KAHULUI)

FINDS

1006820864 N/A

WNW < 1/8

60 HOBRON AVE KAHULUI, HI 96732

SHWS SPILLS

0.089 mi.

Site 5 of 5 in cluster C 472 ft.

Relative: Equal

FINDS:

Registry ID:

110013788856

Actual:

3 ft.

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants. properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

HOBRON AVE AREA (KAHULUI) (Continued)

1006820864

in compliance with environmental regulations

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste, RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

US Facility Response Plan (FRP) contains plans for responding, to the maximum extent practical, to worst case discharges of oil.

SHWS:

Organization: Equilon Enterprises LLC dba Shell Oil Products US

Not reported

Kahului Fuel Distribution Terminal Supplemental Location Text:

Island: Maui

Environmental Interest: Shell Kahului Bulk Terminal

Hid Number: Not reported Facility Registry Identifier: 110013788856 Lead Agency: HEER

Program: State Project Manager: Kelton Otsuka Hazard Priority: Low

Site Status: Ongoing Action: Response Potential Hazards And Controls: Hazard Present Closure Document Title: Not reported Date Of Closure Document:

HI SPILLS:

Island: Maui

Kahului Fuel Distribution Terminal Supplemental Loc. Text:

Case Number: 19941103-2 HID Number: Not reported Facility Registry Id: 110013788856 Lead and Program: HEER EP&R ER: Not reported

Units: Shell Terminal Kahului Substances: Diesel Fuel High Sulfur

8

Less Or Greater Than: Not reported Numerical Quantity: 500 Units: Gallons Activity Type: Response Terry Corpus Activity Lead: Assignment End Date: Not reported

Result:

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

EDR ID Number **EPA ID Number**

HOBRON AVE AREA (KAHULUI) (Continued)

1006820864

File Under:

Equilon Enterprises LLC dba Shell Oil Products US

16

OLEKOI CORPORATION LICENSE AREA

RCRA-NonGen

1012178236

SE < 1/8 59 AMALA PL

HIP000139451

0.092 mi.

KAHULUI, HI 96732

484 ft.

Relative:

RCRA-NonGen:

Equal

Date form received by agency: 01/27/2010

Facility name:

OLEKOI CORPORATION LICENSE AREA

Actual: 3 ft.

Facility address:

59 AMALA PL KAHULUI, HI 96732

EPA ID:

HIP000139451 Mailing address:

C/O SEAN O'KEEFE AT A & B, INC

P.O. BOX 266

PUUNENE, HI 96784 SEAN M O'KEEFE

Contact: Contact address:

P.O. BOX 266 PUUNENE, HI 96784

Contact country: US

Contact telephone: (808) 877-2959

Contact email:

SOKEEFE@HCSUGAR.COM

EPA Region: Classification:

Description:

Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

OLEKOI CORPORATION Owner/operator name:

Owner/operator address:

Not reported Not reported

Owner/operator country: Owner/operator telephone: Not reported Not reported

Legal status: Owner/Operator Type: Owner/Op start date:

Owner/Op end date:

Private Operator 01/01/1994 Not reported

Owner/operator name:

ALEXANDER & BALDWIN, INC.

Owner/operator address:

P.O. BOX 266 PUUNENE, HI 96784

Owner/operator country: Owner/operator telephone: US Not reported

Legal status:

Private: Owner

Owner/Operator Type: Owner/Op start date: Owner/Op end date:

01/01/1900 Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No

Site

MAP FINDINGS

Database(s)

OLEKOI CORPORATION LICENSE AREA (Continued)

1012178236

EDR ID Number

EPA ID Number

Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Historical Generators:

Date form received by agency: 10/28/2009

OLEKOI CORPORATION LICENSE AREA Facility name:

Classification: Small Quantity Generator

Hazardous Waste Summary:

Waste code: D001

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002

A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS Waste name:

> CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH. IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE

DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D003

Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS

> NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE

OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

D008 Waste code: LEAD Waste name:

Violation Status: No violations found

B17 UNITEK SOLVENT SVCS INC MAUI SSW

140 G HOBRON AVE

< 1/8 KAHULUI, HI 96732 0.095 mi.

503 ft. Site 9 of 9 in cluster B

RCRA-NonGen: Relative:

Date form received by agency: 11/09/1999 Equal

Contact address:

Facility name: UNITEK SOLVENT SVCS INC MAUI Actual: Facility address: 140 G HOBRON AVE

2889 MOKUMOA ST

3 ft. KAHULUI, HI 96732 EPA ID: HID984466656 MELANIE HAHN Contact:

TC3218291.2s Page 30

RCRA-NonGen

FINDS

1000601443

HID984466656

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

UNITEK SOLVENT SVCS INC MAUI (Continued)

1000601443

HONOLULU, HI 96819

Contact country: US

Contact telephone: (808) 831-3066 Contact email: Not reported

EPA Region: 09
Land type: Private
Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: UNITEK SOLVENT SVCS INC

Owner/operator address: 2889 MOKUMOA ST

HONOLULU, HI 96819

Owner/operator country: Not reported Owner/operator telephone: (808) 834-1444

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz, and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: Yes Used oil transfer facility: No Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 09/03/2004

Evaluation: FOLLOW-UP INSPECTION

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

FINDS:

Registry ID: 110005727375

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

MAP FINDINGS

Database(s)

RCRA-SQG

HAZNET

EDR ID Number EPA ID Number

UNITEK SOLVENT SVCS INC MAUI (Continued)

1000601443

1007092167

HIT000610915

corrective action activities required under RCRA.

18

KAHULUI GENERATING STATION

South < 1/8

200 HOBRON LANE KAHULUI, HI 96732

0.105 mi. 553 ft.

Relative:

RCRA-SQG:

Site

Equal

Date form received by agency: 03/19/2003 KAHULUI GENERATING STATION

Actual: 3 ft.

Facility name: Facility address:

200 HOBRON LANE KAHULUI, HI 96732

EPA ID:

HIT000610915

Mailing address:

PO BOX 398 KAHULUI, HI 96733-6898

Contact:

DONN FUKADA

Contact address:

Not reported HI 96732

Contact country:

US

Contact telephone:

808-543-4525 Not reported

Contact email: EPA Region:

09

Land type: Classification: Private Small Small Quantity Generator

Description:

Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:

MAUI ELECTRIC COMPANY, LTD.

Owner/operator address:

Not reported HI 96732

Owner/operator country:

US

Owner/operator telephone: Legal status:

Not reported Private Owner 01/01/1946

Owner/Operator Type: Owner/Op start date:

Not reported

Owner/Op end date: Owner/operator name:

MAUI ELEC CO, LTD

Owner/operator address:

Not reported

Owner/operator country:

Not reported

Owner/operator telephone:

US Not reported

Legal status: Owner/Operator Type: Owner/Op start date:

Private Operator 01/01/1946 Not reported

Owner/Op end date:

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz, and radioactive): No Recycler of hazardous waste: No

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI GENERATING STATION (Continued)

1007092167

Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: Yes Used oil transfer facility: No Used oil transporter; No

Historical Generators:

Date form received by agency: 07/29/1993

Facility name: KAHULUI GENERATING STATION

Site name: MAUI ELECTRIC CO LTD KAHULUI GEN STE Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 07/23/1991

Facility name: KAHULUI GENERATING STATION

Site name: MAUI ELECTRIC CO LTD KAHULUI GEN STE

Classification: Not a generator, verified

Hazardous Waste Summary:

Waste code: D001

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D006
Waste name: CADMIUM

Waste code: D008 Waste name: LEAD

Facility Has Received Notices of Violations:

Regulation violated: F - 279.20-24
Area of violation: Used Oil - Generators

Date violation determined: 06/14/2001

Date achieved compliance: 11/26/2001 Violation lead agency: EPA

Not reported Enforcement action: Enforcement action date: 08/03/2001 Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: EPA Proposed penalty amount: 0 Final penalty amount: 0 Paid penalty amount: 0

Regulation violated: F - 279.20-24

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI GENERATING STATION (Continued)

Used Oil - Generators

Date violation determined: 06/14/2001 Date achieved compliance: 11/26/2001 Violation lead agency: **EPA**

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 11/26/2001 Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: **EPA** Proposed penalty amount: 0 Final penalty amount: 0 Paid penalty amount: 0

Evaluation Action Summary:

Area of violation:

Evaluation date: 06/14/2001

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Used Oil - Generators

Date achieved compliance: 11/26/2001

EPA Evaluation lead agency:

Evaluation date: 02/25/1983

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: **EPA**

HAZNET:

2004 Year:

Gepaid: HIT000610915 Contact: DONN FUKADA Telephone: 8085434525 Mailing Name: Not reported Mailing Address: PO BOX 398

Mailing City.St.Zip: KAHULUI, HI 967336898

Gen County: Not reported TSD EPA ID: CAT000646117

TSD County: Kings

Waste Category: Other inorganic solid waste

Disposal Method: T01 Tons: 0.05

Facility County: Not reported

19 ESE < 1/8

VIP FOODSERVICE 90 AMALA PLACE KAHULUI, HI 96732

0.125 mi. 658 ft. Relative:

Actual:

3 ft.

RCRA-NonGen:

Date form received by agency: 03/16/1987 Equal VIP FOODSERVICE

Facility name: Facility address:

90 AMALA PLACE KAHULUI, HI 96732

EPA ID: Mailing address: HID981965874 PO BOX 517

KAHULUI, HI 96732 RICHARD MURRAY Contact: Contact address: 90 AMALA PLACE

TC3218291.2s Page 34

RCRA-NonGen 1000114312

HID981965874

FINDS

1007092167

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

VIP FOODSERVICE (Continued)

1000114312

KAHULUI, HI 96732

Contact country: U

Contact telephone: (808) 877-5055 Contact email: Not reported

EPA Region: 09

Land type: Other land type Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: NOT REQUIRED Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: ROY OKUMURA
Owner/operator address: NOT REQUIRED

NOT REQUIRED, ME 99999

Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 01/17/1996

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Map ID MAP FINDINGS

Direction Distance Elevation

Site

Database(s)

RCRA-NonGen

FINDS

EDR ID Number EPA ID Number

VIP FOODSERVICE (Continued)

1000114312

1005904975

HIR000122275

FINDS:

Registry ID:

110005725590

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

program staff to track the notification, permit, compliance, and

corrective action activities required under RCRA.

D20 T SNIFFEN AND SONS LLC WNW 30 HOBRON AVE

1/8-1/4 KAHULUI, HI 96732

0.134 mi.

707 ft.

Site 1 of 2 in cluster D

Relative:

Equal

RCRA-NonGen:

Facility name:

Date form received by agency: 03/06/2008

Actual: 3 ft.

T SNIFFEN AND SONS LLC Facility address: 687 KAHALE ST

KAHULUI, HI 96732

HIR000122275 EPA ID: Mailing address: PO BOX 874

WAILUKU, HI 96793

Contact: THEODORE A SNIFFEN

Contact address: PO BOX 874 WAILUKU, HI 96793

Contact country: US

Contact telephone: 808-871-7781

Telephone ext.: 301

Contact email: Not reported EPA Region: 09 Land type: State

Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/Op end date:

Owner/operator name: THEODORE A SNIFFEN Owner/operator address: Not reported

Not reported

Owner/operator country: Not reported Owner/operator telephone: Not reported Legal status: Private Owner/Operator Type: Operator Owner/Op start date: 01/01/2007

Owner/operator name: STATE OF HAWAII

Owner/operator address: 400 RODGERS BLVD STE 700

HONOLULU, HI 96819

Not reported

Owner/operator country:

Owner/operator telephone: Not reported Legal status: State Owner/Operator Type: Owner

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

T SNIFFEN AND SONS LLC (Continued)

1005904975

Owner/Op start date: 01/01/1955 Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: Yes Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner; No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: Yes

Historical Generators:

Date form received by agency: 09/19/2002

Facility name: T SNIFFEN AND SONS LLC
Site name: T SNIFFEN AND SONS L L C
Classification: Not a generator, verified

Facility Has Received Notices of Violations:

Regulation violated: Not reported

Area of violation: Used Oil - Generators

Date violation determined: 10/27/2003
Date achieved compliance: 11/10/2010
Violation lead agency: State

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 10/27/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported

Area of violation: TSD IS-Container Use and Management

Date violation determined: 10/27/2003
Date achieved compliance: 11/10/2010
Violation lead agency: State

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 10/27/2003
Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported

Map ID MAP FINDINGS
Direction

Direction Distance Elevation

Site

EDR ID Number Database(s) EPA ID Number

1005904975

T SNIFFEN AND SONS LLC (Continued)

Area of violation: Federal or State Statute

Date violation determined: 10/27/2003
Date achieved compliance: 11/10/2010
Violation lead agency: State

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 10/27/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Regulation violated: Not reported

Area of violation: Used Oil - Dust Suppressant and Disposal

Date violation determined: 10/27/2003
Date achieved compliance: 11/10/2010
Violation lead agency: State

Enforcement action: WRITTEN INFORMAL

Enforcement action date: 10/27/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 0
Paid penalty amount: 0

Evaluation Action Summary:

Evaluation date: 08/25/2003

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: TSD IS-Container Use and Management

Date achieved compliance: 11/10/2010 Evaluation lead agency: State

Evaluation date: 08/25/2003

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Federal or State Statute

Date achieved compliance: 11/10/2010 Evaluation lead agency: State

Evaluation date: 08/25/2003

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Used Oil - Dust Suppressant and Disposal

Date achieved compliance: 11/10/2010 Evaluation lead agency: State

Evaluation date: 08/25/2003

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Used Oil - Generators

Date achieved compliance: 11/10/2010 Evaluation lead agency: State

FINDS:

Registry ID: 110012576499

Environmental Interest/Information System

Site

MAP FINDINGS

Database(s)

FINANCIAL ASSURANCE

EDR ID Number EPA ID Number

T SNIFFEN AND SONS LLC (Continued)

1005904975

UST U001236826

N/A

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

D21 WNW MAUI OIL CO. INC. 16 HOBRON AVE.

1/8-1/4 KAHULUI, HI 96732

0.155 mi.

820 ft.

Site 2 of 2 in cluster D

Relative: Equal

UST:

Facility ID:

9-502218

Actual: 3 ft.

Owner: MAUI OIL CO. INC. Owner Address: 16 HOBRON AVE. Kahului, 96732 96732

Ownder City, St, Zip:

Tank ID:

Date Installed: 9/9/1989 Currently In Use

Tank Status: Date Closed:

Not reported Tank Capacity:

Substance:

Diesel

Tank ID: Date Installed: 2A - 87 9/9/1989

Tank Status: Date Closed: Tank Capacity: Currently in Use Not reported 6000

Substance:

Gasoline

Tank ID: Date installed: 2B - 92 9/9/1989

Tank Status: Date Closed: Tank Capacity:

Currently In Use Not reported 6000

Substance:

Gasoline

Tank ID: Date Installed: R-1 2/7/1963

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: Not reported

Substance:

280 Other

Tank ID: Date Installed:

R-2 2/7/1964

Tank Status: Date Closed:

Substance:

Permanently Out of Use

Not reported Tank Capacity:

4000 Other

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

U001236826

MAUI OIL CO. INC. (Continued)

Tank ID:

R-3 2/7/1964

Date Installed: Tank Status:

Permanently Out of Use

Date Closed:

Not reported

Tank Capacity:

4000

Substance:

Other

HI FINANCIAL ASSURANCE:

Alt Facility ID:

9-502218

Tank Id: Tank Status Desc:

Currently in Use

FRTYPE:

Insurance

Expiration Date:

6/1/2012

Alt Facility ID:

9-502218

Tank Id:

2A - 87

Tank Status Desc:

Currently in Use

FRTYPE: Expiration Date: Insurance 6/1/2012

Alt Facility ID:

9-502218

Tank Id:

2B - 92

Tank Status Desc:

Currently in Use

FRTYPE:

Insurance

Expiration Date:

6/1/2012

Alt Facility ID:

9-502218

Tank Id:

R-1

Tank Status Desc:

Permanently Out of Use

FRTYPE: Expiration Date: Insurance 6/1/2012

Alt Facility ID:

9-502218

Tank Id:

R-2

Tank Status Desc:

Permanently Out of Use

FRTYPE: Expiration Date: Insurance 6/1/2012

Alt Facility ID: Tank Id:

9-502218

R-3

Tank Status Desc:

Permanently Out of Use

FRTYPE: Expiration Date:

Insurance 6/1/2012

22

TROPICAL RENT A CAR

South 1/8-1/4 41 HANA HWY KAHULUI, HI 96732 LUST U001236747 UST N/A

0.240 mi. 1266 ft.

Relative:

Equal

LUST:

Facility ID:

9-501383

Facility Status:

Actual:

Site Cleanup Completed (NFA) 10/7/1994

Facility Status Date: Release ID:

3 ft.

940046

Project Officer:

Raymond Seid

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

TROPICAL RENT A CAR (Continued)

U001236747

UST:

Site

Facility ID:

9-501383

Owner:

ESTATE OF HARRY WEINBERG

Owner Address:

C/O STEEL TECH, INC / 99-1379 KOAHA PLACE

Ownder City, St, Zip:

Kahului, 96732 96732

Tank ID: Date Installed: R-1 4/18/1971

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity:

12/14/1993 1000

Substance:

Gasoline

Tank ID:

R-2

Date Installed:

4/18/1971

Tank Status:

Permanently Out of Use

Date Closed:

12/14/1993

Tank Capacity:

3000

Substance:

Gasoline

Tank ID:

R-3

Date Installed:

4/18/1971

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: Not reported

4000

Substance:

Diesel

Tank ID:

R-4

Date Installed:

4/18/1971

Tank Status: Date Closed:

Permanently Out of Use Not reported

Tank Capacity:

6000

Substance:

Diesel

23 South 1/4-1/2 0.269 mi. 1419 ft.

ALAMO RENT A CAR INCORPORATED 40 SOUTH HANA HIGHWAY

KAHULUI, HI 96732

RCRA-NonGen FINDS

LUST

UST

1000601508 HID984467415

RCRA-NonGen:

Date form received by agency: 12/10/1993

Relative: Equal Actual:

3 ft.

Facility name: ALAMO CAR SALES

Facility address:

40 S HANA HWY KAHULUI, HI 96732

EPA ID: Mailing address: HID984467415

P O BOX 209 PAIA. HI 96779

Contact:

JOHN FITZGIBBON

Contact address:

P O BOX 209 PAIA, HI 96779

Contact country:

US

Contact telephone: Contact email:

(808) 877-3426 Not reported

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

ALAMO RENT A CAR INCORPORATED (Continued)

1000601508

EPA Region:

09

Classification:

Non-Generator

Description:

Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:

A AND B PROPERTIES INC.

Owner/operator address: P O BOX 156

KAHULUI, HI 96732

Owner/operator country: Owner/operator telephone: Not reported (808) 877-5523

Legal status:

Private Owner

Owner/Operator Type: Owner/Op start date: Owner/Op end date:

Not reported Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz, and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status:

No violations found

FINDS:

Registry ID:

110014031939

Environmental Interest/Information System

HI-UST (Hawaii - Únderground Storage Tank). Hawaii Underground Storage Tank Program regulates underground storage tanks which store petroleum or hazardous substances and offers documents and data products for downloading.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LUST:

Facility ID:

9-502454

Facility Status:

Site Cleanup Completed (NFA)

Facility Status Date:

2/11/1994

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

ALAMO RENT A CAR INCORPORATED (Continued)

1000601508

Release ID:

920021

Project Officer:

Sheila Mackenzie

UST:

Site

Facility ID:

9-502454

Owner: Owner Address: Ownder City, St, Zip:

ALAMO RENT A CAR 40 SOUTH HANA HWY Kahului, 96732 96732

Tank ID:

R-1

Date Installed:

Not reported

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: 10/21/1991 1000

Substance:

Used Oil

Tank ID:

R-2

Date Installed:

Not reported

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity:

10/21/1991 2000

Substance:

Gasoline

Tank ID:

R-3

Date Installed:

Not reported

Tank Status:

Permanently Out of Use 10/21/1991

Date Closed: Tank Capacity:

Substance:

550 Used Oil

E24 East IMF (INTERMEDIATE MAINTENANCE FACILITY), NAVAL SHIPYARD

FINDS SHWS

1006820799 N/A

1/4-1/2

261 AMALA PL KAHULUI, HI 96732

0.271 mi.

1430 ft.

Site 1 of 5 in cluster E

Registry ID:

Relative: Equal

FINDS:

110013788115

Actual:

3 ft.

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

IMF (INTERMEDIATE MAINTENANCE FACILITY), NAVAL SHIPYARD (Continued)

1006820799

in compliance with environmental regulations

SHWS:

Site

Organization:

State of Hawaii, Department of Land and Natural Resources

Supplemental Location Text: Island:

Maui

Environmental Interest:

Kanaha Pond Industrial West Site

Hid Number: Facility Registry Identifier: HISFN0905463 110013788115

Not reported

Lead Agency: Program: Project Manager:

HEER Site Discovery

Hazard Priority: Site Status: Action:

Richard Palmer Medium Ongoing Assessment

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document:

Hazard Present Not reported Not reported

KANAHA POND WEST E25 East 261 AMALA PLACE 1/4-1/2 KAHULUI, HI 96732

CERCLIS 1001475718

HISFN0905463

0.271 mi.

1430 ft. Site 2 of 5 in cluster E

Relative:

Equal

CERCLIS: Site ID: EPA ID:

0905463

Actual: Facility County: HISFN0905463

Short Name:

MAUL KANAHA POND WEST

3 ft.

Congressional District: Not reported IFMS ID: Not reported SMSA Number: Not reported USGC Hydro Unit: Not reported Federal Facility: Not a Federal Facility

DMNSN Number: Not reported Site Orphan Flag: Not reported RCRA ID: Not reported USGS Quadrangle: Not reported Site Init By Prog: Not reported NFRAP Flag: Not reported Parent ID: Not reported RST Code: Not reported

EPA Region: 09 Classification: Not reported Site Settings Code: Not reported NPL Status: Not on the NPL DMNSN Unit Code: Not reported

RBRAC Code: Not reported RResp Fed Agency Code: Not reported

Non NPL Status: Other Cleanup Activity: State-Lead Cleanup

Non NPL Status Date: 20051102 Site Fips Code: 15009 CC Concurrence Date: Not reported CC Concurrence FY: Not reported Alias EPA ID: Not reported

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KANAHA POND WEST (Continued)

1001475718

Site FUDS Flag:

Not reported

CERCLIS Site Contact Name(s):

Contact ID:

9000059.00000

Contact Name: Contact Tel:

Eugenia Chow (415) 972-3160

Contact Title:

Site Assessment Manager (SAM)

Contact Email:

Not reported

Contact ID: Contact Name: 13002167,00000 Carl Brickner

Contact Tel:

(415) 972-3814

Contact Title:

Site Assessment Manager (SAM)

Contact Email:

Not reported

CERCLIS Site Alias Name(s):

Alias ID:

101

Alias Name: Alias Address: **BIRD BUILDERS** 261 AMALA PLACE

KAHULUI, HI 96732

Alias ID:

102

Alias Name:

RAINBOW HAULING

Alias Address:

261 AMALA PLACE KAHULUI, HI 96732

Alias Comments:

Not reported

Site Description: Not reported

CERCLIS Assessment History:

Action Code:

001

Action:

DISCOVERY

Date Started: Date Completed: Not reported 03/18/1994

Priority Level:

Not reported

Operable Unit: Primary Responsibility: SITEWIDE

Planning Status:

State, Fund Financed

Urgency Indicator:

Not reported

Action Anomaly:

Not reported Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code:

001

Action:

SITE INSPECTION

Date Started:

Not reported 10/31/2005

Date Completed: Priority Level:

Low priority for further assessment

Operable Unit:

SITEWIDE

Primary Responsibility:

State, Fund Financed

Planning Status:

Not reported

Urgency Indicator: Action Anomaly:

Not reported Not reported

For detailed financial records, contact EDR for a Site Report.:

Map ID MAP FINDINGS

Direction Distance

Elevation Site

Database(s)

EDR ID Number EPA ID Number

E26 East

BIRD BUILDERS 261 AMALA PLACE KAHULUI, HI 96732 CERCLIS 1000855950 FINDS HID000149674

1/4-1/2 0.271 mi.

1430 ft. Site 3 of 5 in cluster E

Relative: Equal CERCLIS: Site ID:

 Site ID:
 0904993

 EPA ID:
 HID000149674

 Facility County:
 MAUI

Actual: 3 ft.

Short Name: BIRD BUILDERS
Congressional District: 02

IFMS ID: Not reported
SMSA Number: Not reported
USGC Hydro Unit: Not reported
Federal Facility: Not a Federal Facility

DMNSN Number: Not reported

Site Orphan Flag: N

RCRA ID: Not reported USGS Quadrangle: Not reported Not reported Site Init By Prog: NFRAP Flag: Not reported Parent ID: Not reported RST Code: Not reported EPA Region: 09 Classification: Not reported Site Settings Code: Not reported

Not reported
NPL Status:

DMNSN Unit Code:

RBRAC Code:

RResp Fed Agency Code:

Not reported
Not reported
Not reported
Not reported
Not reported

Non NPL Status: Other Cleanup Activity: State-Lead Cleanup

Non NPL Status Date: 20051102
Site Fips Code: 15009
CC Concurrence Date: Not reported
CC Concurrence FY: Not reported
Alias EPA ID: Not reported
Site FUDS Flag: Not reported

CERCLIS Site Contact Name(s):

Contact ID: 9000059.00000
Contact Name: Eugenia Chow
Contact Tel: (415) 972-3160

Contact Title: (415) 972-3160
Contact Title: Site Assessment Manager (SAM)

Contact Email: Not reported

 Contact ID:
 13002167.00000

 Contact Name:
 Carl Brickner

 Contact Tel:
 (415) 972-3814

Contact Title: Site Assessment Manager (SAM)

Contact Email: Not reported

Alias Comments; Not reported

Site Description: Not reported

CERCLIS Assessment History:

Action Code: 001

Action: DISCOVERY

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

BIRD BUILDERS (Continued)

1000855950

Date Started: Not reported
Date Completed: 03/18/1994
Priority Level: Not reported
Operable Unit: SITEWIDE

Primary Responsibility: State, Fund Financed

Planning Status: Not reported Urgency Indicator: Not reported Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001

Action: PRELIMINARY ASSESSMENT

Date Started: Not reported Date Completed: 05/10/1995

Priority Level: Higher priority for further assessment

Operable Unit: SITEWIDE

Primary Responsibility: State, Fund Financed

Planning Status: Not reported Urgency Indicator: Not reported Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Action Code: 001

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 10/31/2005

Priority Level: Addressed as part of another non-NPL site

Operable Unit: SITEWIDE

Primary Responsibility: State, Fund Financed

Planning Status: Not reported Urgency Indicator: Not reported Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

FINDS:

Registry ID: 110009278833

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and

Site

MAP FINDINGS

Database(s)

FINDS

SHWS

SPILLS

EDR ID Number EPA ID Number

BIRD BUILDERS (Continued)

1000855950

1006820867

N/A

hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

E27 HONEY BEE INFESTATION

East 281 AMALA PL 1/4-1/2 KAHULUI, HI 96732

0.291 mi.

1535 ft. Site 4 of 5 in cluster E

Relative: Equal

FINDS:

Registry ID: 110013788883

Actual: 3 ft.

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

SHWS:

Organization: County of Maui, Department of Public Works and Waste Management, Wastewater Reclaimati

Supplemental Location Text: Not reported

Island: Maui

Kahului Wastewater Reclaimation Facility 30 Gallon Diesel Release Environmental Interest:

Not reported Hid Number: 110013788883 Facility Registry Identifier: Lead Agency: Not reported Program: State Project Manager: Amy Playdon Hazard Priority: NFA

Site Status: NFA Action: Assessment

Potential Hazards And Controls: Hazard Undetermined Closure Document Title: NFA - Type Undetermined 2/28/2001 1:19:06 AM Date Of Closure Document:

MAP FINDINGS

Site

Database(s)

EDR ID Number EPA ID Number

HONEY BEE INFESTATION (Continued)

1006820867

HI SPILLS:

Island:

Maui

Supplemental Loc. Text: Case Number:

Not reported 19980721-1400

HID Number: Facility Registry Id: Not reported 110013788883

Lead and Program:

HEER EP&R

ER:

Units:

Yes Kahului Wastewater Reclamation Facility Diesel Spill

Substances:

Diesel Fuel

Less Or Greater Than:

Not reported

Numerical Quantity: Units:

30 Gallons

Activity Type:

Response Mike Cripps

Activity Lead: Assignment End Date:

Result:

Not reported

File Under:

County of Maui, Department of Public Works and Waste Management,

Wastewater Reclaimation Division

E28 WAILUKU-KAHULUI WWRF LUST U003222225 N/A

East 1/4-1/2

281 AMALA PL KAHULUI, HI 96732

UST FINANCIAL ASSURANCE

0.291 mi.

1535 ft.

Site 5 of 5 in cluster E

Relative:

Equal

LUST:

Facility ID:

9-501353

Facility Status: Actual: Facility Status Date: Site Cleanup Completed (NFA)

3 ft.

Release ID:

9/5/2000 990117

Project Officer;

Shaobin Li

UST:

Facility ID:

9-501353

Owner:

COUNTY OF MAUI - PUBLIC WORKS & WASTE MANAGEMENT

Owner Address:

200 S HIGH ST

Ownder City, St, Zip:

Kahului, 96732 96732

Tank ID:

R-M-1

Date Installed:

5/5/1977

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: 12/12/1998

Substance:

12000

Diesel

Tank ID:

R-M-2

Date Installed:

5/5/1977

Tank Status:

Permanently Out of Use

Date Closed:

8/17/1998

Tank Capacity:

700

Substance:

Used Oil

HI FINANCIAL ASSURANCE:

Alt Facility ID:

9-501353

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

U003222225

U001236741

N/A

LUST

WAILUKU-KAHULUI WWRF (Continued)

Site

Tank Status Desc:

Permanently Out of Use Self Insured

FRTYPE: Expiration Date:

Not reported

Alt Facility ID:

9-501353

R-M-1

Tank Id:

R-M-2

Tank Status Desc:

Permanently Out of Use

FRTYPE:

Self Insured

Expiration Date:

Not reported

29 South 1/4-1/2 KAHULUI SPS

HANA HWY/HOBRON AVE KAHULUI, HI 96732

UST FINANCIAL ASSURANCE

0.299 mi. 1577 ft.

Relative: Equal

LUST:

Facility ID:

9-501350

Actual: 3 ft.

Facility Status:

Site Cleanup Completed (NFA)

Facility Status Date: Release ID:

4/19/2001 990039

Project Officer:

Shaobin Li

UST:

Facility ID:

9-501350

Owner:

COUNTY OF MAUI - PUBLIC WORKS & WASTE MANAGEMENT

Owner Address: Ownder City, St, Zip: 200 S HIGH ST Kahului, 96732 96732

Tank ID: Date Installed: R-M-1 5/5/1977

Tank Status:

Permanently Out of Use

Date Closed:

10/9/1998

Tank Capacity: Substance:

1500 Diesel

HI FINANCIAL ASSURANCE:

Alt Facility ID:

9-501350 R-M-1

Tank Id: Tank Status Desc;

Permanently Out of Use

FRTYPE:

Self Insured

Expiration Date:

Not reported

30 SW YOUNG BROTHERS KAHULUI 65 WHARF ST

SHWS

S106821170

1/4-1/2

KAHULUI, HI 96732

SPILLS

N/A

0.330 mi. 1744 ft.

Relative:

SHWS:

Equal

Organization:

Supplemental Location Text:

Young Brothers, Ltd. Kahului Harbor Pier 2

Actual:

Island:

Maui

3 ft.

Environmental Interest:

Young Brothers Kahului

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

YOUNG BROTHERS KAHULUI (Continued)

S106821170

Hid Number: Facility Registry Identifier:

Lead Agency: Program:

Project Manager: Hazard Priority:

Site Status: Action:

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document: Not reported 110013774576 Not reported State

Clarence Callahan NFA NFA Assessment

Hazard Undetermined NFA - Type Undetermined 8/6/2004 1:20:17 AM

HI SPILLS:

Island: Maui

Supplemental Loc. Text: Kahului Harbor Pier 2
Case Number: 19990923-1741
HID Number: Not reported
Facility Registry Id: 110013774576
Lead and Program: HEER EP&R
ER: Off Scene

Units: Young Brothers Pier 2, Solvent Spill

Substances: Solvent
Less Or Greater Than: Not reported
Numerical Quantity: 780
Units: Gallons
Activity Type: Response
Activity Lead: Terry Corpus
Assignment End Date: Not reported

Result:

File Under: Young Brothers, Ltd.

Island: Ma

Supplemental Loc. Text: Kahului Harbor Pier 2
Case Number: 19981014-1725
HID Number: Not reported
Facility Registry Id: 110013774576
Lead and Program: HEER EP&R
ER: Not reported

Units: M/V Hokukea, Kahului Harbor Substances: Oil, No. 2-D

Less Or Greater Than: Not reported Numerical Quantity: 50 Units: Gallons Activity Type: Response Activity Lead: Bill Perry Assignment End Date: 10/16/1998

Result:

File Under: Young Brothers, Ltd.

Island: Maui

Supplemental Loc. Text: Kahului Harbor Píer 2
Case Number: 20020826-1000
HID Number: Not reported
Facility Registry Id: 110013774576
Lead and Program: HEER EP&R
ER: Off Scene

Units: Young Brothers Kahului

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

YOUNG BROTHERS KAHULUI (Continued)

S106821170

Substances:

Less Or Greater Than:

Numerical Quantity: Units: Activity Type: Activity Lead: 350 Gallons Response Liz Galvez 3/24/2003

Maui

Oil, Used

Assignment End Date: Result:

File Under:

Young Brothers, Ltd.

Kahului Harbor Pier 2

Island:

ER:

Supplemental Loc. Text:

Case Number: HID Number: Facility Registry Id: Lead and Program:

20090123-0921 Not reported 110013774576 HEER EP&R Off Scene

Units: Substances:

Hokuloa Diesel Release NRC 895660 Diesel Fuel

Less Or Greater Than: Numerical Quantity;

Units: Activity Type: Activity Lead: Assignment End Date: Gallons Response Paul Chong 1/23/2009

Not reported

10

Result:

YOUNG BROTHERS, LTD.

File Under: Young Brothers, Ltd.

31 West

est PIER 2

1/4-1/2 0.335 mi. KAHULUI, HI 96732

1771 ft.

Relative: Lower

Actual:

LUST:

Facility ID:

9-500667

Facility Status: Facility Status Date: Site Cleanup Completed (NFA) 5/16/2003

2 ft. Release ID: Project Officer:

000089 Shunsheng Fu

UST:

Facility ID:

9-500667

Owner Address:

YOUNG BROTHERS, LTD.

Owner Address: Ownder City,St,Zip: P.O. BOX 3288 Kahului, 96732 96732

Tank ID: Date Installed: R-01 3/31/1951

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: Substance: 9/30/1989 1000 Gasoline LUST U003541880

N/A

UST

Map ID MAP FINDINGS Direction.

Distance

Elevation Site Database(s)

EDR ID Number EPA ID Number

32 ISLAND DODGE HONDA SSE 110 SOUTH HANA HIGHWAY

1/4-1/2 0.345 mi. 1824 ft.

KAHULUI, HI 96732

RCRA-NonGen FINDS

1000151958 HID981637747

LUST UST

Relative:

Equal Actual: RCRA-NonGen:

Date form received by agency: 01/09/1987

Facility name: Facility address: ISLAND DODGE HONDA 110 S HANA HWY

3 ft. EPA ID:

KAHULUI, HI 96732 HID981637747

Contact:

ENVIRONMENTAL MANAGER

Contact address:

110 S HANA HWY

KAHULUI, HI 96732

Contact country:

Contact telephone: Contact email:

(808) 877-6578 Not reported

EPA Region:

09 Land type:

Other land type Non-Generator

US

Classification: Description:

Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:

ROY KITAGAWA

Owner/operator address: NOT REQUIRED

Owner/operator country:

NOT REQUIRED, ME 99999 Not reported (415) 555-1212

Owner/operator telephone: Legal status: Owner/Operator Type:

Owner/Op start date:

Owner/Op end date:

Private Owner Not reported Not reported

Owner/operator name:

NOT REQUIRED NOT REQUIRED

Owner/operator address:

NOT REQUIRED. ME 99999

Owner/operator country: Owner/operator telephone: Legal status:

Not reported (415) 555-1212 Private Operator

Owner/Operator Type: Owner/Op start date: Owner/Op end date:

Not reported Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz, and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No Underground injection activity: No On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No

MAP FINDINGS

Site

Database(s)

EDR ID Number EPA ID Number

ISLAND DODGE HONDA (Continued)

1000151958

Used oil transfer facility: Used oil transporter:

Violation Status:

No violations found

No

No

Evaluation Action Summary:

01/17/1996 Evaluation date:

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

FINDS:

Registry ID: 110005724216

Environmental Interest/Information System.

HI-UST (Hawaii - Underground Storage Tank). Hawaii Underground Storage Tank Program regulates underground storage tanks which store petroleum or hazardous substances and offers documents and data products for

downloading.

RCRAInfo is a national information system that supports the Resource. Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LUST:

Facility ID: 9-501697

Facility Status: Site Cleanup Completed (NFA)

9/25/1998 Facility Status Date: Release ID: 930067 Project Officer: Richard Takaba

UST:

Facility ID: 9-501697

KITAGAWA MOTORS INC Owner:

Owner Address: ISLAND DODGE / 110 S HANA HWY

Ownder City, St, Zip: Kahului, 96732 96732

Tank ID:

R-1

Date Installed: Not reported

Tank Status: Permanently Out of Use Date Closed: 3/3/1997

Tank Capacity: 1000 Substance: Gasoline

Tank ID:

Date Installed: 5/16/1971

Tank Status: Permanently Out of Use

R-2

Date Closed: 3/3/1997 Tank Capacity: 2000

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

1000151958

LUST U001236787

N/A

UST

ISLAND DODGE HONDA (Continued)

Substance:

Gasoline

Tank ID:

Date installed:

5/16/1971

R-2

Tank Status: Date Closed: Permanently Out of Use 2/24/1993

Tank Capacity: Substance:

2000 Used Oil

Tank ID:

R-4

Date Installed: Tank Status: 1/1/1969 Permanently Out of Use

Date Closed:

2/23/1993

Tank Capacity:

500

Substance:

Hazardous Substance

33

AMFAC DISTRIBUTION HI. INC

SSE 150 HANA HWY

1/4-1/2

KAHULUI, HI 96732

0.389 mi. 2056 ft.

Relative: Equal LUST:

Facility ID:

9-501686

Facility Status:

Site Cleanup Completed (NFA)

Actual: 3 ft.

Facility Status Date: Release ID: 10/19/2001 900073

Project Officer:

Mark Sutterfield

UST:

Facility ID:

9-501686

Owner:

OAHU DISTRIBUTION

Owner Address:

c/o Tamara Edwards Amfac Land Company 700 Bishop St, #501

Ownder City, St, Zip:

Kahului, 96732 96732

Tank ID:

R-1

Date Installed:

Not reported

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: Substance: 5/8/1990 Not reported Gasoline

Tank ID:

R-2

Date Installed:

Not reported

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: 5/2/1990 Not reported

Substance:

Diesel

Map ID Direction MAP FINDINGS

Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

N/A

34

GOODYEAR AUTO SERVICE CENTER #8026

LUST U003155145

South 1/4-1/2

121 ALAMAHA ST KAHULUI, HI 96732

UST FINANCIAL ASSURANCE

0.413 mi. 2182 ft.

Relative: Equal

LUST:

Facility ID:

9-503099

Facility Status:

Site Cleanup Completed (NFA)

Actual: 3 ft.

Facility Status Date: 7/5/1996 Release ID: 950128 Project Officer: Jose Ruiz

UST:

Facility ID:

9-503099

Owner:

GOODYEAR TIRE & RUBBER CO.

Owner Address:

Not reported

Ownder City, St, Zip:

Kahului, 96732 96732

Tank ID:

R-1

Date Installed:

4/1/1987

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: 8/20/1995 250

Substance:

Used Oil

HI FINANCIAL ASSURANCE:

Alt Facility ID:

9-503099

Tank Id:

Tank Status Desc: FRTYPE:

Permanently Out of Use

Expiration Date:

Self Insured Not reported

35 South ISLAND MOVERS, INC. 172 ALAMAHA ST

U001236701 LUST UST N/A

1/4-1/2 0.452 mi. KAHULUI, HI 96732

2387 ft.

Relative:

LUST:

Equal

Facility ID: Facility Status: 9-500768

Facility Status Date:

Site Cleanup Completed (NFA) 5/9/2000

Actual: Release ID:

960047

Project Officer:

3 ft.

Renato Maniulit

UST:

Facility ID:

9-500768

Owner:

ISLAND MOVERS, INC.

Owner Address: Ownder City, St, Zip:

Not reported Kahului, 96732 96732

Tank ID:

R-001

Date Installed:

5/28/1980

Permanently Out of Use

Tank Status: Date Closed: Tank Capacity

6/25/1996 1000

Substance:

Gasoline

Site

MAP FINDINGS

Database(s)

SHWS

SPILLS

EDR ID Number EPA ID Number

ISLAND MOVERS, INC. (Continued)

U001236701

S106815477

N/A

Tank ID:

R-002 Date Installed: 5/28/1980

Tank Status:

Permanently Out of Use

Date Closed: Tank Capacity: 6/25/1996 1000

Substance:

Gasoline

Tank ID: Date Installed: R-003 5/28/1980

Tank Status:

Permanently Out of Use

Date Closed:

6/25/1996

Tank Capacity: Substance:

1000 Diesel

36 SW 32 LONO AVENUE 32 LONO AVE

1/2-1

KAHULUI, HI 96732

0.665 mi. 3510 ft.

Relative: Equal

SHWS:

Organization:

Supplemental Location Text:

Not reported

Actual: 3 ft.

Island:

Environmental Interest: Hid Number:

Facility Registry Identifier: Lead Agency: Program:

Project Manager:

Hazard Priority: Site Status:

Action: Potential Hazards And Controls:

Closure Document Title: Date Of Closure Document: Alexander & Baldwin, Inc.

Maui 32 Lono Avenue Not reported

Not reported HEER State

Ukris Wongse-Ont

NFA NFA

Assessment

Hazard Undetermined NFA - Type Undetermined 12/6/2004 1:18:12 AM

HI SPILLS:

Island:

Supplemental Loc. Text: Case Number:

HID Number: Facility Registry Id: Lead and Program:

ER: Units:

32 Lono Avenue

Substances: Oil

Less Or Greater Than: Not reported Not reported Numerical Quantity: Units: Not reported Activity Type: Response Activity Lead: Terry Corpus Assignment End Date: Not reported Result:

File Under: Alexander & Baldwin, Inc.

Maui

No

Not reported

Not reported

Not reported

HEER EP&R

20030822-1400

Map ID

MAP FINDINGS

Direction Distance

Elevation Site

Database(s)

EDR ID Number EPA ID Number

37

ALII LINEN SERVICE (FKA SNOW WHITE LINEN)

SHWS

S106816121

SSE 1/2-1 312 ALAMAHA PL KAHULUI, HI 96732 **ENG CONTROLS**

N/A

0.668 mi. 3529 ft.

Relative: Higher

SHWS:

Organization:

Alii Linen Service (Formerly Snow White Linen)

Actual: 10 ft.

Supplemental Location Text: Island:

Maui Snow White Linen Solvent Contamination

Environmental Interest: Hid Number: Facility Registry Identifier:

Not reported 110013771374

Lead Agency: Program: Project Manager:

State Kelton Otsuka

Hazard Priority: Site Status:

Low Ongoing Response

HEER

Unit H

Action: Potential Hazards And Controls:

Hazard Managed With Engineering Controls

Closure Document Title: Date Of Closure Document:

Not reported Not reported

ENG CONTROLS:

Supplemental Location Text: Island:

Unit H Maui

Potential Hazards And Controls:

Hazard Managed With Engineering Controls

38

MAUI TOYOTA FKA HI WOOD PRESERVING CO

CERC-NFRAP

SHWS

1000146664 HID980883185

SSE 1/2-1 356 HANAKAI STREET KAHULUI, HI 96732

RCRA-NonGen **FINDS**

0.683 mi. 3607 ft.

CERC-NFRAP:

0903238

Relative: Higher Actual:

Site ID:

Federal Facility: NPL Status:

Not a Federal Facility Not on the NPL

7 ft. Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: Person ID:

13037189.00000 9000059.00000

Contact Sequence ID:

13086693.00000 13002167.00000

CERCLIS-NFRAP Assessment History:

Action:

Person ID:

DISCOVERY Not reported

Date Started: Date Completed:

04/01/1988 Not reported

Action:

PRELIMINARY ASSESSMENT

Date Started: Date Completed:

Priority Level:

Not reported

Priority Level:

01/25/1990 Low priority for further assessment

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 02/25/1991

Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 02/25/1991
Priority Level: Not reported

RCRA-NonGen:

Date form received by agency: 02/25/2010

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Facility address: 356 HANAKAI STREET

KAHULUI, HI 96732

EPA ID: HID980883185 Mailing address: 320 HANA HIGHWAY

KAHULUI, HI 96732

Contact: DAMIEN J FARIAS
Contact address: Not reported

Not reported

Contact country: US Contact telephone: (808) 877-2781

Contact email: DAMIEN@MAUITOYOTA.NET

EPA Region: 09
Land type: Private
Classification: Non-Generator

Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: DAMIEN FARIAS
Owner/operator address: 320 HANA HIGHWAY

KAHULUI, HI 96732 US

Owner/operator country:

Owner/operator telephone: Not reported Legal status: Private

Owner/Operator Type: Owner
Owner/Op start date: 08/30/2002
Owner/Op end date: Not reported

Owner/operator name: DAMIEN FARIAS
Owner/operator address: Not reported
Not reported

Owner/operator country: US

Owner/operator telephone: Not reported Legal status: Private Owner/Operator Type: Operator Owner/Op start date: 08/30/2002 Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No Mixed waste (haz. and radioactive): No Recycler of hazardous waste: No Transporter of hazardous waste: No Treater, storer or disposer of HW: No

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

Underground injection activity: On-site burner exemption: No Furnace exemption: No Used oil fuel burner: No Used oil processor: No User oil refiner: No Used oil fuel marketer to burner: No Used oil Specification marketer: No Used oil transfer facility: No Used oil transporter: No

Universal Waste Summary:

Waste type: E
Accumulated waste on-site: No
Generated waste on-site: No

Waste type: Batteries Accumulated waste on-site: No

Generated waste on-site: Not reported

Waste type: Lamps
Accumulated waste on-site: No

Generated waste on-site: Not reported

Waste type: Pesticides
Accumulated waste on-site: No

Generated waste on-site: Not reported

Waste type: Thermostats

Accumulated waste on-site: No

Generated waste on-site: Not reported

Historical Generators:

Date form received by agency: 04/12/2006

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Classification: Large Quantity Generator

Date form received by agency: 02/04/2000

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO
Site name: HAWAII WOOD PRESERVING COMPANY

Classification: Large Quantity Generator

Date form received by agency: 10/14/1998

Facility name: MAULTOYOTA FKA HI WOOD PRESERVING CO Site name: HAWAII WOOD PRESERVING COMPANY

Classification: Large Quantity Generator

Date form received by agency: 03/05/1998

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Site name: HAWAII WOOD PRESERVING CO

Classification: Large Quantity Generator

Date form received by agency: 03/05/1998

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Site name: HAWAII WOOD PRESERVING CO

Classification: Large Quantity Generator

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

Date form received by agency: 04/22/1997

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Site name: HAWAII WOOD PRESERVING CO

Classification: Large Quantity Generator

Date form received by agency: 02/21/1996

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO

Site name: HAWAII WOOD PRESERVING CO

Classification: Large Quantity Generator

Date form received by agency: 03/01/1994

Facility name: MAUI TOYOTA FKA HI WOOD PRESERVING CO
Site name: HAWAII WOOD PRESERVING COMPANY

Classification: Large Quantity Generator

Hazardous Waste Summary:

Waste code: D001

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF

LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: Waste name: D004 ARSENIC

Transaction Transaction

D007

Waste code: Waste name:

CHROMIUM

Waste code:

F035

Waste name: WASTEWATERS, PROCESS RESIDUALS, PRESERVATIVE DRIPPAGE, AND SPENT

FORMULATIONS FROM WOOD PRESERVING PROCESS GENERATED AT PLANTS THAT USE INORGANIC PRESERVATIVES CONTAINING ARSENIC OR CHROMIUM. THIS LISTING DOES NOT INCLUDE K001 BOTTOM SEDIMENT SLUDGE FROM THE TREATMENT OF WASTEWATER FROM WOOD PRESERVING PROCESSES THAT USE CREOSOTE AND/OR PENTACHLOROPHENOL (NOTE: THE LISTING OF WASTEWATERS THAT HAVE NOT

COME INTO CONTACT WITH PROCESS CONTAMINANTS IS STAYED ADMINISTRATIVELY. THE STAY WILL REMAIN IN EFFECT UNTIL FURTHER

ADMINISTRATIVE ACTION IS TAKEN.).

Facility Has Received Notices of Violations:

Regulation violated: FR - 264.10-18.B
Area of violation: TSD - General
Date violation determined: 08/19/1994
Date achieved compliance: 08/11/1999
Violation lead agency: State

Enforcement action: FINAL 3008(A) COMPLIANCE ORDER

Enforcement action date: 05/26/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0

Proposed penalty amount: 0 Final penalty amount: 15259 Paid penalty amount: 2544

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/19/1994
Date achieved compliance: 08/11/1999
Violation lead agency: State

Enforcement action: FINAL 3008(A) COMPLIANCE ORDER

Enforcement action date: 05/26/1995
Enf. disposition status: Not reported Enf. disp. status date: Not reported Enforcement lead agency: State Proposed penalty amount: 0 Final penalty amount: 15259
Paid penalty amount: 2544

Regulation violated: FR - 264.170-177.I
Area of violation: TSD - General
Date violation determined: 08/19/1994
Date achieved compliance: 08/11/1999
Violation lead agency: State

Enforcement action: FINAL 3008(A) COMPLIANCE ORDER

Enforcement action date: 05/26/1995
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 0
Final penalty amount: 15259
Paid penalty amount: 2544

Evaluation Action Summary:

Evaluation date: 02/05/2009

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

Evaluation date: 01/26/2007

Evaluation: FOCUSED COMPLIANCE INSPECTION

Area of violation: Not reported Date achieved compliance: Not reported Evaluation lead agency: State

Evaluation date: 08/24/2001

Evaluation: NOT A SIGNIFICANT NON-COMPLIER

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

Evaluation date: 10/24/2000

Evaluation: SIGNIFICANT NON-COMPLIER

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

Evaluation date: 08/11/1999

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: Not reported Date achieved compliance: Not reported

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

Evaluation lead agency: State

Evaluation date: 02/07/1997

Evaluation: NOT A SIGNIFICANT NON-COMPLIER

Area of violation:
Date achieved compliance:
Evaluation lead agency:
Not reported
Not reported
State

Evaluation date: 12/30/1994

Evaluation: SIGNIFICANT NON-COMPLIER

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

Evaluation date: 07/12/1994

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation: TSD - General Date achieved compliance: 08/11/1999 Evaluation lead agency: State

Evaluation date: 06/02/1993

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

Area of violation:

Date achieved compliance:

Evaluation lead agency:

Not reported

Not reported

State

FINDS:

Registry ID: 110000486386

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are in compliance with environmental regulations

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI TOYOTA FKA HI WOOD PRESERVING CO (Continued)

1000146664

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include: Incident Tracking, Compliance Assistance, and Compliance Monitoring.

SHWS:

Organization:

Hawaii Wood Preserving Company

Supplemental Location Text: Island:

Not reported Maui

Environmental Interest:

Hawaii Wood Preserving Co. (Osmose)

Hid Number:

HID980883185

Facility Registry Identifier:

110000486386 SHWB

Lead Agency: Program:

State

Project Manager:

Eric Sadovama NFA

Hazard Priority: Site Status:

NFA Response

Action: Potential Hazards And Controls:

No Hazard

Closure Document Title:

NFA Letter - Unrestricted Residential Use

Date Of Closure Document:

12/29/2008 1:28:12 AM

39 SW KAHULUI SERVICE, INC DBA LLOYD'S KAHULUI CHEVRON

SHWS S106817655 SPILLS N/A

130 W KAMEHAMEHA AVE 1/2-1 0.753 mi.

KAHULUI, HI 96732

3978 ft.

SHWS:

Relative: Equal

Actual:

3 ft.

Organization:

Chevron Products Company

Supplemental Location Text: Island:

Not reported Maui

Environmental Interest:

Kahului Service, Inc dba Lloyd's Kahului Chevron

Hid Number:

Not reported 110013788829

Facility Registry Identifier: Lead Agency:

Not reported State

Program: Project Manager: Hazard Priority:

Clarence Callahan NFA

Site Status:

NFA

Assessment

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document:

Hazard Undetermined NFA - Type Undetermined 8/25/2005 1:19:06 AM

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

KAHULUI SERVICE, INC DBA LLOYD'S KAHULUI CHEVRON (Continued)

Maui

S106817655

S106818999

N/A

SHWS

SPILLS

HI SPILLS:

Site

Island:

Supplemental Loc. Text: Not reported
Case Number: 20040721-1514
HID Number: Not reported
Facility Registry Id: 110013788829
Lead and Program: HEER EP&R
ER: Referred

ER: Units:

Hoist & Sand Grease Trap Removal

Substances: TPH gas
Less Or Greater Than: Not reported
Numerical Quantity: Not reported
Units: Not reported
Activity Type: Response
Activity Lead: Terry Corpus
Assignment End Date: 8/24/2005

Result:

File Under: Chevron Products Company

40 MAUI DISPOSAL COMPANY

SSE 221 LALO PL

1/2-1 KAHULUI, HI 96732 0.794 mi.

0.794 mi. 4194 ft.

Actual:

Relative:

Higher

Organization:

Supplemental Location Text:

Island:

SHWS:

14 ft. Environmental Interest:

Hid Number:

Facility Registry Identifier: Lead Agency: Program:

Project Manager:

Hazard Priority: Site Status: Action:

Potential Hazards And Controls: Closure Document Title: Date Of Closure Document: Maul Disposal Company, Inc.

Not reported

Maui

Opala Partners Diesel Release

Not reported 110013767218 Not reported

State Melody Calisay

NFA NFA Assessment

Hazard Undetermined NFA - Type Undetermined 1/18/2002 1:19:40 AM

HI SPILLS:

Island: Maui

Supplemental Loc. Text: Not reported
Case Number: 19950227
HID Number: Not reported
Facility Registry Id: 110013767218
Lead and Program: HEER EP&R
ER: Not reported

Units: Maui Disposal Company

Substances: Oil, Waste
Less Or Greater Than: Not reported
Numerical Quantity: Not reported
Units: Not reported
Activity Type: Response
Activity Lead: Chris Takeno

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI DISPOSAL COMPANY (Continued)

S106818999

Assignment End Date:

Not reported

Result:

.8

File Under: Maui Disposal Company, Inc.

Island:

Lead and Program:

Maui

Supplemental Loc. Text: Not reported
Case Number: 19950227
HID Number: Not reported
Facility Registry Id: 110013767218

ER:

Not reported

HEER EP&R

Not reported

Units:

Maui Disposal Company

Substances: Paint
Less Or Greater Than: Not reported
Numerical Quantity: Not reported
Units: Not reported
Activity Type: Response
Activity Lead: Chris Takeno

Assignment End Date: Result:

8

File Under: Maui Disposal Company, Inc.

Island: Maui

Supplemental Loc. Text: Not reported Case Number: 20000320-0954 HID Number: Not reported Facility Registry Id: 110013767218 Lead and Program: HEER EP&R ER: Not reported Lalo St-release Units: Substances: Oil Lubricating Less Or Greater Than: Not reported Numerical Quantity: Not reported Units: Not reported Activity Type: Response Activity Lead: Bill Perry

Result: 8

Assignment End Date:

File Under: Maui Disposal Company, Inc.

Not reported

Island: Maui

Supplemental Loc. Text: Not reported Case Number: 20000320-0954 HID Number: Not reported Facility Registry Id: 110013767218 Lead and Program: HEER EP&R ER: Not reported Units: Lalo St-release Substances: Diesel Fuel

Less Or Greater Than: <
Numerical Quantity: 25
Units: Gallons
Activity Type: Response
Activity Lead: Bill Perry
Assignment End Date: Not reported

Result:

File Under: Maui Disposal Company, Inc.

Map ID Direction MAP FINDINGS

Distance Elevation

Site

Database(s)

EDR ID Number EPA ID Number

1006820089

N/A

41 WSW 1/2-1 BEHIND SEA ISLAND 65 KAHULUI BEACH RD

KAHULUI, HI 96732

SHWS SPILLS

0.826 ml. 4360 ft.

Relative: Equal FINDS:

Registry ID:

110013779884

Actual: 3 ft.

Environmental Interest/Information System

Hawaii Hazard Evaluation and Emergency Response (HEER-FRS) system maintains basic information for facility/sites of interest to state of Hawaii, Department of Health, Hazard Evaluation and Emergency Response. It is used to index sites for hardcopy file retrieval and to present limited site status information. The environmental interests included are: release assessments, TRI reporters, EPCRA filers, RMP reporters and long term types of site investigations such as environmental cleanup study areas, state cleanup sites, Superfund NPL sites, voluntary clean up programs and Brownfields Pilot/Grants, properties, sites and targeted assessments.

The HI-ECS (Hawaii Environmental Compliance Program) is the Hawaii state regulatory program relating to environmental compliance and hazardous materials that ensures that program areas and facilities are

in compliance with environmental regulations

SHWS:

Organization: Brewer Environmental Industries, Inc.

Supplemental Location Text: Kahului Harbor

Island: Maui

Environmental Interest: 65 Kahului Beach Road

Hid Number: Not reported Facility Registry Identifier: 110013779884 Lead Agency: Not reported Program: State Project Manager: Unassigned Hazard Priority: NFA Site Status: NFA Action: Assessment

Potential Hazards And Controls: Hazard Undetermined
Closure Document Title: NFA - Type Undetermined
Date Of Closure Document: 6/25/1998 1:18:13 AM

HI SPILLS:

Island: Maui

Supplemental Loc. Text: Kahului Harbor
Case Number: 19940718
HID Number: Not reported
Facility Registry Id: 110013779884
Lead and Program: HEER EP&R
ER: Not reported

Units: Brewer Kahului Harbor 20,000 Gallon Urea Ammonium Nitrate Spill

Substances: Urea Ammonium Nitrate

Less Or Greater Than: Not reported Numerical Quantity: 20000 Units: Gallons

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

BEHIND SEA ISLAND (Continued)

1006820089

Activity Type:

Activity Lead: Assignment End Date: Response Terry Corpus Not reported

Result:

File Under:

Brewer Environmental Industries, Inc.

42 SE PACIFIC MACHINERY, INC MAUI

SHWS S106819524 N/A

SHWS

SPILLS

S104657472

N/A

1/2-1

470 S HANA HWY KAHULUI, HI 96732

0.849 mi. 4481 ft.

Relative:

SHWS:

Organization:

Pacific Machinery, Inc. Supplemental Location Text: Not reported

Actual: 7 ft.

Higher

Island:

Environmental Interest:

Maui

Pacific Machinery, Inc Maui

Hid Number: Facility Registry Identifier: Not reported Not reported Not reported State

Lead Agency: Program:

Project Manager: Mark Sutterfield NFA

Hazard Priority: Site Status: Action:

NFA Response Potential Hazards And Controls: No Hazard

Closure Document Title: Date Of Closure Document: NFA - Type Undetermined 8/5/2004 1:19:41 AM

43

MAUI BUSINESS PARK OIL CONTAMINATION

SSE 1/2-1

KAHULUI, HI 96732

370 DAIRY RD

0.981 mi. 5178 ft.

SHWS:

Relative: Higher

Organization:

Alexander & Baldwin, Inc. Not reported

Actual: Island:

Supplemental Location Text: Maui

13 ft. Environmental Interest:

Maui Business Park Oil Contamination

Hid Number:

Not reported 110013767227

HEER

Facility Registry Identifier: Lead Agency: Program:

State

Project Manager: Hazard Priority: Site Status:

Mark Sutterfield NFA

Action:

NFA Response

Potential Hazards And Controls: Closure Document Title:

No Hazard NFA Letter - Unrestricted Residential Use

Date Of Closure Document:

8/10/2005 1:14:37 AM

HI SPILLS:

Island:

Maui

Supplemental Loc. Text: Case Number:

Not reported 19951220-1

Site

MAP FINDINGS

Database(s)

EDR ID Number EPA ID Number

MAUI BUSINESS PARK OIL CONTAMINATION (Continued)

S104657472

HID Number: Facility Registry Id: Lead and Program; Not reported 110013767227 HEER EP&R

ER:

Units: Maui Business Park Oil Contamination

Substances: Gasoline
Less Or Greater Than: Not reported
Numerical Quantity: Not reported
Units: Not reported
Activity Type: Response
Activity Lead: Terry Corpus
Assignment End Date: Not reported

Result: 8

File Under: Alexander & Baldwin, Inc.

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program, NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 06/30/2011 Date Data Arrived at EDR: 07/12/2011 Date Made Active in Reports: 09/29/2011

Number of Days to Update: 79

Source: EPA Telephone: N/A

Last EDR Contact: 10/12/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 6 Telephone: 214-655-6659

EPA Region 3 EPA Region 7

Telephone 215-814-5418 Telephone: 913-551-7247

EPA Region 4 EPA Region 8

Telephone 404-562-8033 Telephone: 303-312-6774

EPA Region 5 EPA Region 9 Telephone 312-886-6686 Telephone: 415-947-4246

EPA Region 10

Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 06/30/2011 Date Data Arrived at EDR: 07/12/2011 Date Made Active in Reports: 09/29/2011

Number of Days to Update: 79

Source: EPA Telephone: N/A

Last EDR Contact: 10/12/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991 Date Data Arrived at EDR: 02/02/1994 Date Made Active in Reports: 03/30/1994 Number of Days to Update: 56

Source: EPA Telephone: 202-564-4267 Last EDR Contact: 08/15/2011

Next Scheduled EDR Contact: 11/28/2011 Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/30/2011 Date Data Arrived at EDR: 07/12/2011 Date Made Active in Reports: 09/29/2011 Number of Days to Update: 79 Source: EPA Telephone: N/A

Last EDR Contact: 10/12/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/25/2011 Date Data Arrived at EDR: 03/01/2011 Date Made Active in Reports: 05/02/2011

Number of Days to Update: 62

Source: EPA

Telephone: 703-412-9810 Last EDR Contact: 11/29/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010 Date Data Arrived at EDR: 01/11/2011 Date Made Active in Reports: 02/16/2011

Number of Days to Update: 36

Source: Environmental Protection Agency

Telephone: 703-603-8704 Last EDR Contact: 10/14/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/25/2011 Date Data Arrived at EDR: 03/01/2011 Date Made Active in Reports: 05/02/2011

Number of Days to Update: 62

Source: EPA

Telephone: 703-412-9810 Last EDR Contact: 11/29/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/09/2011 Date Data Arrived at EDR: 03/15/2011 Date Made Active in Reports: 06/14/2011 Number of Days to Update: 91

Source: EPA Telephone: 800-424-9346 Last EDR Contact: 11/14/2011 Next Scheduled EDR Contact: 02/27/2012 Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2011 Date Data Arrived at EDR: 07/07/2011 Date Made Active in Reports: 08/08/2011

Number of Days to Update: 32

Source: Environmental Protection Agency

Telephone: (415) 495-8895 Last EDR Contact: 10/05/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA), Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011 Date Data Arrived at EDR: 07/07/2011 Date Made Active in Reports: 08/08/2011

Number of Days to Update: 32

Source: Environmental Protection Agency Telephone: (415) 495-8895

Last EDR Contact: 10/05/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA), Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2011 Date Data Arrived at EDR: 07/07/2011 Date Made Active in Reports: 08/08/2011

Number of Days to Update: 32

Source: Environmental Protection Agency

Telephone: (415) 495-8895 Last EDR Contact: 10/05/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2011 Date Data Arrived at EDR: 07/07/2011 Date Made Active in Reports: 08/08/2011 Number of Days to Update: 32

Source: Environmental Protection Agency Telephone: (415) 495-8895 Last EDR Contact: 10/05/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2011 Date Data Arrived at EDR: 03/25/2011 Date Made Active in Reports: 06/14/2011 Number of Days to Update: 81

Source: Environmental Protection Agency Telephone: 703-603-0695 Last EDR Contact: 09/12/2011 Next Scheduled EDR Contact: 12/26/2011

Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2011 Date Data Arrived at EDR: 03/25/2011 Date Made Active in Reports: 06/14/2011 Number of Days to Update: 81

Source: Environmental Protection Agency Telephone: 703-603-0695 Last EDR Contact: 09/12/2011 Next Scheduled EDR Contact: 12/26/2011

Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 10/03/2011 Date Data Arrived at EDR: 10/04/2011 Date Made Active in Reports: 11/11/2011 Number of Days to Update: 38

Source: National Response Center, United States Coast Guard Telephone: 202-267-2180

Last EDR Contact: 10/04/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Sites List

Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 12/01/2009 Date Data Arrived at EDR: 12/07/2009 Date Made Active in Reports: 01/08/2010 Number of Days to Update: 32

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Permitted Landfills in the State of Hawaii

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/01/2011 Date Data Arrived at EDR: 04/12/2011 Date Made Active in Reports: 05/17/2011 Number of Days to Update: 35

Source: Department of Health Telephone: 808-586-4245 Last EDR Contact: 10/06/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Varies

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 09/06/2011 Date Data Arrived at EDR: 09/07/2011 Date Made Active in Reports: 10/05/2011

Number of Days to Update: 28

Source: Department of Health Telephone: 808-586-4228 Last EDR Contact: 12/05/2011

Next Scheduled EDR Contact: 03/19/2012 Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011 Date Data Arrived at EDR: 09/13/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 59

Source: EPA Region 6 Telephone: 214-665-6597 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/31/2011 Date Data Arrived at EDR: 02/01/2011 Date Made Active in Reports: 03/21/2011 Number of Days to Update: 48

Source: Environmental Protection Agency Telephone: 415-972-3372 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011 Date Data Arrived at EDR: 08/19/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 25

Source: EPA Region 8 Telephone: 303-312-6271 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/16/2011 Date Data Arrived at EDR: 06/02/2011 Date Made Active in Reports: 09/13/2011 Number of Days to Update: 103

Source: EPA Region 7 Telephone: 913-551-7003 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/11/2011 Date Data Arrived at EDR: 08/12/2011 Date Made Active in Reports: 09/13/2011 Number of Days to Update: 32

Source: EPA Region 4 Telephone: 404-562-8677 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2011 Date Data Arrived at EDR: 11/01/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 10

Source: EPA Region 1 Telephone: 617-918-1313 Last EDR Contact: 11/01/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/02/2011 Date Data Arrived at EDR: 11/04/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 7

Source: EPA Region 10 Telephone: 206-553-2857 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 09/06/2011 Date Data Arrived at EDR: 09/07/2011 Date Made Active in Reports; 10/05/2011

Number of Days to Update: 28

Source: Department of Health Telephone: 808-586-4228 Last EDR Contact: 12/05/2011

Next Scheduled EDR Contact: 12/19/2011 Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/04/2011 Date Data Arrived at EDR: 08/05/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 39

Source: EPA Region 9 Telephone: 415-972-3368 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011 Date Data Arrived at EDR: 08/19/2011 Date Made Active in Reports: 09/13/2011 Number of Days to Update: 25

Source: EPA Region 8 Telephone: 303-312-6137 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2011 Date Data Arrived at EDR: 11/01/2011 Date Made Active in Reports: 11/11/2011 Number of Days to Update: 10 Source: EPA, Region 1 Telephone: 617-918-1313 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012

Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2011 Date Data Arrived at EDR: 06/01/2011 Date Made Active in Reports: 06/14/2011

Number of Days to Update: 13

Source: EPA Region 7 Telephone: 913-551-7003 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency; Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011 Date Data Arrived at EDR: 05/11/2011 Date Made Active in Reports: 06/14/2011

Number of Days to Update: 34

Source: EPA Region 6 Telephone: 214-665-7591 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/01/2011 Date Data Arrived at EDR: 08/26/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 18

Source: EPA Region 5 Telephone: 312-886-6136 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/02/2011 Date Data Arrived at EDR: 11/04/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 7

Source: EPA Region 10 Telephone: 206-553-2857 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/11/2011 Date Data Arrived at EDR: 08/12/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 32

Source: EPA Region 4 Telephone: 404-562-9424 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Semi-Annually

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010 Date Data Arrived at EDR: 02/16/2010 Date Made Active in Reports: 04/12/2010 Number of Days to Update: 55 Source: FEMA

Telephone: 202-646-5797 Last EDR Contact: 10/17/2011

Next Scheduled EDR Contact: 01/30/2012 Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

ENG CONTROLS: Engineering Control Sites

A listing of sites with engineering controls in place.

Date of Government Version: 12/01/2009 Date Data Arrived at EDR: 12/07/2009 Date Made Active in Reports: 01/08/2010

Number of Days to Update: 32

Source: Department of Health Telephone: 404-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 12/01/2009 Date Data Arrived at EDR: 12/07/2009 Date Made Active in Reports: 01/08/2010

Number of Days to Update: 32

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 08/04/2011 Date Data Arrived at EDR: 10/04/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 38

Source: EPA, Region 1 Telephone: 617-918-1102 Last EDR Contact: 10/04/2011

Next Scheduled EDR Contact: 01/16/2012

Data Release Frequency: Varies

VCP: Voluntary Response Program Sites

Sites participating in the Voluntary Response Program. The purpose of the VRP is to streamline the cleanup process in a way that will encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.

Date of Government Version: 12/01/2009 Date Data Arrived at EDR: 12/07/2009 Date Made Active in Reports: 01/08/2010

Number of Days to Update: 32

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012

Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008 Date Data Arrived at EDR: 04/22/2008 Date Made Active in Reports: 05/19/2008

Number of Days to Update: 27

Source: EPA, Region 7 Telephone: 913-551-7365 Last EDR Contact: 04/20/2009

Next Scheduled EDR Contact: 07/20/2009 Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites

With certain legal exclusions and additions, the term 'brownfield site' means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Date of Government Version: 12/01/2009 Date Data Arrived at EDR: 12/07/2009 Date Made Active in Reports: 01/08/2010 Number of Days to Update: 32

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012

Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities—especially those without EPA Brownfields Assessment Demonstration Pilots—minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/27/2011 Date Data Arrived at EDR: 06/27/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 78

Source: Environmental Protection Agency

Telephone: 202-566-2777 Last EDR Contact: 09/28/2011

Next Scheduled EDR Contact: 01/09/2012 Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985 Date Data Arrived at EDR: 08/09/2004 Date Made Active in Reports: 09/17/2004 Number of Days to Update: 39

Source: Environmental Protection Agency Telephone: 800-424-9346 Last EDR Contact: 06/09/2004 Next Scheduled EDR Contact: N/A

Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009

Number of Days to Update: 137

Source: EPA, Region 9 Telephone: 415-947-4219 Last EDR Contact: 09/26/2011

Next Scheduled EDR Contact: 01/09/2012 Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998 Date Data Arrived at EDR: 12/03/2007 Date Made Active in Reports: 01/24/2008 Number of Days to Update: 52 Source: Environmental Protection Agency

Telephone: 703-308-8245 Last EDR Contact: 11/07/2011

Next Scheduled EDR Contact: 02/20/2012 Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 06/08/2011 Date Data Arrived at EDR: 09/16/2011 Date Made Active in Reports: 09/29/2011

Number of Days to Update: 13

Source: Drug Enforcement Administration

Telephone: 202-307-1000 Last EDR Contact: 09/07/2011

Next Scheduled EDR Contact: 12/19/2011 Data Release Frequency: Quarterly

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab site locations.

Date of Government Version: 08/04/2010 Date Data Arrived at EDR: 09/10/2010 Date Made Active in Reports: 10/22/2010 Number of Days to Update: 42

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/05/2011

Next Scheduled EDR Contact: 03/19/2012 Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007 Date Data Arrived at EDR: 11/19/2008 Date Made Active in Reports: 03/30/2009 Number of Days to Update: 131

Source: Drug Enforcement Administration Telephone: 202-307-1000 Last EDR Contact: 03/23/2009

Next Scheduled EDR Contact: 06/22/2009 Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 09/09/2011 Date Data Arrived at EDR: 09/16/2011 Date Made Active in Reports: 09/29/2011 Number of Days to Update: 13

Source: Environmental Protection Agency Telephone: 202-564-6023 Last EDR Contact: 10/31/2011 Next Scheduled EDR Contact; 02/13/2012

Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005 Date Data Arrived at EDR: 12/11/2006 Date Made Active in Reports: 01/11/2007 Number of Days to Update: 31

Source: Department of the Navy Telephone: 843-820-7326 Last EDR Contact: 11/22/2011

Next Scheduled EDR Contact: 03/05/2012 Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/04/2011 Date Data Arrived at EDR: 10/04/2011 Date Made Active in Reports: 11/11/2011 Number of Days to Update: 38

Source: U.S. Department of Transportation Telephone: 202-366-4555

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Annually

Last EDR Contact: 10/04/2011

SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 03/10/2010 Date Data Arrived at EDR: 03/16/2010 Date Made Active in Reports: 04/13/2010

Number of Days to Update: 28

Source: Department of Health Telephone: 808-586-4249 Last EDR Contact: 12/02/2012

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Varies

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous

Date of Government Version: 06/15/2011 Date Data Arrived at EDR: 07/07/2011 Date Made Active in Reports: 08/08/2011

Number of Days to Update: 32

Source: Environmental Protection Agency

Telephone: (415) 495-8895 Last EDR Contact: 10/05/2011

Next Scheduled EDR Contact: 01/16/2012 Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/29/2011 Date Data Arrived at EDR: 08/09/2011 Date Made Active in Reports: 11/11/2011

Number of Days to Update: 94

Source: Department of Transporation, Office of Pipeline Safety

Telephone: 202-366-4595 Last EDR Contact: 11/08/2011

Next Scheduled EDR Contact: 02/20/2012 Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands,

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 11/10/2006 Date Made Active in Reports: 01/11/2007

Number of Days to Update: 62

Source: USGS

Telephone: 888-275-8747 Last EDR Contact: 10/20/2011

Next Scheduled EDR Contact; 01/30/2012 Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009 Date Data Arrived at EDR: 08/12/2010 Date Made Active in Reports: 12/02/2010

Number of Days to Update: 112

Source: U.S. Army Corps of Engineers

Telephone: 202-528-4285 Last EDR Contact: 09/12/2011

Next Scheduled EDR Contact: 12/26/2011 Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites, Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/01/2011 Date Data Arrived at EDR: 08/19/2011 Date Made Active in Reports: 09/29/2011

Number of Days to Update: 41

Source: Department of Justice, Consent Decree Library Telephone: Varies

Last EDR Contact: 10/03/2011

Next Scheduled EDR Contact: 01/16/2012

Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/31/2011 Date Data Arrived at EDR: 09/14/2011

Date Made Active in Reports: 09/29/2011

Number of Days to Update: 15

Source: EPA

Telephone: 703-416-0223 Last EDR Contact: 09/14/2011

Next Scheduled EDR Contact: 12/26/2011 Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010 Date Data Arrived at EDR: 10/21/2010 Date Made Active in Reports: 01/28/2011

Number of Days to Update: 99

Source: Department of Energy Telephone: 505-845-0011 Last EDR Contact: 11/29/2011

Next Scheduled EDR Contact: 03/12/2012

Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011 Date Data Arrived at EDR: 09/08/2011 Date Made Active in Reports: 09/29/2011

Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration

Telephone: 303-231-5959 Last EDR Contact: 09/08/2011

Next Scheduled EDR Contact: 12/19/2011 Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009 Date Data Arrived at EDR: 12/17/2010 Date Made Active in Reports: 03/21/2011

Number of Days to Update: 94

Source: EPA

Telephone: 202-566-0250 Last EDR Contact: 12/02/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant

Date of Government Version: 12/31/2006 Date Data Arrived at EDR: 09/29/2010 Date Made Active in Reports: 12/02/2010

Number of Days to Update: 64

Source: EPA

Telephone: 202-260-5521 Last EDR Contact: 09/27/2011

Next Scheduled EDR Contact: 01/09/2012 Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act) FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009 Date Data Arrived at EDR: 04/16/2009 Date Made Active in Reports: 05/11/2009

Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances Telephone: 202-566-1667

Last EDR Contact: 11/28/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act) A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009 Date Data Arrived at EDR: 04/16/2009 Date Made Active in Reports: 05/11/2009

Number of Days to Update: 25

Source: EPA

Telephone: 202-566-1667 Last EDR Contact: 11/28/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006 Date Data Arrived at EDR: 03/01/2007 Date Made Active in Reports: 04/10/2007

Number of Days to Update: 40

Source: Environmental Protection Agency

Telephone: 202-564-2501 Last EDR Contact: 12/17/2007

Next Scheduled EDR Contact; 03/17/2008 Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006 Date Data Arrived at EDR: 03/01/2007 Date Made Active in Reports: 04/10/2007

Number of Days to Update: 40

Source: Environmental Protection Agency

Telephone: 202-564-2501 Last EDR Contact: 12/17/2008

Next Scheduled EDR Contact: 03/17/2008 Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009 Date Data Arrived at EDR: 12/10/2010 Date Made Active in Reports: 02/25/2011

Number of Days to Update: 77

Source: EPA

Telephone: 202-564-4203 Last EDR Contact: 10/31/2011

Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/07/2011 Date Data Arrived at EDR: 01/21/2011 Date Made Active in Reports: 03/21/2011 Number of Days to Update: 59

Source: Environmental Protection Agency Telephone: 202-564-5088 Last EDR Contact: 09/26/2011 Next Scheduled EDR Contact: 01/09/2012

Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010 Date Data Arrived at EDR: 11/10/2010 Date Made Active in Reports: 02/16/2011

Number of Days to Update: 98

Source: EPA

Telephone: 202-566-0500 Last EDR Contact: 10/19/2011

Next Scheduled EDR Contact: 01/30/2012 Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011 Date Data Arrived at EDR: 07/15/2011 Date Made Active in Reports: 09/13/2011

Number of Days to Update: 60

Source: Nuclear Regulatory Commission

Telephone: 301-415-7169 Last EDR Contact: 09/12/2011

Next Scheduled EDR Contact: 12/26/2011 Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity

Date of Government Version: 01/11/2011 Date Data Arrived at EDR: 01/13/2011 Date Made Active in Reports: 02/16/2011

Number of Days to Update: 34

Source: Environmental Protection Agency

Telephone: 202-343-9775 Last EDR Contact: 10/13/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/14/2010 Date Data Arrived at EDR: 04/16/2010 Date Made Active in Reports: 05/27/2010

Number of Days to Update: 41

Source: EPA

Telephone: (415) 947-8000 Last EDR Contact: 09/13/2011

Next Scheduled EDR Contact: 12/26/2011 Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System, RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995 Date Data Arrived at EDR: 07/03/1995 Date Made Active in Reports: 08/07/1995

Number of Days to Update: 35

Source: EPA Telephone: 202-564-4104 Last EDR Contact: 06/02/2008

Next Scheduled EDR Contact: 09/01/2008 Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009 Date Data Arrived at EDR: 03/01/2011 Date Made Active in Reports: 05/02/2011

Number of Days to Update: 62

Source: EPA/NTIS Telephone: 800-424-9346 Last EDR Contact: 11/30/2011

Next Scheduled EDR Contact: 03/12/2012 Data Release Frequency: Biennially

UIC: Underground Injection Wells Listing A listing of underground injection well locations.

> Date of Government Version: 04/05/2011 Date Data Arrived at EDR: 04/15/2011 Date Made Active in Reports: 05/17/2011

Number of Days to Update: 32

Source: Department of Health Telephone: 808-586-4258 Last EDR Contact: 12/05/2011

Next Scheduled EDR Contact: 03/19/2012 Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing A listing of permitted drycleaner facilities in the state.

Date of Government Version: 10/31/2011 Date Data Arrived at EDR: 11/02/2011 Date Made Active in Reports: 12/05/2011 Number of Days to Update: 33

Source: Department of Health Telephone: 808-586-4200 Last EDR Contact: 10/25/2011 Next Scheduled EDR Contact: 01/23/2012

Data Release Frequency: Varies

AIRS: List of Permitted Facilities

A listing of permitted facilities in the state.

Date of Government Version: 10/31/2011 Date Data Arrived at EDR: 11/02/2011 Date Made Active in Reports: 12/05/2011

Number of Days to Update: 33

Source: Department of Health Telephone: 808-586-4200 Last EDR Contact: 10/25/2011

Next Scheduled EDR Contact: 01/23/2012 Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 12/08/2006 Date Made Active in Reports: 01/11/2007

Number of Days to Update: 34

Source: USGS

Telephone: 202-208-3710 Last EDR Contact: 10/20/2011

Next Scheduled EDR Contact: 01/30/2012 Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011 Date Data Arrived at EDR: 03/09/2011 Date Made Active in Reports: 05/02/2011

Number of Days to Update: 54

Source: Environmental Protection Agency Telephone: 615-532-8599 Last EDR Contact: 10/24/2011

Next Scheduled EDR Contact: 02/06/2012 Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008 Date Data Arrived at EDR: 02/18/2009 Date Made Active in Reports: 05/29/2009 Number of Days to Update: 100

Source: Environmental Protection Agency Telephone: 202-566-0517 Last EDR Contact: 11/04/2011 Next Scheduled EDR Contact: 02/13/2012 Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 08/07/2009 Date Made Active in Reports: 10/22/2009

Number of Days to Update: 76

Source: Department of Energy Telephone: 202-586-8719 Last EDR Contact: 10/18/2011

Next Scheduled EDR Contact: 01/30/2012 Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010 Date Data Arrived at EDR: 01/03/2011 Date Made Active in Reports: 03/21/2011

Number of Days to Update: 77

Source: Environmental Protection Agency

Telephone: N/A

Last EDR Contact: 09/16/2011

Next Scheduled EDR Contact: 12/26/2011 Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management. Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005 Date Data Arrived at EDR: 02/06/2006 Date Made Active in Reports: 01/11/2007

Number of Days to Update: 339

Source: U.S. Geological Survey Telephone: 888-275-8747 Last EDR Contact: 10/20/2011

Next Scheduled EDR Contact: 01/30/2012

Data Release Frequency: N/A

FINANCIAL ASSURANCE: Financial Assurance Information Listing

A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 09/23/2011 Date Data Arrived at EDR: 09/23/2011 Date Made Active in Reports: 10/05/2011

Number of Days to Update: 12

Source: Department of Health Telephone: 808-586-4226 Last EDR Contact: 09/19/2011

Next Scheduled EDR Contact: 01/02/2012

Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version; N/A Date Data Arrived at EDR: N/A Date Made Active in Reports: N/A Number of Days to Update: N/A Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A

Next Scheduled EDR Contact: N/A

Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data Source: Rextag Strategies Corp.

Telephone: (281) 769-2247

U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services,

a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary

and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

A&B PARCEL B 180 HOBRON AVE. KAHULUI, HI 96732

TARGET PROPERTY COORDINATES

Latitude (North): 20.89560 - 20* 53' 44.2" Longitude (West): 156.4621 - 156* 27' 43.5"

Universal Tranverse Mercator: Zone 4 UTM X (Meters): 764012.9 UTM Y (Meters): 2312543.5

Elevation: 3 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map: 20156-H4 KAHAKULOA, HI

Most Recent Revision: Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

- 1. Groundwater flow direction, and
- 2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

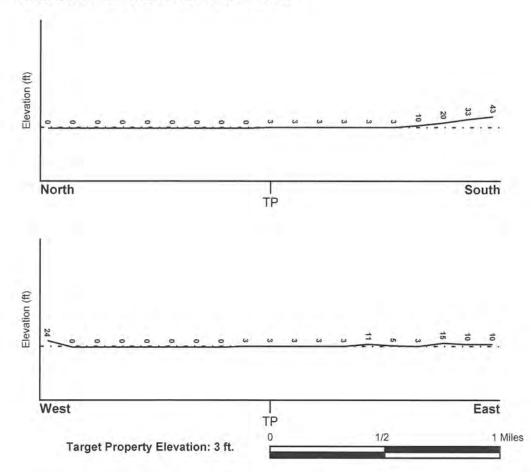
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

FEMA Flood Electronic Data

Target Property County MAUI, HI

YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:

1500030190D - FEMA Q3 Flood data

Additional Panels in search area:

Not Reported

NATIONAL WETLAND INVENTORY

NWI Electronic Data Coverage

NWI Quad at Target Property NOT AVAILABLE

YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID F

LOCATION FROM TP GENERAL DIRECTION

Not Reported

GROUNDWATER FLOW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

GEOLOGIC AGE IDENTIFICATION

Era: - Category: -

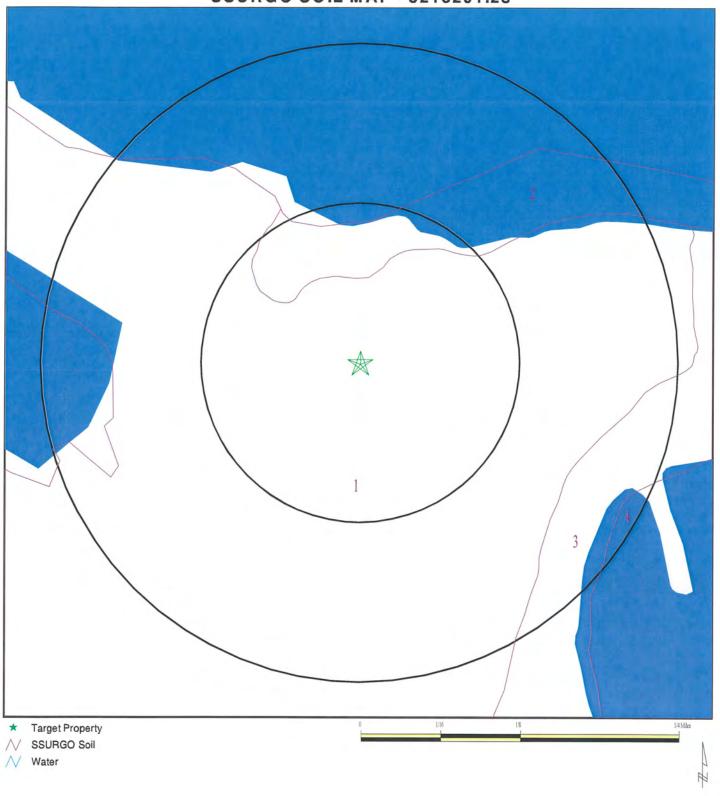
System: -

Series:

Code: N/A (decoded above as Era, System & Series)

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3218291.2s



SITE NAME: A&B Parcel B
ADDRESS: 180 Hobron Ave.
Kahului HI 96732
LAT/LONG: 20.8956 / 156.4621

CLIENT: Kevin S. Kennedy Consulting, LLC CONTACT: Kevin Kennedy INQUIRY#: 3218291.2s

DATE: December 05, 2011 12:44 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Fill land

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward

> 0 inches

movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Depth to Watertable Min:

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 152 inches

Soil Layer Information Saturated Boundary Classification hydraulic conductivity Layer Upper Lower Soil Texture Class **AASHTO Group Unified Soil** Soil Reaction micro m/sec (pH) Silt-Clay 1 0 inches 11 inches silty clay loam Not reported Max: 0.42 Max: Min: Materials (more Min: 0.02 than 35 pct. passing No. 200), Clayey Soils. 11 inches Silt-Clay Max: 0.42 2 29 inches silty clay loam Not reported Max: Min: Materials (more Min: 0.02 than 35 pct. passing No. 200), Clayey Soils. 3 29 inches 59 inches sand Silt-Clay Not reported Max: 0.42 Max: Min: Materials (more Min: 0.02 than 35 pct. passing No. 200), Clayey Soils. 59 inches 4 63 inches bedrock Silt-Clay Not reported Max: 0.42 Max: Min: Materials (more Min: 0.02 than 35 pct. passing No. 200), Clayey Soils.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Beaches

Soil Surface Texture: coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to

excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 92 inches

			Soil Layer	Information			
	Boundary		1	Classification		Saturated hydraulic	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity micro m/sec	Soil Reaction (pH)
1	0 inches	5 inches	coarse sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1
2	5 inches	59 inches	coarse sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.8 Min: 6.1

Soil Map ID: 3

Soil Component Name: Jaucas

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to

excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 107 inches

			Soil Layer	Information			
	Boundary			Classification		Saturated hydraulic	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	conductivity micro m/sec	Soil Reaction (pH)
1	0 inches	12 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand,	Max: 141 Min: 42.34	Max: 8.4 Min: 7.9
2	12 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42.34	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: Water > 40 acres

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to

excessively drained sands and gravels.

Soil Drainage Class: Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE SEARCH DISTANCE (miles)

Federal USGS 1,000

Federal FRDS PWS Nearest PWS within 1 mile

State Database 1.000

FEDERAL USGS WELL INFORMATION

MAP ID WELL ID LOCATION FROM TP

No Wells Found

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID WELL ID FROM TP

9 H10000204 1/4 - 1/2 Mile SW

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

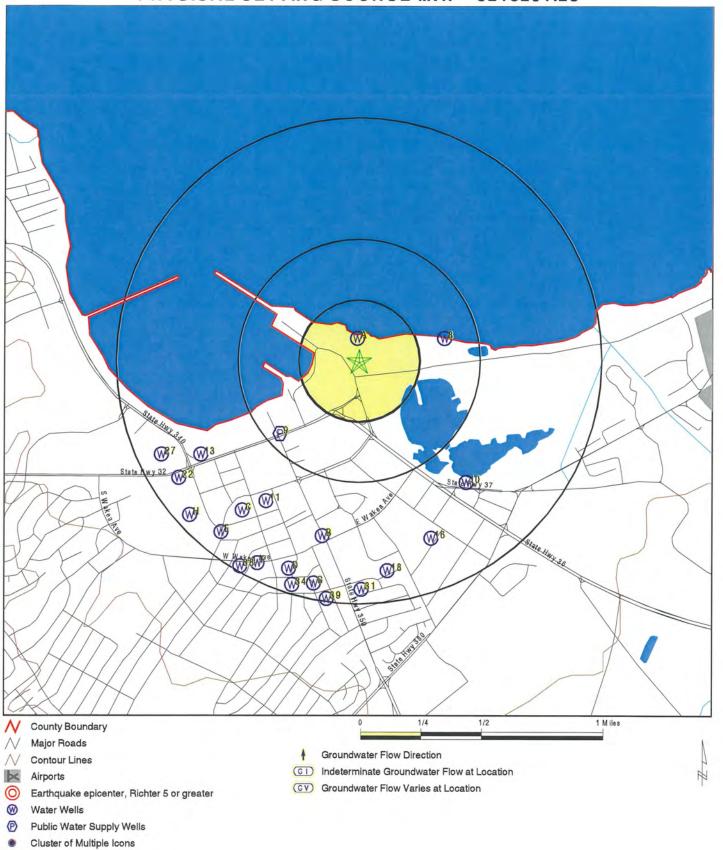
MAP ID	WELL ID	FROM TP
A1	HI600000001467	0 - 1/8 Mile North
A2	HI600000001468	0 - 1/8 Mile North
A3	HI600000001465	0 - 1/8 Mile North
A4	HI600000001466	0 - 1/8 Mile North
A5	HI600000001471	0 - 1/8 Mile North
A6	HI600000001470	0 - 1/8 Mile North
A7	HI600000001469	0 - 1/8 Mile North
8	HI600000001472	1/4 - 1/2 Mile ENE
10	HI600000001434	1/2 - 1 Mile SE
11	HI600000001428	1/2 - 1 Mile SSW
B12	HI600000001416	1/2 - 1 Mile South
13	HI600000001447	1/2 - 1 Mile WSW
C14	HI600000001427	1/2 - 1 Mile SW
B15	HI600000001410	1/2 - 1 Mile SSW
16	HI600000001412	1/2 - 1 Mile SSE
C17	HI600000001422	1/2 - 1 Mile SW
18	HI600000001385	1/2 - 1 Mile South
D19	HI600000001400	1/2 - 1 Mile SSW
E20	HI600000001415	1/2 - 1 Mile SW
D21	HI600000001390	1/2 - 1 Mile SSW

GEOCHECK[®] - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
22	HI600000001436	1/2 - 1 Mile WSW
E23	HI600000001420	1/2 - 1 Mile SW
F24	HI600000001403	1/2 - 1 Mile SSW
D25	HI600000001389	1/2 - 1 Mile SSW
G26	HI600000001380	1/2 - 1 Mile South
27	HI600000001446	1/2 - 1 Mile WSW
H28	HI600000001425	1/2 - 1 Mile SW
F29	HI600000001399	1/2 - 1 Mile SSW
G30	HI600000001369	1/2 - 1 Mile South
31	HI600000001367	1/2 - 1 Mile South
E32	HI600000001409	1/2 - 1 Mile SW
D33	HI600000001372	1/2 - 1 Mile SSW
34	HI600000001368	1/2 - 1 Mile SSW
H35	HI600000001424	1/2 - 1 Mile SW
G36	HI600000001366	1/2 - 1 Mile SSW
F37	HI600000001384	1/2 - 1 Mile SSW
38	HI600000001388	1/2 - 1 Mile SSW
39	HI600000001360	1/2 - 1 Mile South

PHYSICAL SETTING SOURCE MAP - 3218291.2s



SITE NAME: A&B Parcel B ADDRESS: 180 Hobron Ave.

LAT/LONG:

Kahului HI 96732 20.8956 / 156.4621 CLIENT: Kevin S. Kennedy Consulting, LLC CONTACT: Kevin Kennedy

INQUIRY #: 3218291.2s DATE: December 05, 2011 12:44 pm

Copyright © 2011 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

Distance Elevation			Database	EDR ID Number
A1 North 0 - 1/8 Mile Higher			HI WELLS	HI600000001467
Wid:	6-5427-003	Island:	6	
Well no:	5427-03	Well name:	Maui Elec C	
Old name:	Not Reported	Yr drilled:	1949	
Driller:	CAMAY DRLG CO	Quad map:	05	
Longitude2:	1562754	Latitude27:	205401	
Longitude8:	1562744	Latitude83:	205349	
Lat83d:	20	Lat83m:	53	
Lat83s:	49	Lon83d:	156	
Lon83m:	27	Lon83s:	44	
Lat83dd:	20.89694			
Lon83dd:	-156.46222			
Long83dd:	-156.46222			
Lat83dd 1:	20.89694			
Gps:	0	Utm:	1	
Owner user:	Maui Electric Co. Ltd.	Old number:	25-C	
Well type:	Not Reported	Casing dia:	24	
Ground el:	Not Reported	Well depth:	237	
Solid case:	232	Perf case:	Not Reported	
Use:	IND - Geothermal, Thermos	electric Cooling, Power De		
Use year:	71			
Init water:	Not Reported			
Init head:	Not Reported			
Init chlor:	Not Reported	Init cl:	0	
Test date:	Not Reported	Test gpm:	Not Reported	
Test ddown:	Not Reported	Test chlor:	Not Reported	
Test temp:	Not Reported	Temp unit:	Not Reported	
Pump gpm:	Not Reported	Draft mgy:	Not Reported	
Head feet:	Not Reported	Max chlor:	Not Reported	
Min chlor:	Not Reported	Geology:	THO	
Pump yr:	Not Reported	Draft yr:	00	
Head yr:	Not Reported	Maxchl:	Not Reported	
Maxchl yr:	Not Reported	Minchl:	Not Reported	
Minchl yr:	Not Reported	Bot hole:	Not Reported	
Bot solid:	Not Reported	Bot perf:	Not Reported	
Spec capac:	Not Reported	Pump mgd:	Not Reported	
Draft mgd:	Not Reported	Aquifer:	60301	
Tmk:	3-7-011:020	Old aqui:	Not Reported	
Aqui code:	60301	Latest hd:	Not Reported	
Cur head:	Not Reported	Cur cl:	Not Reported	
Cur temp:	Not Reported	Wcr:	01/01/1949	
Pir:	Not Reported	Surveyor:	Not Reported	
T:	Not Reported	Pump elev:	Not Reported	
Pump depth:	Not Reported	Site id:	HI600000001467	

A2 North 0 - 1/8 Mile Higher

Wid:	6-5427-004	Island:	6
Well no:	5427-04	Well name:	Maui Elec D
Old name:	Not Reported	Yr drilled:	1949
Driller:	CAMAY DRLG CO	Quad map:	05
Longitude2:	1562754	Latitude27:	205401
Longitude8:	1562744	Latitude83:	205349
Lat83d:	20	Lat83m:	53
Lat83s:	49	Lon83d:	156
Lon83m:	27	Lon83s:	44
Lat83dd:	20.89694		
Lon83dd:	-156.46222		
Long83dd:	-156.46222		
Lat83dd 1:	20.89694		
Gps:	0	Utm:	1
Owner user:	Maui Electric Co. Ltd.	Old number:	25-D
Well type:	Not Reported	Casing dia:	24
Ground el:	Not Reported	Well depth:	245
Solid case:	232	Perf case:	Not Reported
Use:	IND - Geothermal, Thermos	electric Cooling, Power De	
Use year;	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	00
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-7-011:020	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1949
Pir:	Not Reported	Surveyor:	Not Reported
T2	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001468
Pir: T:	Not Reported Not Reported	Surveyor: Pump elev:	Not Repo

A3 North 0 - 1/8 Mile Higher	HI WELLS	HI600000001465
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Wid:	6-5427-001	Island:	6
Well no:	5427-01	Well name:	Kahului PP A
Old name:	Maui Elec A	Yr drilled:	1946
Driller:	MULLIN	Quad map:	05
Longitude2:	1562754	Latitude27:	205401
Longitude8:	1562744	Latitude83:	205349
Lat83d:	20	Lat83m:	53
Lat83s:	49	Lon83d:	156
Lon83m:	27	Lon83s:	44
Lat83dd:	20.89694		

Lon83dd: -156.46222 Long83dd: -156.46222 Lat83dd 1: 20.89694 Utm: 1 Gps: Owner user: Maui Electric Co. Ltd. Old number: 25-A Well type: Not Reported Casing dia: 20 Ground el: Well depth: 225 Solid case: 175 Perf case: Not Reported IND - Geothermal, Thermoelectric Cooling, Power De Use: Use year: Init water: Not Reported Init head: Not Reported Init chlor: Not Reported Init cl: Not Reported Test date: Test gpm: Not Reported Not Reported Test ddown: Test chlor: Not Reported Not Reported Not Reported Test temp: Temp unit: Pump gpm: 3500.00000 Draft mgy: Not Reported Head feet: Not Reported Not Reported Max chlor: Min chlor: Not Reported Geology: THO Pump yr: 99 Draft yr: 00 Head yr: Not Reported Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Not Reported Minchl yr: Bot hole: -216 Bot solid: Not Reported -166 Bot perf: Spec capac: Not Reported Pump mgd: 5.040 Draft mgd: Not Reported 60301 Aguifer: 3-7-011:020 Old aqui: Not Reported Tmk: 60301 Not Reported Aqui code: Latest hd: Cur head: Not Reported Not Reported Cur cl: Cur temp: Not Reported Wcr: 01/01/1946 Surveyor: Pir: Not Reported REED ARIYOSHI T: Not Reported Pump elev: -13 Pump depth: 22 Site id: HI6000000001465

A4
North
0 - 1/8 Mile
Higher

6-5427-002

Island:
6-6-6427-002

Island:
6-6-6427-002

Wid: 6-5427-002 Island: 6 Well no: 5427-02 Well name: Maui Elec B Old name: Not Reported Yr drilled: 1947 Driller: MULLIN Quad map: 05 205401 Longitude2; 1562754 Latitude27: Longitude8: 1562744 205349 Latitude83: Lat83d: 20 Lat83m: 53 Lat83s: 49 Lon83d: 156 Lon83m: 27 Lon83s: 44 20.89694 Lat83dd: Lon83dd: -156.46222 Long83dd: -156.46222 Lat83dd 1: 20.89694 0 Utm: Gps: Owner user: Maui Electric Co. Ltd. Old number: 25-B Casing dia: Well type: Not Reported 24 Ground el: Not Reported Well depth: 200 Solid case: Perf case: Not Reported IND - Geothermal, Thermoelectric Cooling, Power De Use: Use year:

Not Reported

Init water:

4 TO TO 18	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	00
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	58	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf.	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-7-011:020	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr.	01/01/1947
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001466
	C V V V V V V V V V V V V V V V V V V V		

A5	
North	
0 - 1/8 Mile	
Higher	

Wid:	6-5427-007	Island:	6
Well no:	5427-007	Well name:	Maui Elec G
Old name:		Yr drilled:	
3 15 1 15 10 15 1	Not Reported SAMSON-SMOCK		1953
Driller:		Quad map:	05
Longitude2:	1562754	Latitude27:	205401
Longitude8:	1562744	Latitude83:	205349
Lat83d:	20	Lat83m:	53
Lat83s:	49	Lon83d:	156
Lon83m:	27	Lon83s:	44
Lat83dd:	20.89694		
Lon83dd;	-156.46222		
Long83dd:	-156.46222		
Lat83dd 1:	20,89694		
Gps:	0	Utm:	1
Owner user:	Maui Electric Co. Ltd.	Old number:	25-G
Well type:	Not Reported	Casing dia:	24
Ground el:	255	Well depth:	255
Solid case:	99	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoo	electric Cooling, Power De	
Use year:	71	The second second	
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	00
Head yr:	Not Reported	Maxchl:	Not Reported
	, for risportos	. Than so it.	Hot Hopoited

Maxchl yr: Minchl yr: 0 Minchl: Not Reported 0 Bot hole: Bot solid: 156 Bot perf: Not Reported Not Reported Not Reported Not Reported 60301 Spec capac: Pump mgd: Draft mgd: Aquifer: Tmk: 3-7-011:020 Old aqui: Not Reported Not Reported Aqui code: 60301 Latest hd: Not Reported Not Reported Cur head: Cur cl: Cur temp: Not Reported Wcr: 01/01/1953 Pir: Not Reported Surveyor: Not Reported T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI6000000001471

A6 North 0 - 1/8 Mile Higher

Wid:	6-5427-006	Island:	6
Well no:	5427-06	Well name:	Maul Elec F
Old name:	Not Reported	Yr drilled:	1953
Driller:	SAMSON-SMOCK	Quad map:	05
Longitude2:	1562754	Latitude27:	205401
Longitude8:	1562744	Latitude83:	205349
Lat83d:	20	Lat83m:	53
Lat83s:	49	Lon83d:	156
Lon83m:	27	Lon83s:	44
Lat83dd:	20.89694		
Lon83dd:	-156.46222		
Long83dd:	-156.46222		
Lat83dd 1:	20.89694		
Gps:	0	Utm:	1
Owner user:	Maui Electric Co. Ltd.	Old number:	25-F
Well type:	Not Reported	Casing dia:	24
Ground el:	Not Reported	Well depth:	250
Solid case:	101	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoo	electric Cooling, Power De	************
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor;	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	00
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-7-011:020	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wor:	01/01/1953
Pir:	Not Reported	Surveyor	Not Reported
	Charles Annual Control		The second second second

T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001470

A7
North
0 - 1/8 Mile
Higher

HI WELLS
HI600000001469

Wid: 6-5427-005 Island: 6 Well name: Well no: 5427-05 Maui Elec E Old name: Not Reported Yr drilled: 1953 SAMSON-SMOCK Driller: Quad map: 05 Longitude2: 1562754 Latitude27: 205401 Longitude8: 1562744 Latitude83: 205349 Lat83d: 20 Lat83m: 53 Lat83s: 49 Lon83d: 156 Lon83m: 27 Lon83s: 44 Lat83dd: 20.89694 Lon83dd: -156.46222 -156.46222 Long83dd: Lat83dd 1: 20.89694 Gps: Utm: Owner user: Maui Electric Co. Ltd. Old number: 25-E Well type: Not Reported Casing dia: 24 Ground el: Not Reported Well depth: 257 Solid case: 120 Perf case: Not Reported Use: IND - Geothermal, Thermoelectric Cooling, Power De Use year: Init water: Not Reported Init head: Not Reported Not Reported Init chlor: Init cl: 0 Test date: Not Reported Test gpm: Not Reported Test ddown: Not Reported Test chlor: Not Reported Not Reported Test temp: Temp unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Not Reported Head feet: Max chlor: Not Reported Min chlor: Not Reported THO Geology: Pump yr: Not Reported Draft yr: 00 Head yr: Not Reported Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Minchl yr: Not Reported Bot hole: Not Reported Not Reported Bot solid: Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported Draft mgd: Not Reported Aquifer: 60301 3-7-011:020 Tmk: Old aqui: Not Reported Aqui code: 60301 Latest hd: Not Reported Cur head: Not Reported Cur cl: Not Reported Cur temp: Not Reported 01/01/1953 Wcr: Not Reported Surveyor: Pir: Not Reported Not Reported Pump elev: Not Reported Not Reported HI600000001469 Pump depth: Site id:

8 ENE 1/4 - 1/2 Mile Higher

Old name: Not Reported Yr drilled: 19 Driller: LAYNE INTL Quad map: 05 Longitude2: 1562734 Latitude27; 20 Longitude8: 1562724 Latitude83; 20 Lat83d: 20 Lat83m: 53 Lat83d: 20 Lat83m: 53 Lat83dd: 20.89694 Lon83s: 24 Lat83dd: 20.89694 Lon83dd: 15 Lat83dd: 20.89694 Lon83dd: 15 Lat83dd: 20.89694 Lon83dd: 15 Lat83dd: 20.89694 Lon83dd: 15 Gps: 0 Utm: 1 Owner user: Maui DPW Old number: No Well type: ROT Casing dia: 19 Ground el: 8 Well depth: 38 Solid case: 180 Perf case: No Use: Other Use: Other Use: Other 1 <th></th>	
Driller: LAYNE INTL Quad map: 05 Longitude2: 1562734 Latitude27; 20 Longitude8: 1562724 Latitude83: 20 Lat83d: 20 Lat83m: 53 Lat83s: 49 Lon83d: 15 Lon83m: 27 Lon83s: 24 Lat83dd: 20.89694 Lon83dd: 156.45667 Lat83dd: 20.89694 Lon83s: 24 Long83dd: -156.45667 Lon83s: 24 Lat83dd: 20.89694 Lon83s: 15 Gps: 0 Utm: 1 Owner user: Maui DPW Old number: No Well type: ROT Casing dia: 19 Ground el: 8 Well depth: 38 Solid case: 180 Perf case: No Use: Other Use: Other Use: Other 180 Perf case: No Use: Other <	jection Test
Longitude2:	971
Longitude8: 1562724 Latitude83: 20 Lat83d: 20 Lat83m: 53 Lat83s: 49 Lon83d: 15 Lon83d: 27 Lon83s: 24 Lat83dd: 20.89694 24 Lon83dd: -156.45667 -156.45667 Lat83dd 1: 20.89694 20.89694 Gps: 0 Utm: 1 Owner user: Maui DPW Old number: No Well type: ROT Casing dia: 19 Ground el: 8 Well depth: 38 Solid case: 180 Perf case: No Use: Other Use year; 71 Init water: 2.4 Init water: 2.4 Init cl: 0 0 Use year; 71 Tot Reported Init cl: 0 Test date: Not Reported Test gpm: No Test date: Not Reported Test chlor: No Test demp: <	5
Lat83d: 20 Lat83m: 53 Lat83s: 49 Lon83d: 15 Lon83m: 27 Lon83s: 24 Lat83dd: 20.89694 Lon83dd: -156.45667 Long83dd: -156.45667 Lat83dd 1: 20.89694 Gps: 0 Utm: 1 Owner user: Maui DPW Old number: No Well type: ROT Casing dia: 19 Ground el: 8 Well depth: 38 Solid case: 180 Perf case: No Use: Other Use year: 71 Init water: 2.4 Init head: 2.40000 Init chlor: Not Reported Init cl: 0 Test date: Not Reported Test gpm: No Test date: Not Reported Temp unit: No Test temp: Not Reported Temp unit: No Pump gpm: Not Reported Temp unit: No Pump gpm: Not Reported Temp unit: No Min chlor: Not Reported Max chlor: No Min chlor: Not Reported Max chlor: No Min chlor: Not Reported Draft my: No Maxchl yr: No Maxchl yr: No Maxchl yr: No Minchl yr: O Minchl: No Minchl yr: O Bot hole: -37 Bot solid: -172 Bot perf: No Aqui code: 60301	05401
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Lon83m: 27	3
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Lat83dd 1: 20.89694 Gps: 0 Utm: 1 Owner user: Maui DPW Old number: No Well type: ROT Casing dia: 19 Ground el: 8 Well depth; 38 Solid case: 180 Perf case; No Use: Other Use; Image: No Use year; 71 Init water: 2.4 Init cl: 0 Init water: 2.4 Init cl: 0 0 Init chlor: Not Reported Test gpm: No Test date: Not Reported Test chlor: No Test temp: Not Reported Test chlor: No Test demp: Not Reported Max chlor: No Min chlor: Not Reported Geology:	
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Maxchl yr: 0 Minchl: No Minchl yr: 0 Bot hole; -37 Bot solid: -172 Bot perf: No Spec capac: Not Reported Pump mgd: No Draft mgd: Not Reported Aquifer: 60 Tmk: Not Reported Old aqui: No Aqui code: 60301 Latest hd: No	ot Reported
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Draft mgd: Not Reported Aquifer: 60 Tmk: Not Reported Old aqui: No Aqui code: 60301 Latest hd: No	ot Reported
Tmk: Not Reported Old aqui: No Aqui code: 60301 Latest hd: No	301
Aqui code: 60301 Latest hd: No	ot Reported
	ot Reported
Cur head: Not Reported Cur cl: No	ot Reported
	/01/1971
	ot Reported
	ot Reported
	6000000001472

9 SW 1/4 - 1/2 Mile Higher FRDS PWS HI0000204

PWS ID: HI0000204

Date Initiated: Not Reported Date Deactivated: Not Reported

KAPALUA PWS Name:

KAPALUA WATER COMPANY KAPALUA, MAUI, HI 96761

Addressee / Facility: System Owner/Responsible Party

MR. PAUL SEITZ, MANAGER KAPALUA WATER COMPANY, LTD.

500 OFFICE ROAD

KAPALUA, MAUI, HI 96761

Facility Latitude: Facility Latitude: 00 20 59 20 53 40 Facility Longitude: 156 38 00 Facility Longitude: 156 28 12

City Served:

KAPALUA

City Served: Treatment Class: KAPALUA, MAUI Treated

Population:

4142

Violations information not reported.

ENFORCEMENT INFORMATION:

Truedate:

03/31/2009

Pwsid:

HI0000204

Pwsname: Retpopsrvd: KAPALUA 4150

Pwstypecod:

GROSS ALPHA, EXCL. RADON & U

Vioid:

20104

Contaminant:

Viol. Type: Complperbe:

1/1/2000 0:00:00

Complperen:

12/8/2003 0:00:00

Enfdate:

No Enf Action as of

Enfaction: Violmeasur: 7/8/2009 0:00:00 Not Reported

System Name:

KAPALUA

Violation Type:

GROSS ALPHA, EXCL. RADON & U Contaminant: Compliance Period: 1/1/2000 0:00:00 - 12/8/2003 0:00:00

20104

Violation ID:

No Enf Action as of

Enf. Action:

10/17/2006 0:00:00

Enforcement Date:

System Name: KAPALUA

Violation Type:

Contaminant:

GROSS ALPHA, EXCL. RADON & U 1/1/2000 0:00:00 - 12/8/2003 0:00:00

Violation ID:

20104

Compliance Period: Enforcement Date:

4/12/2007 0:00:00

Enf. Action:

Not Reported

System Name:

Violation Type: Contaminant:

MCL, Monthly (TCR) COLIFORM (TCR)

Compliance Period:

1995-06-01 - 1995-06-30

Violation ID:

9500022 1995-06-19

KAPALUA

Enf. Action:

State Violation/Reminder Notice

Enforcement Date: System Name:

KAPALUA

Violation Type: Contaminant: Compliance Period: MCL, Monthly (TCR) COLIFORM (TCR) 1995-06-01 - 1995-06-30

Violation ID: Enforcement Date: 9500022 1995-06-19

Enf. Action:

State Public Notif Requested

System Name:

KAPALUA

Violation Type: Contaminant: Compliance Period: MCL, Monthly (TCR) COLIFORM (TCR) 1995-06-01 - 1995-06-30

Violation ID: Enforcement Date: 9500022 1995-06-29

Enf. Action:

State Public Notif Issued

CONTACT INFORMATION:

Name:

KAPALUA

Population: Phone:

4150 808-877-1606

Contact:

PEARSON, JEFF

Address:

Maui Land & Pineapple Co., Inc.

Address 2:

P.O. Box 187

KAHULUI, HI 96733

Elevation			Database	EDR ID Numbe
IO SE I/2 - 1 Mile Higher			HI WELLS	HI600000001434
Wid:	6-5327-010	Island:	6	
Well no:	5327-10	Well name:	Kanaha Pond	
Old name:	Not Reported	Yr drilled:	1962	
Driller:	SAMSON-ZERBE	Quad map:	07	
Longitude2:	1562729	Latitude27:	205330	
Longitude8:	1562719	Latitude83:	205318	
Lat83d:	20	Lat83m:	53	
Lat83s:	18	Lon83d:	156	
Lon83m:	27	Lon83s:	19	
Lat83dd:	20.88833			
Lon83dd:	-156.45528			
Long83dd:	-156.45528			
Lat83dd 1:	20.88833			
Gps:	0	Utm:	1	
Owner user:	State DLNR-Engineering	Old number:	116-TH	
Well type:	PER	Casing dia:	14	
Ground el:	5	Well depth:	86	
Solid case:	45	Perf case:	Not Reported	
Use:	UNU - Unused			
Use year:	71			
Init water:	2.6			
Init head:	2.60000			
Init chlor:	550	Init cl:	550	
Test date:	Not Reported	Test gpm:	800	
Test ddown:	4.0	Test chlor:	530	
Test temp:	26.4	Temp unit:	C	
Pump gpm:	1000.00000	Draft mgy:	Not Reported	
Head feet:	Not Reported	Max chlor:	530	
Min chlor:	Not Reported	Geology:	THO	
Pump yr:	71	Draft yr:	Not Reported	
Head vr:	Not Reported	Maxchl:	Not Reported	
Maxchl yr:	71	Minchl:	1/1/1971	
Minchl yr:	Not Reported	Bot hole:	-81	
Bot solid:	-40	Bot perf:	Not Reported	
Spec capac:	200	Pump mgd:	1.430	
Draft mgd:	Not Reported	Aguifer:	60301	
Tmk:	Not Reported	Old agui:	Not Reported	
Aqui code:	60301	Latest hd:	Not Reported	
Cur head:	Not Reported	Cur cl:	Not Reported	
Cur temp:	Not Reported	Wcr:	01/01/1962	
Pir:	Not Reported	Surveyor:	Not Reported	
T:	Not Reported	Pump elev:	Not Reported	
Pump depth:	Not Reported	Site id:	HI6000000001434	

11 SSW 1/2 - 1 Mile Higher

Wid:	6-5328-017	Island:	6	
Well no:	5328-17	Well name:	TMK 3-8-17-46	
Old name:	Not Reported	Yr drilled:	Not Reported	
Driller:	Not Reported	Quad map:	05	
Longitude2:	1562815	Latitude27:	205326	
Longitude8:	1562805	Latitude83:	205314	
Lat83d:	20	Lat83m:	53	
Lat83s:	14	Lon83d:	156	
Lon83m:	28	Lon83s:	05	
Lat83dd:	20.88722			
Lon83dd:	-156.46806			
Long83dd:	-156.46806			
Lat83dd 1:	20.88722			
Gps:	0	Utm:	1	
Owner user:	Union Church	Old number:	20-81	
Well type:	ROT	Casing dia:	4	
Ground el:	20	Well depth:	Not Reported	
Solid case:	Not Reported	Perf case:	Not Reported	
Use:	IRR - Irrigation (non-do	mestic, non-agriculture)		
Use year:	71			
Init water:	Not Reported			
Init head:	Not Reported			
Init chlor:	Not Reported	Init cl:	0	
Test date:	Not Reported	Test gpm:	Not Reported	
Test ddown:	Not Reported	Test chlor:	Not Reported	
Test temp:	Not Reported	Temp unit:	Not Reported	
Pump gpm:	Not Reported	Draft mgy:	Not Reported	
Head feet:	Not Reported	Max chlor:	Not Reported	
Min chlor:	Not Reported	Geology:	THO	
Pump yr:	Not Reported	Draft yr:	Not Reported	
Head yr:	Not Reported	Maxchl:	Not Reported	
Maxchl yr:	Not Reported	Minchl:	Not Reported	
Minchl yr:	Not Reported	Bot hole:	Not Reported	
Bot solid:	Not Reported	Bot perf:	Not Reported	
Spec capac:	Not Reported	Pump mgd:	Not Reported	
Draft mgd:	Not Reported	Aquifer:	60301	
Tmk:	3-8-017:046	Old aqui:	Not Reported	
Aqui code:	60301	Latest hd:	Not Reported	
Cur head:	Not Reported	Cur cl:	Not Reported	
Cur temp:	Not Reported	Wcr:	01/01/1926	
Pir:	Not Reported	Surveyor:	Not Reported	
T:	Not Reported	Pump elev:	Not Reported	
Pump depth:	Not Reported	Site id:	HI6000000001428	8
T:	Not Reported	Pump elev:	Not Reported	d

B12
South
1/2 - 1 Mile
Higher

Wid: 6-5328-024 Well no: 5328-24 Old name: Not Reported JM HEIZER Driller: Longitude2: 1562801 Longitude8: 1562751 Lat83d: 20 Lat83s: 08 Lon83m: 27 Lat83dd: 20.88556

Island:
Well name:
Yr drilled:
Quad map:
Latitude27:
Latitude83:
Lat83m:
Lon83d:
Lon83s:

HI WELLS

HI6000000001416

Lon83dd: -156.46417 Long83dd: -156.46417 Lat83dd 1: 20.88556 Gps: Utm: Owner user: Maui County Old number; 106-TH Well type: ROT Casing dia: 2 Well depth: Ground el: 157 Solid case: 52 Perf case: Not Reported UNU - Unused Use: Use year: 71 Init water: 3.2 3.24000 Init head: Init chlor: 17900 17900 Init cl: Test date: Not Reported Test gpm: Not Reported Test ddown: Not Reported Test chlor: Not Reported Not Reported Not Reported Test temp: Temp unit: Pump gpm: Not Reported Draft mgy: Not Reported Not Reported Not Reported Head feet: Max chlor: Min chlor: Not Reported Geology: THO Not Reported Pump yr: Draft yr: Not Reported Not Reported Maxchl: Not Reported Head yr: Maxchl yr: Minchl: Not Reported Minchl yr: 0 Bot hole: -150 Bot solid: -45 Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported Not Reported 60301 Draft mgd: Aquifer: Not Reported Tmk: Old aqui: Not Reported Aqui code: 60301 Latest hd: Not Reported Not Reported Not Reported Cur head: Cur cl: Cur temp: Not Reported Wcr: 05/10/1936 Pir: Not Reported Surveyor: Not Reported Not Reported Not Reported T: Pump elev: Pump depth: Not Reported Site id: HI600000001416

13 WSW	HI WELLS	HI6000000001447
1/2 - 1 Mile Higher		111000000001441

Wid:	6-5328-052	Island:	6
Well no:	5328-52	Well name:	Maui Beach Hotel
Old name:	Not Reported	Yr drilled:	1998
Driller:	WAILANI DRLG	Quad map:	05
Longitude2:	1562830	Latitude27:	205336
Longitude8:	1562820	Latitude83:	205324
Lat83d:	20	Lat83m:	53
Lat83s:	24	Lon83d:	156
Lon83m:	28	Lon83s:	20
Lat83dd:	20.89		
Lon83dd:	-156.47222		
Long83dd:	-156.47222		
Lat83dd 1:	20.89		
Gps:	0	Utm:	1
Owner user:	Maui Beach Hotel	Old number:	Not Reported
Well type:	ROT	Casing dia:	6
Ground el:	9	Well depth:	75
Solid case:	55	Perf case:	Not Reported
Use:	IRR - Hotel		
Use year:	98		
Init water:	Not Reported		

Init head:	0.89000		
Init chlor:	Not Reported	Init cl:	250
Test date:	#######	Test gpm:	70
Test ddown:	.3	Test chlor:	250
Test temp:	23.9	Temp unit:	C
Pump gpm:	70.00000	Draft mgy:	Not Reported
Head feet:	.9	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	98	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-66
Bot solid:	-46	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	0.100
Draft mgd:	Not Reported	Aguifer:	Not Reported
Tmk:	3-7-003:009	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1969
Pir:	Not Reported	Surveyor:	EDGARDO VALERA
T:	147880.00000	Pump elev:	-15
Pump depth:	24	Site id:	HI600000001447

C14	
SW	
1/2 - 1	Mile
Highe	r

Wid:	6-5328-010	Island:	6
Well no:	5328-10	Well name:	TMK 3-8-17-44
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562820	Latitude27:	205325
Longitude8:	1562810	Latitude83:	205313
Lat83d:	20	Lat83m:	53
Lat83s:	13	Lon83d:	156
Lon83m:	28	Lon83s:	10
Lat83dd:	20.88694		
Lon83dd:	-156.46944		
Long83dd:	-156.46944		
Lat83dd 1:	20.88694		
Gps:	0	Utm:	1
Owner user:	Church Of Lds	Old number:	20-40
Well type:	ROT	Casing dia:	4
Ground el:	20	Well depth:	Not Reported
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-dor	mestic, non-agriculture)	V-2
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported

Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-017:044	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001427

B15 SSW 1/2 - 1 Mile Higher

HI WELLS

HI6000000001410

Wid:	6-5328-044	Island:	6
Well no:	5328-44	Well name:	Wakea
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562803	Latitude27:	205317
Longitude8:	1562753	Latitude83:	205305
Lat83d:	20	Lat83m:	53
Lat83s:	05	Lon83d:	156
Lon83m:	27	Lon83s:	53
Lat83dd:	20.88472		
Lon83dd:	-156.46472		
Long83dd:	-156.46472		
Lat83dd 1:	20.88472		
Gps:	0	Utm:	1
Owner user:	Maui County	Old number:	Not Reported
Well type:	Not Reported	Casing dia:	6
Ground el:	40	Well depth:	Not Reported
Solid case:	Not Reported	Perf case:	Not Reported
Use:	Other		
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	Not Reported	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	44.0.40.00	10.000	
Our tollip.	Not Reported	Wcr:	07/07/1971

T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001410

16 SSE HI WELLS HI600000001412 1/2 - 1 Mile

6

05

53

27

156

Kahului

205318

205306

Not Reported

Wid: 6-5327-005 Island: Well no: 5327-05 Well name: Old name: Not Reported Yr drilled: Driller: Not Reported Quad map: Longitude2: 1562737 Latitude27: Longitude8: 1562727 Latitude83: Lat83d: 20 Lat83m: Lat83s: 06 Lon83d: Lon83m: 27 Lon83s: Lat83dd: 20.885 Lon83dd: -156.4575 Long83dd: -156.4575 Lat83dd 1: 20.885 Gps: Utm: Haleakala Dair Old number:

 Owner user:
 Haleakala Dair
 Old number:
 21

 Well type:
 Not Reported
 Casing dia:
 14

 Ground el:
 5
 Well depth:
 Not Reported

Solid case: Not Reported Perf case: Not Reported Use: UNU - Unused

Use year: 71
Init water: Not Reported

Init head: Not Reported Init chlor: Not Reported Init cl: 0 Test date: Not Reported Test gpm: Not Reported Test ddown: Not Reported Test chlor: Not Reported Not Reported Temp unit:

Test temp: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Head feet: 3.9 Max chlor: 449 Geology: Min chlor: Not Reported THO Pump yr: Not Reported Draft yr: Not Reported 70 Not Reported Head yr: Maxchl: Maxchl vr: 0 Minchl: 1/1/1956 0 Minchl yr: Bot hole: Not Reported Bot solid: Not Reported Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported

Not Reported Draft mgd: Aquifer: 60301 Not Reported Old aqui: Not Reported Aqui code: 60301 Latest hd: 3.90000 Cur head: Not Reported Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1962 Pir: Not Reported Surveyor: Not Reported Not Reported Not Reported Pump elev: Pump depth: Not Reported HI6000000001412 Site id:

C17 SW 1/2 - 1 Mile Higher

Higher

Wid:	6-5328-009	Island:	6
Well no:	5328-09	Well name:	Tmk 3-8-17-39
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562821	Latitude27:	205323
Longitude8:	1562811	Latitude83:	205311
Lat83d:	20	Lat83m:	53
Lat83s:	11	Lon83d:	156
Lon83m:	28	Lon83s:	11
Lat83dd:	20.88639		
Lon83dd:	-156.46972		
Long83dd:	-156.46972		
Lat83dd 1:	20.88639		
Gps:	0	Utm:	1
Owner user:	Yamanishi G	Old number:	20-39
Well type:	ROT	Casing dia:	4
Ground el:	20	Well depth:	Not Reported
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-do	mestic, non-agriculture)	
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-017:039	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001422

18 South	HI WELLS	HI600000001385
1/2 - 1 Mile	HI WELLS	A 40 A 1 A 466 A 1 M 1 M
Higher		

Wid:	6-5327-004	Island:	6
Well no:	5327-04	Well name:	Tmk 3-8-10-76
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562747	Latitude27:	205311
Longitude8:	1562737	Latitude83:	205259
Lat83d:	20	Lat83m:	52
Lat83s:	59	Lon83d:	156
Lon83m:	27	Lon83s:	37
Lat83dd:	20.88306		

Lon83dd: -156.46028 Long83dd: -156.46028 Lat83dd 1: 20,88306 Utm: Gps: Old number: Owner user: Fernandez G 20-113 Well type: ROT Casing dia: Not Reported Ground el: Not Reported Well depth: Solid case: Not Reported Perf case: Not Reported IRR - Irrigation (non-domestic, non-agriculture) Use: Use year: 71 Init water: Not Reported Init head: Not Reported Init chlor: Not Reported Init cl: 0 Not Reported Test date: Test gpm: Not Reported Test ddown: Not Reported Not Reported Test chlor: Test temp: Not Reported Not Reported Temp unit: Pump gpm: Not Reported Draft mgy: Not Reported Not Reported Head feet: Max chlor: Not Reported Min chlor: Not Reported Geology: THO Not Reported Pump yr: Not Reported Draft yr: Not Reported Head yr: Maxchl: Not Reported Not Reported Maxchl yr: Minchl: Not Reported Minchl yr: Not Reported Not Reported Bot hole: Bot solid: Not Reported Not Reported Bot perf: Not Reported Spec capac: Pump mgd: Not Reported Draft mgd: Not Reported Aquifer: 60301 Tmk: 3-8-010:076 Old aqui: Not Reported Aqui code: 60301 Not Reported Latest hd: Cur head: Not Reported Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1962 Not Reported Surveyor: Pir: Not Reported Not Reported Not Reported T: Pump elev: Pump depth: Not Reported Site id: HI600000001385

D19 SSW HI WELLS HI600000001400 1/2 - 1 Mile Higher

Wid: 6-5328-019 Island: 6 Well no: 5328-19 Well name: Tmk 3-8-16-27

Old name: Not Reported Yr drilled: Not Reported Driller: OCEAN VIEW Quad map: 05 1562810 205313 Longitude2: Latitude27: Longitude8: 1562760 Latitude83: 205301 Lat83d: 20 Lat83m: 53 Lat83s: 01 Lon83d: 156 Lon83m: 27 Lon83s: 60 Lat83dd: 20.88361

Lat83dd: 20,88361 Lon83dd: -156,46667 Long83dd: -156,46667 Lat83dd 1: 20,88361

 Gps:
 0
 Utm:
 1

 Owner user:
 Joaquin J
 Old number:
 20-84

 Well type:
 ROT
 Casing dia:
 4

 Ground el:
 30
 Well depth:
 70

Solid case: Not Reported Perf case: Not Reported Use: IRR - Irrigation (non-domestic, non-agriculture)

Use: IRI Use year: 71

Init water: Not Reported

Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-40
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-016:027	Old aqui:	Not Reported
Agui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001400
The second secon	CO. C. C. C. C. C. C. C. C. C. C. C. C. C.		

E20 SW 1/2 - 1 Mile Higher

Wid:	6-5328-008	Island:	6
Well no:	5328-08	Well name:	Tmk 3-8-17-16
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	PAUL SMITH	Quad map:	05
Longitude2;	1562824	Latitude27:	205320
Longitude8;	1562814	Latitude83:	205308
Lat83d:	20	Lat83m:	53
Lat83s:	08	Lon83d:	156
Lon83m:	28	Lon83s:	14
Lat83dd:	20.88556		
Lon83dd:	-156.47056		
Long83dd:	-156.47056		
Lat83dd 1:	20.88556		
Gps:	0	Utm:	1
Owner user:	Okada R	Old number:	20-38
Well type:	ROT	Casing dia:	4
Ground el:	20	Well depth:	20
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-dor	mestic, non-agriculture)	
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported

Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	0
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-017:016	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wer:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI6000000001415

D21 SSW 1/2 - 1 Mile Higher

Wid:	6-5328-021	Island:	6
Well no:	5328-21	Well name:	Tmk 3-8-12-52
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562808	Latitude27:	205312
Longitude8:	1562758	Latitude83:	205300
Lat83d:	20	Lat83m:	53
Lat83s:	00	Lon83d:	156
Lon83m:	27	Lon83s:	58
Lat83dd:	20.88333		
Lon83dd:	-156.46611		
Long83dd:	-156.46611		
Lat83dd 1:	20.88333		
Gps:	0	Utm:	1
Owner user:	Pacheco R	Old number:	20-92
Well type:	ROT	Casing dia:	4
Ground el:	30	Well depth:	Not Reported
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-dor	mestic, non-agriculture)	14-27-10-10-11-11
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole;	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-012:052	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported

T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001390

22 WSW 1/2 - 1 Mile Higher

HI WELLS HI600000001436

Wid: 6-5328-002 Island: 6 Well no: 5328-02 Well name: Cannery Old name: Not Reported Yr drilled: Not Reported Driller: Not Reported Quad map: 05 Longitude2: 1562835 Latitude27: 205331 1562825 Longitude8: Latitude83: 205319 Lat83d: 20 Lat83m: 53 Lat83s: 19 Lon83d: 156 Lon83m: 28 Lon83s: 25 Lat83dd: 20.88861 Lon83dd: -156.47361 -156,47361 Long83dd: Lat83dd 1: 20.88861 Utm: Gps: Owner user: Maui Land & Pine Co Inc Old number: 20-D Well type: Not Reported Casing dia: 20 Ground el: 20 Well depth: 300 Solid case: 140 Perf case: Not Reported IND - Industrial Other Use: Use year: 71 Init water: Not Reported Init head: Not Reported Not Reported Init chlor: Init cl: 0 Test date: Not Reported Test gpm: Not Reported Not Reported Test chlor: Not Reported Test ddown: Not Reported Test temp: Temp unit: Not Reported Not Reported Pump gpm: Draft mgy: Not Reported Not Reported Head feet: Max chlor: Not Reported THO Min chlor: Not Reported Geology: Not Reported Not Reported Pump yr: Draft yr: Not Reported Maxchl: Not Reported Head yr: Maxchl yr: Not Reported Minchl: Not Reported Minchl yr: Not Reported Bot hole: -280 Bot solid: -120 Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported Not Reported 60301 Draft mgd: Aquifer: Not Reported Tmk: Old aqui: Not Reported 60301 Aqui code: Latest hd: Not Reported Cur head: Not Reported Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1926 Not Reported Pir: Surveyor: Not Reported

Pump elev:

Site id:

Not Reported

Not Reported

E23 SW 1/2 - 1 Mile Higher

Pump depth:

HI WELLS HI600000001420

Not Reported

HI600000001436

Wid:	6-5328-051	Island:	6
Well no:	5328-51	Well name:	Akahi
Old name:	Not Reported	Yr drilled:	1969
Driller:	Not Reported	Quad map:	05
Longitude2:	1562827	Latitude27:	205322
Longitude8:	1562817	Latitude83:	205310
Lat83d:	20	Lat83m:	53
Lat83s:	10	Lon83d:	156
Lon83m;	28	Lon83s:	17
Lat83dd:	20.88611		
Lon83dd;	-156.47139		
Long83dd:	-156.47139		
Lat83dd 1:	20.88611		
Gps:	0	Utm:	1
Owner user:	Hale Mahaolu	Old number:	Not Reported
Well type:	Not Reported	Casing dia:	Not Reported
Ground el:	30	Well depth:	Not Reported
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Landscape/Water	Features	
Use year:	Not Reported		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	100,00000	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	0.140
Draft mgd:	Not Reported	Aquifer:	Not Reported
Tmk:	3-8-007:050	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1969
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001420

F24 SSW 1/2 - 1 Mile	HI WELLS	HI600000001403
Higher		

Wid:	6-5328-015	Island;	6
Well no:	5328-15	Well name:	Tmk 3-8-18-1
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562815	Latitude27:	205314
Longitude8:	1562805	Latitude83:	205302
Lat83d:	20	Lat83m:	53
Lat83s:	02	Lon83d:	156
Lon83m:	28	Lon83s:	05
Lat83dd	20.88380		

Lon83dd: -156.46806 Long83dd: -156.46806 Lat83dd 1: 20.88389 Gps: Utm: Owner user: Molina D Old number: 20-51 Well type: ROT Casing dia: Ground el: 35 Well depth: Not Reported Solid case: Not Reported Perf case: Not Reported Use: IRR - Irrigation (non-domestic, non-agriculture) Use year: Init water: Not Reported Init head: Not Reported Init chlor: Not Reported Init cl: Test date: Not Reported Test gpm: Not Reported Test ddown: Not Reported Test chlor: Not Reported Not Reported Test temp: Temp unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Not Reported Head feet: Max chlor: Not Reported Min chlor: Not Reported Geology: THO Not Reported Pump yr: Draft yr: Not Reported Head yr: Not Reported Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Minchl yr: Not Reported Bot hole: Not Reported Bot solid: Not Reported Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported Not Reported Draft mgd: Aquifer: 60301 3-8-018:001 Tmk: Old aqui: Not Reported 60301 Aqui code: Latest hd: Not Reported Not Reported Cur head: Cur cl: Not Reported 01/01/1926 Cur temp: Not Reported Wcr: Pir: Not Reported Surveyor: Not Reported T: Not Reported Not Reported Pump elev: Pump depth: Not Reported Site id: HI6000000001403

D25 SSW 1/2 - 1 Mile HI WELLS HI600000001389 Higher Wid: 6-5328-018 Island: 6 Well no: Well name: Tmk 3-8-16-29 5328-18 Old name: Not Reported Yr drilled: Not Reported Driller: OCEAN VIEW Quad map: 05 205312 Longitude2: 1562810 Latitude27: Longitude8: 1562760 Latitude83: 205300 Lat83d: 20 Lat83m: 53 Lat83s: 00 Lon83d: 156 Lon83m: 27 Lon83s: 60 Lat83dd: 20.88333 Lon83dd: -156.46667 Long83dd: -156,46667 20.88333 Lat83dd 1: Utm: Gps: 0 Owner user: Kern J Old number: 20-83 ROT Well type: Casing dia: Ground el: Well depth: Not Reported Solid case: Not Reported Perf case: Not Reported IRR - Irrigation (non-domestic, non-agriculture) Use: Use year: Init water: Not Reported

Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac;	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-016:029	Old agui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001389

G26	
South	
1/2 - 1 1	Mile
Higher	

HI WELLS	HI6000000001380
HI WELLS	HI6000000001380

Wid:	6-5328-022	Island:	6
Well no:	5328-22	Well name:	Kahiki St
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map;	05
Longitude2:	1562803	Latitude27;	205310
Longitude8:	1562753	Latitude83;	205258
Lat83d:	20	Lat83m:	52
Lat83s:	58	Lon83d:	156
Lon83m:	27	Lon83s:	53
Lat83dd:	20.88278		
Lon83dd:	-156.46472		
Long83dd:	-156.46472		
Lat83dd 1:	20.88278		
Gps:	0	Utm:	1
Owner user:	Maui County	Old number:	20-98
Well type:	Not Reported	Casing dia:	6
Ground el:	25	Well depth:	97
Solid case:	31	Perf case:	Not Reported
Use:	Other		
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported

Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	-72
Bot solid:	-6	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	Not Reported	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	War:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001380

27 WSW 1/2 - 1 Mile Higher

Higher			
Wid:	6-5328-050	Island:	6
Well no:	5328-50	Well name:	Aoao Harb Lts
Old name:	Not Reported	Yr drilled:	1989
Driller:	BRYAN SARASIN	Quad map:	05
Longitude2:	1562839	Latitude27:	205336
Longitude8:	1562829	Latitude83:	205324
Lat83d:	20	Lat83m;	53
Lat83s:	24	Lon83d:	156
Lon83m:	28	Lon83s:	29
Lat83dd:	20.89		
Lon83dd:	-156.47472		
Long83dd:	-156.47472		
Lat83dd 1:	20.89		
Gps:	0	Utm:	1
Owner user:	Aoao Harb Lts	Old number:	Not Reported
Well type:	PER	Casing dia:	6
Ground el:	Not Reported	Well depth:	65
Solid case:	50	Perf case:	Not Reported
Use:	IRR - Landscape/Water F	eatures	0.2502.6.26.26
Use year:	Not Reported		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	100.00000	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	89	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	0.140
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-7-002:018	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1989
Pir:	Not Reported	Surveyor:	Not Reported

T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: Not Reported

H28 SW HI WELLS HI600000001425 1/2 - 1 Mile

Higher Wid: 6-5328-026 Island: 6 Well no: 5328-26 Well name: Cannery Old name: Not Reported Yr drilled: 1954 Driller: SAMSON-SMOCK Quad map: 05 Longitude2: 1562831 Latitude27: 205323 Longitude8: 1562821 205311 Latitude83: Lat83d: 20 Lat83m: 53 Lat83s: 11 Lon83d: 156 Lon83m: 28 Lon83s: 21 Lat83dd: 20.88639 -156.4725 Lon83dd: Long83dd: -156.4725

 Lat83dd 1:
 20.88639

 Gps:
 0
 Utm:
 1

 Owner user:
 Maui Ld & Pine
 Old number:
 20-A

 Well type:
 Not Reported
 Casing dia:
 8

 Ground el:
 300
 Well depth:
 214

Ground el: 300 Well depth: 214
Solid case: Not Reported Perf case: Not Reported
Use: Other

Test temp: Not Reported Temp unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Head feet: Not Reported Max chlor: Not Reported Min chlor: Not Reported Geology: THO Pump yr: Not Reported Draft yr: 00 Head yr: 54 Maxchl: Not Reported Not Reported Maxchl yr: 58 Minchl: Not Reported Minchl yr: Bot hole: Bot solid: Not Reported Not Reported Bot perf:

Spec capac: Not Reported Not Reported Pump mgd: Draft mgd: Not Reported Aquifer: 60301 Not Reported Tmk: Old aqui: Not Reported Aqui code: 60301 Latest hd: Not Reported Not Reported Cur head: Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1954 Pir: Not Reported Surveyor: Not Reported Not Reported Pump elev: Not Reported

Pump depth: Not Reported Pump elev. Not Reported Site id: HI6000000001425

F29 SSW 1/2 - 1 Mile Higher

HI WELLS HI600000001399

19300

Not Reported

Not Reported

Wid:	6-5328-030	Island:	6
Well no:	5328-30	Well name:	Tmk 3-8-18-9
Old name:	Not Reported	Yr drilled:	1962
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562818	Latitude27:	205313
Longitude8:	1562808	Latitude83:	205301
Lat83d:	20	Lat83m:	53
Lat83s:	01	Lon83d:	156
Lon83m:	28	Lon83s:	08
Lat83dd:	20.88361		
Lon83dd:	-156.46889		
Long83dd:	-156.46889		
Lat83dd 1:	20.88361		
Gps:	0	Utm:	1
Owner user:	Hashimoto T	Old number:	20-50
Well type:	ROT	Casing dia:	4
Ground el:	30	Well depth:	40
Solid case:	14	Perf case:	Not Reported
Use:	IRR - Irrigation (non-do	mestic, non-agriculture)	
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	-10
Bot solid:	16	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-018:009	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1962
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001399

G30 South 1/2 - 1 Mile Higher			HI WELLS	HI600000001369
Wid:	6-5328-039	Island:	6	
Well no:	5328-39	Well name:	Tmk 3-8-12-60	
Old name:	Not Reported	Yr drilled:	1963	
Driller:	PAUL SMITH	Quad map:	05	
Longitude2:	1562803	Latitude27:	205308	
Longitude8:	1562753	Latitude83:	205256	
Lat83d:	20	Lat83m:	52	
Lat83s:	56	Lon83d;	156	

Lon83s:

20.88222

27

Lon83m:

Lat83dd:

TC3218291.2s Page A-36

53

Lon83dd: -156.46472 Long83dd: -156.46472 Lat83dd 1: 20.88222 Gps: 0 Utm: Owner user: Imada K Old number: 20-97 Well type: ROT Casing dia: 4 Ground el: Well depth: 35 78 Solid case: Not Reported Perf case: Not Reported Use: IRR - Irrigation (non-domestic, non-agriculture) Use year: 5.0 Init water: 5.00000 Init head: Init chlor: Not Reported Init ci: Test date: Not Reported Not Reported Test gpm: Not Reported Not Reported Test ddown: Test chlor: Not Reported Test temp: Temp unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Not Reported Not Reported Head feet: Max chlor: Min chlor: Not Reported Geology: THO Pump yr: Not Reported Draft yr: Not Reported Head yr: Not Reported Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Minchl yr: Not Reported Bot hole: -43 Bot solid: Not Reported Bot perf: Not Reported Spec capac: Not Reported Pump mgd: Not Reported 60301 Draft mgd: Not Reported Aquifer: 3-8-012:060 Old aqui: Not Reported Tmk: Aqui code: 60301 Latest hd: Not Reported Cur head: Not Reported Cur cl: Not Reported Not Reported 01/01/1963 Cur temp: Wcr: Pir: Not Reported Surveyor: Not Reported Not Reported T: Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001369

31 South HI WELLS HI600000001367 1/2 - 1 Mile Higher

ngner			
Wid:	6-5327-009	Island:	6
Well no:	5327-09	Well name:	Tmk 3-8-10-46
Old name:	Not Reported	Yr drilled:	1962
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562753	Latitude27:	205307
Longitude8:	1562743	Latitude83:	205255
Lat83d:	20	Lat83m:	52
Lat83s:	55	Lon83d:	156
Lon83m:	27	Lon83s:	43
Lat83dd:	20.88194		
Lon83dd:	-156.46194		
Long83dd:	-156.46194		
Lat83dd 1:	20.88194		
Gps:	0	Utm:	1
Owner user:	Saiki K	Old number:	20-103
Well type:	ROT	Casing dia:	4
Ground el:	Not Reported	Well depth:	76
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IRR - Irrigation (non-do	mestic, non-agriculture)	
Use year:	71	3140 00 44 400 4	
Init water:	Not Reported		

Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-010:046	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1962
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001367
A Company of the Comp	A P. W. S. Law B. W.		

E32			
SW 1/2 - 1 Mile			
Higher			

6-5328-007	Island:	6
5328-07	Well name:	Tmk 3-8-18-34
Not Reported	Yr drilled:	Not Reported
Not Reported	Quad map:	05
1562825	Latitude27:	205316
1562815	Latitude83:	205304
20	Lat83m:	53
04	Lon83d:	156
28	Lon83s:	15
20.88444		
-156.47083		
-156.47083		
20.88444		
0	Utm:	1
Takahashi F	Old number:	20-37
DUG	Casing dia:	36
20	Well depth:	20
Not Reported	Perf case:	Not Reported
IRR - Irrigation (non-dor	mestic, non-agriculture)	
71	The second secon	
Not Reported		
Not Reported		
Not Reported	Init cl:	0
Not Reported	Test gpm:	Not Reported
Not Reported	Test chlor:	Not Reported
Not Reported	Temp unit:	Not Reported
Not Reported	Draft mgy:	Not Reported
Not Reported	Max chlor:	Not Reported
Not Reported	Geology:	THO
Not Reported	Draft yr:	Not Reported
Not Reported	Maxchl:	Not Reported
	5328-07 Not Reported Not Reported 1562825 1562815 20 04 28 20.88444 -156.47083 -156.47083 20.88444 0 Takahashi F DUG 20 Not Reported IRR - Irrigation (non-doi 71 Not Reported	Not Reported Yr drilled: Not Reported Quad map: 1562825 Latitude27: 1562815 Latitude83: 20 Lat83m: 04 Lon83d: 28 Lon83s: 20.88444 -156.47083 -156.47083 20.88444 0 Utm: Takahashi F Old number: DUG Casing dia: 20 Well depth: Not Reported Perf case: IRR - Irrigation (non-domestic, non-agriculture) 71 Not Reported Not R

HI WELLS

HI600000001409

Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	0
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-018:034	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001409

D33 SSW 1/2 - 1 Mile Higher

riigiici			
Wid:	6-5328-040	Island:	6
Well no:	5328-40	Well name:	Tmk 3-8-16-31
Old name:	Not Reported	Yr drilled:	1963
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562811	Latitude27:	205309
Longitude8:	1562801	Latitude83:	205257
Lat83d:	20	Lat83m:	52
Lat83s:	57	Lon83d:	156
Lon83m:	28	Lon83s:	01
Lat83dd:	20.8825		
Lon83dd:	-156.46694		
Long83dd:	-156.46694		
Lat83dd 1:	20.8825		
Gps:	0	Utm:	1
Owner user:	Yoshizawa K	Old number:	20-82
Well type:	ROT	Casing dia:	4
Ground el:	35	Well depth:	61
Solid case:	Not Reported	Perf case:	Not Reported
Use:		mestic, non-agriculture)	13-00 (10) 2-31-0
Use year:	71		
Init water:	6.0		
Init head:	6.00000		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	305
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	71	Minchl:	1/1/1971
Minchl yr:	Not Reported	Bot hole:	-26
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd;	Not Reported
Draft mgd:	Not Reported	Aguifer:	60301
Tmk:	3-8-016:031	Old aqui;	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur al:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1963
Pir:	Not Reported	Surveyor:	Not Reported
	riot rioportos	ou rejoi.	not reported

T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001372

34 SSW 1/2 - 1 Mile Higher

Wid: 6-5328-020 Island: 6 Well no: Tmk 3-8-15-14 5328-20 Well name: Old name: Not Reported Yr drilled: Not Reported Driller: Not Reported Quad map: Longitude2: 1562809 Latitude27: 205308 Longitude8: 1562759 Latitude83: 205256 Lat83d: 20 Lat83m: 52 Lat83s: 56 Lon83d: 156 Lon83m: 27 Lon83s: 59 Lat83dd: 20.88222 Lon83dd: -156.46639 Long83dd: -156.46639 20.88222 Lat83dd 1: Gps: 0 Utm: Owner user: Abreu J Old number: 20-91 Well type: ROT Casing dia: Ground el: Well depth: Not Reported Solid case: Not Reported Perf case: Not Reported Use: IRR - Irrigation (non-domestic, non-agriculture) Use year: Not Reported Init water: Init head: Not Reported Init chlor: Not Reported Init cl: 0 Not Reported Test date: Test gpm: Not Reported Not Reported Test ddown: Test chlor: Not Reported Test temp: Not Reported Temp unit: Not Reported Pump gpm: Not Reported Draft mgy: Not Reported Head feet: Not Reported Max chlor: Not Reported Min chlor: Not Reported Geology: THO Pump yr: Not Reported Not Reported Draft yr: Not Reported Head vr: Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Not Reported Minchl yr: Bot hole: Not Reported Bot solid: Not Reported Not Reported Bot perf: Spec capac: Not Reported Pump mgd: Not Reported Draft mgd: Not Reported Aquifer: 60301 Tmk: 3-8-015:014 Old aqui: Not Reported 60301 Aqui code: Latest hd: Not Reported Not Reported Cur head: Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1926 Not Reported Pir: Surveyor: Not Reported Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI600000001368

H35 SW 1/2 - 1 Mile Higher

Wid:			
Well no:	6-5328-028 5328-28	Island: Well name:	6 Cannery
Old name:	Not Reported	Yr drilled:	1958
Driller:	SAMSON-SMOCK	Quad map:	05
Longitude2:	1562834	Latitude27:	205323
Longitude8:	1562824	Latitude83:	205323
Lat83d:	20	Lat83m:	53
Lat83s:	11	Lon83d:	156
Lon83m:	28	Lon83s:	24
Lat83dd:	20.88639	Lorioss.	24
Lon83dd:	-156.47333		
Long83dd:	-156.47333		
Lat83dd 1:	20.88639		
Gps:	0	Utm:	1
Owner user:	Maui Ld & Pine	Old number:	20-C
Well type:	Not Reported	Casing dia:	16
Ground el:	Not Reported	Well depth:	312
Solid case:	278	Perf case:	Not Reported
Use:	IND - Industrial	i on adoc.	Horrisportes
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	13800	Init cl:	13800
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	00
Head yr:	58	Maxchl:	Not Reported
Maxchl yr:	0	Minchl:	Not Reported
Minchl yr:	0	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	Not Reported	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1958
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001424

G36 SSW	HIWELLS	HI6000000001366
1/2 - 1 Mile Higher		10505-21111-11

Wid:	6-5328-035	Island:	6
Well no:	5328-35	Well name:	Tmk 3-8-15-1
Old name:	Not Reported	Yr drilled:	1962
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562806	Latitude27:	205307
Longitude8:	1562756	Latitude83:	205255
Lat83d:	20	Lat83m:	52
Lat83s:	55	Lon83d:	156
Lon83m:	27	Lon83s:	56
Lat83dd:	20.88194		

Lon83dd: -156.46556 Long83dd: -156,46556 Lat83dd 1: 20.88194 Utm: 0 Gps: Owner user: Alexander J Old number: 20-95 Well type: ROT Casing dia: Ground el: 35 Well depth: 71 Solid case: Not Reported Perf case: Not Reported IRR - Irrigation (non-domestic, non-agriculture) Use: Use year: Init water: 3.0 Init head: 3.00000 Init chlor: Not Reported Init cl: Not Reported Test date: Test gpm: Not Reported Not Reported Test ddown: Test chlor: Not Reported Test temp: Not Reported Not Reported Temp unit: Pump gpm: Not Reported Draft mgy: Not Reported Head feet: Not Reported Not Reported Max chlor: Min chlor: Not Reported THO Geology: Not Reported Not Reported Pump yr: Draft yr: Head yr: Not Reported Maxchl: Not Reported Maxchl yr: Not Reported Minchl: Not Reported Minchl yr: Not Reported Bot hole: -36 Bot solid: Not Reported Not Reported Bot perf: Spec capac: Not Reported Pump mgd: Not Reported Draft mgd: Not Reported 60301 Aquifer: Old aqui: 3-8-015:001 Tmk: Not Reported Aqui code: 60301 Not Reported Latest hd: Cur head: Not Reported Cur cl: Not Reported Cur temp: Not Reported Wcr: 01/01/1962 Pir: Not Reported Surveyor: Not Reported T: Not Reported Pump elev: Not Reported Pump depth: Not Reported Site id: HI6000000001366

F37
SSW
HI WELLS HI600000001384
1/2 - 1 Mile
Higher

Wid: 6-5328-014 Island: 6 Well no: 5328-14 Well name: Tmk 3-8-19-29 Not Reported Old name: Yr drilled: Not Reported Driller: Not Reported Quad map: 05 1562818 Longitude2: Latitude27: 205311 Longitude8: 1562808 205259 Latitude83: Lat83d: 20 Lat83m: 52 Lat83s: 59 Lon83d: 156 Lon83m: 28 Lon83s: 08 20.88306 Lat83dd: -156.46889 Lon83dd: Long83dd: -156.46889 Lat83dd 1: 20,88306 0 Utm: Gps: Owner user: Ikeda R Old number: 20-49 ROT Casing dia: Well type: Ground el: Well depth: Not Reported Solid case: Not Reported Perf case: Not Reported UNU - Unused Use: Use year: Init water: Not Reported

Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	Not Reported
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-019:029	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI6000000001384

38
SSW
1/2 - 1 Mile
Higher
Hi WELLS
HI 600000001388

Wid:	6-5328-011	Island:	6
Well no:	5328-11	Well name:	Tmk 3-8-19-44
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	PAUL SMITH	Quad map:	05
Longitude2:	1562821	Latitude27:	205312
Longitude8:	1562811	Latitude83:	205300
Lat83d:	20	Lat83m:	53
Lat83s:	00	Lon83d:	156
Lon83m:	28	Lon83s:	11
Lat83dd:	20.88333		
Lon83dd:	-156.46972		
Long83dd:	-156.46972		
Lat83dd 1:	20.88333		
Gps:	0	Utm:	1
Owner user:	Moniz L	Old number:	20-44
Well type:	ROT	Casing dia:	4
Ground el:	30	Well depth:	30
Solid case:	Not Reported	Perf case:	Not Reported
Use:		mestic, non-agriculture)	242 - 24 A TOTAL
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft yr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported

Maxchl yr:	Not Reported	Minchl:	Not Reported
Minchl yr:	Not Reported	Bot hole:	0
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	3-8-019:044	Old aqui:	Not Reported
Aqui code:	60301	Latest hd;	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
T:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Site id:	HI600000001388

39 South 1/2 - 1 Mile Higher

HI WELLS HI600000001360

rigiter			
Wid:	6-5328-023	Island:	6
Well no:	5328-23	Well name:	Kahiki St
Old name:	Not Reported	Yr drilled:	Not Reported
Driller:	Not Reported	Quad map:	05
Longitude2:	1562801	Latitude27:	205305
Longitude8:	1562751	Latitude83:	205253
Lat83d:	20	Lat83m:	52
Lat83s:	53	Lon83d:	156
Lon83m:	27	Lon83s:	51
Lat83dd:	20.88139	2000	
Lon83dd:	-156.46417		
Long83dd:	-156.46417		
Lat83dd 1:	20.88139		
Gps:	0	Utm:	1
Owner user:	Maui County	Old number:	20-100
Well type:	Not Reported	Casing dia:	6
Ground el:	31	Well depth:	120
Solid case:	81	Perf case:	Not Reported
Use:	Other	,	11447744
Use year:	71		
Init water:	Not Reported		
Init head:	Not Reported		
Init chlor:	Not Reported	Init cl:	0
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Temp unit:	Not Reported
Pump gpm:	Not Reported	Draft mgy:	Not Reported
Head feet:	Not Reported	Max chlor:	Not Reported
Min chlor:	Not Reported	Geology:	THO
Pump yr:	Not Reported	Draft vr:	Not Reported
Head yr:	Not Reported	Maxchl:	Not Reported
Maxchl yr:	0	Minchl;	Not Reported
Minchl yr:	0	Bot hole:	-89
Bot solid:	-50	Bot perf:	Not Reported
Spec capac:	Not Reported	Pump mgd:	Not Reported
Draft mgd:	Not Reported	Aquifer:	60301
Tmk:	Not Reported	Old aqui:	Not Reported
Aqui code:	60301	Latest hd:	Not Reported
Cur head:	Not Reported	Cur cl:	Not Reported
Cur temp:	Not Reported	Wcr:	01/01/1926
Pir:	Not Reported	Surveyor:	Not Reported
	A Service Processing	Activity of the second of the	

T: Pump depth: Not Reported Not Reported Pump elev: Site id: Not Reported HI6000000001360

AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L. : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96732

Number of sites tested: 17

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.271 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.200 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7,5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOWR Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at

least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Well Index Database

Source: Commission on Water Resource Management

Telephone: 808-587-0214

CWRM maintains a Well Index Database to track specific information pertaining to the construction and installation of production wells in Hawaii

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor

radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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A&B Parcel B 180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.9 December 05, 2011

EDR Building Permit Report

Target Property and Adjoining Properties



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SECTION

Glossary

About This Report Executive Summary Findings

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EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-05 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records – The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.





EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Kevin S. Kennedy Consulting, LLC on Dec 05, 2011.

TARGET PROPERTY

180 Hobron Ave. Kahului, HI 96732

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: NO PERMITS IDENTIFIED

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Maui County Years: 1978-2008

Source: Maui County, Planning Department, Wailuku, HI

Phone: (808) 270-7735

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

180 Hobron Ave. Kahului, HI 96732

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Permits Found

GLOSSARY

General Building Department concepts

- ICC: The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections): This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- Jurisdiction: This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- GC: General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work
- Sub: Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- Journeymen: Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- HVAC (Mechanical, Heating & Air companies): HVAC = Heating, Ventilation, and Air Conditioning.
- ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release): Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- "Pull" a permit: To obtain and pay for a building permit.
- CBO: Chief Building Official
- Planning Department: The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- Zoning Department: The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- Zoning District: A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- PIN (TMS, GIS ID, Parcel#): Property Identification Number and Tax Map System number.
- State Card (Business license): A license card issued to a contractor to conduct business.
- Building Inspector (Inspector): The inspector is a building department employee that inspects building construction for compliance to codes.
- C.O.: Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use(s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000 Permit Type: Bldg -

New Permit Number: 101000000405 Status: Valuation: \$1,000,000.00 Contractor Company: OWNER-BUILDER

Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

A&B Parcel B 180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.5

December 06, 2011

The EDR Aerial Photo Decade Package



EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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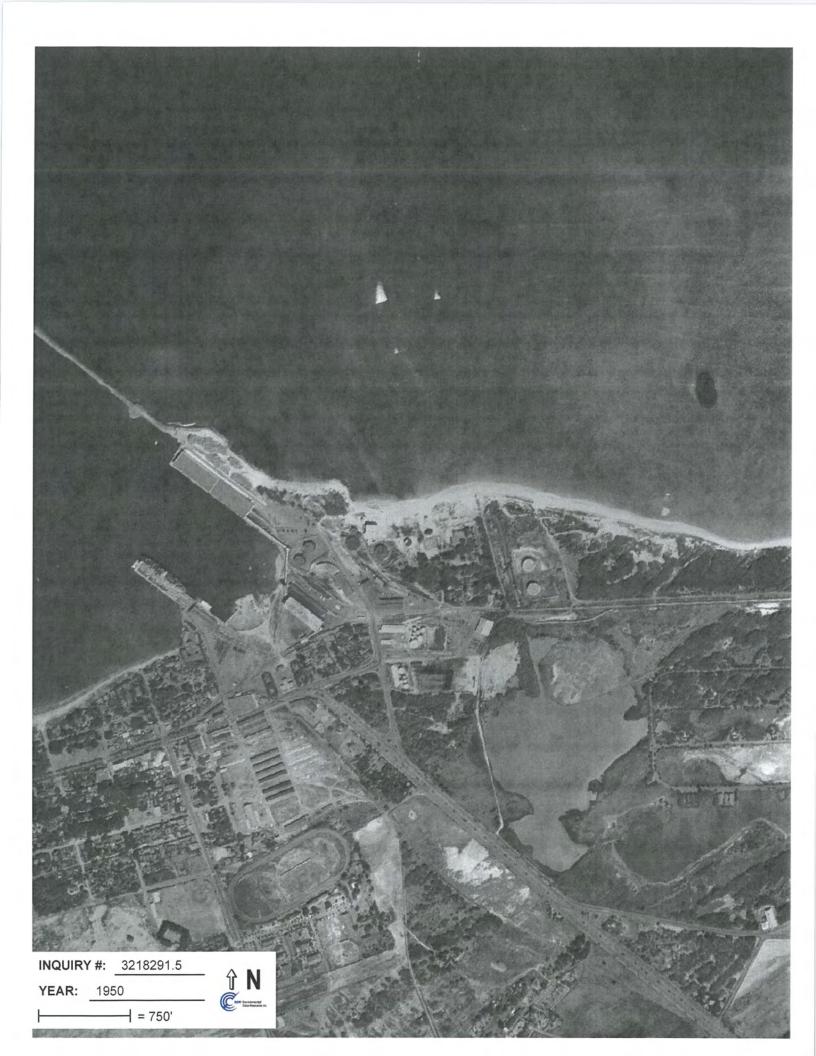
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

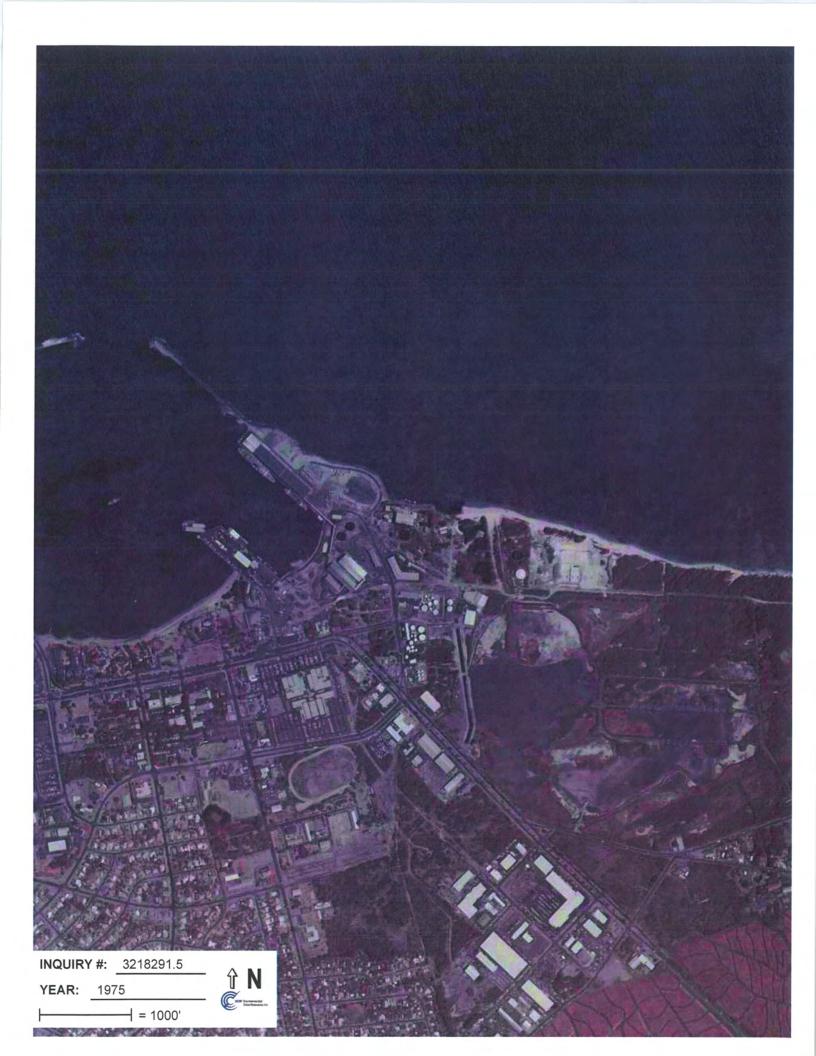
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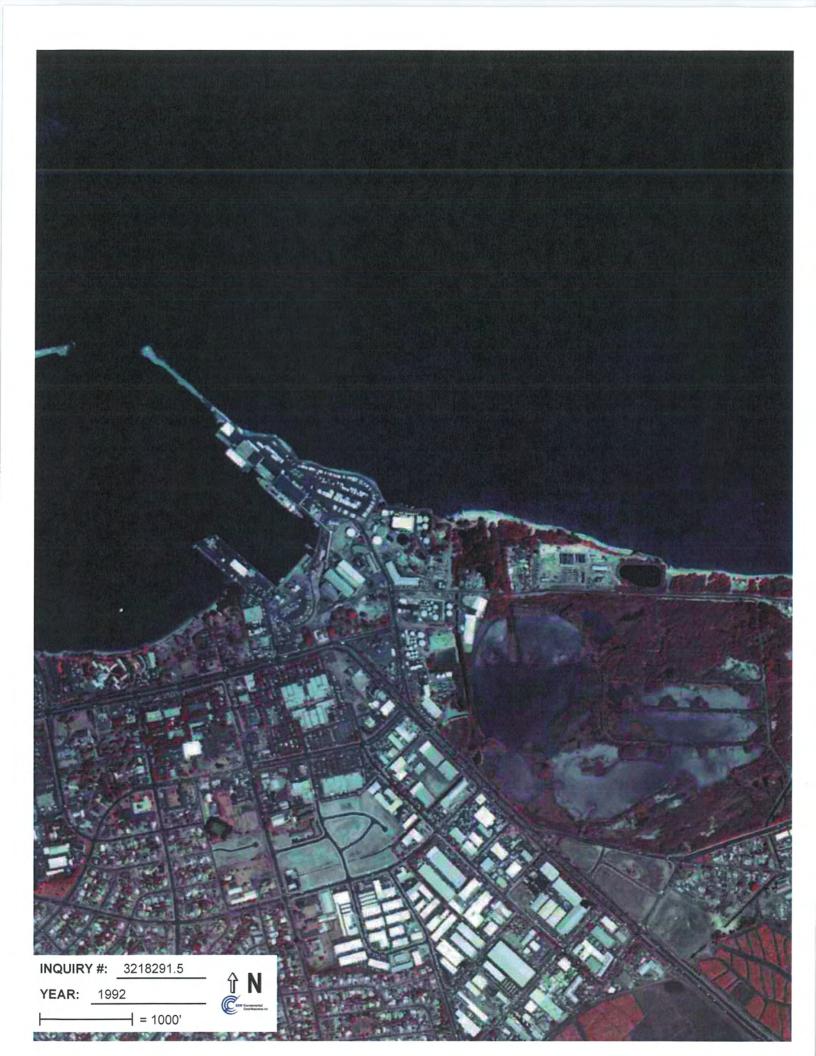
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A&B Parcel B

180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.3

December 06, 2011

Certified Sanborn® Map Report



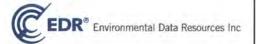
Certified Sanborn® Map Report

12/06/11

Site Name: Client Name:

A&B Parcel B Kevin S. Kennedy Consulting, 180 Hobron Ave. 25 Kaneole Bay Drive Kahului, HI 96732 Kailua, HI 96734

EDR Inquiry # 3218291.3 Contact: Kevin Kennedy



The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Kevin S. Kennedy Consulting, LLC were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edmet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: A&B Parcel B
Address: 180 Hobron Ave.
City, State, Zip: Kahului, HI 96732

Cross Street:

P.O. # NA

Project: KSK-2008-029 Certification # A3AF-4412-A56E

Maps Provided:

1990

1980

1975 1945

1927

1914



Sanborn® Library search results Certification # A3AF-4412-A56E

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

✓ Library of Congress

University Publications of America

✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.



1990 Source Sheets



Volume 1, Sheet 4

1980 Source Sheets



Volume 1, Sheet 4

1975 Source Sheets



Volume 1, Sheet 4

1945 Source Sheets



Volume 1, Sheet 4

1927 Source Sheets

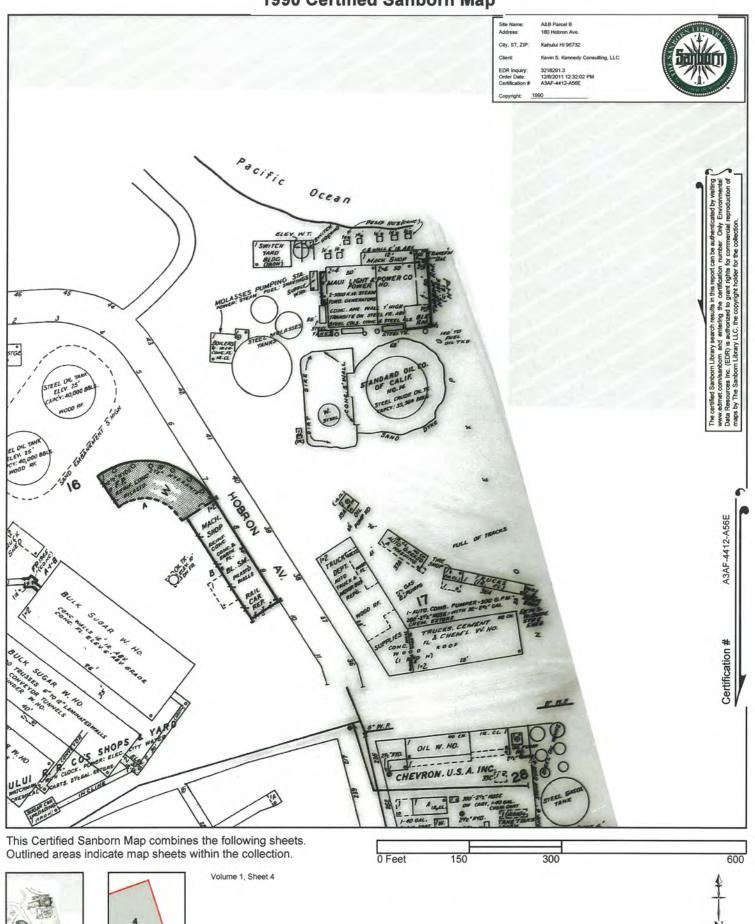


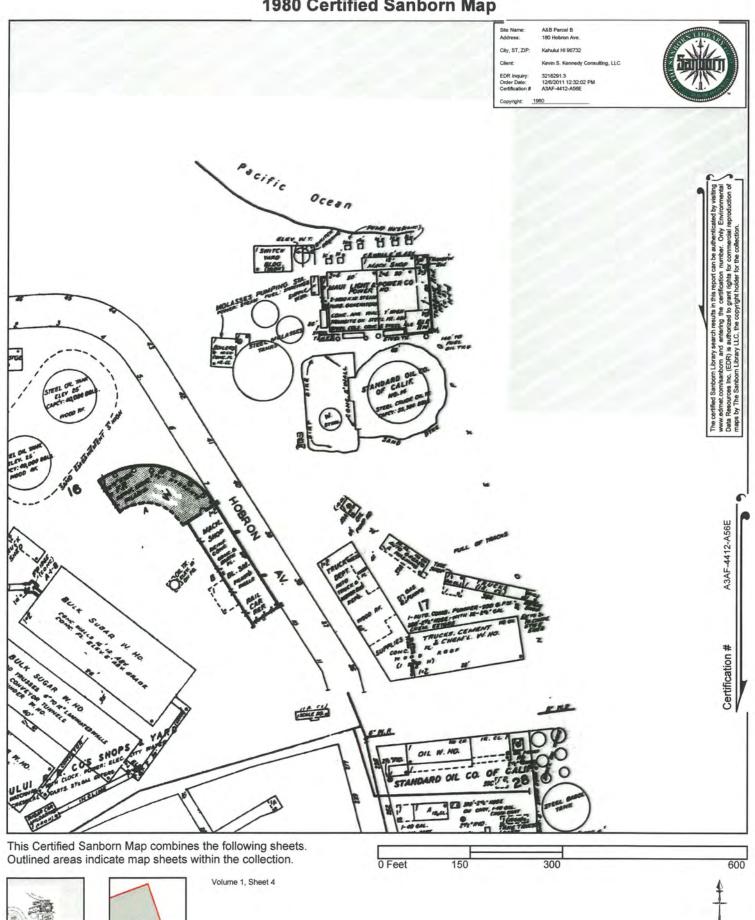
Volume 1, Sheet 4

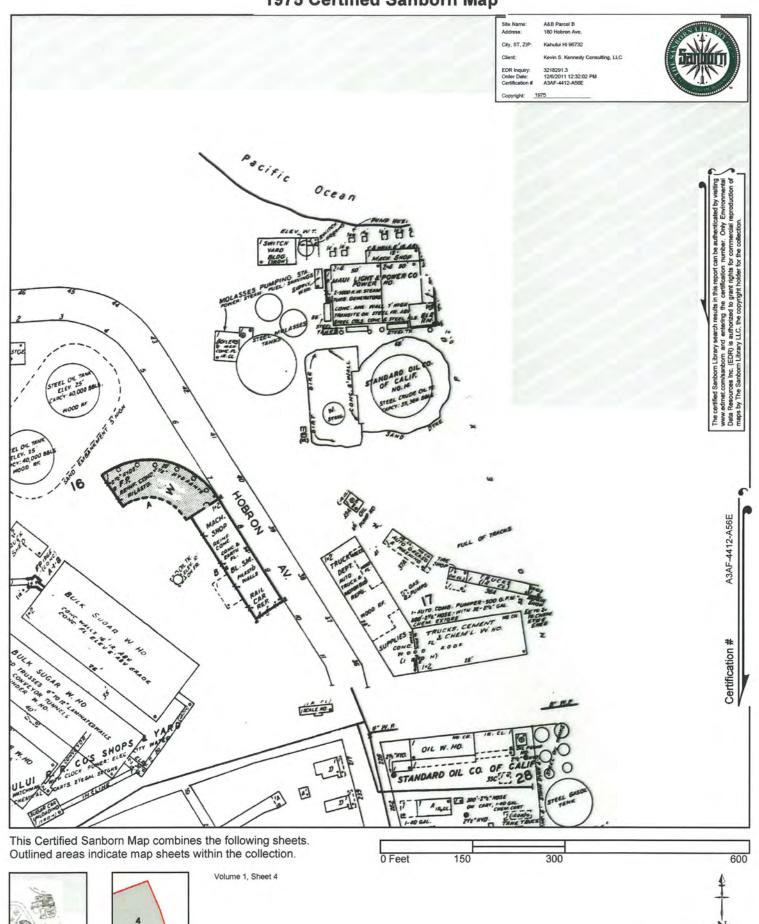
1914 Source Sheets

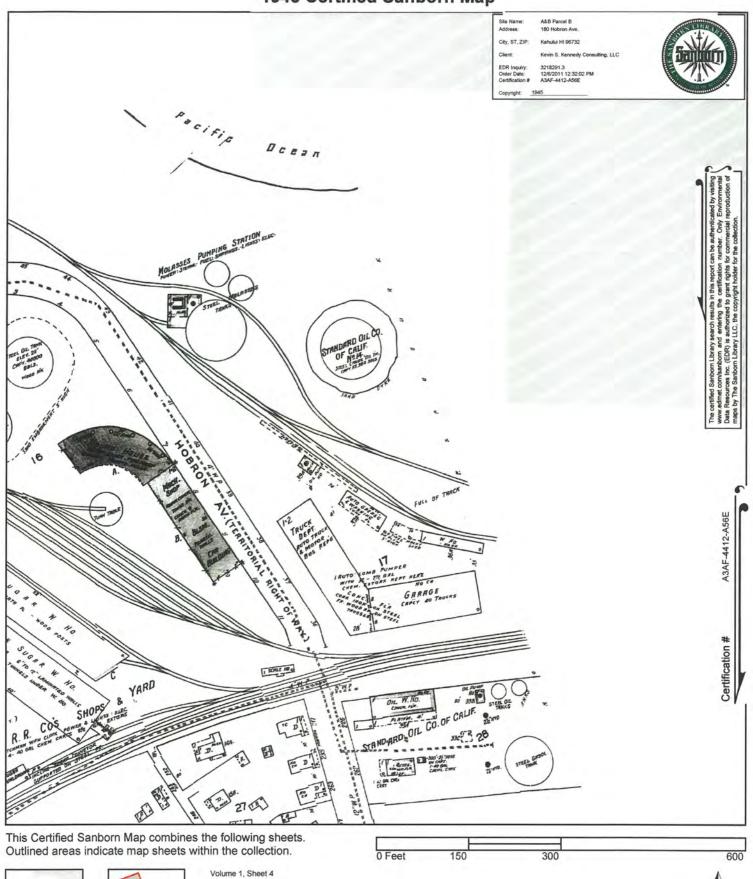


Volume 1, Sheet 3





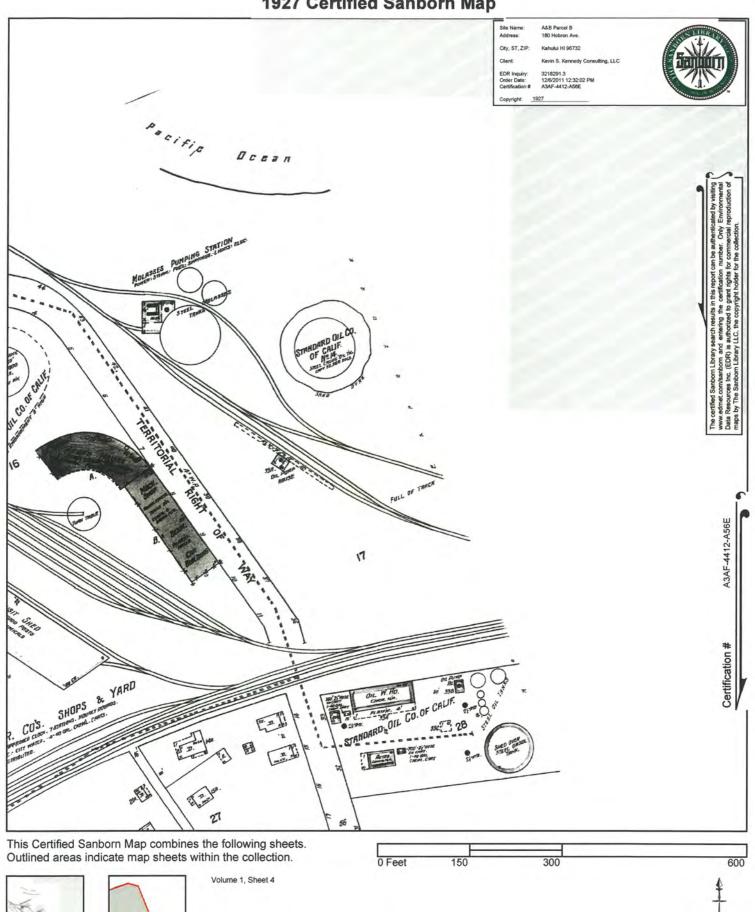
















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A&B Parcel B 180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.4

December 05, 2011

EDR Historical Topographic Map Report



EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

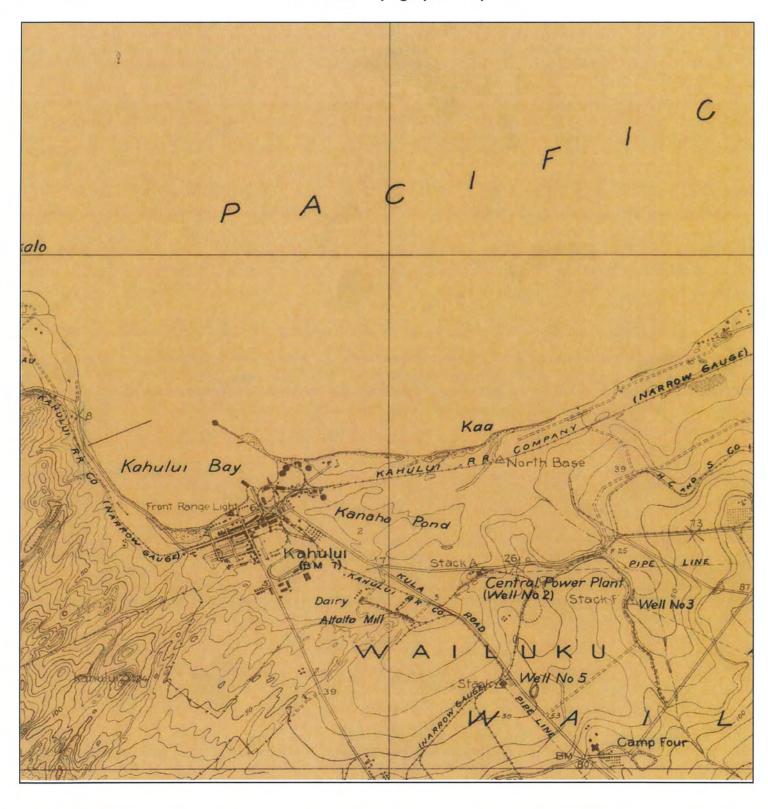
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Historical Topographic Map



TARGET QUAD NAME:

PAIA MAP YEAR: 1922

SERIES: 7.5

SCALE: 1:31680 SITE NAME: A&B Parcel B ADDRESS:

180 Hobron Ave.

Kahului, HI 96732

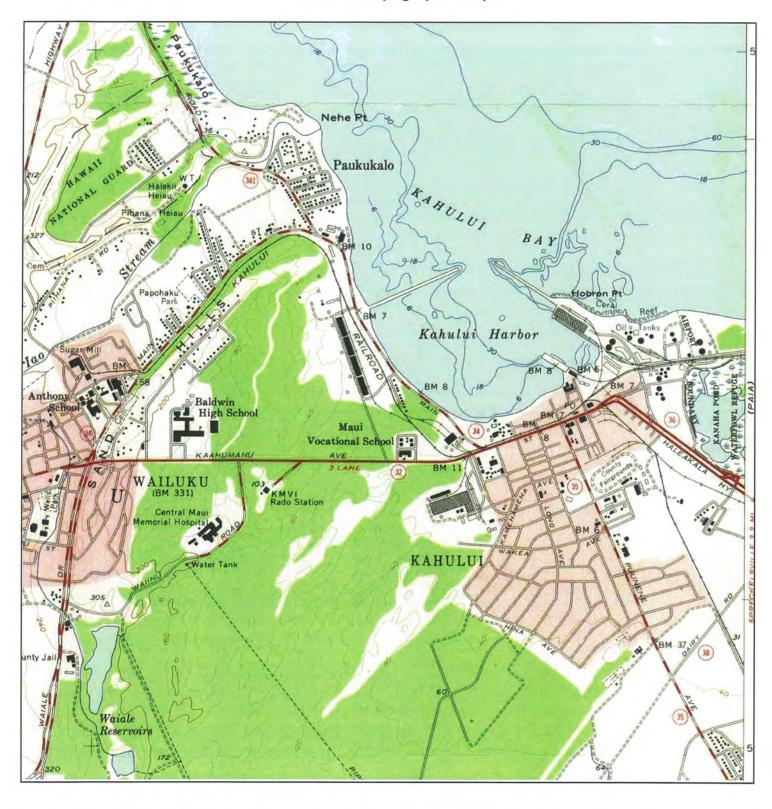
LAT/LONG: 20.8956 / -156.4621

CLIENT:

Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011

Historical Topographic Map



TARGET QUAD NAME: WAILUKU

MAP YEAR: 1955

SERIES: 7.5 1:24000 SCALE:

ADDRESS:

SITE NAME: A&B Parcel B

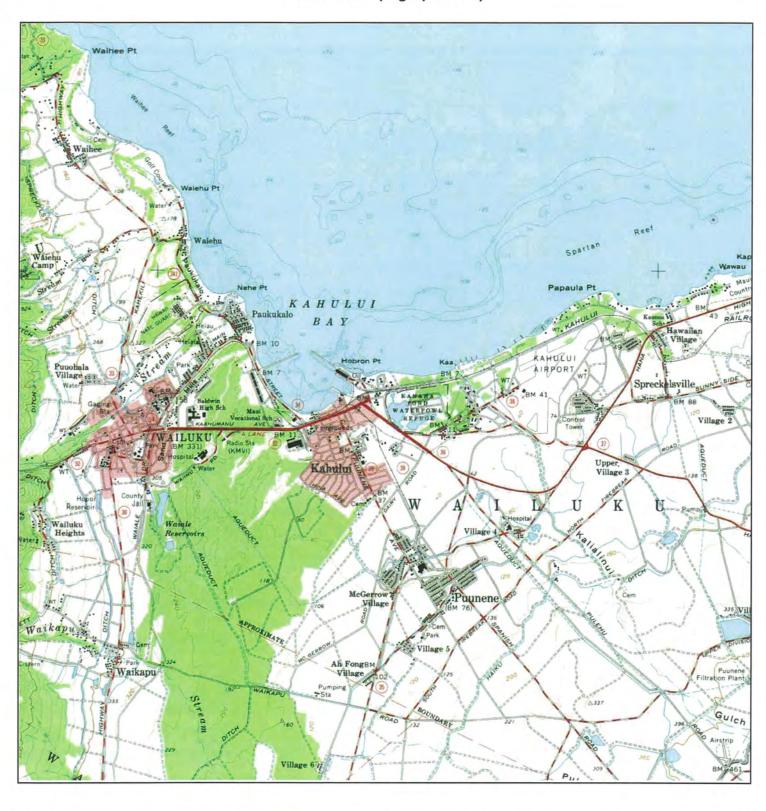
180 Hobron Ave.

Kahului, HI 96732 LAT/LONG: 20.8956 / -156.4621 CLIENT:

Kevin S. Kennedy Consulting, LLC

CONTACT: INQUIRY#: RESEARCH DATE: 12/05/2011

Kevin Kennedy 3218291.4



N

TARGET QUAD
NAME: MAUI
MAP YEAR: 1961
REVISED:1957
SERIES: 15

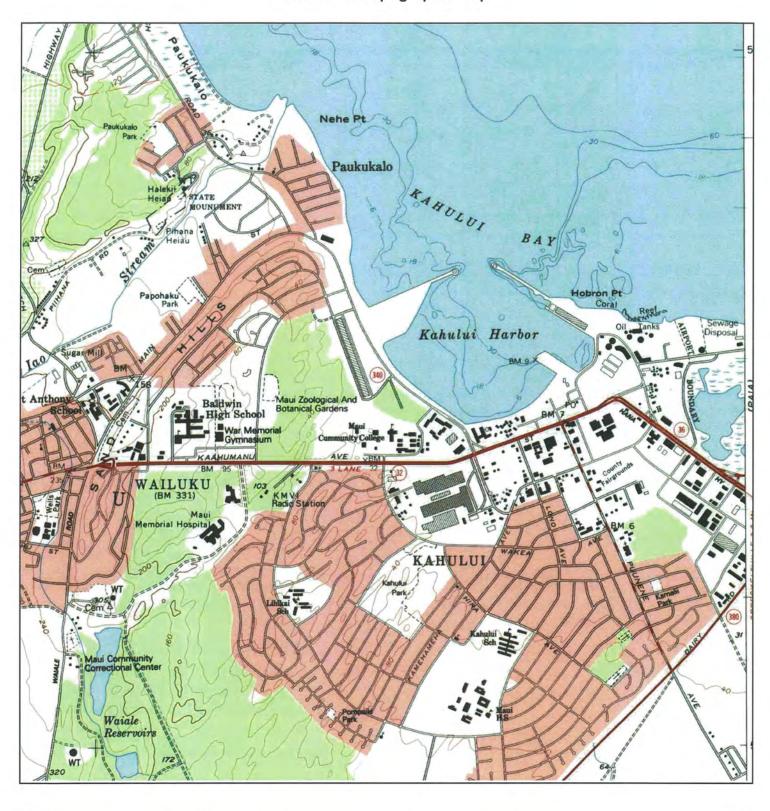
SERIES: 15 SCALE: 1:62500 SITE NAME: A&B Parcel B ADDRESS: 180 Hobron Av

: 180 Hobron Ave. Kahului, HI 96732

LAT/LONG: 20.8956 / -156.4621

CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011



TARGET QUAD WAILUKU NAME:

MAP YEAR: 1983

SERIES: 7.5 SCALE: 1:24000 ADDRESS:

SITE NAME: A&B Parcel B 180 Hobron Ave.

Kahului, HI 96732

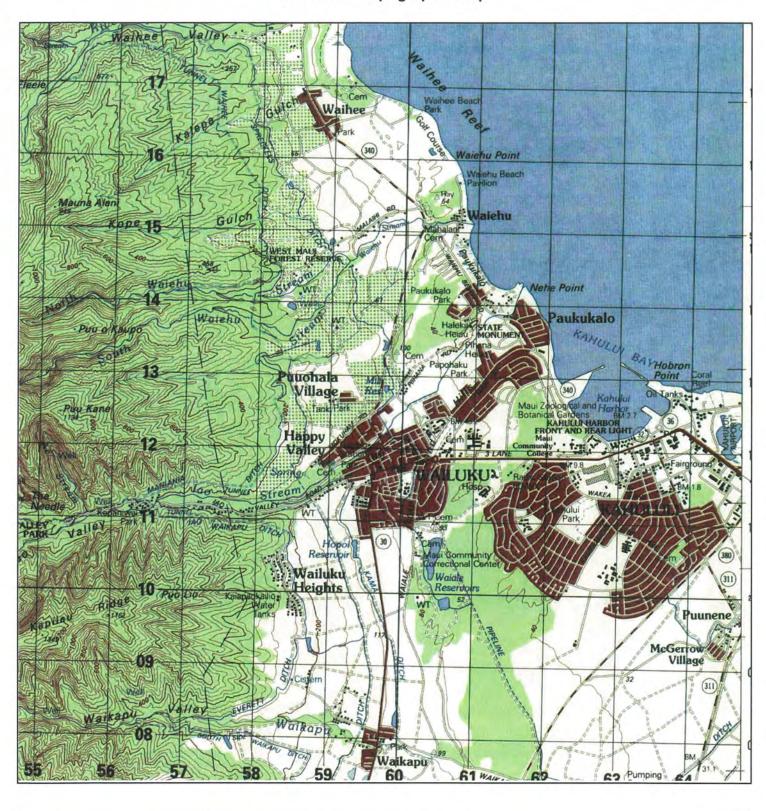
LAT/LONG: 20.8956 / -156.4621

CLIENT:

Kevin S. Kennedy Consulting, LLC

CONTACT: INQUIRY#: Kevin Kennedy 3218291.4

RESEARCH DATE: 12/05/2011



TARGET QUAD WAILUKU NAME:

MAP YEAR: 1983

SERIES: 15 SCALE: 1:50000 ADDRESS:

SITE NAME: A&B Parcel B

180 Hobron Ave.

Kahului, HI 96732 LAT/LONG: 20.8956 / -156.4621 CLIENT:

Kevin S. Kennedy Consulting, LLC

CONTACT: INQUIRY#:

Kevin Kennedy 3218291.4 RESEARCH DATE: 12/05/2011



N

TARGET QUAD NAME: WAILUKU

MAP YEAR: 1997

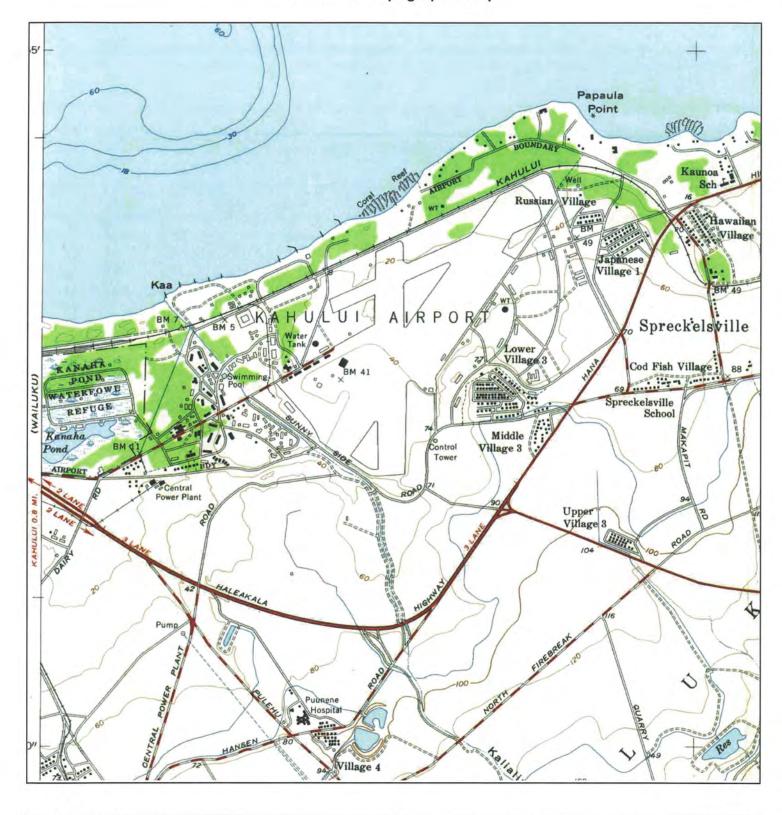
SERIES: 7.5 SCALE: 1:24000 SITE NAME: A&B Parcel B

ADDRESS: 180 Hobron Ave. Kahului, HI 96732

LAT/LONG: 20.8956 / -156.4621

CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011



	ADJOINING	QUAD
	NAME:	PAIA
N	MAP YEAR:	1954
	SERIES:	7.5

SCALE:

1:24000

SITE NAME: A&B Parcel B ADDRESS: 180 Hobron Ave. Kahului, HI 96732

LAT/LONG: 20.8956 / -156.4621 CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011



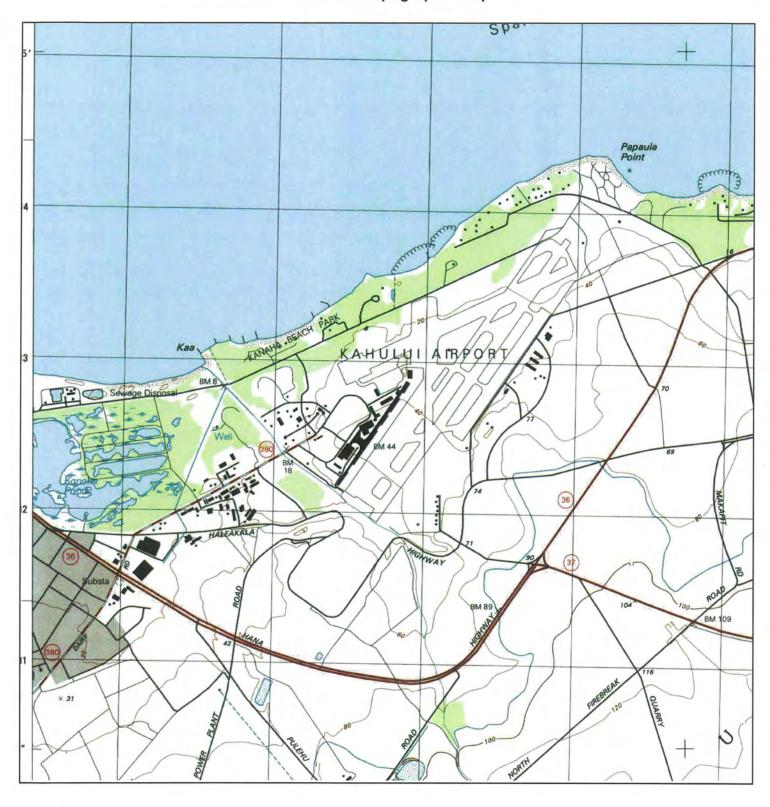
ADJOINING QUAD NAME:

PAIA MAP YEAR: 1983

SERIES: 7.5 SCALE: 1:24000 SITE NAME: A&B Parcel B ADDRESS: 180 Hobron Ave.

Kahului, HI 96732 LAT/LONG: 20.8956 / -156.4621 CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011



ADJOINING QUAD NAME: MAP YEAR: 1997 SERIES: SCALE:

PAIA

7.5

1:24000

SITE NAME: A&B Parcel B ADDRESS: 180 Hobron Ave. Kahului, HI 96732

LAT/LONG: 20.8956 / -156.4621 CLIENT: Kevin S. Kennedy Consulting, LLC

CONTACT: Kevin Kennedy INQUIRY#: 3218291.4 RESEARCH DATE: 12/05/2011 **A&B Parcel B** 180 Hobron Ave. Kahului, HI 96732

Inquiry Number: 3218291.6 December 09, 2011

The EDR-City Directory Abstract



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SECTION

Executive Summary

Findings

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

<u>Year</u>	Source	<u>TP</u>	Adjoining	Text Abstract	Source Image
2011	Polk's City Directory	1	X	X	-
2006	Polk's City Directory		X	X	-
2002	Polk's City Directory		X	X	-
1995	Polk's City Directory	-	X	X	7

TARGET PROPERTY INFORMATION

ADDRESS

180 Hobron Ave. Kahului, HI 96732

FINDINGS DETAIL

Target Property research detail.

No Addresses Found

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

Hobron Ave.

Hobron Ave.

<u>Year</u>	<u>Uses</u>	Source
2011	No address listings beyond 200 Hobron Ave	Polk's City Directory
2006	No address listings beyond 140 Hobron Ave	Polk's City Directory
2002	No address listings beyond 140 Hobron Ave	Polk's City Directory
1995	No address listings beyond 140 Hobron Ave	Polk's City Directory

100 Hobron Ave.

<u>Year</u>	<u>Uses</u>	Source
2006	Chevron USA Inc (petroleum)	Polk's City Directory
2002	Chevron USA Inc (petroleum)	Polk's City Directory
1995	Chevron USA Inc (petroleum)	Polk's City Directory

140 Hobron Ave.

<u>Year</u>	Uses	Source
2011	Office Plaza (8 occupants)	Polk's City Directory
2006	Auto Plaza (11 occupants)	Polk's City Directory
2002	Auto Plaza (11 occupants)	Polk's City Directory
1995	Auto Plaza (7 occupants)	Polk's City Directory

200 Hobron Ave.

<u>Year</u>	<u>Uses</u>	Source
2011	Maui Electric Co Ltd	Polk's City Directory

69 Hobron Ave.

<u>Year</u>	<u>Uses</u>	Source
2011	Merceded Benz of Maui	Polk's City Directory

74 Hobron Ave.

<u>Year</u>	<u>Uses</u>	Source
2011	VIP Food Service	Polk's City Directory
2006	VIP Food Service	Polk's City Directory

3218291-6 Page 3

Year Uses Source

2002 VIP Food Service Polk's City Directory

76 Hobron Ave.

Year Uses Source

1995 Mau PEtroleum Inc Polk's City Directory

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched Address Not Identified in Research Source

180 Hobron Ave. 2011, 2006, 2002, 1995

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched Address Not Identified in Research Source

Hobron Ave. No Years Found
100 Hobron Ave. No Years Found
140 Hobron Ave. No Years Found

200 Hobron Ave. 2006, 2002, 1995

69 Hobron Ave. 2006, 2002, 1995

74 Hobron Ave. 1995

76 Hobron Ave. No Years Found

APPENDIX C

Environmental Questionnaires

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Facility/Property: Parcel B	Date 1/5/2012
Address: 170 Hobron Ave., Kahului, HI	Proj. No. KSK-2008-029
Owner: A&B Propeties, Inc.	
Person Interviewed: Sean O'Keefe (by telephone)	1/5/2012)
Interviewee Title/Contact Info: 877-2959	
Years familiar with the site and in what capacity: 18 Environmental Affairs for A&B	years with A&B, currently Director of
QUESTIONS	
 Are there any documents, such as the follows, are copies available? Relevant Docume Environmental Assessment or Compliance Environmental Permits (e.g. hazardous was Registration of Underground Storage Tanks Safety Plans, Spill Prevention plans Geotechnical studies Hydrogeologic studies Risk assessments Notices or correspondence from any regulation laws, liens etc. Other Yes. Documents provided to KSK [see Sec 2.4 for the content of the content	ents: (Audit Reports ste, NPDES, UIC) s tory agency relating to past environmental
100. Deciments provided to Italy [800 800 2.4 for	. downless discussion;
2. General Site Info. Age of facility/property occupancy, tenants?	, purpose, nature of operations,

Mr. O'Keefe was not sure of the exact age of the facilities at the parcel but suspected that the KTS building was built after 1941. He was not aware of the age of the molasses tanks

PCB content?

3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
No	
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
Sep	tic tank at the KTS Truck Repair & Maintenance Shop, Cess pool at the Molasses Pump
House	
5.	What is the water source for the property (well, municipal supply, catchment)?
W	ater on site, municipal county water
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
N	0
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
No	
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
AST (here are no USTs at the Parcel. Four molasses tanks (two not in use), the Tosco Black Oil just off-Parcel), the fomer oil/molasses tank at the Olekoi Area, two former ASTs (one no present, one partially demolished) associated with the former Hawaiian Bitumel asphalt
	SE of Olekoi Area), fertilizer ASTs at BEI Hawaii fertilizer tank farm (SE corner of
Parcel	
9.	Are there any oil water separators or sumps on the property?
	one oil water separator at the KTS Truck Wash, water drains to soil, oil recovered and med. No other O/W separators on the Parcel

Questionnaire		
Environmental	Site	Assessment
Page 3		

No. There may be pole-mounted transformers but electricity probably brought to the Parcel from Parcel A (KTS Bulk Sugar Storage Site) across Hobron Avenue.

11. Is there or was there in the past any mechanical maintenance/repair/construction shop on the property? If so, what types of activities were conducted there?

Truck Maintenance and Repair Shop does truck repair/maintenance. Maui Crane does truck repair at their portion of Parcel B. Not sure but DeCoite may also work on their equipment at their area of Parcel B.

12. Is there, or was there in the past, any gas station, auto repair shop, junk yard, photo lab, commercial printing operation, dry cleaner, landfill, waste disposal or receiving facility on the property? If so, when and what activities were conducted?

No gas station currently, or historically on Parcel B. Olekoi Area was a junk yard until cleaned up by A&B. Formerly truck repair work at open KTS work area next to Truck Wash. See question 11 above.

13. Are there any hydraulic lifts on the property?

No sub-grade hydraulic lifts on the Parcel. KTS uses electric hoists, no sub-grade hydraulics.

14. Are there any pipelines (petroleum, natural gas, oil, other) on or adjacent to the property?

Chevron pipline runs along Hobron Ave.(probably within easement); pipelines associated with Tosco Black Oil AST (off-Parcel) and associated loading rack (on-Parcel). One pipeline was pigged and cleaned but others still present there. Pipelines ran to Olekoi tank and are probably still present than run towards the harbor.

15. Are there any ponds, lagoons, wetlands, or pits on the property?

No, but there is asphalt present in/on the soil in a depressed area in the former Hawaiian Bitumuls area (SE of Olekoi Area)

16. Is there any stockpiled soil/debris/waste on the property?

Yes, one oil-impacted soil pile stockpiled by the molasses tanks and two drums (not a soil pile) of oil-impacted soil still on-Parcel in the Olekoi AST area.

- 17. Are any of the following materials used on the property, or were used in the past? If so, how were they stored, used, disposed of and in what quantities?
 - Solvents/cleaners
 - Oils/petroleum products/lubricants
 - Pesticides, herbicides or fertilizers
 - Asbestos
 - Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver)
 - Ignitable or reactive materials
 - Radioactive materials
 - PCBs

Paints, solvents, used oil and lubricants are stored within the KTS Truck Repair & Maintenance Shop. Oil and fuel formerly stored at the Olekoi Area, tar/asphalt at the former Hawaiian Bitumuls asphalt plant. Fertilizes at the BEI Hawaii tank farm, resins at the canoe shop in the molasses pump house

18. Are you aware of any leaks or spills of any of the above materials?

Yes – asphalt tar release at former Hawaiian Bitumuls area; two spills at Tosco Back Oil tank loading rack (near molasses tanks); releases at Tosco Black Oil tank/pipeline (off-Parcel)

19. Are there any Material Safety Data Sheets (MSDSs) for any hazardous materials used or stored on site?

Yes at KTS Truck Maintenance and Repair Shop.

20. Is there a Spill Prevention Countermeasures and Control (SPCC) plan for the property?

Not required but had one in the past and we may update that.

22. Are you aware of any areas of contamination or waste disposal on or adjacent to the property?

Releases at the Chevron tank farm south of Parcel B, across Amala Place, black oil-impacted soil encountered during installation of Tesoro loading rack (NE of Parcel B) over ten years ago.

Environmental Site Assessment
Page 5

Old injection well at the KTS Sugar Storage facility across Hobron Avenue to the west of Parcel
B that received sugar warehouse wash water and has a methane issue.

23. Are you aware of any current or past environmental violations or lawsuits related to
the property or any environmental removal or remediation activities?

No

24. Has there been any other environmental investigations, assessments, clean ups or

Questionnaire

24. Has there been any other environmental investigations, assessments, clean ups or removal actins conducted at the property? If so are reports available for review?

Not other than those discussed above and the documents provided.

25. Any other comments?

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Facility/Property BEI Tank Farm	Date 12/14/2011
Address: SE corner of Parcel B	Proj. No. KSK-2008-029
Owner: BEI Hawaii	
Person Interviewed: Shirley Zhai	
Interviewee Title/Contact Info Regulatory Compl	liance officer
Years familiar with the site and in what capacity.	10 years_
(Shirley Zhai's response apply to the BEI Tank I	Farm area of Parcel B only)
1. Are there any documents, such as the following, so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit - Environmental Permits (e.g. hazardous waste, NP - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory as laws, liens etc. - Other	Reports PDES, UIC)
No permits, but annual report filed with HDOH on what 2. General Site Info. Age of facility/property, purp	
occupancy, tenants? Bulk fertilizer storage above ground storage tan	uks (steel) built in 1982

Page 2	
3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
	no
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
-	Not at tank farm
5.	What is the water source for the property (well, municipal supply, catchment)?
	Yes, municipal
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
	All storm water runoff contained by berm, so no run off or discharge
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
_	No, but possible drain valve on berm to drain rain water
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
	Yes, 3 x 15,000-gallons, 1 x 17,000-gallon and 3 x 110,000-gallon ASTs (but only
	STs in use, one 15,000-gallon (but only 10,000 gallons with 10-34-0, an ammonium
	nate fertilizer). Only one of the 110,000-gallon ASTs is in use and stores 25,000 gallons of
UAN:	32, an ammonium nitrate and urea fertilizer.
9.	Are there any oil water separators or sumps on the property?
	No

Questionnaire

Environmental Site Assessment

Questionnaire Environmental Site Assessment Page 3

	nere electrical transformers on the property? If so, have they been tested for content?
	<u>No</u>
	ere or was there in the past any mechanical maintenance/repair/construction on the property? If so, what types of activities were conducted there?
	Not to my knowledge
lab, co	re, or was there in the past, any gas station, auto repair shop, junk yard, photommercial printing operation, dry cleaner, landfill, waste disposal or receiving on the property? If so, when and what activities were conducted?
N	lo
13. Are	there any hydraulic lifts on the property?
	No
14. Are th	No
14. Are the prope	there any hydraulic lifts on the property? No nere any pipelines (petroleum, natural gas, oil, other) on or adjacent to the rty?

	16. Is there any stockpiled soil/debris/waste on the property?	
	No_	
	any of the following materials used on the property, or were used in the past ow were they stored, used, disposed of and in what quantities? Solvents/cleaners	
	Oils/petroleum products/lubricants	
	T esticates, herbicates of fertilizers	
:	713063103	
	Radioactive materials	
	PCBs	
	Fertilizers only	
18. Are	Not to my knowledge	
10 Ara 1	there any Material Safety Data Sheets (MSDSs) for any hazardous materials or stored on site? s. Stored at the tank farm and at BEI offices	
used		
used Ye	ere a Spill Prevention Countermeasures and Control (SPCC) plan for the erty?	

Questionnaire Environmental Site Assessment Page 5

	22. Are you aware of any areas of contamination or waste disposal on or adjacent property?	
	not to my knowledge_	
	Are you aware of any current or past environmental violations or lawsuits related the property or any environmental removal or remediation activities?	
	not to my knowledge	
	Has there been any other environmental investigations, assessments, clean ups or removal actins conducted at the property? If so are reports available for review?	
	<u>No</u>	
25.	Any other comments?	

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Date 12/14/2011
Proj. No. KSK-2008-029
years
ing portion of Parcel B only.
ving, about the property available, and if ts: udit Reports , NPDES, UIC) ry agency relating to past environmental

2. General Site Info. Age of facility/property, purpose, nature of operations, occupancy, tenants?

DeCoite uses the area to store trucks, loaders and shipping containers used to store truck parts. DeCoite does some minor truck repair/maintenance on its on trucks. Some concrete working equipment:

Questic Enviror Page 2	onnaire nmental Site Assessment
3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
-	No
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
_ Not	at the DeCoite area. DeCoite uses porta-potties at their area
	What is the water source for the property (well, municipal supply, catchment)?
Mu	inicipal water supply
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
Just	rainwater runoff
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
No	
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
ground	soline stored at the DeCoite area, but DeCoite has an approximately 200-gallon above d oil storage container; and a 200- to 300-gallon used oil tank. Both are reportedly ned in drip boxes
9.	Are there any oil water separators or sumps on the property?
	No
10.	Are there electrical transformers on the property? If so, have they been tested for PCB content?

No

D 6	
DeC	oite conducts minor truck repair and servicing of its own equipment at the site.
12. Is there, or was there in the past, any gas station, auto repair shop, junk yard, pl lab, commercial printing operation, dry cleaner, landfill, waste disposal or received facility on the property? If so, when and what activities were conducted?	
Not	to my knowledge
13.	Are there any hydraulic lifts on the property?
No	
	re there any pipelines (petroleum, natural gas, oil, other) on or adjacent to the roperty?
No	
15. A	re there any ponds, lagoons, wetlands, or pits on the property?
No	
16.1	there any steelimited estilled shiply resteem the rest of the
10. 1	there any stockpiled soil/debris/waste on the property?
No	

- so, how were they stored, used, disposed of and in what quantities?
 - Solvents/cleaners
 - Oils/petroleum products/lubricants
 - Pesticides, herbicides or fertilizers
 - Asbestos
 - Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver)
 - Ignitable or reactive materials
 - Radioactive materials
 - PCBs

200- to 300-gallons each of oil and used oil for use in DeCoite trucks and loaders
18. Are you aware of any leaks or spills of any of the above materials?
There have been no leaks or spills of the oil or used oil DeCoite uses at the Site. A&B does environmental inspections of the DeCoite area once a year.
19. Are there any Material Safety Data Sheets (MSDSs) for any hazardous materials used or stored on site?
No
20. Is there a Spill Prevention Countermeasures and Control (SPCC) plan for the property?
No
21. Is there any runoff from adjacent properties onto the property?
No
22. Are you aware of any areas of contamination or waste disposal on or adjacent to the property?
Not that I am aware of
23. Are you aware of any current or past environmental violations or lawsuits related the property or any environmental removal or remediation activities?
No
24. Has there been any other environmental investigations, assessments, clean ups or removal actins conducted at the property? If so are reports available for review?
Not that I am aware of

25. Any other comments?	
No other comments	

Questionnaire

Page 5

Environmental Site Assessment

Fed ax

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

	Date_ 12/16/11
Address: 140 HOBRON AVE, KANHILLI 96732	Proj. No.
Owner: FADE GROUND	
Person Interviewed: STEVEN OF ADA	
Interviewee Title/Contact Info STATION MANAGE	R , 873-2195 steven.oku
Years familiar with the site and in what capacity. / yk,	
RUN FEREX GROUND OFERATIONS - ONLY	PAMILYPE W/ SPACE LEASES
QUESTIONS	
so, are copies available? Relevant Documents: Environmental Assessment or Compliance/Audit Repo Environmental Permits (e.g. hazardous waste, NPDES, Registration of Underground Storage Tanks Safety Plans, Spill Prevention plans Geotechnical studies Hydrogeologic studies Risk assessments Notices or correspondence from any regulatory agency laws, liens etc. Other	, UIC)
2. General Site Info. Age of facility/property, purpose, i	nature of operations,

3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
	What is the sewer system for the property (municipal sewer, cesspool, septic)?
5.	What is the water source for the property (well, municipal supply, catchment)?
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property? NOT TO MK KNOWWOGE
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
NO	DRAINS IN FEDER LEASED SPACE - PLOUD DRAIN FILLED W/
	N CRETE.
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
	NOT TO MY KNOWHEDGE
9.	Are there any oil water separators or sumps on the property?

Questionnaire	
Environmental	Site Assessment
Page 3	

10.	Are there electrical transformers on the property? If so, have they been tested for PCB content?
	NOT TO MY KNOWLEDGE
11.	Is there or was there in the past any mechanical maintenance/repair/construction shop on the property? If so, what types of activities were conducted there?
	NOT TO MY KNOWINGE
	Is there, or was there in the past, any gas station, auto repair shop, junk yard, photoab, commercial printing operation, dry cleaner, landfill, waste disposal or receiving facility on the property? If so, when and what activities were conducted?
	NOT TO MY KNOW LED GE
13.	Are there any hydraulic lifts on the property?
	NOT TO MY KNOWNDGE
14. <i>A</i>	Are there any pipelines (petroleum, natural gas, oil, other) on or adjacent to the property?
Ν	OT TO MY KNOWLEDGE
15. A	are there any ponds, lagoons, wetlands, or pits on the property?
N	ONE THAT I HAVESEEN

Questionnaire Environmental Site Assessment Page 4

16. Is there any stockpiled soil/debris/waste on the property?				
 Solvents/cleaner Oils/petroleum p Pesticides, herbid Asbestos 	roducts/lubricants cides or fertilizers ad, chromium, cadmium, mercury, arsenic, silver) tive materials			
NONE FOR FEREN	l			
18. Are you aware of any le	eaks or spills of any of the above materials?			
used or stored on site?	Safety Data Sheets (MSDSs) for any hazardous materials			
property?	on Countermeasures and Control (SPCC) plan for the			
YES, FOR PEPEN	PROTOCOL			
21. Is there any runoff from	adjacent properties onto the property?			

Questionnaire Environmental Site Assessment Page 5

NOT	TO MY KNOWLEDGE
the pr	ou aware of any current or past environmental violations or lawsuits related to operty or any environmental removal or remediation activities? TO MY KNOW USOGE
24. Has th	nere been any other environmental investigations, assessments, clean ups or all actins conducted at the property? If so are reports available for review?
NOT	TO MY KNOWLEDGE
- T	TO MY KNOWLEDGE ther comments?
25. Any o	

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Facilit	y/Property: Hale Nanea Community Center	Date 12/14/2011
Addre	ss: Northeast corner of Parcel B	Proj. No. KSK-2008-029
Owner	r: (Tenant) Royal Order of Kamehameha I	
Person	Interviewed: Clifford Alakai'i	
Intervi	ewee Title/Contact Info: President, Royal Order	of Kamehameha I - 283-0443
	familiar with the site and in what capacity: 15 ye nameha I	ears, President of Royal Order of
QUES	TIONS	
1.	Are there any documents, such as the following so, are copies available? Relevant Documents	s:
7	Environmental Assessment or Compliance/Au	
	D ' ' ' CIL 1 10' T 1	NPDES, CIC)
	C.C. DI C. III D I	
+		
- 4		
	The second secon	
*	Notices or correspondence from any regulator laws, liens etc.	y agency relating to past environmental
	Other	
Mo		

2. General Site Info. Age of facility/property, purpose, nature of operations, occupancy, tenants?

Community center, hula halau classes, mens groups, Hawaiian culture classes, group meetings – former WWII officers club – building present before WWII

Question Environ Page 2	onnaire nmental Site Assessment
3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
N	0
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
Septic	sytem on site
	What is the water source for the property (well, municipal supply, catchment)?
Mun	icipal county water supply
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
No l	out drainage ditch on adjacent property to east
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
_No	
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
Not	that I am aware of
9.	Are there any oil water separators or sumps on the property?
_No	ot that I am aware of
10	. Are there electrical transformers on the property? If so, have they been tested for PCB content?

y gas station, auto repair shop, junk yard, photo dry cleaner, landfill, waste disposal or receiving
and what activities were conducted?
property?
natural gas, oil, other) on or adjacent to the
nds, or pits on the property?
aste on the property?
buried at the site (fill material)

11. Is there or was there in the past any mechanical maintenance/repair/construction

- Solvents/cleaners Oils/petroleum products/lubricants
- Pesticides, herbicides or fertilizers
- Asbestos
- Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver)

so, how were they stored, used, disposed of and in what quantities?

- Ignitable or reactive materials
- Radioactive materials

Questionnaire	
Environmental	Site Assessment
Page 4	

PCBs

Possible lead based paint on building walls and possible asbestos in building	
materials because of age-but has not been confirmed with testing	
18. Are you aware of any leaks or spills of any of the above materials? No	
19. Are there any Material Safety Data Sheets (MSDSs) for any hazardous materia used or stored on site?	ls
No – N/A	
20. Is there a Spill Prevention Countermeasures and Control (SPCC) plan for the property?	
No	
21. Is there any runoff from adjacent properties onto the property?	
Occaisional minor flooding after heavy rains	
22. Are you aware of any areas of contamination or waste disposal on or adjacent t property?	o the
Not on the site, possibly adjacent to.	
23. Are you aware of any current or past environmental violations or lawsuits relat the property or any environmental removal or remediation activities?	ed to
No	
24. Has there been any other environmental investigations, assessments, clean ups or removal actins conducted at the property? If so are reports available for review	
No	

Questionnaire Environmental Site Assessment Page 5		
25. Any other comments?		
\$ 		

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Facility/Property: Kahului Trucking & Storage (KTS)	Date_	12/16/2011
Address: 180 Hobron Avenue, Kahului (Parcel B)	Proj. No. KSk	K-2008-029
Owner: KTS (tenant) – A& B Properties land owner		
Person Interviewed: Glenn Wilbourn		
Interviewee Title/Contact Info: EVP & General Manager, KTS	S – 877-5011	
Years familiar with the site and in what capacity: 6 years		
Mr. Wilbourn's responses apply to the KTS area of Parcel B (S of Parcel B) only.	W corner and en	tire westen half
or racer by only.		

QUESTIONS

- 1. Are there any documents, such as the following, about the property available, and if so, are copies available? Relevant Documents:
 - Environmental Assessment or Compliance/Audit Reports
 - Environmental Permits (e.g. hazardous waste, NPDES, UIC)
 - Registration of Underground Storage Tanks
 - Safety Plans, Spill Prevention plans
 - Geotechnical studies
 - Hydrogeologic studies
 - Risk assessments
 - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc.
 - Other

Environmental permits for waste oil and other petroleum storage and use in the truck repair garage.

2. General Site Info. Age of facility/property, purpose, nature of operations, occupancy, tenants?

KTS occupies the southwest corner and entire western half of Parcel B. KTS is a trucking and storage company and primarily trucks and stores bulk molasses for HC&S. KTS also has a truck

maintenance/repair shop i	for its own trucks and	commercial t	truck repair too.	The shop	has been
in operation for over 100	years and used to rep	air trains for	the Kahului Rail	road.	178796

	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
Not	other than petroleum permits discussed above.
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
Cess	s pool, located by molasses plant and septic system by service shop
5.	What is the water source for the property (well, municipal supply, catchment)?
W	ater on site, municipal county water supply
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
No	
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
No	
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
M	ollases ASTs only.
9.	Are there any oil water separators or sumps on the property?
Yes in	truck wash area to catch oil washed from trucks

Environmental Site Assessment Page 3
10. Are there electrical transformers on the property? If so, have they been tested for PCB content?
Yes – PCB content unknown.
11. Is there or was there in the past any mechanical maintenance/repair/construction shop on the property? If so, what types of activities were conducted there?
KTS operates a truck repair shop currently at the shop and operated one there fo the last 100 years.
12. Is there, or was there in the past, any gas station, auto repair shop, junk yard, photo lab, commercial printing operation, dry cleaner, landfill, waste disposal or receiving facility on the property? If so, when and what activities were conducted? Current KTS truck repair shop – over 100 years (formerly repaired trains for Kahului rail
road).
13. Are there any hydraulic lifts on the property?
Yes - in truck shop, but not sub-grade lifts. Above grade electric lifts only.
No visible or knowledge of former sub-grade lifts
14. Are there any pipelines (petroleum, natural gas, oil, other) on or adjacent to the property?
Chevron fuel line along Hobron lane. And 12-icch molasses line up by molasses storage tank
15. Are there any ponds, lagoons, wetlands, or pits on the property?
No
16. Is there any stockniled soil/debris/waste on the property?

- 17. Are any of the following materials used on the property, or were used in the past? If so, how were they stored, used, disposed of and in what quantities?
 - Solvents/cleaners

Questionnaire

- Oils/petroleum products/lubricants
- Pesticides, herbicides or fertilizers

Questionnaire Environmental Site Assessment Page 4

- Asbestos
- Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver)
- Ignitable or reactive materials
- Radioactive materials
- PCBs

Petroleum products and lubricants in the truck shop (for oil changes and lube wor	
solvent parts washers in shop (contract with Unitek to manage waste solvent, no sol disposal on site).	vent
18. Are you aware of any leaks or spills of any of the above materials?	
No	
19. Are there any Material Safety Data Sheets (MSDSs) for any hazardous mat used or stored on site?	erials
Yes	-
20. Is there a Spill Prevention Countermeasures and Control (SPCC) plan for to property?	he
Yes	
21. Is there any runoff from adjacent properties onto the property?	
No	
22. Are you aware of any areas of contamination or waste disposal on or adjace property?	ent to the
No	
23. Are you aware of any current or past environmental violations or lawsuits the property or any environmental removal or remediation activities?	related to
No	

Questionnaire Environmental Site Assessment Page 5

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Facility	Property: Lengo Construction Date 12/14/2011
Address	: Center of eastern side of Parcel B Proj. No. KSK-2008-029
Owner:	Lengo Cosntruction (tenant)
Person	Interviewed: Len Gomes
Intervie	wee Title/Contact Info: 344-5111
Years fa	amiliar with the site and in what capacity: President Lengo Construction; since 1997
	omes's responses apply to the Lengo Constsruction, Cruiser Phil, Maui Tropix, Aloha ine and Bio Beetle/Maui Recycling – Center of eastern side of Parcel B only.
QUEST	
	Are there any documents, such as the following, about the property available, and if so, are copies available? Relevant Documents:
-	Environmental Assessment or Compliance/Audit Reports
(-	Environmental Permits (e.g. hazardous waste, NPDES, UIC)
	Registration of Underground Storage Tanks
-	Safety Plans, Spill Prevention plans
-	Geotechnical studies
-	Hydrogeologic studies
	Risk assessments
-	Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc.
	Other
No	

2. General Site Info. Age of facility/property, purpose, nature of operations, occupancy, tenants?

Mr. Gomes has been on his leased portion of Parcel B since 1997. Lengo Construction operates an for office for accounting and drafting. Minor construction material stored inside a shipping container stored on site. Gomes subleases portions of his area of Parcel B to Cruiser Phil – a

Questionnaire		
Environmental	Site	Assessment
Page 2		

down hill bicycle rental with associated bicycle repairs of bike, p; Maui Tropix – Maui built custome surfboards and sail boards manufacturing on site; Aloha limousine – limousine and taxi service, no auto repair or maintenance, just park cars. Bio Beetle – rents biofuel operated volkswagons – no repair or servicing. Recycle plastic and glass, paper,

3.	Are there any city, county, state or federal environmental permits for the property or for any operation on the property?
No	
4.	What is the sewer system for the property (municipal sewer, cesspool, septic)?
Ces	s pool
5.	What is the water source for the property (well, municipal supply, catchment)?
W	ater on site, municipal county water
6.	Is waste water or storm water discharged from the property? Any discharge (storm water, waste water) permits for the property?
N	0
7.	Are there any floor drains and/or sumps on the property? If so, what and where do they drain?
No	
8.	Are there any aboveground or underground storage tanks on the property? If so, what type, size and content?
N	o
9.	Are there any oil water separators or sumps on the property?
	No
10	Are there electrical transformers on the property? If so, have they been tested for PCB content?
N	

11. Is there or was there in the past any mechanical main shop on the property? If so, what types of activities w	
Not to my knowledge	vere conducted there?
Not to my knowledge	
12. Is there, or was there in the past, any gas station, auto lab, commercial printing operation, dry cleaner, land facility on the property? If so, when and what activit	fill, waste disposal or receiving
In the past area was an area for illegal dumping junk cars - over 200 junk cars.	Mr. Gomes personally hauled of
13. Are there any hydraulic lifts on the property?	
No	
14. Are there any pipelines (petroleum, natural gas, oil, o property?	other) on or adjacent to the
Not that I know of	
15. Are there any ponds, lagoons, wetlands, or pits on the	e property?
No	

- 17. Are any of the following materials used on the property, or were used in the past? If so, how were they stored, used, disposed of and in what quantities?
 - Solvents/cleaners
 - Oils/petroleum products/lubricants
 - Pesticides, herbicides or fertilizers
 - Ashestos

No

Questionnaire

Environmental Site Assessment

- Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver)
- Ignitable or reactive materials
- Radioactive materials

t
any leaks or spills of any of the above materials?
terial Safety Data Sheets (MSDSs) for any hazardous materials site?
evention Countermeasures and Control (SPCC) plan for the
ff from adjacent properties onto the property?

property?

Not to my knowledge

23. Are you aware of any current or past environmental violations or lawsuits related to the property or any environmental removal or remediation activities?

24. Has there been any other environmental investigations, assessments, clean ups or removal actins conducted at the property? If so are reports available for review?

No – other than removal of junk cars randomly dumped in the site area

estionnaire		
vironmental Site Assessment		
ge 5		
25. Any other comments	?	

Kevin S. Kennedy Consulting, LLC

QUESTIONAIRE

ENVIRONMENTAL SITE ASSESSMENT

Address: No	Facility/Property REUNOLDS RECYCLING INC.	
Person Interviewed: Source Sunce Years familiar with the site and in what capacity. QUESTIONS 1. Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: Environmental Assessment or Compliance/Audit Reports Environmental Permits (e.g. hazardous waste, NPDES, UIC) Registration of Underground Storage Tanks Safety Plans, Spill Prevention plans Geotechnical studies Hydrogeologic studies Risk assessments Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc. Other	Address: 140 HOBRON AVE.	Proj. No
Years familiar with the site and in what capacity. QUESTIONS 1. Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Reports - Environmental Permits (e.g. hazardous waste, NPDES, UIC) - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc Other	Owner:	
Years familiar with the site and in what capacity. QUESTIONS 1. Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Reports - Environmental Permits (e.g. hazardous waste, NPDES, UIC) - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc. - Other	Person Interviewed: GEORGIE JUND	
QUESTIONS 1. Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Reports - Environmental Permits (e.g. hazardous waste, NPDES, UIC) - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc Other	Interviewee Title/Contact Info Suybe	
QUESTIONS 1. Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Reports - Environmental Permits (e.g. hazardous waste, NPDES, UIC) - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc Other	Years familiar with the site and in what capacity.	
 Are there any documents, such as the following, about the property available, and so, are copies available? Relevant Documents: Environmental Assessment or Compliance/Audit Reports Environmental Permits (e.g. hazardous waste, NPDES, UIC) Registration of Underground Storage Tanks Safety Plans, Spill Prevention plans Geotechnical studies Hydrogeologic studies Risk assessments Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc. Other 		
so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Reports - Environmental Permits (e.g. hazardous waste, NPDES, UIC) - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency relating to past environmental laws, liens etc. - Other	QUESTIONS	
	so, are copies available? Relevant Documents: - Environmental Assessment or Compliance/Audit Repo - Environmental Permits (e.g. hazardous waste, NPDES, - Registration of Underground Storage Tanks - Safety Plans, Spill Prevention plans - Geotechnical studies - Hydrogeologic studies - Risk assessments - Notices or correspondence from any regulatory agency laws, liens etc Other	rts UIC) relating to past environmental
General Site Info. Age of facility/property, purpose, nature of operations, occupancy, tenants?	2. General Site Info. Age of facility/property, purpose, roccupancy, tenants?	nature of operations,
REYNOLDS RECYCLING ING.	REYNOLDS RECYCLING	INE.

3. Are there any city, county, state or fede or for any operation on the property?	ral environmental permits for the property
4. What is the sewer system for the proper	rty (municipal sewer, cesspool, septic)?
5. What is the water source for the proper	ty (well, municipal supply, catchment)?
6. Is waste water or storm water discharge water, waste water) permits for the proposition of the propositio	100 T
7. Are there any floor drains and/or sumpthey drain?	s on the property? If so, what and where do
8. Are there any aboveground or undergrowhat type, size and content?	ound storage tanks on the property? If so,
9. Are there any oil water separators or s	umps on the property?

10. Are th	ere electrical transformers on the property? If so, have they been tested for content?
1,7	D,K,
11. Is the	re or was there in the past any mechanical maintenance/repair/construction on the property? If so, what types of activities were conducted there?
ME	
lab, co	re, or was there in the past, any gas station, auto repair shop, junk yard, photommercial printing operation, dry cleaner, landfill, waste disposal or receiving on the property? If so, when and what activities were conducted?
NO	
13. Are t	here any hydraulic lifts on the property?
NO	
14. Are the	ere any pipelines (petroleum, natural gas, oil, other) on or adjacent to the
NO	
15. Are the	ere any ponds, lagoons, wetlands, or pits on the property?
NO	

	16. Is there any stockpiled soil/debris/waste on the property?					
NO						
17. Are a	any of the following materials used on the property, or were used in the past? www.were they stored, used, disposed of and in what quantities? Solvents/cleaners					
	Oils/petroleum products/lubricants					
	Pesticides, herbicides or fertilizers Asbestos					
:	Heavy metals (lead, chromium, cadmium, mercury, arsenic, silver) Ignitable or reactive materials					
	Radioactive materials					
	PCBs					
N	0					
NOT	ou aware of any leaks or spills of any of the above materials? TO MY KNOWLEDGE					
19. Are the	nere any Material Safety Data Sheets (MSDSs) for any hazardous materials or stored on site?					
	on a Smill Description C					
20. Is then	re a Spill Prevention Countermeasures and Control (SPCC) plan for the rty?					

Questionnaire Environmental Site Assessment Page 5

	you awa erty?	are of any	areas of contamination or waste disposal on or adjacent to the
HBT	- 10	MU	KNOWLEDAB
			current or past environmental violations or lawsuits related to environmental removal or remediation activities?
HOT	D	my	KNOWLEDGE
		ins condu	ther environmental investigations, assessments, clean ups or acted at the property? If so are reports available for review?
25. Any	other co	omments:	?
NO			

APPENDIX D

Qualifications of Kevin S. Kennedy

Resume

Kevin S. Kennedy

(January 2011)

808-286-5786 25 Kaneohe Bay Dr., Suite 208, Kailua, HI 96734 Kevin@kskconsultingllc.com www.kevinskennedyconsultingllc.com

Kevin Kennedy is an environmental consultant specializing in environmental litigation and regulatory matters with over 25 years experience in Hawaii, California, Oregon, Guam and many other locations throughout the Pacific. Kevin has conducted and managed hundreds of environmental assessments and investigations and remedial actions and has worked closely in all these projects with State and Federal regulators at all levels.

Kevin has conducted, overseen, and managed projects ranging from Phase I Site Assessments at hundreds of commercial/industrial sites ranging from auto repair shops to entire naval air stations. He has conducted hazardous waste clean up and removal actions at dozens of industrial sites and has conducted Phase II Site Investigations at sites ranging from gas stations and dry cleaners to entire sugarcane plantations, resort hotels and military installations. Kevin has worked on several Brownfields/VRP sites and has designed, installed and operated a variety of soil, soil vapor and groundwater remediation systems.

From his in-depth field experience and countless consultations and negotiations with clients, stake-holders and State and Federal regulators, Kevin has developed a reputation as an experienced and highly competent environmental professional. He is a recognized expert in the environmental field who is regularly retained as an expert witness, litigation expert, public speaker and regulatory specialist. Kevin's reputation for thoroughness, professionalism and his can-do attitude makes him a highly sought-after environmental specialist and gives him direct and immediate access to regulators and a wide variety of specialty subcontractors.

Kevin's clients include attorneys, developers, commercial property owners and managers, realtors, lenders, oil companies and dozens of small businesses as well as State and Federal agencies.

RELEVANT EXPERIENCE

July 2007 to Present Kevin S. Kennedy Consulting, LLC; President/Owner/Managing Member

Environmental and regulatory compliance consultant for a variety of Hawaii commercial businesses. Regulatory liaison and expert consultant for a variety of projects and clients on Oahu, Maui and Kauai. Recent projects include dioxin-contaminated soil investigation and remedial system design and installation; transformer spill site investigation and remediation; diesel fuel-contaminated groundwater recovery system design, installation and operation; groundwater monitoring; cesspool closure and removal; MIS soil sampling investigations; hazardous waste characterization, categorization and removal/disposal;

Resume Kevin S. Kennedy Page 2

transformer oil draining and removal; waste permitting and disposal; general consulting and litigation expert.

12/2005 - 7/2007 Environet, Inc. Honolulu, Hawaii, Vice President/President

Vice Present/President - Oversight of staff and projects. Client and market development. Overall project quality control of project and all business operations. Leadership and mentorship. P/L, business development. Project involvement at the senior level for select clients. Public presentations, expert witness, litigation expert, regulatory liaison.

9/1995 - 10/2005 Brewer Environmental Services/BEI, Honolulu, Hawaii; Commercial Group Manager/Vice President/ President

Commercial Group Manager/Vice Present/President – Initially, oversight of commercial client staff and projects and client and market development, followed by promotion to VP – President - Owner (via LBO. Overall project quality control of project and all business operations. Leadership and mentorship. P/L, business development. Project involvement at the senior level for select clients. Public presentations, expert witness, litigation expert, regulatory liaison. In December 2005 I sold/merged BEI with Environet, Inc. (see above).

2/1994 - 9/1995 EA Engineering Science and Technology, Inc. Honolulu, Hawaii; Business Group Leader

Set up, established and staffed EA's Honolulu office for the implementation of AFCEE contract work at Hickam AFB and other Oahu USAF sites and Wake Island. Built core staff to 17 and managed multiple contract delivery orders involving development of management action plans, work plans and site investigations for POL sites throughout Oahu and Wake.

9/1991 - 12/1993 RZA AGRA (Now AMEC Earth & Environmental) Honolulu, Hawaii; Principal

Hired to establish RZA AGRA's Honolulu office. Business development, staff recruitment, project oversight, P/L. Remedial system design, construction and operation.

5/1990 - 9/1991 ERCE (Ogden Environmental) Honolulu, Hawaii Sr. Hydrogeologist

Hydrogeologist for site investigation projects under US Navy contract in Hawaii and Guam. Project field and office work relating to soil and groundwater investigations (soil sample, groundwater monitoring well installation and sampling) at current and former military oil/fuel-contaminated sites including Environmental Assessment of entire Midway Naval Air Station.

11/1988 - 5/1990 EA Engineering Science and Technology, Inc. Lafayette, California Sr. Hydrogeologist

Project Manager for site soil and groundwater investigations primarily at Exxon and Chevron existing and former gas station sites. Soil and groundwater sample collection, contaminant fate and transport computer modeling and mapping, project reporting and client contact and follow-up.

8/1986 - 10/1988 McKesson Environmental/Clayton Environmental Services; Pleasanton, California Hydrogeologist

Field hydrogelogist. Soil and groundwater investigationd, UST closure and follow-up investigations. Groundwater monitoring well installation. Soil vapor surveys and petroleum product recovery projects.

Resume Kevin S. Kennedy Page 3

8/1985 - 7/1986 Dames & Moore Portland, Oregon; Hydrogelogist

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APPENDIX H DRAFT Environmental Hazard Management Plan – Kahului Harbor, Parcel B

ENVIRONMENTAL HAZARD EVALUATION AND ENVIRONMENTAL HAZARD MANAGEMENT PLAN

Kahului Harbor Parcel B Kahului, Oahu, Hawaii TMK [2] 3-7-11: Parcels 17, 19 (portion), and 23

Prepared For:
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ETC Project No. 14-2003

November 2018

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1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center (ETC), LLC has completed this Environmental Hazard Evaluation (EHE) and Environmental Hazard Management Plan (EHMP) for the project site. ETC's findings and conclusions presented in this plan are professional opinions based solely upon visual observations of the project site, government regulations, and upon interpretation of the laboratory data and field measurements available at the time and location of the study.

This document is intended for the sole use of ETC's Client, exclusively for the project site indicated. The scope of services performed in execution of this project may not be appropriate for satisfying the needs of other users, and any use or reuse of this document or the findings and conclusions presented herein is unauthorized and at the sole risk of said user.

ETC makes no guarantee or warranty; either expressed or implied, except that our services are consistent with good commercial or customary practices designed to conform to acceptable industry standards and governmental regulations. No warranty or representation, expressed or implied, is included or intended in its proposal, contracts, or plan. Opinions stated in this plan apply only to the site as outlined and apply to the conditions present at the time of preparation. Moreover, these opinions do not apply to site changes that occur after the project has been completed.

Prepared By:

Sharla Nakashima Project Manager

Date:

November 2018

2.0 INTRODUCTION AND PURPOSE

EnviroServices & Training Center (ETC), LLC was contracted by the A&B Properties Inc. (A&B) to prepare this Environmental Hazard Evaluation (EHE) and Environmental Hazard Management Plan (EHMP) for the project site located at the Kahului Harbor and identified as Tax Map Key (TMK) (2) 3-7-011: Parcels 017, 019 (portion), and 023, herein referred to as the Property.

This EHE-EHMP is based on environmental data and information documented in the Limited Phase II Environmental Site Assessment, Kahului Harbor Parcel B, Kahului, Maui, Hawaii, TMK [2] 3-7-011: Parcels 017, 019 (portion), and 023; dated July 2018; prepared by EnviroServices & Training Center, LLC for A&B Properties Inc. Additional environmental data collected from various previous environmental investigations and cleanup were reviewed and included in this EHE-EHMP.

The purpose of this EHE-EHMP is to document contaminants in the soil and groundwater within the Property, identify potential environmental hazards associated with these contaminants, and describe appropriate measures to be used to mitigate these hazards.

3.1 Site Description and Land Area

The Property is currently owned by A&B and consists of TMK: (2) 3-7-11: Parcels 17, 19 (portion), and 23. The Property is located at 140 Hobron Avenue, bound by Hobron Avenue to the west, Alahao Street to the south, and Amala Road to the east. The Property consists of approximately 11.04 acres of land. The Royal Order of Kamehameha property, which occupies approximately 1.2 acres of the Property, was excluded from this investigation due to the fact that this area was reportedly not used for industrial purposes; and current plans indicated that this area will be subdivided from the remainder of the Property.

Currently, there are tenants operating various businesses on the Property. These businesses use of the Property include trucking, recycling, vehicle and heavy equipment maintenance operations, offices, parking, and storage.

Ground surface at the Property does not exhibit a discernible gradient. The Property is situated at an elevation of approximately 5 feet above mean sea level (msl). The nearest surface water body is the Kahului Harbor located approximately 200-feet north of the Property.

3.2 Site Geology

The island of Maui is the second largest of the Hawaiian Islands. Maui consists of two shield volcanoes with a connecting isthmus. The volcanic rocks of the West Maui Mountains (West Maui Volcano) are divided into three series. The oldest is the Wailuku Volcanic Series, followed by the Honolua and Lahaina Volcanic Series. The Wailuku Series built the major shield volcano comprised of basaltic lava flows and associated pyroclastic deposits. The Lahaina Series then covered the western slopes of the West Maui Volcano.

The Haleakala Volcano last erupted around 1790 and is presently dormant. The shield of the volcano is composed of a'a and pahoehoe lava flows of theoliite, theoleiitic olivine basalt, and oceanite known as the Honomanu Volcano Series. The Kula Volcanic Series overlays the Honomanu Series and is comprised of hawaiite, alkalic olivine basalt, and ankaramite. Lava flows from the Haleakala volcano formed the Maui Isthmus and are made up of permeable basalt and erosional deposits (Macdonald, et al., 1983).

The soil at the Subject Property is mapped as Fill land (Fd). Fd consists of areas filled with bagasse and slurry from sugar mills. A few areas are filled with material from dredging and from soil excavations. These materials are generally dumped and spread over marshes, low-lying areas along the coastal flats, coral limestone, or areas shallow to bedrock. This land type is mostly used for the production of sugarcane (USDA, 1972).

3.3 Site Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. The portion of the island situated below sea level, except within rift zones of the volcanoes, is saturated with ocean salt water and thus forms a basal lens called the "Ghyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt

water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

The Property is underlain by the Kahului Aquifer System, which is part of the Central Aquifer Sector on the island of Maui. The aquifer is classified by Mink and Lau, 1990, with the system identification number 60301116 (12211). This system includes an unconfined basal aquifer in sedimentary (nonvolcanic) lithology. The aquifer is described as a currently used, ecologically important water source, containing groundwater with a low salinity (250 to 1,000 mg/l Cl⁻). It is also described as irreplaceable with a high vulnerability to contamination.

The Property is further underlain by a second aquifer of the same system. The aquifer is an unconfined, basal aquifer in flank compartments, and is classified with the system identification number 60301111 (12212). The aquifer is described as a currently used, ecologically important water source, containing groundwater with a low salinity (250 to 1,000 mg/l Cl⁻). It is also described as irreplaceable with a moderate vulnerability to contamination (Mink and Lau, 1990).

3.4 Surface Water Bodies/Drinking Water Wells/Ecological Habitats

The nearest surface water body is the Kahului Harbor located approximately 200-feet north of the Property. The Property is located below the Underground Injection Control (UIC) line and therefore, groundwater is not considered a drinking water resource. There are no drinking water wells located within a 1-mile radius of the property.

3.5 Historical Land Use

The Property has been used for commercial and light industrial operations since the early 1900s.

3.6 Current and Future Land Use

Current use of the Property remains the same as past use (i.e. commercial and light industrial operations). Currently, there are tenants operating various businesses on the Property. These businesses' use of the Property include trucking, recycling, vehicle and heavy equipment maintenance operations, offices, parking, and storage. There are no definitive plans to change site usage in the future. A&B anticipates similar light industrial activities will continue. Potential future use of the Property includes the redevelopment of the Property as an asphalt paved storage yard.

3.7 Conceptual Site Model

A conceptual site model (CSM) provides a generalized framework regarding site-specific conditions relevant to potential contaminants, contaminant sources, migration pathways, routes of exposure, potential receptors, and environmental hazards (i.e., leaching to groundwater/discharge to surface waters, ecological toxicity) that may be affected by the contaminants. Establishment of this framework is essential for assessing environmental hazards associated with the contaminants, determining what receptors are at risk, determining appropriate remedial strategies, and addressing unacceptable hazards.

The following environmental hazards were initially considered:

Soil

- Direct exposure threats to human health;
- Intrusion of subsurface vapors into buildings;
- Leaching and subsequent threats to groundwater resources;
- Threats to terrestrial habitats; and
- Gross contamination and general resource degradation concerns.

Groundwater

- Drinking water toxicity;
- Vapor emissions to indoor air;
- Aquatic ecotoxicity; and
- Gross contamination.

3.7.1 Receptors of Concern

When identifying potential receptors, plausible exposure under both current and future land use was evaluated. Accordingly, potential receptors were identified for both current and future use scenarios.

Future Site Users: Short-term and long-term plans identify continued commercial/light industrial use of the Property. Potential receptors may include future facility workers.

Site Construction Workers: Short-term plans include continued commercial/industrial use. Although no definitive plans have been developed; one or more of the existing site structures may be demolished. In addition, future potential site development activities include the redevelopment of the Property as asphalt-paved storage yard. As such, it is assumed that demolition and/or construction workers may be exposed to impacted soil and/or groundwater at the site during potential site demolition and construction activities associated with future site demolition and redevelopment

Off-Site Receptors: Other off-site receptors can be impacted if contaminant-impacted media are not managed appropriately. As an example, for sites with contaminated soil, re-use of such soil at other sites for fill without implementing appropriate handling and management practices can create potential environmental hazards at the receiving facility.

3.7.2 Exposure Pathways

Exposure is defined as the contact of an organism with a chemical or physical agent. An exposure pathway is defined as "the course a chemical or physical agent takes from a source to an exposed organism." It describes "a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site (USEPA, 1989)." In order for an exposure pathway to be considered potentially complete, four elements must exist: 1) a source or release from a source; 2) a transport/exposure media; 3) an exposure point (point of contact with the contaminated medium); and 4) an exposure route. The potential exposure pathways present at the Property are described below.

A. Soil Exposure Pathway

Direct contact with soil may result in incidental oral ingestion and/or dermal absorption of contaminants of potential concern (COPC). Although generally associated with surface soil, direct contact may also occur with subsurface soil during trenching and excavation work.

B. Air Exposure Pathway

Air exposure pathways become potential routes of exposure when COPC enter the air via volatilization or via adsorption to fugitive dust particles. Volatilization occurs when COPC partition to the air. Such volatilization may occur from surface soil, subsurface soil, and/or groundwater. When considering volatilization from subsurface soil or groundwater, transport of COPC occurs through void spaces in unsaturated soils, asphalt, and concrete to the outdoor air or to indoor air through foundation cracks.

Generation of fugitive dust may occur through disturbance of affected soil, such as wind or construction activities. Dust particles may be inhaled, may settle on human skin and be ingested (hand to mouth), and/or may settle on vegetation that may be ingested by humans.

C. Sediment Exposure Pathway

Receptors may be exposed to COPC in sediment from the Property as a result of surface runoff during storm events to nearby drainageways, which may eventually discharge to the ocean. Sediment may accumulate in the marine environment and be available for contact with various receptors. Recreational users of the marine environment (swimmers, surfers, fishermen) may come into direct contact with sediment and be exposed through oral ingestion and/or dermal absorption. Ecological receptors may live directly in the impacted sediment and may be exposed to COPC through feeding within the sediment. As a secondary transport mechanism, COPC may accumulate in ecological receptors (i.e., fish, shellfish), then be ingested by human receptors.

Walker Consultants, Ltd. (WCL) prepared a Site Assessment Report in October 2000 to document the investigation of Tosco's black oil AST located on Parcel 23. A total of fifty-three soil samples and three caprock groundwater samples were collected from twenty-eight soil borings/sampling points. The sampling points were situated within and surrounding the former AST; and in the vicinity of the loading rack. Analytical results indicated that petroleum related constituents were detected in several soil samples and one caprock groundwater grab sample. Elevated concentrations of petroleum related constituents were generally located on the southeast portion of the former AST site and the loading rack area. Investigation maps indicated that there were several underground pipelines traversing the south portion of the former AST site and the loading rack area. Based on the analytical results, WCL suspected that the identified petroleum impacts were likely due to leakage from the abandoned pipelines in the vicinity of the former AST (WCL, 2000). WCL's investigation included both near surface and subsurface soil samples. A limited volume of impacted surface soils were excavated; however, WCL concluded that the impacted soils likely remain at the bottom of these limited excavations (WCL, 2000). Based on ETC's review of WCL's site maps, boring B24 of ETC's investigation was situated east and adjacent to the former AST site and located in close proximity to the historic pipelines noted by WCL. Investigative reports indicate that TPH as fuel oil (FO) was detected within the vicinity of the former black oil tank at concentrations as high as 120,000 mg/kg. While there are no visible apparent surficial impacts in this area, the interim measures to address the remaining petroleum impacts are included in this document. Note that as part of the current planned future use of the Property, asphalt paving of the Property is likely. In addition, interim measures are described in the following section to address any grossly contaminated soils encountered during future soil disturbing activities (e.g. demolition activities, improvements, etc.).

Two former molasses ASTs; and a former fuel oil/molasses AST are located on the Property. A hazardous materials inspection identified deteriorated lead and asbestos-containing coatings on each of the three tanks. Potential impacts to surrounding soils from these coatings will reportedly be investigated and/or addressed in conjunction with future demolition activities.

Two ASTs containing liquid asphalt/bitumen (bitumuls) were reportedly abandoned on the Property by a former tenant, Hawaiian Bitumuls and Paving Company (HBPC). In November 1998, one of the tanks reportedly failed, releasing residual contents to the surrounding soil. The release was reported to the DOH HEER Office by A&B, and HBPC reportedly cleaned up the spill and removed the failed tank. Analysis of the spilled bitumuls indicated the presence of elevated levels of TPH but no detectable PAHs were reported. In 2006, A&B requested a no further action (NFA) determination for the 1998 release, but noted that a second bitumuls AST remained on the site and was planned for removal. These plans were delayed when no on-island disposal site could be identified for the remaining bitumuls; as a consequence, remnants of the tank and its contents are still on the Property and the NFA request remains pending. While the disposition of the former bitumuls AST and any remaining surficial bitumuls will be addressed in future demolition/cleanup activities; such activities will be completed in accordance with the interim measures described in the following sections and/or a separate Construction EHMP.

A Phase I Environmental Site Assessment Report, dated January 13, 2012, was performed by Kevin S. Kennedy Consulting, LLC (KSK). KSK's Phase I ESA identified numerous RECs in connection with the Property (KSK, 2012). The RECs generally pertained to current and

historic operations on the Property as well as adjacent and nearby properties; and observed storage practices and conditions. Although Parcel 23 (former Tosco AST site) was not included in KSK's January 2012 Phase I ESA, KSK's *Additional Parcel Inclusion* addendum letter, dated March 16, 2012 indicated that the 'same conclusions' would have been reported (KSK, 2012).

In January 2014, Bureau Veritas North America, Inc. (BV) completed a *Historical Research Report* for the Property. The purpose of the historical research was to identify and document parties whose current or historical operations may have caused or contributed to the suspect petroleum impacts on the Property (BV, 2014). Based on ETC's review of BV's *Historical Research Report*, the following potential sources of petroleum impacts were identified: 1) former UST and dispensers; 2) seepage pit (former cesspool); 3) former oil pump house; 4) former bitumuls ASTs; and 5) potential for contaminant migration from off-site bulk petroleum storage facilities located south of the Property. The historical pipelines were also identified as a source of potential petroleum contamination.

ETC conducted a Limited Phase II Environmental Site Assessment (ESA) activities for the Property in 2014. Multi-increment samples were collected from fifteen surface soil decision units established based on the potential impacts associated with the historical Property usage; and analyzed for TPH-D, TPH-O, PAHs, organochlorine pesticides, and RCRA 8 metals. A total of thrity-four soil borings were advanced in biased locations throughout the Property. Eight groundwater monitoring wells were installed on the Property. Discrete subsurface soil and groundwater samples were selectively analyzed for TPH-G, TPH-D, TPH-O, MBTEX, PCBs, PAHs, RCRA 8 Metals, and organochlorine pesticides. According to A&B, KT&S (Property tenant) was advised of the elevated TPH concentrations in the initial results, KT&S subsequently excavated stained surface soils from DU12. The excavated soils were subsequently profiled and disposed at the Maalaea Demolition and Construction Landfill. As a result, the field replicates collected from DU12 in 2018 confirmed that the previously detected contaminants (i.e. TPH-D, TPH-O, arsenic, and lead) were sufficiently removed. Based on the future commercial/industrial land use, analytical results indicated that TPH-G, MBTEX, PAHs, PCBs, and organochlorine pesticides were either not detected above method detection limits or below their corresponding EAL for all soil and groundwater samples. TPH-D and/or TPH-O were detected in one or more surface soil decision units (DU2, DU3, DU6, DU8, DU9, and DU11) at elevated concentrations exceeded the default commercial/industrial EAL. Lead was detected at 1,400 mg/kg (DU11), which exceeds the corresponding default commercial/industrial EAL, TPH-D and/or TPH-O were detected above the default commercial/industrial EALs in B5, B16, and B24. Groundwater sampling results indicated that, with the exception of the TPH-D, arsenic, and silver; all COPCs were either not detected above method detection limits or were below all applicable EALs. Specifically, TPH-D was detected in B19; arsenic was detected in B2 and B9; and silver was detected in B9 and B30 at elevated concentrations exceeding their corresponding default EALs.

5.1 Contaminants of Potential Concern

The contaminants of potential concern (COPC) identified for the project site are based on review of existing data available to date. A chemical was considered an initial COPC if data indicated that the chemical was detected at a concentration exceeding the default (lowest) Hawaii Department of Health (DOH) Environmental Action Level (EAL). Based on previous investigations, the retained COPC for the project site are TPH-D, TPH-O, arsenic, cadmium, lead, silver, and selenium.

5.2 Applicable Environmental Action Levels

DOH Tier 1 Environmental Action Levels (EALs) as described in the Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater (Fall 2017, updated January 2018), herein referred to as the "EHE Document" and the current DOH HEER Office Technical Guidance Manual for Implementation of the Hawaii State Contingency Plan, Interim Final, herein referred to as the "HEER TGM," were considered. Given the current and potential usage of the Property, the DOH EALs applicable to this site and considered in this EHE are the EALs associated with commercial/industrial land use for areas where groundwater is not a current or potential drinking water source and where the nearest surface water body is less than 150 meters from the site.

5.3 Additional Potential Hazards

Direct exposure human health hazards and gross contamination are the primary concerns for this EHMP. Additional potential hazards include leaching to groundwater and impacts to indoor air. Based on the analytical data, these additional hazards are considered to be minimal considering the likely low leaching potential and low volatility of the COPCs.

5.4 Comparison of Site Data to DOH EALs

A comparison of existing data for the Parcel 9 site to current default DOH EALs was initially performed to identify COPC. Table 1 and 2 below summarizes soil samples with constituent concentrations that exceed current, default DOH EALs. DOH EALs specific to the various environmental hazards are also shown in the Tables 1 and 2.

As shown in Table 1 below, the detected TPH-D and TPH-O concentrations in one or more samples exceeded the direct exposure, gross contamination, and leaching EALs for unrestricted land use and commercial/industrial land use. The detected arsenic and cadmium concentrations in one or more samples exceeded only the direct exposure EAL for unrestricted land use. The detected lead concentration exceeded the direct exposure and gross contamination EAL for unrestricted land use; and the direct exposure EAL for commercial/industrial land use. TPH-D, TPH-O, arsenic, silver and selenium concentrations in one or more groundwater samples exceeded the EAL pertaining to impacts aquatic habitats direct exposure. In addition, TPH-O concentrations in one or more groundwater samples exceeded EAL pertaining to gross contamination concerns.

Table 1: Soil Sample Data Comparison

Sample ID	Depth (ft bgs)	TPH-D	TPH-O	Arsenic	Cadmium	Lead
SB1-0.5	0,5		12,0001			
SB1-7.5	7.5		37,0001	-		
SB2-0.5	0.5	-	9101			
SB3-0.5	0.5		920¹			*
SB3-8.0	8.0	**	65,0001			
SB4-7.0	7.0		1,0001			24
SB5-1.0	1.0		1,4001			(**
SB6-1.0	1.0		700¹			
SB6-7.5	7.5		25,000¹	(-0-1		
SB7-1.5	1.5	è	80,0001			
SB7A-7.5	7.5		1,4001	-	***	
SB9-7.5	7.5	-	1,4001	+-		44
SB13-0.5	0.5	9.1	1,1001			
SB14-0,5	0.5	81	5501			-
SB14-8.0	8.0		81,0001			
SB15-8.0	8.0	- 62	19,0001	-4		
SB16-0.5	0.5	ů.	7201	ω.		142
SB19-6.5	6.5		120,000¹			
SB19-8.0	8.0		48,0001	4-		
SB21-8.0	8.0		21,0001			
SB24-2.5	2.5		9,7001			
P1-1.0	1.0		7501			
P2-1.0	1.0		6401			
P4-2.5	2.5		19,000 ¹	-		-
2003.SS1	Surface Soil				18.8	- 20
2003.SS2	Surface Soil		1,550			
2003.SS3	Surface Soil	795	3,890	- -		
2003.SS5	Surface Soil	519	845			- 77
2003,SS6	Surface Soil	975	5,010			
2003.SS7	Surface Soil	330	986		***	
2003.SS8	Surface Soil	687	1,090			
2003.SS9	Surface Soil	266 J	1,940	- 4		4.2
2003.SS10	Surface Soil		861	14		÷
2003.SS11	Surface Soil	317	1,730	52.6		1,400
2003.SS13	Surface Soil	246	903			- A
2003.SS14	Surface Soil		642	-		-
2003,SS15	Surface Soil	-2-	744	4-		
2003.B5.48-60	4.0-5.0	1,190	7,170		*	
2003.B7.48-60	4.0-5.0	239	-	-		**
2003.B12.48-60	4.0-5.0		1,340			

Sample ID	Depth (ft bgs)	TPH-D	ТРН-О	Arsenic	Cadmium	Lead
2003.B16.48-60	4.0-5.0	2,350	3,440	(m)	1,7	**
2003.B20.48-60	4.0-5.0		1,400			
2003.B24.48-60	4.0-5.0	1,790	9,380	140	7 - 27	
Default EAL (Low	est)	220	500	23	14	200
Unrestricted- Direct Exposure		220	9,400	23	14	200
Unrestricted - Vapor Emissions		Use Soil Gas	NA	NA	NA	NA
Unrestricted - Terrestrial Ecotoxicity		Site Specific	Site Specific	Site Specific	Site Specific	Site Specific
Unrestricted - Gross Contamination		500	500	000,1	1,000	1,000
Unrestricted - Leac	hing	1,500	1,500	95	Use Batch Test	Use Batch Test
Commercial - Dire	ct Exposure	680	120,000	95	72	800
Commercial - Vapor Emissions		Use Soil Gas	NA	NA	NA	NA
Commercial - Terrestrial Ecotoxicity		Site Specific	Site Specific	Site Specific	Site Specific	Site Specific
Commercial - Gros	ss Contamination	680	2,500	2,500	2,500	2,500
Commercial - Leaching		1,500	1,500	95	Use Batch Test	Use Batch Test

Site specific = site specific, ecological risk assessment recommended at sites where anthropogenic contamination identified and sensitive, terrestrial ecological habitats could be threatened.

Use Soil Gas = Collection of soil gas data is recommended for additional evaluation of potential vapor intrusion hazards at site with significant areas of VOC-impacted soil.

Table 2: Groundwater Sample Data Comparison

Sample ID	TPH-D	TPH-O	Benzo(a)pyrene	Arsenic	Silver	Selenium
SB3-1W		8.01	0.00122	**		
SB6-1W		12.0 ^T		-		
MW1	-			0.0766		
MW2		-51	99-	0.0363	0.0052	1.00
MW3	0.828		**	-		4>
MW4		-22	¥ 1	-3200	0.0067	144
MW8				-	-	0.0079
Default EAL (Lowest)	0.640	0.640	0.00006	0.036	0.0001	0.005
Drinking Water Toxicity	NA	NA	NA	NA	NA	NA
Gross Contamination	5.0	NA	0.0008	50	50	50
Impacts to Aquatic Habitats	0.640	0.640	0.00006	0.036	0.0001	0.005
Vapor Intrusion into Buildings	Use Soil Gas	NA	NA	NA	NA	NA

All results in mg/L

NA = not applicable

Use Soil Gas = Collection of soil gas data is recommended for additional evaluation of potential vapor intrusion hazards at site with significant areas of VOC-impacted soil.

^{1 =} Results for TPH as fuel oil, which is most appropriately comparable to TPH-O.
-- = not analyzed, not detected above laboratory detection limit, or below default (lowest) DOH EAL

^{1 =} Results for TPH as fuel oil, which is most appropriately comparable to TPH-O.

^{2 =} Sample collect using a peristaltic pump; therefore, results are considered qualitative.

^{-- =} not analyzed, not detected above laboratory detection limits, or below default (lowest) DOH EAL

6.0 SUMMARY OF ENVIRONMENTAL HAZARDS

Considering that the Property will be used for commercial/industrial purposes for the foreseeable future, commercial/industrial land use EALs would be the most applicable for the Property. DOH recommends a site specific ecological risk assessment for sites with anthropogenic contamination where sensitive, terrestrial ecological habitats could be threatened. Since this particular site has been used for commercial/industrial purposes, sensitive ecological habitats are not anticipated. Similarly, sensitive terrestrial ecological habitats are not anticipated since planned future use will be commercial/industrial. Available investigation data was used to identify the extent and magnitude of existing environmental hazards within the Property. A summary of the existing environmental hazards within the Property is presented Tables 3 and 4. In addition to the hazards summarized in Tables 3 and 4, uninvestigated areas (i.e. beneath existing buildings, tanks, and pavement) will need to be either assumed to be contaminated (same as the adjacent open areas that were sampled) or investigated in the future.

Table 3: Summary of Environmental Hazards in Soil for Commercial/Industrial Use Only

Decision Unit or area	Depth	Direct Exposure	Gross Contamination	Leaching to Groundwater	Vapor Emissions to Indoor Air
Former Tosco Black Oil AST SB1, SB3, SB6, SB7, SB15, SB16, SB19, SB21, SB24, P4	08.0,	TPH-O (SB19 at 6.5* bgs only)	трн-о	трн-о	
2003.B24.48-60	41-51	TPH-D	TPH-D, TPH-O	TPH-D, TPH-O	
DU2 (SS2)	0'-0.5'			TPH-O	
DU3 (SS3)	0*-0.5*			TPH-O	
2003.B5.48-60	4'-5'	TPH-D	TPH-D, TPH-O		
DU6 (SS6)	0*-0.5*	TPH-D	TPH-D, TPH-O	TPH-O	
DU8 (SS8)	0'-0.5'	TPH-D	TPH-D	TPH-O	
DU9 (SS9)	0*-0.5*			ТРН-О	
2003.B16.48-60	4'-5'	TPH-D	TPH-D, TPH-O	TPH-D, TPH-O	
DU11 (SS11)	0'-0.5'	Lead		TPH-O	

Table 4: Summary of Environmental Hazards in Groundwater

Monitoring Well	Impacts to Aquatic Habitats	Gross Contamination	Drinking Water Toxicity	Vapor Emissions to Indoor Air
Former Tosco Black Oil AST SB3-1W and SB6-1W	TPH-O and Benzo(a)pyrene			ТРН-О
MW1 (DU3)	Arsenic			
MW2 (DU6)	Arsenic, Silver			
MW3 (DU12)	TPH-D			
MW4 (DU11)	Silver			
MW8 (DU4)	Selenium			

7.0 SHORT-TERM INSTITUTIONAL AND ENGINEERING CONTROLS

Engineering and institutional controls are often used to mitigate environmental hazards by separating the residual COPC in soil and/or groundwater at a site from potential receptors, thus breaking the exposure pathways. The COPC at the project site, assuming future commercial/industrial land use, were identified as TPH-D, TPH-O, and lead in soil; and TPH-D, TPH-O, benzo(a)pyrene, arsenic, silver, and selenium in the groundwater.

The DOH EAL for TPH-D stated in the EHE Document is 680 mg/kg, which is based on the soil saturation limit of diesel in soil. With the exception of DU9, no obvious indications of diesel or oil in the surface soils are present on the site (i.e. gross contamination). If the non-carcinogenic EAL based on a hazard quotient (HQ) of 1.0 is applied, the corresponding direct exposure EAL is 1,000 mg/kg for TPH-D. As an interim measure, based on evaluation of the analytical data compared to the non-carcinogenic (HQ=1.0) direct exposure EAL for TPH-D pertaining to commercial/industrial land use, the Property does not require additional engineering controls and would be considered suitable for commercial/industrial land use as is.

The lead impacted surface soils within DU11 are likely associated with the existing AST (empty) within this DU. In addition, residual bitumen is present within DU9 (known as Hale Nanea ASTs) and is considered a gross contamination concern. Restricted access to both DU9 and DU11 is currently in-place. Specifically, the area is secured with fencing and a locked gate. ETC understands that the ASTs will be demolished as part of the potential future redevelopment activities. The lead impacted soils (DU11) and the residual bitumen (DU9) will be addressed at that time.

The preferred alternative is to leave the contaminated soils in-place with administrative controls. During future demolition and/or redevelopment activities, all contaminated soils will need to be managed appropriately. Although a definitive redevelopment plan has not been established yet, the final remedy for contaminated soils generated should include either off-site disposal at a permitted solid waste facility or placement of contaminated soil beneath relatively impermeable groundcover (asphalt, concrete, structures, etc.). Placement of relatively impermeable groundcover will create a barrier between the contaminated soil and surface receptors, as well as prevent or minimize the infiltration of storm water.

8.0 LONG-TERM MONITORING AND INSTITUTIONAL CONTROL REQUIREMENTS

Since potential future site land use includes the continued use of the Property for commercial purposes, the findings of this EHE-EHMP are based on commercial/industrial EALs. In order to maintain the integrity of the interim controls, a long-term monitoring and maintenance program will be implemented. The maintenance program will ensure that the interim institutional/administrative controls, engineering controls, and site-wide groundwater monitoring controls are maintained on the Property.

As part of the long-term monitoring requirements, semi-annual inspections of the site will be implemented and reported annually to the HEER Office. An inspection form is included in Appendix II. These routine inspections will ensure that unauthorized access to DU9 and DU11 does not occur. In addition, the fencing will be routinely inspected and repaired, as needed.

In addition to monitoring of access controls, a site-wide groundwater monitoring plan will be initiated for the Property. This groundwater monitoring plan includes semi-annual groundwater monitoring of the boundary groundwater monitoring wells. The groundwater monitoring will be semi-annual; however, it is anticipated that groundwater monitoring activities will be ongoing until 2020. At a minimum, TPH-D, TPH-O and metals will be included in the groundwater monitoring program.

9.0 SOIL MANAGEMENT FOR FUTURE SITE ACTIVITIES AFFECTING ONSITE CONTAMINATION

Elevated TPH-D and TPH-O concentrations have been identified in the surface and subsurface soils throughout the Property. The gross contamination hazards associated with the TPH-D and TPH-O concentrations and current land use are not considered a significant concern under current site conditions. However, if future redevelopment of the Property is conducted, construction activities occurring within the area of existing TPH-D and TPH-O contamination should follow the recommendations provided in the sections below to appropriately manage the contaminated soils at the site and to control exposure to contamination soil during construction.

9.1 Consultation with HEER Office

Construction activities that may disturb contaminated soil will likely be limited to demolition activities, soil improvement activities, footing excavations, and/or foundation piling. Appropriate soil handling, stockpiling, and disposal procedures should be followed.

In addition to this EHE-EHMP, a Site-specific Safety and Health Plan (SSHP) should be prepared and implemented to account for potential hazards to construction workers during future site activities. The SSHP should comply with the applicable regulations and the most current version of the DOH HEER Office TGM.

ETC recommends that this EHE-EHMP be reviewed and approved by the DOH HEER Office prior to the start of work. The HEER Office is available for consultation and can be reached at the following address and telephone:

State of Hawaii Department of Health Hazard Evaluation and Emergency Response Office 2385 Waimano Home Road Pearl City, Hawaii 96782 Telephone: (808) 586-4249

9.2 Erosion Control Measures

Erosion control measures should be established prior to commencement of any earthwork activities to prevent site soils from migrating via surface water runoff into adjacent roadways, drainage systems, and/or surface water bodies. Contractor(s) should be responsible for determining whether certain permits associated with site grading and/or stockpiling are appropriate (i.e., National Pollutant Discharge Elimination System [NPDES], County grading/stockpiling permits, etc.) and whether an erosion control plan is necessary. Typically, Best Management Practices (BMPs) associated with erosion control measures are designed to ensure that soils from a site are retained on site and prevented from ultimately entering surface water bodies. Such BMPs may include (but are not limited to) installation of a silt fence along the site perimeter, physically redirecting potential storm water runoff from leaving the site, and/or installation of controls to prevent tracking of dirt and debris off-site on vehicle tires.

9.3 Dust Control

Standard procedures to minimize dusty conditions, such as spraying water on the soil, should be utilized at the site by the contractor. Dust barriers should be constructed along the perimeter of the site if extensive earthwork is anticipated. Controlled spraying of the area with water to suppress dust migration during any soil disturbance work should be conducted during any earthwork activities. The contractor should ensure that throughout the construction process, work at the site does not cause significant deterioration of existing air quality. Specifically, the Contractor should ensure compliance with ambient air quality standards established in Hawaii Administrative Rules (HAR) 11-59 and should comply with air pollution control requirements specified in HAR 11-60.1, at a minimum.

9.4 Historic Pipelines

Historical pipelines were also identified as a source of potential petroleum contamination. And although not specifically targeted as part of previous investigative efforts, several borings were situated along or in the vicinity of the historic pipelines. The abandoned pipelines represent potential sources of petroleum contamination if they were not properly abandoned in past. If documentation of petroleum pipeline abandonment is not available, known or newly discovered abandoned pipelines should be evaluated (e.g. tapped to determine if petroleum remains in the pipeline(s), sampling for evidence of a release, etc). In addition, ground penetrating radar (GPR) studies or exploratory excavations should be considered prior to redevelopment. The historic pipelines are mapped in Figure ____.

9.5 Soil Excavation and Handling

Construction activities should be structured to result in minimal soil disturbance and to minimize dust generation. When excavation of TPH-D, TPH-O, or metals contaminated site soils is necessary for development, activities should be sequenced to minimize the potential for exposure of site workers. As an example, all earthwork (trenching for utilities, site grading, etc.) should be performed prior to mobilization of other trade personnel to minimize the number of workers at the site that may be exposed to airborne particulates.

Another control that can be implemented to isolate contaminated soils during construction activities is to place a barrier on or along exposed surface soils, such as lining the walls of an open trench with polyethylene sheeting or placing a thin layer of clean, imported fill material immediately after completing foundation excavations.

If excavated soil needs to be transported, whether on-site or off-site, controls should be implemented to minimize the generation of fugitive dust. This may include spraying water on loads of excavated soil or covering truck loads with fabric.

9.6 Soil Stockpiling and Storage

Any excavated soil that needs to be stockpiled on-site temporarily should be placed on a minimum 10-mil thick layer of polyethylene sheeting in a designated stockpile area. All stockpiles should then be covered using minimum 6-mil thick polyethylene sheeting. The covering should be secured with inert material (i.e., clean, imported fill; etc.) to anchor the polyethylene cover to the stockpile in order to prevent the cover from being blown off during high wind conditions. The edges of the stockpile should then be secured to prevent run-on of storm water or run-off of soil particles. This can be accomplished by rolling the edges of the polyethylene liner and the polyethylene cover together and securing the rolled ends with heavy, inert materials. Alternatively, a berm can be constructed around the soil stockpile using clean, imported fill material.

9.7 Soil Disposal

Petroleum and metals contaminated soil excavated from the Property during construction should either be transported off-site for disposal at a government-permitted facility (e.g., landfill) or placed beneath structures or relatively impermeable surface (concrete foundations, asphalt paving). Any contaminated soil that will be disposed off-site should first be sufficiently characterized and the information should be presented to the permitted disposal facility in the form of a soil profile. The disposal facility will have the discretion of accepting or rejecting the overburden soil.

9.7.1 Other Soil

Soil generated from previously uninvestigated areas (i.e. soil beneath existing buildings and pavement) should be sufficiently characterized prior to disposal, re-use and/or relocation. Additionally, if existing buildings, tanks, and pavement (i.e. uninvestigated areas) are removed in the future, these areas will need to be either assumed to be contaminated (same as the adjacent open areas that were sampled) and managed appropriately, or sampled independently to determin the extent and magnitude of contamination in the newly uncovered area(s).

If feasible and acceptable, excavated soils should be used onsite. If contaminant concentrations exceed unrestricted DOH EALs, analytical information will need to be provided to the government-permitted disposal facility. The disposal facility will have the discretion of accepting or rejecting the overburden soil. Soil that does not need to be disposed at a government-permitted disposal facility may be re-used on-site in accordance with this EHMP.

9.8 Soil Vapor

If future development plans include the construction of enclosed building structures atop select areas of the Property, a soil vapor characterization is required to address emissions to indoor air. These select areas include the Former Tosco black oil AST area (includes DU13), DU2, DU3, DU6, DU8, and DU9.

9.9 Groundwater Handling and Disposal

Previous investigations indicate that the groundwater at the site is minimally impacted; therefore, if implementation plans require the disturbance of groundwater at the site, controls will be necessary to prevent the release of contaminated groundwater to surface water bodies.

If possible, groundwater should be retained on-site rather than being discharged or disposed off-site. This may be accomplished through construction of temporary settling basins, groundwater discharge trenches, or other means. If discharge of groundwater off-site is necessary, the contractor will need to obtain the appropriate permits (i.e., NPDES, discharge permits, etc.) prior to release. The contractor will ensure that the groundwater being discharged has been sufficiently characterized and that any contaminants in the groundwater meets applicable threshold criteria (e.g., surface water quality standards, etc.).

Groundwater generated during groundwater monitoring activities should be retained onsite rather than being discharged or disposed off-site. Specifically, the groundwater will be containerized and sufficiently characterized for disposal if necessary. Exposure to contaminated soils during construction can generally be controlled by isolating the contaminated media, eliminating routes of exposure and/or eliminating the exposure point. Exposure management can be accomplished by implementing controls during the construction phase. Examples of such exposure controls are provided below.

10.1 Awareness/Training for Contamination Managed On-Site

All future workers and tenants of the site should be advised about the residual COPC present in the soils at the site and that any future earthwork should take this EHE-EHMP into consideration.

10.2 Construction Worker Notifications and Protections

All construction workers who have contact with the contaminated soils should be educated on the site conditions and potential risks associated with contaminants found at the site. In particular, workers should be aware of the contamination at the site and the management protocols to address associated hazards. Although the COPC do not pose a significant hazard to human health, workers should be aware that routes of exposure to the contaminated soil are generally via inhalation of airborne particulates, ingestion of soil, and absorption through the skin and eyes.

The most common method of informing construction personnel of potential exposure risks is to prepare a SSHP. The SSHP should describe the contaminants of concern, routes of exposure, and potential symptoms of exposure. The plan should also describe personal protection measures, controls, and work practices to minimize the risk of exposure. Construction personnel should be required to review the SSHP and certify that they have reviewed the plan and understand the risks involved with the project.

In addition to understanding how to protect oneself, site construction workers should also be educated on how contaminated soils can impact the general public (through migration via air or surface water) and the environment. The importance of implementing controls that are protective of the general public should be emphasized.

10.3 Protections for Site Workers and Visitors

To supplement the erosion control, dust control, and exposure prevention measures described in previous sections, possible strategies for ensuring that workers and guests are protected from environmental hazards associated with site contamination are provided below.

10.3.1 Use Restrictions to Protect Site Workers and Visitors

Prior to commencing any activities that will potentially disturb contaminated soils, workers should be educated on the existing environmental hazards, the potential environmental hazards associated with disturbed soils, and appropriate management of these hazards. Only trained personnel should be permitted access to the site if contaminated soil is exposed.

10.3.2 Personal Protective Equipment (PPE)

The use of personal protective equipment (PPE) is a key measure used to eliminate the exposure point for site construction workers by placing a physical barrier between the worker and the contaminant. Workers should be provided with the opportunity to don PPE prior to the start of any work requiring disturbance of site soils. Once available, work area air monitoring data can be used to evaluate the adequacy of the selected level of worker protection. The SSHP typically details the specific PPE required during various earthwork activities.

Immediately after leaving the work area, workers should remove PPE and wash their hands and face with soap and water. At no time should workers be allowed to smoke, drink, or eat within the work zone and/or near contaminated soil.

10.3.3 Contaminant Detection and Monitoring (Air Monitoring Program)

An air monitoring program may be implemented as the primary contaminant detection and monitoring system. The contractor should be responsible for determining whether air monitoring is prudent and which analyses are to be performed to satisfy U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements and such information should be included in the SSHP. The data obtained from work area air samples can then be used to evaluate the effectiveness of control measures and to determine the appropriate level of personal protection.

In addition, area air monitoring at the project site perimeter may be conducted. Prior to start of earthwork activities, background air samples can be collected at the site to identify baseline air quality data. During project activities occurring within the petroleum contaminated area, air samples may be collected as specified in the SSHP to monitor for contaminant migration through fugitive dust. Data from perimeter monitoring should be used to evaluate the effectiveness of control measures implemented on-site.

10.4 Emergency Response Actions for Chemical Exposure

A general emergency response protocol for petroleum exposure is provided below. These recommendations are based on guidance found in the National Institute of Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards (NIOSH, 2005).

10.4.1 Eye Exposure to Chemicals

In the event that contaminated soil comes into contact with the eyes or skin, the recommended courses of action are to:

- Immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper lids.
- Seek immediate medical attention if irritation persists after washing.

An eye wash station should be available on site during any activities involving the disturbance of contaminated surface soils.

10.4.2 Skin Exposure to Chemicals

In the event that contaminated soil comes into contact with the skin, the recommended course of action is to:

- Promptly flush the contaminated skin with soap and water.
- Promptly remove the clothing and flush the skin with water if contaminants penetrate any clothing.
- Seek medical attention if irritation persists after washing.

Soap and water should be made available for the purpose of washing skin during any activities involving the disturbance of contaminated surface soils.

10.4.3 Inhalation Exposure to Chemicals

Should contaminated soil be inhaled over the course of work leading to breathing difficulty, the recommended course of action is to:

- Immediately move the exposed person to fresh air.
- Perform artificial respiration if breathing has stopped.
- Keep the affected person warm and at rest.
- Seek medical treatment as soon as possible.

10.4.4 Internal Exposure to Chemicals

Should contaminated soil be ingested in sufficient quantities over the course of work, the recommended course of action is to seek immediate medical treatment.

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 Prepared for Tosco Refining Company.

APPENDIX I FIGURES

APPENDIX II EXAMPLE INSPECTION FORM

	Kahului Ha Annual Insp				
Inspec	ctor's Name & Title:			Date & T	ime of Inspection:
Inspec	etor's Affiliation:			Inspector	's Contact:
Weath	ner Conditions: Raining Cloudy] Sunny	7		nnce conducted Yes No
Item E	Being Evaluated	Yes	No	N/A	Comments
DU11	(Molasses/Bitumuls AST) and DU9 (Hale Nanea ASTs)				
1.	Is the chain-link fence surrounding this area intact and secured (i.e. locked)?				
2.	Is the fenced area free of any permanent occupants or tenants (i.e. vacant)?				
3.	Are there any signs of trespassers or unauthorized occupants?				
4.	Is the area free of any 'new' development?				
5.	Are there any visible releases from the existing Hale Nanea AST located within DU9?				
All Ot	ther Areas of the Site			100	
1.	Is the significant staining or evidence of gross petroleum contamination within the remaining areas (outside the fenced area of DU9 and DU11) of the Property?				
2.	Are the activity and use of these other areas limited to commercial/industrial use?				
3.	Is the area free of any 'new' development?				
4.	Are there any signs of trespassers or unauthorized occupants?				
Descr	iption of Maintenance or Corrective Action and Da	tes of	Impi	lementai	tion:

APPENDIX I

Interim Final Area-Wide EHE/EHMP Document
Kahului Harbor Area

Interim Final Area-Wide EHE/EHMP Document

Kahului Harbor Area Kahului, Maui

June 2018 Version 1.0

Prepared by:



State of Hawai'i Department of Health (HDOH)
Hazard Evaluation and Emergency Response Office (HEER Office)

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Soil Types Within KHID

Figure 6

Area-Wide EHE/EHMP Document Kahului Harbor Industrial District, Kahului, Maui

- B.3 Construction Activities Release Response Plan
- B.4 Inactive Pipeline Removal Plan
- B.5 Soil Management Plan
- B.6 Groundwater Management Plan
- B.7 Free Product Management Plan
- B.8 Vapor Management Plan
- B.9 Stormwater Management Plan

ACRONYMS

bgs Below ground surface
BMP Best management practice

BTEX Benzene, toluene, ethylbenzene, and xylenes

CAS Chemical Abstracts Service

CERCLA Comprehensive Environmental Response, Compensation, and Liability

Act

CFR Code of Federal Regulations
COPC Contaminant of potential concern

COC Contaminant of concern

CPR Cardiopulmonary resuscitation

cy Cubic yard

DCS Debris-contaminated soil

EAL Environmental action level

EC Engineering Control

EHE Environmental Hazard Evaluation

EHMP Environmental Hazard Management Plan EPA U.S. Environmental Protection Agency

eV Electron volt

GPS Global Positioning System

HAR Hawaii Administrative Rules

HAZWOPER Hazardous Waste Operations and Emergency Response

HDOH Hawaii Department of Health

HDOT Hawaii Department of Transportation

HEER Office Hazard Evaluation and Emergency Response Office HIOSH Hawaii Occupational Safety and Health Division

HRS Hawaii Revised Statutes

HSERC Hawaii State Emergency Response Commission

HSP Health and Safety Plan

HVOC Halogenated volatile organic compound

IAP Incident Action Plan
IC Institutional control

kg Kilogram

KHID Kahului Industrial District

LEL Lower explosive limit

LEPC Local Emergency Planning Committee

LNAPL Light non-aqueous phase liquid

mg Milligram ml Milliliter

MTBE Methyl tertiary butyl ether

NOI Notice of Intent

NPDES National Pollutant Discharge Elimination System

OPA Oil Pollution Act

OSHA Occupational Safety and Health Administration

PAH Polycyclic aromatic hydrocarbon
PCS Petroleum-contaminated soil
PEL Permissible exposure limit
PID Photoionization detector

PPE Personal protective equipment

ppm Parts per million

ppmv Parts per million by volume PRP Potentially responsible party

RP Responsible party
RQ Reportable quantity

SOSC State On-scene Coordinator STEL Short-term exposure limit

TCLP Toxicity Characteristic Leaching Procedure

TGM Technical Guidance Manual TPH Total petroleum hydrocarbons

TPH-d Total petroleum hydrocarbons as diesel fuel TPH-g Total petroleum hydrocarbons as gasoline TPH-o Total petroleum hydrocarbons as oil

TWA Time-weighted average

UGP Underground pipeline

UIC Underground injection control

USDA United States Department of Agriculture

UST Underground storage tank

VOC Volatile organic compound

1.0 INTRODUCTION

Kahului Harbor is located in Kahului Bay on the north shore of the isthmus connecting east and west Maui (Figure 1). Kahului Harbor is one of ten commercial harbors in the State of Hawaii and the only deep-draft commercial harbor that services ocean shipping for the Island of Maui. Three harbor piers are located on the east and west side of the harbor, where cargo ships, barges and passenger ships dock.

Historical and current land uses are primarily industrial and commercial—docking and unloading of ships and trains (Figure 2), an auto storage yard, a power plant, warehousing, container, molasses, and cement storage, bulk petroleum storage with associated pipelines, and sugar processing and storage. Between the east and west breakwaters is a strip of land that is currently occupied by restaurants, hotels, and other commercial facilities. The main industrial area is located on the eastern side of the harbor. This main industrial area is the focus of this Environmental Hazard Evaluation/Environmental Hazard Management Plan (EHE/EHMP) and will be referred to as Kahului Harbor Industrial District (KHID) EHE/EHMP.

The KHID encompasses approximately 1,300 acres of land (see Figures 1 & 2). The State of Hawaii is a large landowner in the KHID and these state lands are principally managed by the Hawaii Department of Transportation (HDOT) Harbors Division. Other portions of the KHID are privately owned.

The Hazard Evaluation and Emergency Response Office (HEER Office) of the Hawaii Department of Health (HDOH) is overseeing assessment and cleanup of historical impacts in the KHID associated with 1) petroleum handling activities that have resulted in petroleum hydrocarbon releases from storage tanks and underground pipelines (UGP), (2) impacts by metals (e.g. lead or arsenic) resulting from past industrial or imported fill activities, and (3) historic soil contamination around the foundations of buildings or tank structures and on former railroad rights-of-way resulting from past use of lead paint, arsenic or pentachlorphenol mixtures for weed control, or use of termiticides (e.g. chlordane) for termite control at wooden structures.

Cleanup measures and long-term Institutional Controls (ICs) have been and continue to be implemented to prevent hazards to human health and the environment within the Kahului Harbor Area. Potentially hazardous contaminants of concern (COC) are present in soil, groundwater, and soil gas at various locations within the KHID. Some of these COCs, primarily oil compounds, have been removed, and removals or other cleanup options will continue. Management of potential hazards associated with any remaining (also referred to as residual) COCs is addressed by ICs, which are described in Environmental Hazard Management Plans (EHMPs). These plans—an HDOH requirement where contamination is managed on-site—are described in HDOH's Technical Guidance Manual (TGM, Section 19; www.hawaiidoh.org).

Site/parcel-specific EHMPs have been implemented or are currently being prepared within the KHID, developed by parties HDOH considers responsible for residual COCs on specific parcels.. Site-specific EHMPs are developed after completion of site assessments and implementation of any cleanup actions. Site-specific EHMPs include those developed by potentially responsible parties such as petroleum companies, HDOT, or other parcel/site operators/owners. EHMPs for large operating facilities such as petroleum distribution terminals may have an "Interim" status due to limited (and on-going) environmental assessments as a result of site access constraints from existing structures or work activities. Figure 3 shows the areas for which site-specific EHMPs have been established and for which this Area-Wide

EHMP applies. Copies of site-specific EHMPs are available at the HEER Office in Honolulu. As environmental impacts are identified at other sites within the KHID, HDOH may require preparations of additional site-specific EHMPs in the future.

Under current conditions, which include existing (extensive) soil cover by gravel, asphalt, cement, or building structures, and any administrative or engineering controls utilized for parcel-specific EHMPs, the COCs within the KHID are not believed to pose hazards to human health and the environment. However, exposures to residual COCs could occur during (1) future subsurface activities—including belowground constructions of utility trenches (for water, natural gas, electricity, telephone, cable), box culverts and storm drain laterals, sanitary sewers, street lights, traffic lights, grease traps, and septic tanks; (2) construction activities within roadways and common areas, and (3) surface soil disturbance activities around (or under) the foundation areas of current or former buildings or large tank structures, and on former railroad rights-of-way. This Area-Wide EHE/EHMP and the existing parcel-specific EHMPs specify requirements, procedures, and guidelines intended to prevent occurrences of potential exposures to or re-location of soils that could pose hazards to human health and the environment.

Area-Wide EHE/EHMPs address sites of known or suspected presence of COCs where no previous site investigations have occurred and for which no parcel-specific EHMPs have been established. These sites are shown on Figure 3 as "Area Covered by the KHID Area-Wide EHMP." HDOH may update the extent of this area periodically. Importantly, pursuant to the Environmental Response Law (Hawaii Revised Statutes [HRS] 128-D) and the State Contingency Plan (Hawaii Administrative Rules [HAR] 11-451), affected parties are expected to know about and comply with this Area- Wide EHE/EHMP to the extent feasible.

Parties may utilize this Area-Wide EHE/EHMP as is, and HDOH expects this for small-scale projects involving soil excavation on public and private sites, public and private roadways, and common areas. Construction projects involving soil excavations within utility rights-of-way, roadways, and common areas may encounter COCs that must be properly managed by the construction and/or environmental contractors.

Alternatively, parties can refine or modify the details of this Area-Wide EHE/EHMP in order to better address site-specific requirements. So in effect, parties have the option to create their own site-specific construction EHMPs provided the site is properly characterized based on the Area-Wide EHE/EHMP.

1.1 Regulatory Framework

Under state laws and regulations, entities and individuals involved with surface or subsurface excavations are ultimately responsible for proper handling of contaminated materials and environmental media, reporting releases where encountered, preventing migration of existing contamination, and ensuring compliance with the law (owners, operators, generators, and transporter are liable). Entities conducting subsurface excavations are also responsible for training of contractors and subcontractors on the requirements presented in this EHE-EHMP. This EHE-EHMP is not intended to address chemicals and hazards introduced by contractors during the course of their work. Additional environmental hazards not identified in this plan may exist. During construction, each contractor remains responsible for protecting the environment and the health and safety of its employees, workers, and the general public. Before construction, the contractors should review applicable Hawai'i Occupational Safety and Health Division (HIOSH), U.S. Environmental Protection Agency (USEPA), and State of Hawaii Department of Health (HDOH) regulations and guidance.

This EHE-EHMP is not intended to identify all agencies and environmental statutes and

regulations that may be required during construction but instead focuses on the relevant requirements for managing contamination or potential contaminated soil or groundwater encountered in the field.

Statutory requirements for identification, reporting, and responding to releases are described in Hawaii laws and regulations that are administered by the HDOH Hazard Evaluation and Emergency Response (HEER) Office, and include the following:

Hawaii Revised Statutes - (HRS)

- HRS 128-D, Hawaii Environmental Response Law (HERL)
- Hawaii Administrative Rules (HAR)
 - HAR 11-451, Hawaii State Contingency Plan (Hawaii SCP)

Statutory requirements for managing waste are described in Hawaii laws and regulations administered by the HDOH, Solid and Hazardous Waste Branch (SHWB).

2.0 PURPOSE

The purpose of this Area-Wide EHE/EHMP is to specify consistent and effective practices for managing the following COCs if these are encountered during subsurface excavation activities within the KHID: petroleum-contaminated soil (PCS), debris- or sewage-contaminated soil (DCS), and metal or pesticide contaminated surface soil located adjacent to building or tank foundations, or on former railroad rights-of-way that commonly contain high levels of petroleum compounds, metals, and sometimes organochlorine pesticides, petroleum- or dissolved metalscontaminated groundwater, or elevated soil vapors from petroleum compounds or their degradation products. Petroleum contamination, metals, and pesticides are emphasized because these are the most common contaminants found within harbor industrial areas. The scope of this EHE/EHMP includes all sites within the KHID for which a site-specific EHE has not been carried out and a site-specific EHMP has not been established (see Figures 2 and 3). Activities covered by this document include: (1) subsurface work within utility trenches (for water, natural gas, electricity, telephone, cable), box culverts and storm drain laterals, sanitary sewers, street lights, traffic lights, grease traps, and septic tanks; (2) subsurface construction activities within roadways or common areas, and (3) excavations of exposed surface soils around (within about 3 feet surrounding) or under the foundation areas of older (or former) buildings and storage tanks as well as on former railroad rights-of-way. Note that large projects involving extensive amounts of subsurface work within the KHID area will need to develop a project-specific construction EHMP and the HEER Office should be consulted in these cases.

If unsure whether this Area-Wide EHE/EHMP is detailed enough to provide appropriate guidance for planned subsurface construction activities, contact HDOH prior to commencing the project.

Under the present conditions (e.g. the amount of existing soil covered with gravel, asphalt, cement, or buildings, and parcel-specific controls, contamination within the KHID is not known to pose a threat to human health or the environment. This KHID Area-wide EHE/EHMP does not supersede existing site/parcel-specific EHE/EHMPs or replace the need to develop site-specific construction EHMP documents for land development on specific parcels or for large construction projects.

HDOH recognizes that developing independent, site-specific EHE/EHMPs for smaller-scale projects within public and private sites, roadways, and common areas can lead to delays in construction because of the requirement that HDOH approve new plans prior to construction. In

addition, construction within roadways and common areas may encounter contamination that must be properly managed by construction and/or environmental contractors. This Area-wide EHE/EHMP can be used to deal with these contingencies. The Area- Wide EHE/EHMP can also be used by landowners, tenants, and utility companies to assist in developing individual EHE/EHMPs for large construction activities. The EHE/EHMP is therefore a vehicle to avoid costly delay in construction due to the discovery or suspicion of contaminated soil or groundwater.

Important: Complete site characterization must precede full-scale redevelopment (including construction of additional buildings or major building alterations) within areas of known or suspected contamination. If contamination is encountered, a release must be reported in accordance with HRS 128D and HAR 11-451 (see Section 9), and preparation of a site-specific construction EHE/EHMP must be carried out to address contamination within the site boundary.

Where responsibility for COC releases are clearly determined, the identified responsible party(s) (RPs) must conduct the site assessment and necessary cleanup actions.

This Area-wide EHE-EHMP presents guidance for surface or subsurface excavation work for utility construction/repair projects on sites that do not have an EHE/EHMP, and for work within roadways and common areas owned by Maui County, the State., or other public or private organizations.

3.0 AREA COVERED

The area covered by this document is the KHID. The KHID lies north of Kaahumanu Avenue, north and east of Hana Highway, east of N. Puunene Avenue, north and west of Kanaha Pond, and includes the Wailuku-Kahului sewage treatment plant on the northwest border (see Figures 1 to 3). Kanaha Pond is a State Wildlife (Bird) Sanctuary, and protected wetland with endangered species (Hawaiian coot and Hawaiian stilt).

Technical approaches presented in this document can also be applied to other areas of Maui with similar COCs and lithology, and with non-drinking water utility.

3.1 History and Background

In 1863, the first warehouses were constructed in Kahului Bay and in 1879 the first landing was constructed. Intensive harbor development occurred during the early 1900s in response to the growing sugar industry and construction of the breakwater on the east side of the harbor. Kahului Railroad was built in 1879 to haul sugar cane from the fields to the mills and finished sugar to the harbor. A network of railroad tracks is documented for the KHID (USGS, 1954; Figure 2). Piers 1 and 2 were constructed in stages between 1921 and 1963. Pier 3 was constructed in 1979. Petroleum storage and distribution in the KHID has been documented since at least the 1920s. Evolution of Kahului Bay into a full-scale commercial harbor coincided with rebuilding of Kahului town after the Chinatown area was burnt to ground in 1900 to rid the town of plaque carrying rats (Ikeda, 1985). The first bulk-sugar storage plant of the Hawaiian Islands started operating at the harbor in 1942. The Kahului power plant was built in 1948 and expanded in 1954 (MECO, 2016). Harbor dredging was conducted in 1961 and earlier to widen and deepen the harbor. The upland area of Kahului Harbor was constructed on fill material. This includes areas filled with material from dredging, bagasse and slurry from sugar mills, and soil excavated and imported from other areas of the island (Foote et al., 1972). Debris from the Kahului town fire may have also been used or incorporated as fill material.

For the past 100 years, the KHID area has been dominated by Port activities, docking and unloading of ships, warehousing, bulk petroleum storage with associated pipelines, heavy industry, support industries, petroleum, and other commercial/industrial activities. The area remains dominated by heavy industry and Port activities. Numerous petroleum releases occurred over the years, and contaminated fill was used to raise the ground level in some areas. Because of numerous petroleum releases over the years and use of fill in the KHID, site redevelopment activities in the area often encounter both PCS and fill. In addition, past chemical use for weed or rat control adjacent to structures, termite control around (or under) wooden building structures, or weed control on railroad rights-of-way, as well as the use of lead-based paints for building exteriors/interiors and storage tanks for many years may have resulted in contaminated surface soils in areas of the KHID.

4.0 HOW TO USE THIS DOCUMENT

The intent of this document is to provide guidance when subsurface excavations encounter contaminated soil and groundwater at properties for which site-specific EHE/EHMPs have not been established, most typically for repair or small construction projects on utility rights-of-way or public rights-of-way. An EHE assesses hazards to human health and the environment from contaminants in soil and groundwater that exceed HDOH environmental action levels (EALs), An EHMP details how contaminants are to be managed when encountered or suspected during surface soil excavation in specific areas, or during subsurface soil excavation. Properties. roadways, and common areas within the KHID may be contaminated by various chemical constituents that are presently in the subsurface under soil, gravel, or hard surfaces such as asphalt or cement, and do not present a significant hazard unless the subsurface material is exposed during excavation work. In addition, exposed surface soils adjacent to current or former building and tank foundations (e.g. within a 3-foot perimeter or under foundations) or on former railroad rights-of-way may be contaminated by metals or pesticides due to past practices for control of weeds, rodents, or termites. Use of an EHE to identify contamination is presented in Sections 6 and 7. Basic components of an EHMP to manage contamination is found in Sections 8 through 17. Appendices A and B provide guidelines and forms for landowners, tenants, utility companies, and construction contractors responsible for implementation of the EHMP and proper management of contaminated media and reporting.

Note: In this document, the terms "encounter" and "release" are synonymous where applied to contamination exposed within a medium during surface or subsurface construction/excavation activity.

Following procedures specified in this document will help minimize the need to stop work when contamination is encountered or suspected. An environmental consultant or a supervisor knowledgeable in dealing with contaminated soil and groundwater should be on site during construction activities at sites with known or suspected contamination. The first person to notice gross contamination (visual or odor signs) is typically the backhoe or heavy equipment operator. This machine operator relays the discovery of the contamination to the designated onsite environmental consultant or supervisor, who then reports this information to the project director or property owner. The project director or property owner, or at their direction the environmental consultant, are then required to report a "release" to HDOH (see Section 9 and Appendix B.1) and ensure that management of contaminated soil and/or groundwater is then carried out in accordance with the EHE and EHMP. When exposed surface soils are planned to be excavated adjacent to building or tank foundation areas, or on former railroad rights-of-way, soil can be presumed contaminated and handled appropriately, or analyzed, if feasible, to determine the need for special handling.

The EHMP provides a range of options for dealing with contaminated soil and groundwater. The Guidelines for Landowners, Tenants, Utilities Companies and Construction Contractors (Appendix A) provides graphic and photographic examples of how to deal with contaminated soil and groundwater, and includes a Project Implementation Form. This form is a checklist based on HDOH experience with a wide range of events that can occur during construction.

Use of the forms in Appendix B is required to document proper handling of gross contamination discovered, provide record keeping for the project, and fulfill reporting requirements for HDOH. The forms should detail deviations from standard practices in the text, and explain how those deviations were protective of human health and the environment.

If subsurface excavations or surface excavations of soils adjacent to building or tank foundations or on former railroad rights-of-way are planned within the KHID:

- 1. Review the EHMP and identify known or suspect areas of contamination;
- Read the EHE section of this document to become familiar with the potential hazards associated with contaminated soil and groundwater;
- Prepare a brief, project-specific EHMP to outline specific management requirements as needed (e.g., contacts for reporting gross contamination, stockpile area locations, stormwater management, reuse and disposal options, etc.; see sections 9-17 and associated appendices);
- 4. Develop a site-specific Health and Safety Plan (HSP) (Section 10 and Appendix B.2).

During subsurface construction work, if contaminated media, inactive pipelines, or underground storage tanks (USTs) are encountered, take the following necessary steps as applicable to ensure proper handling of contaminated media:

- Report any contaminated soil, groundwater, or surface water encountered to the HEER Office (Section 9 and Appendix B.1). Petroleum contaminated soil and sheen or petroleum product on groundwater are usually the most obvious indicators of contamination, but unusual odors can also be an indicator.
- Follow the Construction Activities Release Response Plan (Section 11 and Appendix B.3).
- If inactive pipelines or USTs are encountered, follow the Inactive Pipeline and UST Removal Plan (Section 12 and Appendix B.4).
- If contaminated soil is encountered, follow the Soil Management Plan (Section 13 and Appendix B.5).
- If contaminated groundwater is encountered, follow the Groundwater Management Plan (Section 14 and Appendix B.6).
- If free product is encountered, follow the Free Product Management Plan (Section 15 and Appendix B.7).
- If elevated soil vapor is encountered, follow the Soil Vapor Management Plan (Section 16 and Appendix B.8).
- If contaminated soil and/or groundwater is in or could be in contact with stormwater, follow the Stormwater Management Plan (Section 17 and Appendix B.9).

Fill out the individual plans in Appendix B by following approved practices in the EHMP sections of the document (Sections 9 through 17). Record actions taken on the appropriate form(s), keep a copy for your records, and submit a copy to the HEER Office to fulfill reporting

requirements.

If responsible parties elect not to adhere to guidance in this document, then the subsurface activities must be halted upon the discovery of gross contamination and the contamination reported to the HEER Office Emergency Preparedness and Response Section. Recommencement of work should not be initiated until the site has been inspected by an On- Scene Coordinator or otherwise directed by the HEER Office. Failure to report a release could lead to fines of up to \$10,000 per day. Failure to properly handle soil and groundwater could lead to fines from HDOH departments or other agencies, including the HDOH Solid and Hazardous Waste Branch and Clean Water Branch as well as the U.S. Coast Guard.

Disclaimer:

The procedures, information, guidelines, and sample hazard management plans referred to herein are not intended to be a comprehensive description of all rules, regulations, laws, and other requirements applicable to a construction project. They are only intended to provide general information and should not be used in place of appropriately qualified personnel. Each landowner, tenant, and construction contractor is responsible for complying with all applicable rules, regulations, laws, and other requirements, and for preparing their own hazard management plans for their own site-specific project.

5.0 AREA GEOLOGY & HYDROGEOLOGY

The KHID is located on the isthmus between the two volcanoes, West Maui and Haleakala which formed the island of Maui. Surface geology on the isthmus is dominated by Holocene and Pleistocene Alluvium (Sherrod et al., 2007) that eroded from lava formations of the two volcanoes. The alluvium comprises unconsolidated deposits of silt, sand, and gravel along stream and valley bottoms. Other surficial deposits, specifically at the coastline are dominantly calcareous sand and coral gravel strand-line deposits worked by surf. Soil covering the deposits are silty loams on alluvial fans and beach deposits developed from basaltic substrate, coral and seashells. In the KHID surface soils are described as fill land. Fill land includes areas filled with material from dredging, bagasse and slurry from sugar mills, and soil excavations (Foote et al., 1972). These materials were dumped and spread over marshes and low-lying areas along coastal flats. Debris from the 1900 Kahului (Chinatown area) fire may have been used or incorporated as fill material as well.

No active drinking water wells are present within the KHID. The area is seaward (makai) of the underground injection control (UIC) line (HDOH,1983). Due to the close location to the ocean, groundwater is likely to be encountered during shallow subsurface activities at the KHID. Shallow groundwater is situated in a sedimentary, unconfined aquifer (Mink and Lau, 1990) and is not a drinking water source. Deeper groundwater is situated in an unconfined basaltic flank aquifer. Both aquifers have low salinity and are ecologically important. Previous environmental investigations at the KHID reported groundwater tables at depths ranging from 2 to 7 feet depth below the ground surface (HIES, 1997a, EnviroServices, 2014). A tidal study conducted revealed water table elevation oscillations in response to inland tidal forcing with little landward attenuation (HIES, 1997b).

6.0 ENVIRONMENTAL HAZARD EVALUATION

6.1 Contaminants of Potential Concern

The EHE consists of Sections 6 and 7.

Based on the site history of the industrial area, the following contaminants of potential concern (COPC) may be encountered in soil and groundwater during subsurface construction projects in the KHID due to industrial activities.

The COPCs are further broken down to petroleum related contaminants and non-petroleum related contaminants.

Petroleum related contaminants:

- Total petroleum hydrocarbons (TPH) as gasoline (TPH-g), as diesel (TPH-d), and as oil (TPH-o)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Methyl tertiary butyl ether (MTBE)
- Halogenated volatile organic compounds (HVOC)

- Polycyclic aromatic hydrocarbons (PAH)
- Lead, Cadmium
- PCBs
- Light non-aqueous phase liquid (LNAPL)/free product (e.g., gasoline, diesel fuel, fuel oils, lubricating oils, benzene, toluene, xylenes)
- Methane

The PAHs identified in this area include acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorene, indeno[1,2,3-cd]pyrene, 2- methylnaphthalene, naphthalene, phenanthrene, and pyrene.

Petroleum products are likely to be encountered near fuel storage areas (Figure 4) and in the vicinity of current or historical pipelines. The latter cross/crossed and run/ran alongside and underneath roads in the KHID (Figure 5).

Non-Petroleum related contaminants:

Treated wood in railway tracks and weeds/brush lining railway tracks might have been treated with metals and organochlorine pesticides. Pesticides such as pentachlorophenol and 2,4,5-T and Silvex can be sources of dioxins and furans. Dioxin/Furan contamination is anticipated to be very localized along railway lines (see railway lines in Figure 2). Organochlorine pesticides and arsenic are likely to be more widespread due to their (former) use for termite, weed, and rodent control around structures (see Figure 4 for potential locations around above ground storage tanks (ASTs) and pre-1988 buildings) and railway tracks (Figure 2). Lead was a significant constituent of some paints used on structures until at least 1978 (Figure 4).

Pesticide related contaminants

- · Organochlorine Pesticides
- Dioxins/Furans
- Copper, Chromium, Arsenic (treated wood, former railroad rights-of-way)
- Arsenic (herbicide, rodenticide)

Fill, sewage, or paint related contaminants

Metals (arsenic, cadmium, chromium, and lead).

Metal contamination associated with fill, sewage, or paint may be impacting at least portions of the KHID as a result of historic activities. Fill can be encountered in the area labeled "Fd" in the USDA soil map in Figure 6. Metal COCs that may have impacted the area include arsenic, cadmium, chromium, lead.

6.2 Gross Contamination

Gross contamination refers to physical conditions that present odor, nuisance, and general pollution concerns. It includes free product, sheen, objectionable odors and tastes (in drinking water), and general resource degradation. At high levels, certain types of gross contamination can become a physical hazard (e.g., presence of flammable vapors or liquids, such as those associated with gasoline). Methane gases can be produced in

petroleum contaminated areas under anaerobic conditions, if it is under pressure, and mixes with oxygen in the right proportions. These conditions may be encountered during utility trench excavations or in utility vaults or buildings and can lead to flashbacks or explosions.

Contaminants in areas considered grossly contaminated are typically relatively immobile and of low toxicity to humans, though they are considered a nuisance or other hazard due to characteristics noted above. In the absence of ICs and/or engineered controls, future human populations and ecological receptors at a property could be exposed to gross contamination (e.g., free product, objectionable odors).

6.3 Direct Exposure

Direct exposure hazards involve human contact with contaminated soil, groundwater, or soil vapor, either directly or indirectly. Direct contact can occur via incidental ingestion or dermal contact, or inhalation of dust in outdoor air. Indirect contact can occur via inhalation of soil vapors in outdoor air. In general, contaminants in areas considered to present a direct exposure hazard are relatively immobile and are potentially toxic to humans.

In the absence of cleanup measures or ICs, direct exposures to contaminants exceeding HDOH EALs may result in current or, future human populations at the property being exposed to contaminated soil (including contaminated dust), groundwater, or soil vapor...

6.4 Soil Vapor Intrusion

Vapor intrusion involves exposure of human populations to volatile chemical compounds that have entered a building or other enclosed structure from contaminated subsurface soil or contaminated groundwater. In general, contaminants in areas considered to present a vapor intrusion hazard are volatile chemicals that are toxic to humans via inhalation of vapors. These volatile chemicals can either be directly from the source material or volatiles produced by degradation of source materials (e.g., methane).

In the absence of cleanup measures or ICs, soil vapors at levels exceeding applicable HDOH EALs may result in current or future human users of the property to be exposed to volatile organic compound (VOC) vapors.

6.5 Leaching

Leaching is movement of contaminants from vadose zone soils into underlying groundwater through chemical and physical mechanisms. The principal chemical mechanism is dissolution of contaminants into water (e.g., percolating rainwater, irrigation water) moving downward through the vadose zone. Physical mechanisms include (1) entrainment of contaminants bound in a colloid phase by water moving through the vadose zone, and (2) mass movement of contaminants through the vadose zone by infiltrating water. Most contaminants in areas considered to present a leaching hazard typically are mobile, volatile chemicals that are toxic to humans and may threaten ecological receptors at sites close to surface water bodies (including Kahului Harbor).

In the absence of cleanup measures or ICs, groundwater could be contaminated via leaching of contaminants from vadose zone soils by infiltrating groundwater.

6.6 Ecotoxicity

6.6.1 Terrestrial Ecotoxicity

Ecotoxicity refers to the capability of a contaminant to damage an ecological population, ecological community, or ecosystem. The ecotoxicity of a contaminant typically is based on its toxicity to one or more species, its persistence in the environment, and its ability to bioaccumulate. Flora and/or fauna in terrestrial (i.e., land) habitats may be affected.

Impacts on terrestrial flora and fauna can occur through exposure of populations to contaminated soil or discharge into Kanaha Pond. Kanaha Pond is a State Wildlife (Bird) Sanctuary, and protected wetland with endangered species (Hawaiian coot and Hawaiian stilt). Therefore, protection of this area from contamination is essential.

Most contaminants in areas considered to present a terrestrial eco-toxicity hazard are typically relatively immobile, non-volatile chemicals that are toxic to ecological receptors. Because no current or future sensitive ecological receptors are or will be present within the KHID, terrestrial eco-toxicity is not considered a concern and will not be evaluated further. In the absence of concerns regarding terrestrial flora or fauna in the area, terrestrial eco-toxicity is not considered an environmental hazard.

6.6.2 Aquatic Ecotoxicity

Impacts on aquatic (i.e., freshwater or marine) flora and fauna can occur through discharge of contaminated groundwater into surface waters or via surface runoff into aquatic habitats. Most contaminants in areas considered to present an aquatic eco-toxicity hazard are typically mobile, volatile chemicals that are toxic to ecological receptors. In the absence of control measures or ICs, sensitive populations could be exposed to groundwater contaminants or soil contaminants entering surface water bodies such as the ocean, streams, or wetlands via migration through the Harbor wall, surface runoff, or other preferential pathway (e.g., current and future storm drains).

7.0 EXPOSURE PATHWAYS

Identified potential exposure pathways to human and ecological receptors within the KHID include ingestion, inhalation, and dermal contact. These are described briefly below.

7.1 Ingestion

Ingestion is oral intake of a solid or liquid material. Ingestion of contaminated soil or groundwater is a human health risk, ecological risk and a direct exposure hazard. Accidental ingestion of contaminated soil or groundwater by human receptors will be of concern during construction when contaminated soil and groundwater are encountered. Ingestion of contaminated soil, sediment, and groundwater is a concern for sensitive receptors at Kanaha Pond and Kahului Bay if contaminants are flushed into these areas via groundwater, storm drain or other potential preferential pathways, or surface water flow and are ingested directly or via the food chain.

7.2 Inhalation

Inhalation is the act of drawing air, other gases, vapors, fumes, smoke, dust, or mists into the lungs. Inhalation of contaminated soil (as dust) is a human health risk and a direct exposure hazard. VOC vapors released from surface soil potentially pose an indirect exposure hazard.

During excavation and construction activities, contaminated subsurface soils may be disturbed, thus increasing potential for release of dust into the work area.

7.3 Dermal Contact

Dermal contact is direct exposure of skin to solids, liquids, or gases. Dermal contact with contaminated soil, groundwater, or soil vapor is a direct exposure hazard. During excavation and construction activities, contaminated subsurface soils and groundwater are likely to be encountered, thus increasing potential for dermal contact. Dermal contact with contaminated soil, groundwater, and soil vapor (and contact with free product) may be of concern during construction activities when contaminated soil and groundwater are encountered. Dermal contact with petroleum, contaminated soil, sediment, and groundwater is a concern for sensitive receptors at Kanaha Pond and Kahului Bay if petroleum or contaminants are flushed into these areas via groundwater, storm drain/preferential pathways, or surface water flow. Methane gas, if produced and mixed with oxygen in the right proportion, could cause explosions and/or backflashes that could lead to dermal exposure and burns of the skin.

8.0 ENVIRONMENTAL HAZARD MANAGEMENT PLAN

The EHMP consists of Sections 8 through 17.

This EHMP has been developed to mitigate potential exposure of utility and construction workers, other on-site workers, and the aquatic ecosystem (Kahului Harbor and Kanaha Pond) to COCs during excavation activities in the KHID. The EHMP consists of nine individual plans presented as Sections 9 through 17 as follows, each addressing potential sources of COCs (see Section 6.1) and methods of handling contaminated media:

- · Section 9 Release Reporting Plan
- Section 10 Health and Safety Plan (HSP)
- Section 11 Construction Activities Release Response Plan
- Section 12 Inactive Petroleum Pipeline and UST Management Plan
- Section 13 Soil Management Plan
- Section 14 Groundwater Management Plan
- · Section 15 Free Product Management Plan
- Section 16 Vapor Management Plan
- Section 17 Stormwater Management Plan

The plans address engineering and administrative controls, as well as requirements for personal protective equipment (PPE) and a monitoring program. Prior to initiation of construction work, on-site workers need to be informed and educated about potential hazards posed by COCs and methods used to prevent exposure.

Construction activities in contaminated media are to be reported by filling out appropriate form(s) in Appendix B and submitting the forms to the HEER Office.

9.0 RELEASE REPORTING PLAN

Encounters with obvious petroleum contaminated soil, debris-contaminated soils (DCS), or other identified contaminated soil or groundwater during surface or subsurface excavation activities is considered a release discovery and must be reported to the HEER Office according to the following procedures. This includes unexpected contamination not identified in this plan, "fresh" sources of release, and large releases that cannot be managed under this plan. Releases that occur during construction activities or releases due to contingencies should also be reported by following the directions in this Section.

The contractor must immediately notify the Hawaii State Emergency Response Commission (HSERC)/HEER Office in Honolulu) at 808-586-4249 or 808-247-2191 after work hours, and the Maui County Local Emergency Planning Committee (LEPC) (808-270-7900; LEPC contact currently Jeffrey Kihune) after discovery of contaminated soil and/or groundwater.

A release of oil within the KHID would be indicated by any of the following:

Any amount of oil that causes a sheen on the groundwater in an excavation.

- Any free product that appears on groundwater.
- Visual or olfactory (odor) evidence of oil contamination in soil or groundwater.

If free product is encountered in soil or groundwater, report the release in accordance with this section. It is not necessary to stop work if you follow the procedure specified in this document.

Note that any release of oil to Kahului Harbor falls under the Oil Pollution Act (OPA) of 1992. Releases of Reportable Quantities (RQ) of CERCLA hazardous substances or oil that cause a sheen on water (e.g., ocean, stream, storm drain leading to ocean) must be reported to the National Response Center (1-800-424-8802) as a release to surface water. The National Response Center will then notify the Coast Guard.

9.1 Immediate Verbal Notification

In the event of a release that causes an imminent threat to human health or the environment, the first call shall be to 9-1-1.

Immediate verbal notification shall be provided to the HSERC/HEER Office and the Maui County LEPC either via telephone or in person. HSERC/HEER Office will not accept initial notification via fax or e-mail. In addition, unless it is specifically stated that a verbal notification is being given to a HEER Office State On- scene Coordinator (SOSC) on the scene during an incident, mere presence of a HEER Office SOSC does not constitute a notification. When in doubt, the contractor should call and speak to a HEER Office SOSC. There is no penalty for reporting a release unnecessarily, but there are large penalties for not reporting a release (up to \$10,000 per day).

Notification should occur within 20 minutes of discovery of the release. Provide the following information to the extent known at the time of notification (do not delay notification information regarding the release is incomplete):

- · Name and telephone number of the caller
- Name and telephone number of a contact person (if different from the caller) who can
 provide timely information as the incident is occurring
- Name (trade and chemical) of the hazardous substance that has been released
- Approximate quantity of the hazardous substance that has been released
- Location of the incident
- Date and time of spill, release, or threatened release
- Description of what happened (source and cause of the release)
- Immediate danger or threat posed by the release
- Name, address, and telephone number of the RP or potentially responsible party (PRP)
- Measures taken or proposed to be taken in response to the release as of the time of notification
- Any known injuries or advice regarding medical attention necessary for exposed individuals
- Names and phone numbers of other federal, state, or local government agencies that have been notified of the release

Any other information that may help emergency personnel respond to the incident.

Once the information has been conveyed, the caller will be provided with a HEER Office Incident Case Number, which shall be referenced in any future correspondence including the follow up written notification submittal—federal requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and OPA.

9.2 Written Follow-Up Notification Contents

Notification, including all information provided in the verbal notification described above and any other pertinent information not previously provided, shall also be made in writing to the HSERC/HEER Office. This written notification shall be sent to HSERC/HEER Office no later than thirty (30) days after initial discovery of a release. The written notification can be sent by certified mail, fax, hand-delivery, or another means that provides proof of delivery. Photos should be included to document the incident. A copy of the Written Follow-up Notification Form B.1, is in Appendix B.1. The HSERC/HEER Office mailing address is:

Attn: EPCR Data Manager State of Hawai*i Department of Health Hazard Evaluation and Emergency Response Office 2385 Waimano Home Road, Suite 100 Pearl City, Hawaii 96782

9.3 Recordkeeping Requirements for Encountered Contamination

Fill out Form B.1 for your records and send a copy to the HEER Office at the address noted above.

10.0 HEALTH AND SAFETY PLAN (HSP)

Provide a HSP for workers performing excavations who will encounter or potentially encounter the COCs and hazards described in Sections 6 and 7 (EHE). The HSP should generally include the following:

- Requirements that workers be trained in dealing with petroleum compounds, whether
 occurring as free product, soil residues, contaminated groundwater, or as soil vapor,
 and protection from other chemical substances and hazards that may be
 encountered, including, but not limited to, use of appropriate PPE
- General site control and safety requirements such as site access controls, information on emergency medical facilities, and good worker practices.
- Description of present and potential hazards, including COCs, action levels, and applicable actions (see Appendix B, Form B.2, Table 1 for oil hazards example and lead).
- Emergency contact information.

A HSP is not a substitute for Hawai*i Occupational Safety and Health Division (HIOSH) requirements. Employers of construction workers/utility workers must comply with all applicable OSHA/HIOSH requirements. See Appendix B, form B.2 for additional guidance.

11.0 CONSTRUCTION ACTIVITIES RELEASE RESPONSE PLAN

Parties should operate under a site-specific release response plan. The sample Construction Activities Release Response Plan provided in Appendix B.3 can be used as a starting point.

On-site workers need to minimize probability of releases from excavations during construction. They should familiarize themselves with site conditions and potential presence of petroleum in the subsurface. An HSP and soil and groundwater management plans should be prepared.

If uncontrolled releases of petroleum, DCS or petroleum-impacted soil, and petroleum- and/or metals-impacted groundwater could occur, human health concerns would include possible direct contact, exposure to fire hazards, and disruptions to site activities, including possibly local traffic. Environmental impacts of concern would be discharges of metals-contaminated groundwater, petroleum contamination in soil or groundwater, or sheen to harbor waters either directly or via a storm drain or other type of surface water conveyance.

A response plan to deal with uncontrolled releases should be available to the construction workers and other parties. It should include descriptions of the types of releases, a list of names and contact information regarding the release response team and the parties that must be notified, a list of available response equipment, descriptions of response procedures, and an outline of release reporting requirements.

12.0 INACTIVE PETROLEUM PIPELINE AND UST MANAGEMENT PLAN

This section provides guidance on how to prepare for and manage belowground inactive petroleum pipelines or USTs located or exposed during excavation or other subsurface activities.

12.1 Preparatory Work

Prior to performing any subsurface work, parties should review Figures 4 and 5, historical documents and plans and contact the Hawaii One Call Center at 1-866-423-7287 or 811 for information on inactive pipelines, utilities, or USTs identified to date. Hawaii State Law requires that excavators provide at least 5 working days' notice prior to any subsurface excavation. However, accuracy and completeness of this information are not warranted or guaranteed because historical pipeline information has not been well documented. In some instances, previously unknown inactive pipelines or USTs may be discovered for the first time during excavation or other subsurface activities.

Notify the HEER Office if any inactive pipelines or USTs are encountered.

12.2 General

Parties should manage soil from the excavation or other subsurface activities in accordance with the soil management plan Section 13. If an inactive buried suspect fuel pipeline is discovered, refer to the known/suspect fuel pipeline map in this EHE/EHMP, check with landowners/operators in the area, and contact the HEER Office to discuss status of the line (i.e. do we know if the pipeline has been previously identified, drained of any product, and may be left in place?) and, as necessary, discuss options to check or drain and remove any product (and/or the pipe segment) from the required excavation. If a UST is discovered, it

must be removed as per HEER Office or Solid and Hazardous Waste Branch requirements.

12.3 Pipeline Tapping, Draining, and Removal

If a pipeline or UST is discovered, attempt to identify the nature of the pipeline or UST, and to confirm that it is not active. Prior to any excavation work, confirm that any pipeline segments to be removed are inactive by contacting the HEER Office or others, including Hawaii One Call Center and the appropriate utility company or nearby petroleum terminal operator if one can be identified. Parties undertaking their own pipeline or UST removal should prepare and use a site-specific plan that incorporates the procedures described in this section. The site-specific plan can be based on the sample Inactive Pipeline or UST Removal Plan provided in Appendix B.4.

Do not attempt to remove USTs or pipeline segments without first draining the UST or pipeline segment or determining that it is empty. To the extent practicable, any drainable fluids must be drained before cutting the pipeline or UST. Petroleum fluids recovered must be representatively sampled and tested to determine how they can be recycled or disposed of in full accordance with Title 11, 58.1 and Chapters 260-279 of HAR and any other state and federal regulation governing this activity.

Only personnel knowledgeable and trained in pipeline and UST removal should cut, drain, and remove USTs and pipelines. Remove the required pipeline segments by cutting. If an explosion hazard is possible, cutting should be with a wet saw or some other non-sparking tool. If the pipelines are suspected to be asbestos-covered, a qualified contractor must direct this work and recommend appropriate procedures and PPE, including procedures for removal. Ensure that the area below and adjacent to cutting locations is covered with plastic sheeting and absorbent material. In addition, place a catch basin directly beneath the cutting location. Because pipelines may be under pressure, a vacuum truck should be on site during cutting to recover any released fluids. Pipeline fluids collected in the catch basin should be pumped out.

Cut-off ends of remaining pipeline segments must be appropriately sealed, or otherwise closed, to prevent any potential leakage. Suitable seals include cement plugs, blind flanges, or other methods not involving hot welding. Welding is not appropriate due to the potentially explosive nature of petroleum and its associated vapors.

12.4 Removed UST and Pipe Handling

In many cases, sections of removed pipeline and USTs contain heavy viscous petroleum products that appear to be immobile. However, once the pipes and product heat up on the surface, the product can liquefy and cause a release. If sections of waste pipe or USTs are stored on site prior to disposal, the area should be lined with plastic and bermed to contain any petroleum that may mobilize due to atmospheric heating. All removed pipelines and USTs should be properly disposed of or recycled.

12.5 Other Sub-Surface Utilities

Other subsurface utilities such as cable, water and sewage lines, and electrical lines may also be discovered during excavations. The nature of the utilities and whether they are presently active should be determined prior to removal. The One Call Center at 1-866-423-7287 (or 811) can help identify the nature and origin of active subsurface utilities.

12.6 Record Keeping

Parties should record field observations that include the location of the UST and pipeline relative to fixed landmarks (including Global Positioning System coordinates); depth, diameter, and type of pipeline and any other distinguishing features; type of petroleum; beginning and ending fluid levels; volumes of each type of fluid removed (e.g., water and petroleum); flow rates; direction of flow; and any other information pertinent to the UST or pipeline contents. Provide records of field observations with detailed photographs to the HEER Office, and, if requested, to the landowners. Major deviations from the EHE/EHMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and documented; complete Appendix B.4 for your records and send a copy to HDOH.

13.0 SOIL MANAGEMENT PLAN

The purpose of the soil management plan is to ensure proper handling and management of PCS, DCS, and pesticide-related contamination in soil that could be encountered during future construction. The principal hazards posed by these contaminants in soil are direct exposure, gross contamination, leaching to groundwater, and/or vapor intrusion into existing or future buildings. Contaminated soil cannot be re-used off site prior to laboratory testing and confirmation that testing results meet the most restrictive EALs (for unrestricted use, within 150 meters of a water body over a drinking water resource). or soils are determined to be potentially contaminated and need to be handled with certain precautions.

PCS falls into two categories: (1) moderately contaminated soil with slight petroleum odors and exhibiting staining, and (2) heavily contaminated soil with a very strong petroleum odor, very dark staining, and potentially mobile free product. From an analytical standpoint, heavily contaminated soil is defined as soil with total TPH concentration exceeding 5,000 milligrams per kilogram (mg/kg) (subsurface gross contamination). Gasoline and diesel free product in soil could be mobile at concentrations as low as 5,000 mg/kg. Although somewhat arbitrary, this serves as a useful tool for distinguishing heavily contaminated soil from less contaminated soil. Test to determine if soil exceeds 5,000 mg/kg TPH include laboratory analysis and field tests such as the glove test and the paper towel test (also see HEER Office TGM (www.hawaiidoh.org) Section 8.4.2 on field screening options for petroleum contamination in soils). The glove test consists of squeezing a handful of soil in a gloved hand. If oil droplets remain on the glove, assume the soil exceeds the 5,000 mg/kg threshold and do not reuse the soil on site. The paper towel test consists of squeezing a handful of soil in a paper towel. If droplets of oil appear on the paper towel, assume the soil exceeds the 5,000 mg/kg threshold and do not reuse the soil on site. PCS exceeding 5.000 mg/kg should be excavated and disposed of in an approved landfill, when feasible. The soil used in the field tests should be representative of the soil in the trench or stockpile, meaning a multi-increment (MI) sample should be collected in accordance with the HEER TGM and fill guidance. If the soil contains free product, it should be handled as per Section 15 Free Product Management Plan. Anticipated tasks associated with managing excavated soil are summarized as follows:

- Notify the HDOH HEER Office at least 7 days prior to planned excavation activities that could disturb PCS, DCS, sewage-related, or pesticide-related contaminated soil (includes surface soils along former railroad tracks or exposed soils adjacent to building or tank foundations).
- If PCS or DCS, sewage related soil, bagasse, railroad lines or exposed soils along foundation areas are observed during excavation activities, provide field oversight to

direct the excavated soil to the appropriate stockpile, and to specify appropriate use of excavated soils as on-site backfill versus off-site disposal; and provide health and safety guidance related to potential exposure of workers to COCs.

- Oil-impacted stockpiled soils can also be placed in containers (such as 20-yard steel rolloff bins, super sacks, tri-wall boxes, or drums). Drain any liquid-phase oil or fuel product associated with the soil prior to stockpiling. Remove and properly dispose of any oil observed in the excavation.
- Soil must be stockpiled on site near the project area prior to reuse.
- Create soil stockpiles by laying down 10-millimeter (mil) black plastic (polyethylene) sheeting within a designated on-site soil stockpiling area. PCS, DCS, and surface soils from railroad rights-of-way or building and tank foundation areas should be in separate stockpiles. Underlay edges of the plastic sheeting with bermed soil. Ensure that the height of the bermed soil will be sufficient to prevent stormwater runoff from breaching it. Place excavated soil inside the bermed area on top of the plastic sheeting. At the end of each day or in the event of a significant rain event, cover the stockpiles with plastic sheeting. Secure the plastic covering with sufficient ballast (e.g., sandbags, boulders, concrete blocks) so that it will not be dislodged by strong winds.
- Segregate excavated contaminated from clean soil, and stockpile the contaminated soil
 on plastic sheeting. Cover both the clean soil and PCS stockpile(s) at the end of each
 day with plastic sheeting to mitigate potential dust concerns and to prevent contact with
 rainwater and stormwater runoff. See Appendix A for additional details.
- If soil is classified as moderately contaminated by petroleum compounds due to
 observed staining or odors (i.e., estimated TPH <5,000 mg/kg), the soil can be used as
 backfill on site if more than 100 feet from the Harbor wall and it is placed more than one
 foot above the tidally influenced high water level. Remove floating free product to the
 extent practicable prior to backfilling any excavation
- If PCS is classified as heavily contaminated (i.e., estimated TPH>5000 mg/kg), it must be profiled and disposed of at an appropriate landfill site.
- In determining whether excavated soil can be used for on-site backfill, consider also its structural suitability, although this is not a requirement under HDOH guidance. The soil could be considered not structurally suitable if it cannot support foundation loading of a structure intended to be placed over backfilled and compacted soil, or if it does not meet the technical specifications for backfilling of utility trenches, or if it does not meet other design or constructability requirements. If structurally suitable, DCS should be given preference for re-interment in the excavation.
- If PCS- or DCS-contaminated soil is to be used in roadways, the soil must also meet roadway design criteria of the County and Hawaii Department of Transportation (HDOT).
- Soil not structurally suitable for reuse should be reused at other areas of the site, or should be profiled and taken off site for appropriate disposal in a landfill.
- Place PCS, DCS, or surface soils from railroad rights-of-way or building and tank foundation areas used as backfill on site a minimum of 1 foot bgs above the tidally influenced high water table (to prevent leaching), cover it with clean soil, and as required, cap with asphalt or cement.
- If there is no place to stockpile PCS, DCS, or other suspect contaminated soil, profile it and haul it to a landfill for disposal. Stockpiling more than 1 cubic yard (cy) of PCS at an

off-site location requires a solid waste management permit from the Solid and Hazardous Waste Branch (see HRS, 2011).

 Decontaminate equipment used in contaminated areas before using it in noncontaminated areas. All liquid and solid waste resulting from on-site decontamination must be collected and appropriately disposed of at a certified landfill site (See TGM 5.10.)

13.2 Soil Sampling and Testing for Reuse or Disposal

Sample collection procedures should follow HDOH HEER's August 2017 "Interim Final Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan" (HDOH, 2017; or as updated), and HDOH HEER's October 2017 "Guidance for Stockpile Characterization and the Evaluation of Imported and Exported Fill Material (HDOH, 2017). For unrestricted relocation, the general sample collection procedures are as follows:

- Collect one multi-increment sample for every 20 to 100 cubic yards (CY) of affected soil (staged in stockpiles of 20-100 CY).
- Each multi-increment sample should consist of 50-100 soil increments collected in a random, stratified manner from the entire volume of soil (20-100 CY) for which the sample will represent (each sample for volatile analysis should at least contain 300 gram (g) of soil in methanol; each sample for non-volatiles should be comprised of at least 1-2 kg soil mass).
- Collect soil increments of the same relative volume/weight (for example, each increment consisting of a 50-gram soil aliquot or similar).
- Use appropriate sample collection methodology to preserve the COPCs to be tested.
- Label samples, place in designated sample container, and preserve in accordance with USEPA and HDOH TGM procedures.
- Complete chain-of-custody documentation.

If a soil is presumed to be contaminated, the testing of that soil will depend on the suspected contaminants.

Before relocation or disposal, soil must be tested to determine whether it contains COPCs above the HDOH Tier 1 EALs for unrestricted use and whether it is a hazardous waste under RCRA (Resource Conservation and Recovery Act). If a soil is presumed to be contaminated, the testing of that soil will be depend on the suspected contaminants. Collecting a representative sample of soil or bulk C&D waste is crucial to characterizing samples. If a sample is not representative, there are legal and environmental consequences (see HEER TGM Section 4.0).

Re-Use Testing. This testing involves field tests or laboratory tests for sewage-related, pesticide-related, PCS- and DCS-related COCs, and for other potentially relevant COCs (Section 6.1). Results of this testing are referenced to guide soil re-use, as described above. Note that this testing can occur either on stockpiled, excavated soils or on in-situ soils during pre-excavation field investigations.

Landfill Profile Testing. This testing involves determining suitability of the soil for use as daily cover or for disposal as a waste at a landfill. Soils not to be reused (backfilled), as described above, can generally be disposed of in a suitable landfill. Disposal of these soils would be subject to Landfill Profile Testing. Information regarding chemical analysis and disposal options (i.e., as cover or as waste) should be obtained from the relevant landfill. Soils that meet the

landfill's standards for interim/daily cover or longer term, intermediate cover should be used as such. The former typically requires that the soil meet HDOH EALs for commercial/industrial land use, while the latter typically requires that the soil meet EALs for unrestricted reuse. Costs for disposal of these soils are typically lower than for disposal of more contaminated soil that cannot be used for cover. Soils not suitable for use as cover or other uses at the landfill must be disposed of as waste. Soil testing to pre-profile the soil for off-site disposal can also occur as part of the pre-excavation field investigations.

Stockpile Testing. Recommendations for sampling soil stockpiles are provided in the HDOH guidance "Guidance for Stockpile Sampling and *Evaluation of Imported and Exported Fill Material* (HDOH 2017)". Qualified environmental professional should direct soil sample collection and testing methods in accordance with the most current TGM guidelines. Parties undertaking excavation are responsible for employing a qualified environmental professional and complying with the latest HEER TGM guidelines.

Making a Hazardous Waste Determination.

To determine whether soil is a hazardous waste, the generator must make a Hazardous Waste Determination in accordance with Hawai'i Administrative Rules (HAR) §11-262-11. Hazardous waste determination is a step-by-step process. First determine if the soil is considered a waste. For site under HEER oversight soil generally becomes a waste if it leaves the site and has concentrations exceeding the most restrictive Tier 1 EAL. If it is deemed a waste based on this criteria, determine if it is specifically exempted by HAR §11-261-4. Wastes that are not specifically excluded are further assessed as follows:

- Listed Wastes: Specifically listed as a hazardous waste in HAR chapter 11-261 subchapter D;
- Testing Testing the waste for toxicity, ignitability, corrosivity, or reactivity according to the methods set forth in HAR chapter 11-261 subchapter C; and/or
- Knowledge (e.g., known flammable solvent).

The proper relocation or disposal of the soil depends on the category in which the soils fall. Soils and Fill material may fall into one of the following categories:

- 1) Unrestricted Use
- 2) Contaminated/Restricted Use
- 3) Hazardous Waste

Unrestricted Use

Unrestricted use soils are soils that do not contain COPCs above the HDOH Tier 1 EALs for unrestricted use, where sites are located within 150 meters (approximately 500 feet) from surface water and over a drinking water source (most restrictive EAL). After background information has been gathered regarding the potential for contamination in an area and testing has demonstrated that soil does not contain COPCs concentrations above the most restrictive EAL, unrestricted use soil can be reused within the Work Area or offsite.

Sampling will be required before reuse in sensitive areas. Further guidance on the use of non-regulated soil as fill is provided in "Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material" (HDOH, 2017).

Contaminated/Restricted Use.

If the soil contains any contaminants above the most restrictive Tier 1 EALs or the Tier 1 EALs for commercial/industrial use, but it is not a hazardous waste, it is considered contaminated and can be reused under specified circumstances, but only with the approval of the HEER office and the Hazardous Waste section. If the soil only exceeds the unrestricted EALs, and not the commercial/industrial EALs, it can be used within the Work Area and in some instances with prior approval, treated until the contaminant concentrations are below the Tier 1 EALs for unrestricted use within 150 meters (approximately 500 feet) from surface water and over a drinking water source, or disposed at a permitted landfill. If the contaminant concentrations exceed both unrestricted and commercial/industrial EALs, the soil can be used within the Work Area (if not grossly contaminated), treated to reduce concentrations to below Tier 1 EALs, or disposed at a permitted landfill. Mixing soils containing COPCs with soils that do not contain COPCs to reduce concentrations violates state and federal law.

Treatment of soil will require additional coordination with HDOH HEER and SHWB to identify permitting requirements, treatment methods and locations, best management practices at treatment locations, follow up testing, and other pertinent requirements.

Hazardous Waste

Hazardous waste regulations most commonly apply to soil that fails a leaching test criteria for disposal in a municipal landfill, referred to as the Toxicity Characteristics Leaching Procedure (TCLP). Material that meets the regulatory classification as "hazardous waste" must be disposed of at a permitted hazardous waste treatment, storage or disposal facility. There are currently no hazardous waste landfills in Hawai'i. Therefore, soil classifiable as hazardous waste must be disposed of at a regulated facility on the mainland. Generators of hazardous waste are subject to additional regulations and must notify the Hazardous Waste section of their status. Further information can be found at http://health.hawaii.gov/shwb/hazwaste/ and by calling the Solid and Hazardous Waste Branch (Hazardous Waste section) at 808-586-4226.

13.3 Soil Contingency Plan

The Soil Contingency Plan provides guidelines for actions to be taken when engineering controls, administrative controls, or PPE fail, and risk of exposure to contaminated soil is imminent.

13.3.1 Open Excavations

During construction activities, subsurface contaminated soil could be exposed in excavations for utility corridors or other subsurface structures. If contaminated soil is encountered, more contaminated than anticipated, and could pose a direct exposure hazard to on-site workers, the following actions may be taken:

- If site conditions warrant, PPE will be upgraded from Level D to Level C. Respiratory
 protection and vapor monitoring are described in the Vapor Management Plan (Section
 9.4) and the Site-Specific HSP.
- If warranted, contaminated soil will be excavated and properly stockpiled prior to continuance of work. The stockpiling procedures are described in the Soil Management Plan (Section 13.1).

 If airborne dust generated from contaminated soil becomes significant, additional dust control measures will be implemented. This may require more frequent use of or an increased volume of applied water. Also, the dust screen cloth on the site boundary fence will be inspected for damage and repaired as necessary.

13.3.2 Soil Stockpiles

During construction activities or log-term exposure to sunlight, the plastic sheeting used to berm and cover soil stockpiles could be damaged through long-term exposure to sunlight, by strong winds or punctured by debris or other sharp objects. Such damage could allow on-site workers to come into contact with PCS. To prevent that from occurring, the following actions may be taken:

- Damaged sections of plastic sheeting will be replaced promptly.
- Damaged sections of the berm will be repaired promptly.

13.4 Engineering and Administrative Controls

Dust and vapor control methods may be necessary during construction-related work in which contaminated soil is encountered. These controls include use of plastic sheeting on soil stockpiles, vapor control using vapor suppressants, and dust suppression using applied water.

It is anticipated that Level D PPE will be appropriate for workers during future construction. Should site conditions warrant, the PPE will be upgraded to Level C. Ultimately, the contractor is responsible for monitoring site conditions and supplying site workers with appropriate training and PPE, in accordance with 29 *Code of Federal Regulations* (CFR) 1910 and 29 CFR 1926.

13.5 Periodic Inspections and Preventive Maintenance

A key component of the plan is routine inspections. Accordingly, all locations where exposure of on-site workers to PCS or DCS is possible (e.g., open excavations, soil stockpiles) will be inspected at a frequency appropriate for access and activities carried out on the site (e.g., daily for sites used or accessed on a daily basis). The site should also be inspected prior to and following adverse weather conditions that could disrupt control measures (e.g., heavy winds or rains). In addition, daily inspections of the security fence, locked gates, and dust screen will occur during construction and excavation activities. Replacement and repair of damaged or inadequate chain link fences, dust screens, stormwater control measures, stockpile covers, berms, etc., will occur immediately after discovery. PPE will be inspected for damage and defects before personnel don the PPE.

13.6 Record Keeping and Reporting

Detailed records will be maintained of workspace monitoring, PCS excavation, soil stockpiling and testing, soil testing, soil reuse and disposal, inspections, and maintenance and response activities. Any known or suspected contaminated soils (e.g. either PCS, DCS, metals, pesticides, or other) needs to be well documented via location on a map using GPS coordinates or physical measurements to nearby landmarks, and provided to the HEER Office. Significant issues also need to be communicated to site workers promptly. Major deviations from this EHE/EHMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and

documented; complete Appendix B.5 for your records and send a copy to HDOH.

14.0 GROUNDWATER MANAGEMENT PLAN

The purpose of the groundwater management plan is to ensure proper handling and management of contaminated groundwater that could be encountered during construction. Principal hazards posed by contaminated groundwater are gross contamination and aquatic ecotoxicity.

Shallow groundwater in the area is typically encountered at approximately 2 to 7 feet bgs. Results of previous site characterizations indicate that groundwater in the area has been impacted by COCs. Groundwater contamination may be apparent through visual evidence and olfactory detection. Contaminated groundwater may have a measurable thickness of free product, emit petroleum hydrocarbon odor, or exhibit sheen. It is unlikely that residual groundwater contamination is at a level warranting extensive response actions or disposal; however and importantly, additional site characterization may be required depending on conditions encountered in the field.

14.1 Groundwater Management

If contaminated groundwater is encountered during excavation activities, appropriate response actions must be taken that conform to HDOH and EPA regulatory guidelines. These response actions include ensuring that workers have the appropriate level of PPE and that free product, sheen, and groundwater are managed properly if dewatering is conducted. Anticipated tasks associated with managing groundwater are summarized as follows:

- If groundwater is encountered during construction excavation activities, provide field
 oversight to identify contaminated groundwater, direct appropriate dewatering if this is
 conducted, manage disposal of groundwater if this is necessary, and provide health and
 safety guidance related to potential exposure of workers to COCs.
- If free product is encountered during construction excavation activities, manage free product as described in Section 15.
- Dewatering is not generally anticipated during future utility-related work. However, if dewatering becomes necessary, water should be pumped into on-site infiltration pits or holding tanks, and should not be allowed to discharge off site.
- If off-site discharge is necessary, a Notice of Intent (NOI) for National Pollutant Discharge Elimination System (NPDES) coverage will be submitted to HDOH Clean Water Branch. The NOI will include a dewatering plan. Prior to discharge into a storm sewer or aquatic habitat, the water will be tested and, if necessary, treated to address both free product and dissolved-phase contamination. Water with contaminant concentrations exceeding EALs for chronic aquatic toxicity will not be discharged off site.
- Generation of groundwater requiring disposal is not generally anticipated during future
 utility-related work. However, if such disposal becomes necessary, the groundwater
 will be stored on site in appropriate containers (e.g., 55-gallon drums), sampled,
 analyzed for the appropriate COCs to determine disposal options, and disposed of
 properly. For additional details, see the Guidelines in Appendix A.

14.2 Vapor Control

Vapor control methods (e.g., vapor suppressants) may be necessary during construction-related work in which contaminated groundwater is encountered. It is anticipated that Level D PPE will generally be appropriate for workers. Should site conditions warrant, the PPE will be upgraded to Level C. Respiratory protection and vapor monitoring are described in the Vapor Management Plan (Section 16.0).

14.3 Vector Control

If groundwater is filling open excavation it has the potential to attract disease vectors that will breed in standing water. Vectors can carry viruses and propagate diseases such as Dengue Fever and the Zika virus. Vector control methods (e.g., agitating standing water, addition of larvicides) may be necessary when excavations have standing water.

14.4 Groundwater Contingency Plan

The Groundwater Contingency Plan provides guidelines for actions to be taken when engineering controls, administrative controls, or PPE fail, and risk of exposure to contaminated groundwater is imminent.

14.4.1 Open Excavations

During construction activities, contaminated groundwater could be exposed in excavations for utility corridors or other subsurface structures. If contaminated groundwater is encountered that could pose a direct exposure hazard to on-site workers, the following actions may be taken:

- If site conditions warrant, PPE will be upgraded from Level D to Level C. Respiratory
 protection and vapor monitoring are described in the Vapor Management Plan (Section
 9.4) and Site-Specific HSP.
- If appropriate, the excavation will be backfilled using appropriate materials (e.g., gravel, select borrow) to a level above the groundwater prior to continuance of work.
- If it becomes necessary to remove contaminated groundwater from the excavation, the
 groundwater will be stored on site in appropriate containers (e.g., 55-gallon drums),
 sampled, analyzed for the appropriate COCs to determine disposal options, and
 disposed of properly.

14.4.2 Dewatering Pits

Dewatering is not generally anticipated during future utility work. However, if dewatering is conducted, and contaminated dewatering water is encountered that could pose a direct exposure hazard to on-site workers, the following actions may be taken:

- If site conditions warrant, PPE will be upgraded from Level D to Level C. Respiratory protection and vapor monitoring are described in the Vapor Management Plan (Section 9.4).
- If appropriate, dewatering will be discontinued until such time that contaminants at the source of the dewatering (i.e., an open excavation) can be mitigated.
- If it becomes necessary to discharge contaminated groundwater from a dewatering pit, such discharge will fully comply with the conditions of any required NPDES permit.

14.5 Periodic Inspections and Preventive Maintenance

A key component of the plan is routine inspections. Accordingly, all locations where exposure of on-site workers to contaminated groundwater is possible (e.g., open excavations, dewatering pits) will be inspected daily.

If groundwater requiring disposal is generated, the storage containers will be inspected regularly for rust and other signs of deterioration while they remain on site, pending disposal. If on-site dewatering is conducted, the infiltration pit(s) will be inspected daily to ensure that no accidental discharge occurs.

14.6 Record Keeping and Reporting

Detailed records will be maintained of workspace monitoring, dewatering (if performed), groundwater disposal (if conducted), and response activities. The location of any remaining sheens on groundwater, free product, or dissolved contaminates in groundwater above applicable HDOH EALs needs to be well documented on a map using GPS coordinates or physical measurements to nearby landmarks, and provided to the HEER Office. Significant issues need to be communicated to site workers on a regular basis. Major deviations from the EHE/EHMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and documented; complete Appendix B.6 for your records and send a copy to HDOH.

15.0 FREE PRODUCT MANAGEMENT PLAN

The purpose of the Free Product Management Plan is to ensure proper handling and management of free product encountered during subsurface construction activities. The principal hazards posed by free product are direct exposure and gross contamination. Additional related hazards include flammable/explosive vapors.

Free product within the KHID is likely confined to the general area of the capillary fringe of the water table, which is approximately 2 to 7 feet bgs. Free product often occurs as (1) free-flowing, black, viscous product; (2) a thin layer of black, viscous product; (3) a discontinuous layer of product; and (4) a petroleum hydrocarbon sheen. The free product is readily apparent visually and via olfactory detection.

Distribution of free product within the KHID has not been completely defined, and free product could be encountered during any subsurface activities approaching the shallow groundwater level. Free product recovery will be required where possible and practicable.

15.1 Free Product Management

If excavation occurs to the depth of the capillary fringe of the water table at approximately 2 to 7 feet bgs, free product may be encountered. However, anticipated problems associated with free product can be mitigated by performing the tasks described in this plan.

If free product is encountered during excavation, appropriate response actions will be taken that conform to HDOH and EPA regulatory guidelines. These response actions include ensuring that workers have the appropriate level of PPE, and that free product is managed properly. The anticipated tasks associated with managing free product are summarized as follows:

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- If free product is encountered during construction excavation activities, field oversight should be provided to identify free product; to recover the product to the extent practicable using absorbent pads/booms, oil-water separators, and/or vacuum trucks to skim free product off the water table; and to provide health and safety guidance related to potential exposure of workers to the product. Following completion of product recovery, the absorbents, PPE, and plastic sheeting will be allowed to dry prior to mandatory proper disposal.
- If dewatering becomes necessary and free product is floating on the water in the on-site
 infiltration pit(s), the product will be recovered to the extent practicable, and any
 absorbent material such as absorbent pads will be disposed of properly.
- If free product produces vapors that could adversely affect air quality during construction activities in the area, follow the Vapor Management Plan Section 16.0.

15.2 Engineering and Administrative Controls

Generation of explosive vapors from free product is a slight possibility. Methane or other degradation products may be encountered near petroleum source zones. If generated, such vapors increase risk of fire and/or explosion. Accordingly, if free product is encountered, the lower explosive limit (LEL) of the workspace atmosphere will be monitored using a combustible gas indicator.

Vapor control methods (e.g., vapor suppressants) may be necessary during construction-related work in which free product is encountered. It is anticipated that Level D PPE will be appropriate for workers. If site conditions warrant, the PPE will be upgraded to Level C. Respiratory protection and vapor monitoring are described in the Vapor Management Plan (Section16.2).

15.3 Periodic Inspections and Preventive Maintenance

A key component of the plan is routine inspections. Accordingly, all locations where exposure of on-site workers to free product is possible (e.g., open excavations, dewatering pits, hoses, pumps, tanks, or spills from any of these sources) will be inspected daily or more frequently as appropriate. In addition, daily inspections of the security fence and locked gates will occur during construction activities where free product is encountered. PPE will be inspected for damage and defects before personnel don the PPE. If respiratory protection is required, a daily positive pressure respirator fit test will be conducted at the start of each day, and filter cartridges will be replaced regularly as described in the site-specific HSP.

Excavations (including infiltration pit[s] if on-site dewatering is conducted) will be inspected daily for presence of free product on the water. If free product is present, removal of it will be attempted using absorbent pads, skimming with a vacuum truck, or applying other means such as processing through an oil-water separator.

15.4 Record Keeping and Reporting

Detailed records will be maintained of workspace monitoring (including LEL measurements), product recovery, and response activities. Significant issues will be communicated to site workers on a regular basis. Locations of free product discovery need to be mapped using GPS coordinates or physical measurements to nearby landmarks and reported to the HEER Office. Major deviations from the EHE/EHEMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and documented; complete Appendix B.7 for your records and send a copy to HDOH.

15.5 Free Product Contingency Plan

The Free Product Contingency Plan provides guidelines for actions to be taken when engineering controls, administrative controls, or PPE fail, and risk of exposure to free product is imminent.

15.5.1 Open Excavations

During construction activities, free product could be encountered on groundwater in excavations used for utility corridors or other subsurface structures. Free product can pose a fire and explosion hazard when close to utility line that can produce sparks. Also, utility corridors can create preferential pathways to the ocean. If free product is encountered that could pose a direct exposure hazard, fire/explosion hazard, or ecotoxicity hazard, the following actions may be taken:

- If site conditions warrant, PPE will be upgraded from Level D to Level C. Respiratory protection and vapor monitoring are described in the Vapor Management Plan (Section16.2).
- If the volume of free product encountered is too great for absorbent pads to handle effectively, a vacuum truck will be used to pump product out of the excavation, and the product will be disposed of properly.
- If appropriate, following removal of free product and prior to continuance of work, the
 excavation will be backfilled using appropriate materials (e.g., gravel, select borrow) to a
 level above the groundwater.
- If fire/explosion hazards, or ecotoxicity hazards due to creation of preferential pathways are identified, utility corridors should be relocated.

15.5.2 Dewatering Pits

Dewatering is not anticipated during future utility work. However, if dewatering is conducted and free product is encountered that could pose a direct exposure hazard to on-site workers, the following actions may be taken:

- If site conditions warrant, PPE will be upgraded from Level D to Level C. Respiratory protection and vapor monitoring are described in the Vapor Management Plan (Section 16.2).
- If the volume of free product encountered is too great for absorbent pads to handle
 effectively, a vacuum truck will be used to pump product out of the dewatering pit, and
 the product will be disposed of properly.
- If appropriate, dewatering will be discontinued until such time that the free product can be recovered.
- Under no circumstances will water contaminated with free product be discharged from a dewatering pit.

16.0 VAPOR MANAGEMENT PLAN

The purpose of the Vapor Management Plan is to identify VOC vapors that could adversely affect air quality during construction activities within the area covered by this document. The principal hazards posed by VOC vapors at levels below LELs are direct exposure and gross contamination. The areas within which these hazards potentially pose the greatest concern are where contaminated soil, contaminated groundwater, and free product have been previously encountered.

Results of past site characterizations within the KHID indicate that soil vapor across most of the area has been impacted by one or more COCs. Soil vapor contamination is readily apparent throughout much of the KHID because the vapor has a petroleum hydrocarbon odor. The principal sources of contaminated soil vapor within the KHID are PCS, contaminated groundwater, and free product.

This EHE/EHMP describes the necessary controls for minimizing exposure of on-site workers to hazardous vapors. It also describes measures for minimizing exposure of off-site human populations (i.e., the general public) to hazardous vapors created as a result of construction activities. Included are procedures for identifying and mitigating potential physical hazards posed by generation of explosive vapors. Importantly, this EHE/EHMP describes general procedures for monitoring hazardous vapors during field activities. Rather than as a stand- alone document to address vapor issues, it should be considered a companion document to the site-specific HSP, which should describe in detail procedures and equipment for monitoring hazardous vapor concentrations, as well as PPE and engineering controls.

16.1 Vapor Management

If VOC vapors are encountered during excavation, appropriate response actions need to be taken that comply with HDOH and EPA regulatory guidelines. The response actions include ensuring that on-site workers have the appropriate level of PPE, and that the general public is not affected adversely. Anticipated tasks associated with managing VOC vapor exposure are summarized as follows:

- If VOC vapors below LELs are encountered during excavation activities, field oversight
 must be provided to identify VOC vapors and provide health and safety guidance related
 to potential exposure of workers to COCs.
- Air monitoring should be conducted during excavation associated with future construction activities. Air monitoring should also occur when workers are required to enter excavations regardless of whether PCS or free product is present. The monitoring should include both workspace (on site) and perimeter measurements of VOC vapors.
- If warranted by air monitoring results, on-site workers should be notified to upgrade PPE to include respiratory protection.
- Air monitoring required for confined space entry (if required) will be conducted by the contractor responsible for construction. Confined space entry and associated air monitoring requirements will be described in the site-specific HSP for construction.

16.2 Vapor Contingency Plan - Exposure Monitoring

To assess potential exposure of on-site workers to hazardous VOC vapors and determine the level of PPE that might be required, a baseline exposure assessment will be required. To conduct the assessment, both total VOC concentrations and benzene concentrations must be measured during excavation of a trench. Measurements of concentrations of these COCs within the workspace atmosphere and at the perimeter (off site) are required.

Based on results of the exposure assessment, exposure limits must be established for workers performing remedial excavation. The exposure limits are based on Occupational Safety and Health Administration (OSHA) permissible exposure limits (PEL). The exposure monitoring plan is summarized as follows:

- Level D PPE will be appropriate for on-site workers under normal working conditions.
- · Both workspace (on site) and perimeter (off site) air monitoring will be conducted.
- Air monitoring will proceed using a conventional photoionization detector (PID) to determine total VOC concentration, and using an Ultra-Rae PID, which is benzenespecific, to determine benzene concentration.
- If total VOC concentration in the workspace atmosphere exceeds an 8-hour, time-weighted average (TWA) of 20 parts per million (ppm) or a 15-minute, short-term exposure limit (STEL) of 100 ppm, PPE requirements will be upgraded to Level C, and it may be necessary to implement a modified work schedule. These levels are based on a maximum benzene concentration in gasoline of 5 percent by volume.
- On-site workers will be notified immediately if benzene is detected in the workspace atmosphere at a concentration exceeding 0.5 ppm, and wearing respirators with organic vapor cartridges will be recommended (i.e., recommendation will be to upgrade respiratory protection to Level C).
- If benzene concentrations in the workspace atmosphere exceed the 8-hour TWA PEL (1 ppm) or the OSHA 15-minute STEL (5 ppm), PPE requirements will be upgraded to Level C, and it may be necessary to implement a modified work schedule.
- If benzene concentrations in the workspace atmosphere exceed the TWA PEL (1 ppm), short-term exposure monitoring will be conducted. To determine short-term exposure, a minimum of five samples will be collected within a 15-minute period.
- If daily average benzene concentrations in the workspace atmosphere exceed the OSHA STEL (5 ppm), or benzene concentrations exceed the OSHA acceptable ceiling concentration (25 ppm), PPE will be upgraded to Level C, with either full-face respirators or powered air-purifying respirators and protective goggles.
- If benzene concentrations in the workspace atmosphere exceed the OSHA 8-hour TWA for a 40-hour work week (10 ppm), or benzene concentrations exceed the OSHA acceptable maximum peak for an 8-hour shift (50 ppm), work will be stopped immediately, the on-site representative will be notified, and workers will be requested to leave the work zone.
- If benzene concentrations along the site perimeter (off site) exceed the 15-minute STEL (5 ppm) or the TWA PEL (1 ppm), the exclusion zone will be extended beyond the property boundary.

If benzene concentrations along the site perimeter (off site) exceed the OSHA
acceptable ceiling concentration (25 ppm), work will be stopped immediately, and the
project on-site representative will be notified.

16.3 Engineering and Administrative Controls

Vapor control methods may be necessary during construction-related work in which VOC vapors are encountered. These controls include use of plastic sheeting on soil stockpiles, vapor suppressants, and supplied ventilation.

It is anticipated that Level D PPE will be appropriate for workers during future construction. If site conditions warrant, as described above, PPE will be upgraded to Level C.

In addition to respiratory protection practices, engineering controls and safe work practices will be employed. Engineering controls include barriers that prevent workers from unnecessarily entering work zones and use of recycled air conditioning in mobile equipment cabs. Safe work practices include monitoring wind direction and having workers stand upwind of VOC vapor sources whenever possible, or instituting a modified work schedule.

A natural control is that vapors originating within the KHID normally will be diluted by the prevailing northeasterly trade winds. If left undisturbed, surface soil (0 to 2 feet bgs) not impacted by VOCs provides a natural barrier, covering VOC-contaminated subsurface soil and groundwater, and thereby reducing potential for vapor emissions.

Because anaerobic degradation of petroleum products will continue in the area for many years, methane gas remains a potential problem for indoor workers within the KHID. In addition, TPH-g, TPH-d, and BTEX remain potential soil vapor COPCs in the area. HDOH therefore takes the most conservative approach when dealing with the vapor intrusion issue.

To ensure proper protection of inside workers from soil vapor intrusion, all existing buildings should be inspected for floor cracks and other areas that could allow a pathway for soil vapor. All cracks and pathways should be properly sealed with an appropriate epoxy sealant to prevent vapor intrusion.

While not under the purview of this document, modification of floors, major structural changes to existing buildings, or construction of new buildings may necessitate installation of vapor control measures such as a sub floor vapor barriers. This would necessitate proper characterization of the area and site-specific oversight by HEER.

If methane soil vapor intrusion issues have been identified, new vaults should be properly sealed to prevent soil vapor intrusion that could cause an explosion hazard during work in the vaults. Unsealed vaults should be tested for methane prior to entry.

16.4 Periodic Inspections and Preventive Maintenance

A key component of the plan is routine inspections and air monitoring. Accordingly, daily or more frequent (if appropriate) air monitoring will occur at all locations where exposure of on-site workers to hazardous vapors is possible (e.g., open excavations, soil stockpiles). PPE will be inspected for damage and defects before personnel don the PPE. If respiratory protection is required, a daily positive pressure respirator fit test will be performed at the start of each day, and filter cartridges will be replaced regularly.

Both the conventional PID and the benzene-specific Ultra-Rae PID require daily calibration. The conventional PID should be calibrated using a 100 ppm isobutylene standard. The Ultra-Rae PID should be calibrated using a 5 ppm benzene standard, and measurements of the standard will occur as needed to confirm that the calibration is maintained. Records of the recalibrations will be maintained.

16.5 Record Keeping and Reporting

Detailed records of workspace monitoring and changes to PPE requirements will be maintained. Daily monitoring results and sampling locations will be documented in field logs. Significant issues will be communicated to site workers on a regular basis. Major deviations from this EHE/EHMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and documented; complete Appendix B.8 for your records and send a copy to HDOH.

17.0 STORMWATER MANAGEMENT PLAN

The purpose of the stormwater management plan is to provide procedures to prevent stormwater runoff from coming into contact with contaminated soil or groundwater, and to provide contingencies in the event that such contact does occur. The principal hazards posed by stormwater runoff are direct exposure, gross contamination, and aquatic eco-toxicity. If contaminated stormwater is allowed to leave the construction site, downgradient human populations (the general public) and ecological receptors (marine flora and fauna in Kahului Harbor) could be exposed to COCs. Areas where these hazards potentially pose the greatest concern are where contaminated soil, contaminated groundwater, and free product have been encountered.

This plan describes the necessary measures for controlling stormwater within the area covered by this document during construction activities. Preventing stormwater from contacting contaminated media is the principal concern during future construction activities. Construction activities could expose stormwater runoff to contaminated media as follows:

- Subsurface excavation could expose stormwater to contaminated subsurface soil and/or groundwater.
- Stormwater could be exposed to excavated PCS or DCS stored temporarily in stockpiles.
- Although not anticipated, if dewatering is conducted that utilizes an on-site infiltration pit, stormwater could be exposed to contaminated groundwater.

17.1 Stormwater Management

If contaminated soil or groundwater is encountered during excavation, appropriate response actions will be taken that conform to HDOH and EPA regulatory guidelines. The response actions include ensuring that these media are not exposed to stormwater. Anticipated tasks associated with managing stormwater are summarized as follows:

Field oversight will be provided during excavation activities associated with construction.
 The purpose of the oversight is to identify contaminated media that could be exposed to stormwater runoff, and to provide guidance related to controlling stormwater at the site.

In addition, weather will be monitored throughout each work day for signs of approaching storms and/or heavy rains.

- Inspections of engineering stormwater controls will occur each day to ensure that contaminated media will not be exposed to stormwater runoff, and that contaminated stormwater will not leave the construction site.
- All construction activities—including clearing, grading, and excavation—that result in
 disturbance of 1 or more acres of total land area will accord with the conditions of an
 HDOH Clean Water Branch-approved NPDES NOI permit for stormwater discharge
 associated with construction activity. Conditions of the permit include preparation of a
 Construction Site Best Management Practices (BMP) Plan. For projects involving
 disturbance of less than

1 acre of land, an NPDES permit is not required; however, erosion controls or BMPs required or recommended by Maui County should be used at these disturbed areas.

17.2 Engineering and Administrative Controls Open Excavations

In the absence of engineering and administrative controls, PCS and/or groundwater exposed in open excavations could contact stormwater, thus potentially contaminating the stormwater with COCs. To prevent this, the following activities will occur:

- 1. Where possible, excavations will be backfilled as soon as practicable to limit the time they are open and potentially exposed to stormwater runoff and direct precipitation.
- Where possible, the edges of excavations will be bermed, thus preventing stormwater runoff from entering.
- Open excavations will be inspected each day to minimize potential for direct precipitation to cause the excavation to overflow.

Soil Stockpiles. In the absence of engineering and administrative controls, excavated PCS stored in stockpiles could contact stormwater, thus potentially contaminating the stormwater with COCs. To prevent this, the following activities will occur:

- Soil stockpiles will be placed on plastic sheeting, and the sheeting will be bermed at the edges, thus preventing contact with stormwater runoff.
- At the end of each day, or in the event of a storm, the soil stockpiles will be covered with
 plastic sheeting, thus preventing contact with direct precipitation.
- The soil stockpiles will be inspected each day to ensure that the plastic sheeting is intact.

Dewatering Infiltration Pits. In the absence of engineering and administrative controls, the water in infiltration pits used for on-site dewatering could contact stormwater. To prevent this, the following activities will occur:

- Where possible, infiltration pits will be backfilled as soon as practicable to limit the time they are open and potentially exposed to stormwater runoff and direct precipitation.
- Where possible, the edges of infiltration pits will be bermed, thus preventing entry of stormwater.

 Infiltration pits will be inspected each day or more frequently as appropriate to minimize potential for direct precipitation to cause the pit to overflow.

Erosion and sediment control measures will be in place and functional before construction activities commence. These measures will be maintained throughout the construction period. If stormwater discharge from the site is anticipated, the following preventive measures may be taken:

- Stormwater flowing towards active construction areas will be diverted using appropriate control measures, as practicable.
- Erosion control measures will be designed to handle the size of the disturbed or drainage area in order to detain runoff and trap sediment.
- · Height of the property boundary can be increased using sandbags.
- Additional silt fencing will be added to affected property boundaries, if warranted.
- Berms surrounding soil stockpiles will be increased as necessary.
- Moveable booms will be available to contain spills.
- Absorbent pads will be employed if free product is observed in stormwater runoff.

17.3 Stormwater Contingency

Open Excavations. During construction activities, stormwater could come into contact with contaminated soil or groundwater exposed in excavations for utility corridors or other subsurface structures. If a storm event is more severe than anticipated and could result in entry of stormwater to an excavation or overflow of water from an excavation, the following actions may be taken:

- Height of the berm along the edges of the excavation may be increased to prevent stormwater runoff from entering the excavation.
- 2. If feasible, stormwater runoff may be diverted away from the excavation.
- The excavation may be covered with plastic sheeting to prevent entry of direct precipitation or stormwater runoff.

Soil Stockpiles. During construction activities, stormwater could contact PCS stored in stockpiles. If a storm event is more severe than anticipated and could result in stormwater runoff coming into contact with stockpiled soil or in damage to the plastic covering the stockpile, the following actions may be taken:

- Berms surrounding soil stockpiles that are damaged by a storm will be repaired.
 Additional plastic sheeting may be necessary.
- Height of the berm surrounding the stockpile may be increased.
- If feasible, stormwater runoff may be diverted away from soil stockpiles.
- Plastic sheeting covering soil stockpiles that is damaged by a storm will be repaired or replaced. Additional plastic sheeting may be necessary.

Dewatering Pits. During construction activities, stormwater could come into contact with contaminated groundwater exposed in dewatering pits, if dewatering become necessary (not anticipated). If a storm event is more severe than anticipated (i.e., capable of overcoming engineering controls) and could result in stormwater runoff entering a dewatering pit or water overflowing a dewatering pit, the following actions may be taken.

- Height of the berm along the edges of the dewatering pit may be increased to prevent stormwater runoff from entering the excavation.
- If feasible, stormwater runoff may be diverted away from the dewatering pit.

Stormwater Run-on. During construction activities, stormwater run-on could enter the property and come into contact with contaminated soil or groundwater. If a storm event is more severe than anticipated and could result in stormwater run-on entering the property, the following action may be taken:

Height of the property boundary can be increased using sandbags.

Off-Site Discharge of Contaminated Stormwater. If, during construction activities, stormwater comes into contact with contaminated soil or groundwater and that stormwater is not contained, contaminated stormwater could discharge off site. If a storm event is more severe than anticipated and could result in discharge of contaminated stormwater off site, the following actions may be taken:

- Height of the property boundary can be increased using sandbags.
- If feasible, stormwater runoff may be diverted away from the property boundary.
- Additional silt fencing may be added at affected property boundaries.
- Moveable, petroleum-absorbent booms may be deployed along the affected property boundary.
- Absorbent pads may be used if free product is observed on stormwater runoff.
- Moveable, petroleum-absorbent booms may be deployed in front of off-site storm drain entrances in the immediate vicinity of the property.

17.4 Inspection and Preventive Maintenance

A key component of the plan is routine inspections. Accordingly, all locations of possible contact of stormwater with contaminated media (e.g., open excavations, soil stockpiles, dewatering pits) should be inspected daily. During storm events, inspections should occur to minimize possibilities of stormwater runoff, contact of direct precipitation with soil stockpiles, and entry of stormwater runoff into open excavations or (if present) infiltration pits. If stormwater run-on occurs, accumulated water on the site should be inspected for visual and olfactory evidence of contamination (e.g., petroleum hydrocarbon sheen, discoloration, free product, petroleum hydrocarbon odors).

Storage containers, vehicles, and heavy equipment that could contact stormwater will be stored within one area and will be inspected regularly to ensure proper functioning. Signs of deterioration or leaks that could lead to an unanticipated release of petroleum-based products or hazardous substances will be reported immediately, and corrective measures will be taken.

General site inspections should occur periodically and should be documented. Engineering controls should be inspected and repaired as necessary. During prolonged rainfall, daily inspections may be necessary. Accumulated sediment at the silt fence should be removed once accumulation reaches one-third the height of the fence. If damaged, the silt fence should be repaired or replaced within 24 hours. During storm events, stormwater runoff will be inspected to assess whether it has been impacted by COCs or by contaminants associated with construction activities.

17.5 Record Keeping and Reporting

Detailed records of storm events, inspections of engineering controls, and response activities need to be maintained. Significant issues also need to be communicated to site workers and the project on-site representative on a regular basis. Reporting requirements of the NPDES stormwater discharge permit need to be followed strictly. Major deviations from this EHE/EHMP should be approved by HDOH prior to implementation. Minor deviations from the EHE/EHMP are acceptable based on field discretion. All deviations should be explained and documented; complete Appendix B.9 for your records and send a copy to HDOH.

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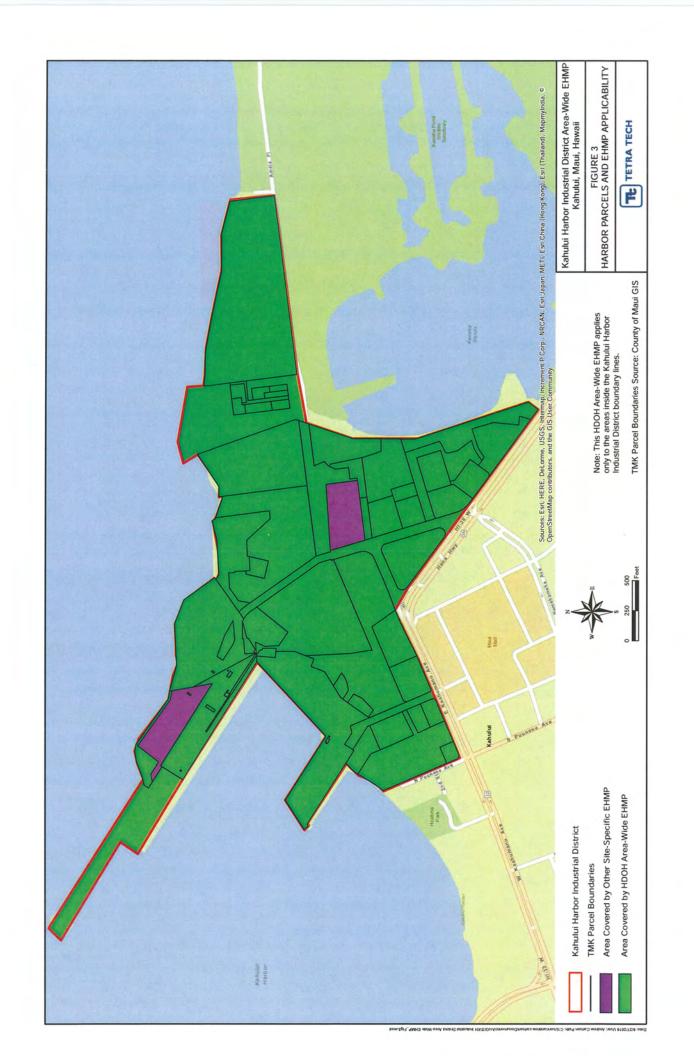
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Figures

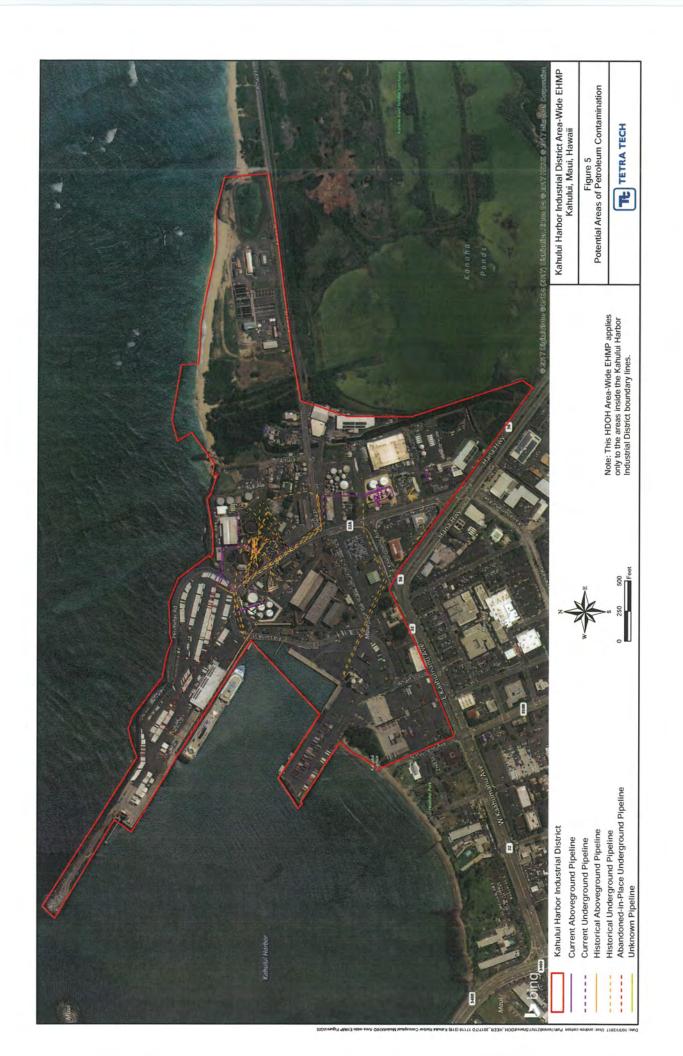
Environmental Hazard Management Plan











Jaucas sand, saline, 0 to 12 percent slopes, MLRA 163

Water > 40 acres



Appendix A

Environmental Hazard Management Plan
GUIDELINES FOR LANDOWNERS, TENANTS,
UTILITIES COMPANIES, AND CONSTRUCTION CONTRACTORS

Environmental Hazard Evaluation Environmental Hazard Management Plan Kahului Harbor Area

GUIDELINES FOR LANDOWNERS, TENANTS, UTILITIES
COMPANIES, AND CONSTRUCTION CONTRACTORS

Prepared by HDOH

Version 1

June, 2018

These guidelines are for landowners, tenants, utility companies, and construction contractors involved in construction projects within the Kahului Harbor District (KHID) of Kahului, which is described in more detail below. They describe controls that provide protection from oil, oily soil and water, debris-contaminated soil (DCS), metals and pesticide-contaminated surface soils, and soil vapors. They will guide you through three steps on how to:

- 1. Determine if your project is within the area covered by the guidelines (see Figure 3 in EHE/EHMP).
- 2. Determine if you should consider these guidelines
- If you follow these guidelines, use them as an aid in determining the controls you need to conduct your specific project safely and protect the environment.

Soil and groundwater within the KHID have been impacted by oil released from historical tanks and buried pipelines, and from contaminated fill material. Locally, surface soils can be contaminated by sewage, metals and pesticide-impacted soil (including organochlorine pesticides, dioxins/furans, lead, and arsenic).

Remediation has been undertaken at some properties within the KHID, and many areas have not been characterized. Because remedial activities did not remove all soil and groundwater contamination and undiscovered contaminated soil or groundwater may be present, appropriate precautions must be taken so that workers involved in excavating within the area are not exposed to risks related to remaining contamination on site.

These guidelines explain how parties performing construction work within the KHID shown on the map on Figure 3 can protect those who may be exposed to contamination in soil and groundwater.

Disclaimer:

The procedures, information, guidelines, and sample hazard management plans referred to herein are not intended to be a comprehensive description of all of the rules, regulations, laws, and other requirements applicable to a construction project. They are only intended to provide general information, and should not be used in place of appropriately qualified personnel. Each landowner, tenant, and construction contractor is responsible for complying with all applicable rules, regulations, laws, and other requirements, and for preparing his/her/its own hazard management plans for his/her/its own site-specific project.

Determine if you should consider these guidelines for work within the KHID:

- If you are landscaping, paving, or excavating to a depth of less than 2 feet, you probably do not need to consider these guidelines for potential oil contaminants. However, be vigilant for any evidence of oil, oily soil, oily water, soil containing debris, bagasse, or sewage. Surface soils from former railroad rights-of-way (potential pesticides, arsenic, and dioxins/furans) or from directly adjacent to building or tank foundations (potential lead, arsenic, organochlorine pesticides) are also suspect for contamination and warrant evaluation or special handling. Consult with the Hazard Evaluation and Emergency Response (HEER) Office if you encounter any of these materials.
- If you are excavating within 3 feet of a current or former building or aboveground storage tank (AST) build prior to 1988 (Figure 4), be aware that the surface soil may contain termiticides such as organochlorine pesticides, rodenticides, such as arsenic, or lead from lead-based paint. Consider these guidelines when implementing proper procedures to protect construction workers, tenants, visitors, or customers from hazards related to historical uses and applications of pesticides and lead-based paint. This type of contamination is likely not apparent, although paint-chips may readily be observed in the soil. At a minimum, this would include need to place excavation material (i.e. surface soils) in a temporary stockpile on plastic adjacent to work, and replace it back into the excavation area with a soil or gravel cover. This soil may not be reused offsite as fill, but can be disposed off at an approved landfill. Alternately, these soils could be appropriately sampled (DU-MIS) and tested for contaminants to determine need for any special handling precautions.
- If you are excavating deeper than 2 feet, replacing or repairing belowground utilities, consider these guidelines when implementing proper procedures to protect construction workers, tenants, visitors, or customers from hazards related to historical releases or fire and explosion. Check with the HEER Office for information and support.
- If you are replacing floor slabs, replacing or substantially modifying foundations, or constructing new buildings, contact the HEER Office to determine whether a site-specific assessment is required.

Some potential hazards that can occur during excavation and how they can be prevented are described below.

During excavations, workers may be exposed to oil, pesticides, dioxins/furans, or metals remaining in the soil or on groundwater. **Site-Specific Health and Safety Plans (HSP)** (which require appropriate protective clothing, equipment, and training) may be needed.

Backhoe excavation





Backhoe Excavation



Oil might seep from the side of an excavation and cause an oil sheen. It may be necessary to manage the oily water.

Contaminated soil may be inadvertently spread around the work area. Also, clean and contaminated soil could be mixed, increasing the volume of soil that must be disposed of.

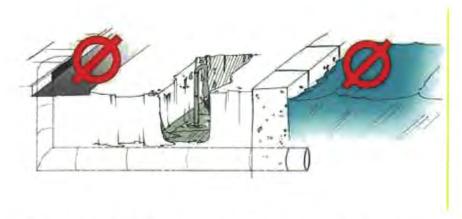
Site-Specific Environmental Hazard Management Plans (EHMP) with a Soil Management Plan approved by the HEER Office may be needed to prevent spreading oily soil or otherwise contaminated soil (Appendix B.5). Separate clean soil from contaminated soil. Always cover the contaminated soil stockpile with plastic sheeting and inspect sheeting for holes or degradation on a regular basis.

Oil might seep from the side of an excavation and cause oil sheen. It may be necessary to manage the oily water.

Oil or contaminated water or soil extracted from excavations could be released and reach surface waters, including the ocean. Releasing any oil to surface waters, storm drains, or the harbor or the ocean is illegal.

Avoid creating preferential pathways that would allow oil, or contaminated soil and groundwater to reach the ocean.

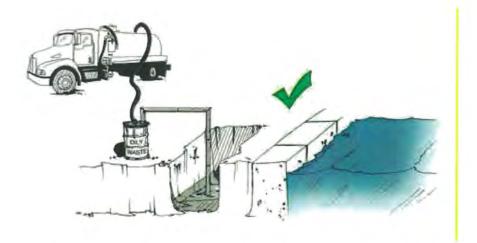
Do not discharge extracted groundwater unless it meets the requirements of, or is approved by the HEER Office and other applicable government agencies. Prepare and follow a **Groundwater Management Plan (Appendix B.6)** and obtain necessary permits or approvals from the HEER Office and other applicable government agencies to appropriately manage any oil and oily water that is encountered.



In some instances, oily water must be removed from excavations. Do not discharge to the ocean or storm drains.



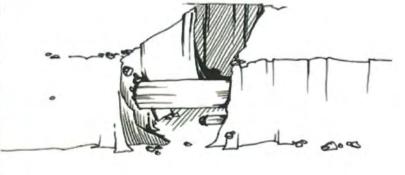
Upon acquisition of applicable government approval, contaminated water can be discharged into a newly excavated pit/trench within the impacted area.



Upon acquisition of applicable government approval, oily water can be hauled for off-site disposal.

Abandoned petroleum product pipelines or underground storage tanks (UST) may be discovered in excavations. If these are discovered, contact the HEER Office. If you need to remove a segment of an abandoned pipeline, develop an Inactive Pipeline Removal Plan (Appendix B.3), and tap, drain, cut, and cap the pipeline in accordance with the plan. Obtain HEER Office approval if you undertake removal.





Exposed abandoned pipelines in the harbor area

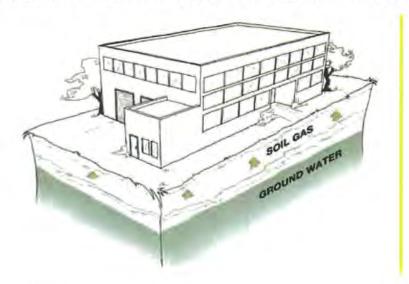


Workers tapping and draining abandoned pipelines

Methane or other soil vapors can intrude into buildings. Vapor intrusion can occur when the floors are modified or major structural changes are made to buildings, resulting in need for vapor barriers. New buildings may also need vapor barriers to meet current HEER Office requirements. Accumulation of vapors can also lead to a fire or explosion hazard when exposed to sparks. Consult the HEER office on guidance regarding identifying fire and explosion hazards.

If you are modifying floors, constructing a new building, or making major structural changes to existing buildings, you may need to conduct a soil gas investigation and if appropriate, install control measures such as floor vapor barriers. This will require site-specific oversight by the HEER Office.

When modifying floors, be alert for evidence of existing vapor barriers or vapor mitigation systems. Do not compromise systems without prior consultation with the HEER Office.



Soil Vapor Figure

Large-scale excavations may emit vapors and odors.

An **Air Monitoring Plan** may be required for excavations. Develop a Vapor Management Plan (Appendix B-8). Contact the HEER Office for site-specific oversight to determine requirements and obtain any needed approvals.



Large-scale excavation in a harbor area

Emergency responses to releases of oily soil or water.

Accidental releases of oil, oily soil, DCS, or oily water can occur during construction. Sudden releases can also occur if a water line or other utility fails. Develop a Construction Activities Release Response Plan (Appendix B-2) that describes how to deal with an accidental release of oil, oily soil, or oily water during construction.



Emergency responses to releases of oily soil or water.

HOW TO PROCEED

Planned Projects:

Determine whether your project falls under these guidelines. If you have any questions, contact the HEER Office. (See Contacts on page 11.) If your project does fall under these guidelines, complete the following steps:

- Notify the HEER Office as soon as possible about your project. The HEER Office can provide information and support.
- 2. Determine whether you need the support of an environmental consultant.
- You are encouraged to read the attached "Project Implementation Form" because it
 provides a useful checklist of the items you should consider. Filling out the form will help
 the HEER Office determine how to support you. If necessary, have the HEER Office
 assist you in completing the form.
- 4. Consult with the HEER Office as needed.
- 5. Determine what steps you should take to protect your workers and the environment during construction, and have a qualified environmental professional complete the needed hazard management plan forms. Specific types of plans are listed on pages 4 through 7. Sample plans that can be considered by your environmental professional are at the back of these guidelines.
- 6. Proceed with your project.
- As appropriate, keep the HEER Office informed.

Unplanned Release Responses:

If any releases associated with your project occur, you should act in accordance with your Construction Activities Release Response Plan. If you discover a release of oil, oily soil, or oily water within the property where you are working, do the following:

- Review release reporting requirements (described in the HEER Technical Guidance Manual [TGM]), and Section 9.0 of this EHMP and if the release is determined to be reportable, notify the HEER Office immediately.
- 2. Notify the landowner or tenant for whom you are working.

HEER Office Contact:

HEER Office:

Steve Mow

e-mail: steven.mow@doh.hawaii.gov

phone: (808) 586-4249

The HEER web-site for Spill Reporting and Emergency Response is: http://hawaii.gov/health/environmental/hazard/spill.html

DISCLAIMER:

The procedures described herein are not intended to be a comprehensive description of all requirements (e.g., federal, state, and local) with which landowners/tenants and others must comply while undertaking a construction project.

-	Kanului Harbor Industrial District, Kanului, Mau
Filling out this form will help HEER determine	what support to provide.
PROJECT IMPLEMENTATION FORM:	
Project:	
Project Description:	
Completed By (Name):	
Title/Company:	
Phone Number:	e-mail:
Expected Date of Construction:	Date Form Completed:
Are you considering land use other than Comm	nercial or Industrial?
YES:NO:	
If Yes, explain:	
Are you considering Excavation below 2 Feet?	YES: NO:
Do you need the support of an environmental of	company? YES: NO:
If yes, who do you intend to use?	
Other Comments:	

Questions continued on next page

QUESTIONS	ANS	WERS	Useful remarks by HEER and/or Tenant/Contractor
Have you reviewed the site background information available in the public record maintained by the HEER Office:	YES	NO	Describe reports and information sources that may be useful:
Site Characterization Reports?			
Environmental Hazard Management Plan?			
Monitoring Reports?			
 Appropriate As-built Reports describing past cleanup and construction reports? 			
Have you determined if your project may result in exposure to oily soil, DCS or potentially harmful soil gases:	YES	NO	Further describe the hazards that may be encountered during construction:
During construction?			
 At the completion of construction (of a new building for example)? 			
Do you understand potential hazards to:	YES	NO	Refer to Environmental Hazard Management Plan, as necessary, for more details.
Construction workers?			
Building occupants?			
Visitors or customers?			
Ocean water, storm drains, etc.?			
Do you understand the requirements and your responsibilities to prevent hazards from occurring?			
 Site-specific Health and Safety Plan? 			

QUESTIONS	ANSW	/ERS	Useful remarks by HEER and/or Tenant/Contractor
Free Product Management Plan	YES	NO	
 Construction Activities Release Response Plan? 			
• Inactive Pipeline Removal Plan?			
Air Monitoring Plan?			
Soil Management Plan?			
Groundwater Management Plan?			
Are you undertaking additional environmental investigations for the project planning or implementation purposes:	YES	NO	What HEER support do you need in undertaking investigations?
Soil and groundwater?			
1. Soil gas?			
Based on soil gas investigation results, are you preparing designs for	YES	NO	What HEER support do you need in preparing designs?
soil gas controls for buildings?			
Are you complying with:	YES	NO	Remarks:
 Landowner's environmental requirements? (These may be included in lease agreements or other legal documents) 			
Are the construction workers that			
may encounter contaminated soil or	YES	NO	
groundwater 40 hour HAZWOPER trained?			

¹ Either NO or NOT NEEDED.
² Routine air monitoring is included in the Health and Safety Plan. This plan is intended for large-scale excavations (i.e., down to five feet or deeper and over an area exceeding one half acre, or as required by the HEER Office). ³See sample plans at the back of these guidelines.

What is the HEER Office's role?

For Planned Projects, the HEER Office may be able to:

- Provide oversight and technical support for dealing with oil, oily soil, or otherwise contaminated soil, water, and soil vapors, and for implementing the Environmental Hazard Management Plan (EHMP).
- Suggest possible reimbursement of reasonable incremental environmental costs from known responsible parties (RP).
- Develop guidelines for consideration when implementing the EHMP.
- Monitor effectiveness of the EHMP in properly dealing with environmental issues during subsurface construction. This may require the HEER Office to access monitoring points on your parcel.

If an accidental release of oil occurs, and oily soil, or otherwise contaminated soil and water must be addressed, the HEER Office may be able to:

- Participate as a member of the emergency response team.
- Assist in providing the appropriate method(s) for proper management of oil, oily soil, and oily water.

What type of HEER Office technical and logistical support can I expect?

- The HEER Office's Project Manager is available to provide general guidance on how to comply with the EHMP, and to assist with the logistics of addressing oil, oily soil and water, or otherwise contaminated soil, groundwater, and soil vapors.
- The HEER Office will provide sample plans that can be considered by your environmental consultant in preparing plans that may be required for your project.
- The HEER Office can help identify environmental companies that can perform support services. The landowner or tenant and utilities companies are responsible for directing the work of the professional.

What are the responsibilities of Landowners?

The landowner is responsible for the following:

- Complying with applicable federal, state, and local laws and regulations
- Determining whether historical activities at the site may have resulted in release of possible non-petroleum and/or petroleum contaminants of concern (COC)
- Verifying that the site has been adequately characterized by identification of the nature and extent of contamination
- Identifying any site conditions requiring appropriate protection of human health and the environment that must be added to the plan template of this EHMP
- Complying with requirements of the EHMP
- Developing/complying with a Management Plan consistent with these guidelines
- Communicating requirements of the EHMP and these guidelines to whoever is undertaking construction work (e.g., excavation, building construction, etc.)
- Notifying the HEER Office about construction project plans within the KHID, contacting the HEER Office for support to help address requirements of the EHMP, and cooperating with the HEER Office by providing timely information and site access
- Ensuring appropriate hazard management plans are prepared and implemented, and providing appropriate documentation to the HEER Office
- Keeping the HEER Office informed regarding construction work
- Notifying the HEER Office of any accidental release of oil, oily soil, or oily water or DCS.

What is the Tenant's responsibility?

Any tenant undertaking excavation, building re-construction, or new construction should coordinate with the landowner; comply with applicable federal, state, and local laws and regulations; and ensure adherence to the EHMP and consideration of these guidelines.

What are the responsibilities of the Utilities Companies and Construction Contractor?

The Utilities Companies and Construction Contractors undertaking excavation, building reconstruction, or new construction work should (as appropriate to the size and nature of each project) operate under the appropriate Health and Safety Plans (HSP), implement air monitoring, manage soil and groundwater in accordance with the EHMP, and consider these guidelines. Utilities Companies and Contractors must identify tasks/actions not already covered in the plan templates included in the EHMP. The Contractor should request that the landowner make appropriate changes to the plan(s) prior to commencement of site work.

Area-Wide EHE/EHMP Document Kahului Harbor Industrial District, Kahului, Maui

Contacts:

HEER Office:

Steve Mow

e-mail: steven.mow@doh.hawaii.gov

phone: (808) 586-4249

The HEER web-site for Spill Reporting and Emergency Response is:

http://hawaii.gov/health/environmental/hazard/spill.html

Environmental Statutes and Guidelines:

The following environmental statutes, regulations, and guidance documents, or any recent updates to these, may apply:

- The Hawaii Environmental Response Law (Hawaii Revised Statutes [HRS] Chapter 128D) and the State Contingency Plan (Hawaii Administrative Rules [HAR] 11 451 1 through 11 451 24). These outline legal requirements for protecting human health and the environment from releases or threatened releases of hazardous substances, including oil.
- The Hazard Evaluation and Emergency Response Office Technical Guidance Manual (TGM) for implementation of the State Contingency Plan (Interim Final, June 21, 2009).
 This provides many helpful guidelines and procedures to comply with the Hawaii Environmental Response Law and the State Contingency Plan.
- Hawaii Water Quality Standards (HAR Title 11, Chapter 54). This specifies standards for water quality discharge.
- Hawaii Ambient Air Quality Standards (HAR Title 11, Chapter 59). This specifies air quality standards. Specific standards may apply during soil excavation, remediation, and construction, or during other activities.
- Hawaii Occupational Safety and Health Standards (HAR Title 12, Chapter 99). This
 specifies health and safety requirements during remedial work and construction.

In addition to the TGM, current technical guidance issued by the HEER Office indicating how it can enforce requirements of the EHMP includes the following:

- Screening Environmental Hazards at Sites with Contaminated Soil and Groundwater (December 2011).
- Guidance Fact Sheet For Use When Petroleum Contamination is Encountered During Subsurface Soil Excavation (Interim Final, November 2008).
- Long-term Management of Petroleum Contaminated Soil and Groundwater (June 2007).
- EAL Surfer (Fall 2011).

Contact the HEER Office if you are interested in the latest version of these documents.

Appendix B

Reporting Forms

- B.1 Written Follow-Up Notification Form
- B.2 Health and Safety Plan
- B.3 Construction Activities Release Response Plan
- B.4 Inactive Pipeline Removal Plan
- B.5 Soil Management Plan
- B.6 Groundwater Management Plan
- B.7 Free Product Management Plan
- B.8 Vapor Management Plan
- B.9 Stormwater Management Plan

The purpose of the reporting forms are to ensure consistency between actions taken and the associated management plans. Add notation to indicate all deviations from the management plans.

PLEASE PROVIDE THE FOLLOWING INFORMATION

Incident Case No.:			
Contact Information			
Caller's Information:			
Name:			
Address:			
City:	State:	Zip code:	
Telephone Number:			
Owner's Information:			
Name:			
Address:			
City:	State:	Zip code:	
Telephone Number:			
Operator's Information:			
Name:			
Address:			
City:	State:	Zip code:	
Telephone Number:			
Name of contact person at the fa	cility or vessel where the re	elease has occurred:	
Telephone Number:			

Chemical Abstra	ets Service (CAS) Nur	mber (if applica	able):			
Approximate qua	ntity of the hazardous	substance rele	eased:			
Incident Inform	tion					
Location of the re	lease:					
Brief description	of the release:					
Media into which	the release occurred	or is likely to o	ccur (indicate	all those that	apply):	
☐ Air ☐ Soil	Groundwater	☐ Concrete	☐ Asphalt	☐ Stream	Ocean	Other
Cause of the rele	ase:					
Date of the relea	se:					
Time of the relea	se:					
Duration of the re	lease:					
Time when person	n in charge of constru	action learned of	of release:			
Source of the rel	ease:					
9	nation					
Response Infor						

Names of other federal, state, or local government agencies that have been notified of the release Health Information Known or anticipated acute health risks:		
Known or anticipated acute health risks:		The state of the s
Known or anticipated chronic health risks:	Health Information	
Advice regarding medical attention necessary for exposed individuals: Potential impacts on public health or welfare: Potential impacts on the environment: "I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information is true accurate and completion in the information in the information is true accurate and completion in the information in the	Known or anticipated acute health risks:	
Potential impacts on the environment: "I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true accurate and completion in the information is true accurate. Printed Name:	Known or anticipated chronic health risks:	
"I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true accurate and comples a large submitted information is true accurate. Date: Date:	Advice regarding medical attention necessary	y for exposed individuals:
"I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the submitted information is true accurate and complestignature:	Potential impacts on public health or welfare:	
information submitted and believe the submitted information is true accurate and compl Signature: Date: Printed Name:		
information submitted and believe the submitted information is true accurate and compl Signature: Date: Printed Name:		
Printed Name:	"I certify under penalty of law that I information submitted and believe the s	have personally examined and am familiar with the submitted information is true accurate and comple
	Signature:	Date:
	Printed Name:	

B.2 Health and Safety Plan

Prepared By:	Health and Safety Plan
Organization:	Environmental Hazard Management Plan Kahului Harbor Industrial District
Signature:	Version: Reference:
	Date:
Project Name:	
Project Location:	

Parties may use this sample as a basis for preparing their own site-specific plans.

Revise this Sample Plan by:

- 1. Completing Table 2 with names and telephone numbers.
- Attaching a Figure 1 map below at conclusion of Appendix B.2 to show locations of the work site and nearest medical facilities and hospitals. Alternatively, ensuring that on-site workers know locations of closest medical facilities
- 3. Reviewing the Occupational Safety and Health Administration (OSHA) regulations to ensure that hazard levels described in Table 1 are still current.
- 4. Including any additional specific instructions.

Implement this Plan by:

- 5. Warning on-site workers that they may encounter oil, oily water, and oil-impacted soil in belowground excavations.
- 6. Making the on-site workers aware of need for proper safety procedures, and familiarizing them with the contents of this plan.
- 7. Making sure a copy of this completed plan is present at the construction site.

Note: If you are dealing with hazardous chemicals other than oil, oily water, and oilimpacted soil, you may need additional hazardous Chemical Response Plans and Procedures not covered in this plan.

Delete this box after completing this plan.

2. INTRODUCTION

Soil, groundwater, and vapor impacted by contaminants (metals, TPH, BTEX, PAHs, dioxins/furans, pesticides), and oil may be encountered during excavation projects. This Health and Safety Plan (HSP) provides information regarding potential hazards that may be encountered (Table 1 below), specifies protective measures and necessary monitoring (Table 1 below), and lists emergency contact information (Table 2 below).

3. WORKER AWARENESS

On-site workers who may be exposed to soil, groundwater, and vapor impacted by contaminants (metals, TPH, BTEX, PAHs, dioxins/furans, pesticides), and oil should have the appropriate and current level of Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard (29 Code of Federal Regulations [CFR] 191 0.120) training.

A daily on-site tailgate safety meeting should occur. These meetings should include a discussion of the day's work and an analysis of hazards that may be encountered.

If site or work conditions change, this HSP may have to be amended accordingly. Apprise onsite workers of any change

4. SITE CONTROL AND GENERAL HEALTH AND SAFETY REQUIREMENTS

Minimize exposure of workers and others to potential hazards by restricting workplace access.

Do not smoke, eat, or drink during and after entering the work zone. Conduct these activities upwind and outside of the work zone after first washing hands.

Avoid skin contact with oil, contaminated soil, groundwater, and vapor, and avoid inhalation of dust particles.

5. WORKSPACE AIR MONITORING AND ACTION THRESHOLDS

Monitor workspace air conditions during work activities to verify that safe conditions are maintained by comparing measurements to the action levels in Table 1.

If action levels are exceeded, take the actions listed in Table 1 or others, if necessary.

Use the field monitoring devices listed in Table 1, or equivalent, to monitor workspace air conditions.

Acute exposure to elevated concentrations of these constituents listed in Table 1 may cause the following symptoms, among others:

Lead:

Lead is a potent, systemic poison. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy. Signs of encephalopathy are:

- Seizures
- coma
- cardiorespiratory arrest.

Short term occupational exposures of this magnitude are highly unusual, but not impossible.

Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower Appendix B B.2-2 doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

Arsenic

- Dermatitis/hyperpigmentation of skin
- · Peripheral neuropathy
- Gastrointestinal disturbances
- Respiratory irritation

Petroleum Hydrocarbons:

- Abnormal eye and nose irritation Dizziness
- Headache
- Giddiness
- Nausea
- Abnormal fatigue.

Dioxins/Furans

- Eye irritation
- Allergic dermatitis
- Chloracne

ď

Technical Chlordane

- Blurred vision
- Confusion
- Delirium
- Cough
- Abdominal pain
- Nausea
- Vomiting
- Diarrhea
- Irritability
- Tremor
- Convulsion
- Anuria
- Inability to coordinate voluntary muscular movements

If any of these symptoms are observed during or following construction work, seek help from a physician.

Table 1: Action Levels

Contaminant	Medium/Hazard	Monitoring Instrument (See HEER 2009 for more information)	Monitoring Instructions	Action Levels and Applicable Actions (See OSHA for more information)
			Take readings in excavations while	<5% Lower Explosive Limit (LEL): No explosive hazard. Proceed with caution.
Methane	Air/Flammability	Combustible gas indicator	work is ongoing to determine if flammable vapors are present.	> 5% LEL: Potential explosion hazard. Exit area immediately. Contact Health and Safety Manager (Table 2) for further direction.
TPH as gasoline TPH as diesel TPH residual Benzene Toluene Xylenes Naphthalene, HVOCs	Air/Inhalation	Photoionization detector(PID) with I0.6 electron volt (eV) Lamp	Monitor breathing zone while work is ongoing. Compare action thresholds to time-averaged breathing zone measurements.	<0.5 parts per million by volume (ppmv): Proceed with caution. 0.5 to 10 ppmv: Level D, use benzene-specific detector (see below).
Benzene		Draeger Benzene-specific detector tube (if necessary; see above)	Deploy benzene- specific detector tube for benzene if PID levels exceed 0.5 ppmv.	<0.5 ppmv: Level D personal protective equipment (PPE) >0.5 ppmv: Exit area and consult Health and Safety Manager (Table 2) for further direction.
TPH as gasoline TPH as diesel TPH residual Benzene Toluene Xylenes Naphthalene Metals, Dioxins/Furans	Soil(dust)/Inhalation	None (visual) – inspect workspace air for fugitive dust caused by work activities or high winds.		Evacuate area i visible fugitive dust is observed and cannot be readily mitigated. Contact Health and Safety Manager (Table 2) for further direction.

Contaminant	Medium/Hazard	Monitoring Instrument (See HEER 2009 for more information)	Monitoring Instructions	Action Levels and Applicable Actions (See OSHA for more information)
Lead	Soil(dust)/Inhalation and Ingestion	Mixed cellulose Ester (MCE) Filter cartridge 25 micron	Personal MCEs and/ or area sampling in the breathing zone, sampling upwind and downwind inspect workspace air for fugitive dust caused by work activities or high winds.	Respirator use: if lead > 30 μg/m³ for 8-hour TWA Respirator upgrade: If > 0.5 mg/m³ half mask air-purifying respirator with high efficiency filters or half-mask supplied - air respirators operated on demand (negative pressure) mode PEL = 50 μg/m³ Other protective clothing: >200 μg/m³ for 8-hour TWA medical surveillance: If exposed to > 30 μg/m³ for more than 30 days in any consecutive 12 month and if blood lead is > 40 μg/dl.

If workers experience any of the above symptoms while conducting work involving exposure to oil, oily water, and oil-impacted soil, they should stop work, leave the work area, and consult the Health and Safety Manager (Table 2).

6. PROTECTIVE CLOTHING

A minimum of Occupational Safety and Health Administration (OSHA) Level D Personal Protective Equipment (PPE) should be used for activities involving disturbance, movement, sampling, or management of oil, oily water, and oil-impacted soil. Level D PPE consists of the following:

- Safety glasses
- Hard hat
- Surgical (rubber or nitrile) gloves
- Coveralls or full-length pants
- Boots with chemical-resistant steel toe and shank.

Additional PPE, such as respirators, may be required in response to project-specific hazards or unusual conditions, such as possible close contact of workers with oil seeping from soils or floating on groundwater.

7. EMERGENCY CONTACTS

Table 2: Emergency Contacts

Organization	Purpose	Phone
Contractor-designated Health and Safety Manager Name:	Hazarous work conditions	()
For emergencies: Fire, Ambulance, or Police		911

8.0 REFERENCES

State of Hawaii Department of Health (HEER). 2009. Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan, Interim Final. June 21.

Occupational Safety and Health Administration (OSHA), 29 Code of Federal Regulations (CFR) Sections 1910 and 1915.12 (b)(3).

Figure 1 Site and Hospital Map (Insert appropriate map)

B.3 Construction Activities Release Response Plan

Prepared By: Organization:	Construction Activities Release Response Plan
Name:Signature:	Environmental Hazard Management Plan Kahului Harbor Industrial District
oignature.	Version:
	Reference:
	Date:
Project Name:	
Project Location:	

Parties may use this sample as a basis for preparing their own site-specific plan.

Revise this Sample Plan by:

- 1. Completing Tables 1 through 3.
- 2. Checking to make sure the Section9.1 notification requirements are current.
- Including any additional specific instructions.

Implement this Plan by:

- Warning on-site workers that they may encounter oil, oily water, oil-impacted soil, and debris-contaminated soil in belowground excavations.
- Making the on-site workers aware of proper response procedures and familiarizing them with the contents of this plan.
- Making sure a copy of the completed plan is present at the construction site.
- 4. Ensuring that on-site workers are familiar with surface drainage patterns, presence and flow directions of storm drains that could direct releases to harbor waters, locations of storm drain outlets to the harbor that may need to be protected with oil booms or other measures, potential locations for emergency storage tanks, etc. Obtain further information on these conditions from HEER, if necessary.

Additional details for completing this form are in Sections 9 and 11 of the EHMP.

Submit a copy of this form to HEER Office if contamination is encountered during subsurface activities.

Note: If you are dealing with hazardous chemicals other than oil, oily water, and oilimpacted soil or DCS, you may need additional hazardous Chemical Response Plans and Procedures not covered in this plan.

Delete this box after completing this plan.

1. INTRODUCTION

This Construction Activities Release Response Plan (Plan) describes how to proceed in the event of an unplanned discovery of, or accidental release of oil, oily water, or oil-impacted soil.

On-site workers must minimize the possibility of spills and releases of oil, oily water, and oil-impacted soil during excavation by:

- Familiarizing themselves with the site conditions
- Implementing appropriate Health and Safety, Soil and Groundwater Management Plans
- Being prepared at all times to encounter and manage oil, oily water, and oil-impacted soils.

Uncontrolled releases or spills of oil, oily water, and oil-impacted soil can occur. Such releases can pose a hazard to human health and/or the environment, and require an emergency response and/or regulatory agency notification. Human health concerns include human contact with oil, oily water, and oil-impacted soil; explosive or fire hazards; and disruptions to the normal operations in the area around the construction site, particularly disruptions to traffic flow. A major environmental impact of concern is discharge of oil or oily water to the harbor water either directly or via storm drains.

The responses described here apply to incidents that may occur during construction activities and that can be controlled by on-site workers undertaking the construction work.

2. TYPICAL RELEASES

The releases described below can occur during repair or replacement of deep utilities (water, sewer, electric, and fuel and communications lines) and buried utilities that require excavation and removal of oil, oily water, and oil-impacted soil and DCS.

Small incidental releases (e.g. < 1 cubic yard of soil or about three 55 gallon drums of soil) that do not spread and do not interfere with construction activities should be cleaned up as part of normal activities of the construction team.

For the following types of more significant release, respond immediately as outlined in this plan:

- Surface spillage of oil, oily water, and oil-impacted soil from excavations that actually spills, or threatens to spill, beyond the boundaries of the construction site.
- Breakages or other malfunctions of pipelines, storage facilities, groundwater treatment systems, or re- infiltration galleries/trenches used for belowground construction dewatering that continue to release oil or oily water.
- Oil-impacted soils or DCS temporarily stockpiled on the ground surface that are eroded or washed away by rain, and which continue to spread under the action of rain or other causes such as water from a water supply pipeline break.

- Spillage outside of the construction site during handling and disposal of oil, oily water, oil-impacted soils, or DCS removed from excavations.
- Release of oil from abandoned or active oil pipelines encountered and damaged during construction activities—that oil threatening to spill out of the excavation or actually doing so.

3. RELEASE RESPONSE TEAM

In the event of a release, the following team will determine the necessary response, make proper notifications, and conduct the response.

Table 1: Contractor Release Response Team

Name	Phone
Internal Contacts:	
Contractor-designated Release Response Coordinator Name:	()
Contractor-designated Health and Safety Manager Name:	()
On-site Construction Superintendent Name:	()
Landowner Contact Name:	()

4. RESPONSE PROCEDURES

4.1 General

The first priority of response action is protection of human health. The second priority is to ensure no impact on harbor water or the environment. <u>Immediate action is required</u>. Do not delay prudent response action.

In the event of a release:

- Notify the response coordinator (Table 1).
- Take immediate action to contain the release (do not wait if Release Response Coordinator is unavailable).

 In dangerous circumstances, give notice to evacuate the work area and notify persons in Table 1. If no persons listed in Table 1 are available, obtain assistance as necessary by contacting appropriate persons listed in Table 3.

Other general responses include:

- Use appropriate personal protective equipment (PPE).
- Eliminate or contain the source of the release.
- Put up signs or caution tape to let other workers know of a release and need to stay away.
- Place barriers or absorbents around the release to prevent spread of contamination.
- Secure impacted soil stockpiles by covering, repairing, or constructing containment berms around the stockpile, etc.
- Remove released material and clean all surfaces.
- Dispose of the released material as appropriate (see Soil and Groundwater Management Plan).
- Monitor air quality at the location of the release to assess the vapor hazards as defined in the Health and Safety Plan (HSP). Take appropriate action if hazardous conditions exist as required by the HSP.Use appropriate personal protective equipment (PPE).
- Eliminate or contain the source of the release.
- Put up signs or caution tape to let other workers know of a release and need to stay away.
- Place barriers or absorbents around the release to prevent spread of contamination.
- Secure impacted soil stockpiles by covering, repairing, or constructing containment berms around the stockpile, etc.
- Remove released material and clean all surfaces.
- Dispose of the released material as appropriate (see Soil and Groundwater Management Plan).

If the release occurs indoors, do the following:

- Close off vents and air ducts leading from the release area to other parts of the building.
- Use appropriate personal protective equipment (PPE).
- Eliminate or contain the source of the release.
- Put up signs or caution tape to let other workers know of a release and need to stay away.
- Place barriers or absorbents around the release to prevent spread of contamination.
- Secure impacted soil stockpiles by covering, repairing, or constructing containment berms around the stockpile, etc.
- Remove released material and clean all surfaces.

 Dispose of the released material as appropriate (see Soil and Groundwater Management Plan).

If electrical equipment is operating in the vicinity of the release and hydrocarbon vapors are detected near the explosivity limits (see **Health and Safety Plan**), turn off the equipment, preferably at the main breaker, to avoid sparking.

If necessary, protect nearby storm drains by use of adsorbent, booms, or drain covers; and protect potentially affected harbor water and storm drain outlets to the harbor by placing floating oil booms on the water.

To deal with either the incidental or more significant releases, equipment and materials listed in Table 2 are available either at the construction site or in storage nearby.

Table 2: Response Equipment and Materials

Equipment and Materials	Purpose	Source of Equipment and Materials	
Spill kits	Cleanup of small releases to land		
Trucks and loading equipment	Excavation and transport of oil- impacted soil		
Steel roll-off bins	Temporary storage of oil- impacted soil pending waste profiling or on- site relocation		
Pumps, piping, storage tanks	Transfer of impacted water and oil to on-site tanks or approved disposal trenches		
Plastic sheeting	Cover and security of soil stockpiles		
Hay bales, silt fences, wattles	Erosion control and containment materials		
Oil absorbent pads	Absorption and containment of oil or fluids released to land or within excavations		
Sand bags or equivalent	Construction of a small dike along areas of the release to prevent releases from spreading or entering storm drains		
Floating oil booms	Absorption and containment of oils released to harbor waters		
Sediment and oil filters	Connection to the end of an excavation dewatering hose to filter out sediment and oil		

5. NOTIFICATION INFORMATION

If the release meets the Section9.1 notification requirements:

- Notify the person in the first entry in Table 3.
- If utilities are involved, notify the affected utility in Table 3.
- Notify the landowner in Table 3.

Table 3: Other Potential Contacts

Organization	Purpose	Phone	
State Agency Contacts:			
Hawaii State Emergency Response Commission/the HEER Office	Any required release reporting	(808) 586-4249 (808) 247-2191 (after hours)	
Fire, Ambulance, or Police	Required in the event of fire danger or injury	911	
Underground Utility Contact	s:		
Gas Utility Name:	Notification of any gas utility damage or break	()	
Electric Utility Name:	Notification of any electric utility damage or break	()	
Water Utility Name:	Notification of any water utility damage or break	()	
Landowner Contact:			
Landowner Name:	Notification of any significant release	()	
Federal Contact:	-1	1	
U.S. Coast Guard Name:	Notification of any sheen on harbor waters	()	

RELEASE COMMUNICATIONS AND AGENCY REPORTING REQUIREMENTS

6.1 Circumstances under which agency notification is required

Pursuant to Title II, Chapter 451, Hawaii Administrative Rules [HAR] § 11-451-7, releases meeting any of the following criteria must be reported to the first agency contact appearing in Table 3 within 24 hours of first occurrence or observance:

- Any release causing surface water to exhibit sheen.
- Any release of petroleum or hazardous substances to navigable waters (e.g. the ocean and local canals and streams).
- Any release of oil to the environment greater than 25 gallons.
- Any release of oil less than 25 gallons that is not cleaned up within 72 hours.
- In addition, any sheens or oil or oily water releases to storm drains that have open connections to the harbor, even if contained within project boundaries and not yet impacting the harbor water.
- Sheen and oil observed in the harbor or in a storm drain should be reported to the U.S. Coast Guard and HEER Office in Table 3.
- Releases to other waters of the United States require reporting to the U.S. Coast Guard.

Sheen and oil observed in the harbor or in a storm drain should be reported to the U.S. Coast Guard and HEER Office in Table 3.

Releases to other waters of the United States require reporting to the U.S. Coast Guard.

Report the following information to agencies when notifying of a reportable release:

- Name of the person making the notification
- Location of the release
- Time and date of discovery
- Characteristics of the oil observed (color, viscosity, etc.)
- How the release occurred
- Removal actions taken and volume removed
- Whether the release poses an immediate threat to human health or the environment
- Other agencies that have been notified of the spill
- Known injuries resulting from the spill.

Release Response:	action Activities

B.4 Inactive Petroleum Pipeline and UST Management Plan

Prepared By	Inactive Petroleum Pipeline and UST Management Plan
Organization:	Environmental Hazard Management Plan Kahului Harbor Industrial District
Signature:	Version: Reference: Date:
Project Name:Project Location:	

Parties may use this sample as a basis for preparing their own site-specific plan.

Revise this Sample Plan by:

1. Reviewing the requirements of this sample plan to ensure that construction workers can comply with its requirements, and modifying the plan, if necessary.

Implement this Plan by:

- 1. Making sure on-site workers are aware of a plan for dealing with inactive pipelines.
- 2. Making sure a copy of the completed plan is present at the construction site.
- 3. Accessing additional guidance for completing this form in Section 12 of the EHMP.
- 4. Keeping a copy for your records and sending a copy to the HEER Office.

Inactive pipelines may be encountered during excavation (activities) within the Kahului Harbor Industrial District (KHID). This Plan provides procedures and guidelines for dealing with these inactive pipelines if they are encountered.

2. PREPARATORY WORK

Prior to starting any belowground construction work, undertake the following:

- Contact Hawaii One Call at (866) 423-7287 to notify them of proposed excavation activities. Underground facilities owners must be notified to mark any of their underground utilities near the proposed excavation.
- Conduct an underground utility survey using geophysical surveying equipment (e.g., toning/metal detection, ground penetrating radar) before excavation begins.

In addition to the above, identify the location of any inactive pipelines that may not be included in the above-referenced information. To do this, review the most recent available reports including the Environmental Hazard Management Plan (EHMP) to determine if pipelines could be present within the work area. Contact the Hazard Evaluation and Emergency Response (HEER) Office at (808) 586-4249 for assistance in obtaining the most current pipeline information.

3. NOTIFICATION REQUIREMENTS

If unanticipated inactive pipelines are discovered during construction activities, notify as follows:

 Contact the HEER Office via telephone within 24 hours after encountering the unanticipated petroleum pipelines.

4. PIPELINE TAPPING AND DRAINING

Inactive piping may contain residual petroleum product and may be under pressure. This could present a possible safety and spill hazard if the line is cut prior to implementation of appropriate measures. If, through the notification process described in Section 12.3, the nature and use of the piping cannot be determined, tapping may be required to determine if fluids are present or if the piping is pressurized, and to provide a means to drain residual product.

If you are performing the work, follow the procedures in Sections 5.0 through 8.0 below.

5. PIPELINE CUTTING AND CAPPING

Follow these general procedures for cutting and capping the pipelines:

- Prior to cutting, tap the pipeline using non-sparking tools, and drain the contents of the pipeline to the extent practical and possible.
- Cover the area below and adjacent to the cutting location with plastic sheeting and absorbent material, and place a catch basin beneath the location of the cut. Use these devices to collect residual fluid that may drain from the pipeline during and after cutting.
- Use precautionary measures to prevent explosive hazards. For example, cut the pipeline using non-sparking tools and remove the pipeline segment.

4. Cap the cut-off ends of remaining pipeline segments to prevent any potential future leakage. Suitable capping methods include concrete plugs, blind flanges, cement plugs with rebar, or other methods that do not involve hot welding. Hot work, including welding, is not considered appropriate due to potential explosiveness of petroleum and associated vapors.

Consider the need for the presence of a vacuum truck on standby during pipeline cutting and capping.

6. PRODUCT SAMPLING

Sample the residual product that has been drained and collected during this process, and have it analyzed by a laboratory to enable proper profiling and off-site disposal.

7. INVESTIGATION-DERIVED WASTE DISPOSAL

Dispose of petroleum and other wastes in accordance with applicable laws and regulations.

8. HEALTH AND SAFETY

Comply with the following health and safety measures whether or not these are included in the **Health and Safety Plan (HSP)**.

- Personnel conducting post-discovery work on abandoned petroleum pipelines should have current 40/24-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training and air-purifying respirator fit test certifications. At least one onsite worker potentially exposed to chemical or physical hazards should have basic first aid and cardiopulmonary resuscitation (CPR) training.
- Select air-purifying respirators based on the type of contaminant encountered (i.e., petroleum).
- Conduct air monitoring to monitor potential hazardous vapors and worker exposure. If
 petroleum is encountered, air monitoring typically includes use of a photoionization
 detector (PID) to monitor organic vapors for potential inhalation hazards, and a methane
 and oxygen/combustible gas indicator to monitor for potential explosive hazards.

9. DOCUMENTATION ACTIVITIES

Provide HEER with the following information:

- A description of where the pipeline was encountered (Global Positioning System [GPS]
 coordinates or location relative to prominent landmarks), number and lineal footage of
 pipelines encountered, size of pipelines, depth of pipelines, condition of pipelines, and
 actions taken following pipeline discovery such as cutting or petroleum removal
- A location map that shows where the pipeline was encountered. The map must include a north arrow and a scale
- Photographs of the exposed portion of the pipeline in the excavation
- Analytical laboratory reports for product recovered from the pipeline.

B.5 Soil Management Plan

Prepared By	Soil Management Plan
Organization:	Kahului Harbor Industrial District
Signature:	Version: Reference: Date:
Project Name:	
Project Location:	

Parties may use this sample as a basis for preparing their own site-specific plan.

Revise this Sample Plan by:

 Reviewing the requirements of this sample plan to ensure that the construction worker can comply with its requirements, and modifying the plan, if necessary.

Implement this Plan by:

- 1. Making sure on-site workers are aware of this plan and that they follow this plan.
- 2. Making sure a copy of the completed plan is present at the construction site.
- 3. Accessing additional guidance for completing this form in Section 13 of the EHMP
- 4. Keeping a copy for your records and sending a copy to the HEER Office.

These procedures are intended to protect construction workers, the environment, and tenants in buildings from contact with oil-impacted soil where such soils are known to exist, or where people may be exposed. These procedures also comply with requirements for excavating, stockpiling, re-using, and disposing of oil-impacted soils.

2. SOIL EXCAVATION AND STOCKPILING

If you encounter oil or oil-impacted soils, or otherwise contaminated soil, or if you are conducting soil surface excavations around former rail line tracks (Figure 2), within 3 feet of a former AST or within 3 feet of a current or former building built prior to 1988 (Figure 4) do the following:

- Always place contaminated soil or anticipated contaminated soil on plastic sheeting.
- For surface soil in the vicinity of railway tracks or within 3 feet of an AST or building built prior to 1988, assume the soil is impacted with pesticides, arsenic, and dioxins/furans in the railway track case and termiticides, arsenic, and lead in the latter (building and AST) case. At a minimum, place excavation material (i.e. surface soils) in a temporary stockpile on plastic adjacent to work.
- If the amount of excavated soil is less than one cubic yard (equivalent to about three 55gallon drums), it can be replaced in the excavation upon completion of the work without further evaluation.
- For excavation volumes exceeding 1 cy, segregate unimpacted soil from the oilimpacted soil, DCS, or metals or pesticide-contaminated soils, and stockpile these separately.
- Have a qualified environmental professional direct any necessary collection of soil samples, direct testing of the samples in the field or at an off-site laboratory, and direct segregation of impacted soils from non-impacted soils.
- Place contaminated stockpiled soils in containers (such as 20-yard steel roll-off bins, super sacks, tri-wall boxes, or drums) or within lined containment areas (i.e., underlain by plastic sheeting). Drain any liquid phase oil or fuel product associated with the soil prior to stockpiling. Remove and properly dispose of any oil observed in the excavation.
- Cover stockpiles of contaminated soils and containerized soil with plastic sheeting or tarps to minimize dust, stormwater, and odor concerns. Inspect cover frequently for damage.
- Stockpile soil near the project area prior to reuse.

3. RE-USE OF EXCAVATED SOILS

This plan provides general guidelines. For more details, consult Section 13 of this Document and the HDOH Fill Guidance (HDOH 2017). Unimpacted soils can be used as backfill.

Excavated oil-impacted soil can be used as backfill only under the following conditions:

- The oil-impacted soil is placed within areas more than 100 feet from the harbor wall and up to 1 foot below surface grade.
- The oil-impacted soil does not contain any free oil, oil sheens, oil stains, or total petroleum hydrocarbon (TPH) concentrations exceeding 5000 parts per million (ppm).

- TPH concentration is determined either by an off-site laboratory or through use of a field test such as the paper towel or glove test described in Section 13. Soils determined to be heavily contaminated should be excavated and disposed at an approved landfill.
- In the backfilling procedure, the moderately impacted soil should be placed at the bottom
 of the excavation above the tidally influenced high water table, and the cleanest soil at
 the top. If the surface is not to be paved, at least 1 foot of non-impacted soil must be
 placed as the final backfill at the top.
- For surface soil in the vicinity of railway tracks or within 3 feet of an AST or building built prior to 1988, assume the soil is impacted with pesticides, arsenic, and dioxins/furans in the railway track case and termiticides, arsenic, and lead in the latter (building and AST) case. At a minimum, replace excavated material back into excavation area with at least some cover soil or gravel. Untested, the soil may not be re-located into another area of these soils (except to an approved landfill) or reuse of these soils off-site. Alternately, these soils could be appropriately sampled (DU-MIS) and tested for contaminants to determine need for any special handling precautions.

 Excavated soils can be used to backfill other excavations within proximity of the excavations with approval of the HEER Office.

Oil sampling and analysis may be necessary to determine whether soils are suitable and when they can be used as backfill. Qualified environmental professionals or the HEER Office may determine if sampling is required, and the HEER Office TGM can be used for guidance on sampling options and procedures.

If necessary, the following number of samples should be collected:

Less than 20 cy of soil:	1 sample	
More than 20 cy of soil:	1 sample for each 20 cy up to the first 100 cubic yards	
More than 100 cy of soil:	1 sample for every additional 100 cy	

For further description of soil and soil stockpile characterization, review the current HEER Office guidance in Sections 3, 4, and 5 of the TGM at www.hawaiidoh.org/tgm.aspx.

4. OFF-SITE DISPOSAL

If you intend to transport the excavated soil to an off-site disposal facility, confirm with the disposal facility the number of soil samples needed for laboratory testing, as well as the standards for disposal.

5. EQUIPMENT DECONTAMINATION

Equipment used in contaminated areas must be decontaminated before use in non-contaminated areas. All liquid and solid waste resulting from on-site decontamination must be collected and appropriately disposed of.

6. SOILS MANAGEMENT DOCUMENTATION

Any known or suspected contaminated soils backfilled on site should be mapped with GPS coordinates or physical measurements to nearby landmarks. This documentation should be provided to the HEER Office in a concise letter or project follow up report. The HEER Office should also be notified if contaminated soils are excavated and disposed of off-site. In some instances, the HEER Office may require that you obtain its approval for how you intend to excavate, manage, and backfill or dispose of soil.

Provide det	alls of now -c	ontaminated son v	vas nandied co	nsistent with Section 1	3 of the Envir:

B.6 Groundwater Management Plan

Prepared By	Groundwater Management Plan
Organization:	Environmental Hazard Management Plan Kahului Harbor Industrial District
Signature:	Version: Reference: Date:
Project Name:	
Project Location:	

Revise this Sample Plan by:

- If you intend to place excavated groundwater back into an excavation or trench, contacting the Hazard Evaluation and Emergency Response (HEER) Office at (808) 586-4249 to obtain an appropriate disposal location.
- If you intend to discharge extracted water to local surfaces (including storm drains), contacting the HEER Office to obtain all applicable permits and approvals ahead of time because authorizations could take weeks or months.
- If you intend to discharge extracted water to a local sanitary sewer, contacting the City and County (C&C) for approval to dispose of that water into a sanitary sewer. Water discharged to a sanitary sewer or storm drain may be required to meet Water Quality Standards. These standards are specified in the Environmental Hazard Management Plan (EHMP), and are available from the HEER Office.
- 4 Reviewing the requirements of this sample plan to ensure that construction workers can handle groundwater possibly impacted by petroleum hydrocarbons which may be encountered during soil excavation.
- 5 Consulting the HEER office for answers to any questions.
- 6 Preparing your own site-specific plan.
- 7 Accessing additional guidance for completing this form in Section 14 of the EHMP.
- 8 Keeping a copy of the completed form for your records and sending a copy to the HEER Office.

Implement this Plan by:

Ensuring that on-site workers are aware of this plan and that they follow it.

Note: If you are dealing with hazardous chemicals other than oil, oily water, and oilimpacted soil, you may need additional hazardous Chemical Response Plans and Procedures not covered in this plan.

Delete this box after completing this plan.

1. INTRODUCTION

These procedures are for handling groundwater encountered during excavation activities. Soil and groundwater may be impacted by petroleum hydrocarbons and/or dissolved metals, and may be encountered during soil excavation. Purposes of these procedures are to: (1) protect construction workers from contact with petroleum hydrocarbons and inhalation of associated vapors, and (2) protect the quality of the surface waters.

2. GROUND WATER MANAGEMENT PROCEDURES

The following requirements apply to oil or oily water encountered in an excavation:

- If petroleum free product is present in the extracted groundwater, separate it from groundwater and dispose of it at an appropriate off-site facility prior to transfer of the groundwater into a nearby trench or excavation.
- At least once daily, remove oil observed floating on the groundwater during excavation
 activities using a vacuum truck, absorbent pads, or other methods approved by the HEER
 Office. Excavations should not be backfilled until the floating oil is removed to the extent
 practicable, which is when further use of vacuum trucks, absorbent pads, or other
 approved methods does not result in further floating oil removal.
- If you intend to dispose of the groundwater off site, collect and analyze water samples as required by the disposal facility.
- CAUTION: Avoid releases of affected groundwater to surface water bodies or areas beyond the work area.
- If you are disposing of treated or untreated groundwater in accordance with a method approved by the HEER Office or by the City or County, provide the necessary notifications and record the information.

	rmation consistent with Section 14 on handling contaminated groundwate ation for any contaminated groundwater encountered:	r, including a
парреч юса	ation for any contaminated groundwater encountered.	
-		

B.7 Free Product Management Plan

Prepared By	Free Product Management Plan
Organization:	Kahului Harbor Industrial District
Signature:	LAV AND
Project Name:	
Project Location:	

Parties may use this sample as a basis for preparing their own site-specific Free Product Management Plan.

Revise this Sample Plan by:

1 Reviewing the requirements of this sample plan to ensure the construction worker can comply with its requirements, and modifying the plan, if necessary.

Implement this Plan by:

- Making sure on-site workers are aware of this plan and the site-specific Health and Safety Plan (HSP), and that they follow both documents.
- 2. Making sure a copy of the completed plan is present at the construction site.
- 3. Accessing additional guidance for completing this form in Section15 of the EHMP.
- Keeping a copy of the completed form for your records and sending a copy to the HEER
 Office.

These procedures are for handling free product encountered during excavation activities. Soil and groundwater may be impacted by petroleum hydrocarbons and may be encountered during soil excavation. Normally, free product is found floating on groundwater; however, it can also occur in oil- saturated soils. Purposes of these procedures are to: (1) protect construction workers from contact with petroleum hydrocarbons and inhalation of associated vapors, (2) protect the quality of surface water, and (3) provide guidance in the handling and disposal of free product.

2. FREE PRODUCT MANAGEMENT PROCEDURES

The following requirements apply to free product in soil or floating on groundwater encountered in an excavation:

- If free product is present in the extracted groundwater, it must be separated from groundwater and disposed of at an appropriate off-site facility prior to transfer of the groundwater into a nearby trench or excavation.
- At least once daily, remove oil observed floating on the groundwater during excavation
 activities using a vacuum truck, absorbent pads, or other methods approved by the HEER
 Office. Excavations should not be backfilled until the floating oil is removed to the extent
 practicable, which is when further use of vacuum trucks or absorbent pads, or other
 approved methods do not result in further floating oil removal.
- If free product is encountered in excavated soil, it must be separated from clean or moderately contaminated fill, profiled, and disposed of at an approved recycling/disposal site.
- Soil contaminated with free product cannot be used for backfill.
- CAUTION: Avoid releases of free product to the harbor or areas beyond the work area.

Provide details and mapped locations of free product discovery and how free product was managed

consistent wit	h Section 15 of	the EHMP):		

B.8 Vapor Product Management Plan

Prepared By	Vapor Management Plan				
Organization:	Environmental Hazard Management Plan Kahului Harbor Industrial District				
Signature:	Version: Reference:				
	Date:				
Project Name:					
Project Location:					

Parties may use this sample as a basis for preparing their own site-specific Vapor Management Plan.

Revise this Sample Plan by:

1. Reviewing the requirements of this sample plan to ensure that the construction worker can comply with its requirements, and modifying the plan, if necessary.

Implement this Plan by:

- 1 Making sure on-site workers are aware of this plan and the site-specific Health and Safety Plan (HSP), and that they follow both documents.
- 2 Making sure a copy of the completed plan is present at the construction site.
- 3 Accessing additional guidance for completing this form in Section16 of the EHMP.
- 4 Keeping a copy of the completed form for your records and sending a copy to the HEER Office.

These procedures are for handling petroleum vapors encountered during excavation activities. Soil and groundwater may be impacted by petroleum hydrocarbons and may be encountered during soil excavation. This type of contamination may produce soil vapor that must be properly handled during and after construction activities. Purposes of these procedures are to: (1) protect construction workers from contact with petroleum hydrocarbons and inhalation of associated vapors, (2) protect the quality of the surface water, and (3) provide guidance in the handling soil vapors.

2. VAPOR MANAGEMENT PROCEDURES

If volatile organic compound (VOC) vapors are encountered during excavation, appropriate response actions will be taken, and the actions will conform to Hawaii Department of Health (HDOH) and U.S. Environmental Protection Agency (EPA) regulatory guidelines. The response actions include ensuring that on-site workers have the appropriate level of personal protective equipment (PPE) and the general public is not affected adversely. Anticipated tasks associated with managing VOC vapor exposure are summarized as follows:

If VOC vapors are encountered during excavation activities, field oversight must be provided to identify VOC vapors and provide health and safety guidance related to the potential exposure of workers to COCs.

- Air monitoring will be conducted during excavation associated with future construction activities. Air monitoring will also be conducted when workers are required to enter excavations where PCS or free product is present. The monitoring will include both workspace (on-site) and perimeter measurements of VOC vapors.
- If warranted by the air monitoring results, on-site workers will be notified of the need to upgrade PPE to include respiratory protection.
- Air monitoring required for confined space entry (if required) will be conducted by the contractor responsible for construction. Confined space entry and associated air monitoring requirements will be described in the site specific health and safety plan for construction.

Air monitoring required for confined space entry (if required) will be conducted by the contractor responsible for construction. Confined space entry and associated air monitoring requirements will be described in the site-specific health and safety plan (HSP) for construction.

3. Exposure Management Procedures

- Level D PPE will be appropriate for on-site workers under normal working conditions.
- Both workspace (on site) and perimeter (off site) air monitoring will occur.
- Air monitoring will be conducted using a conventional photoionization detector (PID) to measure total VOC vapor concentrations, and an Ultra-Rae PID, which is benzenespecific, to determine benzene concentrations.
- If VOC vapor concentrations in the workspace atmosphere exceed an 8-hour time-weighted average (TWA) of 20 parts per million (ppm) or a 15-minute short-term exposure limit (STEL) of 100 ppm, PPE requirements will be upgraded to Level C, and it may be necessary to implement a modified work schedule. These levels are based on a maximum benzene concentration in gasoline of 5 percent by volume.

- On-site workers will be notified immediately if benzene is detected in the workspace atmosphere at a concentration exceeding 0.5 ppm, and wearing respirators with organic vapor cartridges will be recommended (i.e., recommended upgrade of respiratory protection to Level C).
- If benzene concentrations in the workspace atmosphere exceed the 8-hour TWA PEL (1 ppm) or the Occupational Safety and Health Administration (OSHA) 15-minute STEL (5 ppm), PPE requirements will be upgraded to Level C, and it may be necessary to implement a modified work schedule.
- If benzene concentrations in the workspace atmosphere exceed the TWA PEL (1 ppm), short-term exposure monitoring will be conducted. To determine short-term exposure, a minimum of five samples will be collected within a 15-minute period.
- If daily average benzene concentrations in the workspace atmosphere exceed the OSHA STEL (5 ppm) or benzene concentrations exceed the OSHA acceptable ceiling concentration (25 ppm), PPE will be upgraded to Level C, with either full-face respirators or powered air-purifying respirators and protective goggles.
- If benzene concentrations in the workspace atmosphere exceed the OSHA 8-hour TWA for a 40-hour work week (10 ppm) or benzene concentrations exceed the OSHA acceptable maximum peak for an 8-hour shift (50 ppm), work will be stopped immediately, the on-site representative will be notified, and workers will be requested to leave the work zone.
- If benzene concentrations along the site perimeter (off site) exceed the 15-minute STEL (5 ppm) or the TWA PEL (1 ppm), the exclusion zone will be extended beyond the property boundary.

If benzene concentrations along the site perimeter (off site) exceed the OSHA acceptable ceiling concentration (25 ppm), work will be stopped immediately and the project on-site representative will be notified.

B.9 Stormwater Management Plan

Prepared By	Stormwater Management Plan				
Organization:	Environmental Hazard Management Plan Kahului Harbor Industrial District				
Signature:	Version: Reference: Date:				
Project Name: Project Location:					

Parties may use this sample as a basis for preparing their own site-specific Stormwater Management Plan.

Revise this Sample Plan by:

1. Reviewing the requirements of this sample plan to ensure that the construction worker can comply with its requirements, and modifying the plan, if necessary.

Implement this Plan by:

- 1. Making sure on-site workers are aware of this plan and that they follow it.
- 2. Making sure a copy of the completed plan is present at the construction site.
- 3. Accessing additional guidance for completing this form in Section17 of the EHMP
- Keeping a copy of the completed form for your records and sending a copy to the HEER Office.

If contaminated soil or groundwater is encountered during excavation, appropriate response actions will be taken, and the actions will conform to Hawaii Department of Health (HDOH) and U.S. Environmental Protection Agency (EPA) regulatory guidelines. The response actions include ensuring that these media are not exposed to stormwater. Anticipated tasks associated with managing stormwater are summarized below.

2. STORMWATER MANAGEMENT PROCEDURES

Field oversight will be provided during excavation activities conducted as part of construction. Purposes of the oversight are to identify contaminated media that could be exposed to stormwater runoff and to provide guidance related to controlling stormwater on the property. In addition, the weather will be monitored throughout each work day for signs of approaching storms and/or heavy rains.

Inspections of engineering stormwater controls will occur each day to minimize potential for exposure of contaminated media to stormwater runoff and minimize potential for contaminated stormwater to leave the construction site.

All construction will accord with the conditions of an HDOH-approved National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge associated with construction activity. Conditions of the permit include preparation of a Construction Site Best Management Practices Plan.

3. OPEN EXCAVATIONS

In the absence of engineering and administrative controls, PCS and/or groundwater exposed in open excavations could come into contact with stormwater, thus potentially contaminating the stormwater with contaminants of concern (COC). To prevent this, the following activities will occur:

- Where possible, excavations will be backfilled as soon as practicable to limit the time they are open and potentially exposed to stormwater runoff and direct precipitation.
- Where possible, the edges of excavations will be bermed, thus minimizing potential for entry of stormwater runoff.
- Open excavations will be inspected each day to minimize potential for direct precipitation to cause the excavation to overflow.

4. SOIL STOCKPILES

In the absence of engineering and administrative controls, excavated petroleum-contaminated soil (PCS) stored in stockpiles could come into contact with stormwater, thus potentially contaminating the stormwater with COCs. To prevent this, the following activities will occur:

- Soil stockpiles will be placed on plastic sheeting, and the sheeting will be bermed at the edges, thus minimizing potential for contact with stormwater runoff.
- At the end of each day, or in the event of a storm, the soil stockpiles will be covered with
 plastic sheeting, thus minimizing potential for contact with direct precipitation.
- The soil stockpiles will be inspected each day to ensure that the plastic sheeting is intact.

5. DEWATERING INFILTRATION PITS

In the absence of engineering and administrative controls, water in infiltration pits used for onsite dewatering could come into contact with stormwater. To prevent this, the following activities will occur:

- Where possible, infiltration pits will be backfilled as soon as practicable to limit the time they are open and potentially exposed to stormwater runoff and direct precipitation.
- Where possible, the edges of infiltration pits will be bermed, thus minimizing potential for entry of stormwater runoff.
- Infiltration pits will be inspected each day to minimize potential for direct precipitation to cause the pit to overflow.

Erosion and sediment control measures will be in place and functional before construction activities commence. These measures will be maintained throughout the construction period. If stormwater discharge from the site is anticipated, the following preventive measures may be implemented:

- Stormwater flowing toward active construction areas will be diverted using appropriate control measures, as practicable.
- Erosion control measures will be designed to handle the size of the disturbed or drainage area in order to detain runoff and trap sediment.
- · Height of the property boundary can be increased using sandbags.
- Additional silt fencing will be added at affected property boundaries, if warranted.
- Berms surrounding soil stockpiles will be increased as necessary.
- Moveable booms will be available to contain spills.
- Absorbent pads will be employed if free product is observed in stormwater runoff.

Provide details of how stormwater was managed (consistent with Section 17 of the EHMP) when a significant storm event occurred during construction:						