Pana‘ewa Agricultural Lots Subdivision

Draft Environmental Assessment – Anticipated Finding of No Significant Impacts

(HRS 343)

Prepared for

Department of Hawaiian Home Lands

Prepared by

PBR HAWAII
& ASSOCIATES, INC.

July, 2015

SUMMARY

Project Name:	Pana‘ewa Agricultural Lots Subdivision
Location:	Waiākea *ahupua’a*, South Hilo, Island and County of Hawai‘i
Judicial District:	South Hilo
Tax Map Key (TMK):	Parcels off of Auwae Road (hereafter referred to as the “Auwae Lots”): (3) 2-1-025:047 (Lot 47 of Pana‘ewa House & Farm Lots) (3) 2-1-025:048 (Lot 48 of Pana‘ewa House & Farm Lots) (3) 2-1-025:006 (Lot 6 of Pana‘ewa House & Farm Lots) (3) 2-1-025:007 (Lot 7 of Pana‘ewa House & Farm Lots) Parcel off of Mahiai Street (hereafter referred to as the “Mahiai Lot”): (3) 2-2-061:002 (Lot 185 of Pana‘ewa House & Farm Lots)
Land Area:	Approximately 50 acres total (10 acres each of five lots)
Proposing/Determining Agency:	Department of Hawaiian Home Lands
Landowner:	Department of Hawaiian Home Lands
Existing Use:	One open area with a single home to be demolished (Mahiai Lot), and four undeveloped parcels with existing vegetation dominated by albizia trees (Auwae Lots)
Proposed Action:	The project consists of subdividing the various parcels into approximately 80 half-acre lots with County dedicated roads and water system. DHHL will award the lots to native Hawaiian beneficiaries on the wait list, and/or to existing lessees who need to relocate due to lava or other hazards.
Current Land Use Designations:	*State Land Use:* Agriculture *County General Plan LUPAG*: Urban Expansion (Auwae Lots); Low Density Urban (Mahiai Lot) *County Zoning*: General industrial district (MG-1a) (Auwae Lots); Agricultural (A-5a) (Mahiai Lot) *Special Management Area (SMA)*: Not in SMA *DHHL Land Designation (Hawai‘i Island Plan 2002):* Commercial (Auwae Lots); Supplemental Agricultural (Mahiai Lot)
Alternatives Considered:	Three alternatives were considered: • No action • Alternative sites • Alternative designs
Potential Impacts and Mitigation Measures:	Beneficial impact by providing affordable housing opportunity for native Hawaiians within the urban core in proximity to jobs, schools, and shopping. One-half acre lot size provides opportunity for self-sufficiency agriculture.

	Mitigation measures include: *Threatened or endangered species.* DHHL to provide notice to lessees: • To protect night-flying seabirds, outdoor illumination be shielded so that the bulb is not visible at or above bulb-height. • To protect the low-flying, foraging Hawaiian hoary bat, barbed wire not be used for fencing. Construction scheduling and documents will incorporate the following applicable recommendations of the USFW: • Hawaiian hawk. If construction occurs during the hawk's breeding season (March through September), the contractor will retain a qualified ornithologist to conduct a nest search of the area of the proposed construction site and surrounding area prior to the advent of construction activities. Surveys should ensure that construction activity will not occur within 1,600 feet of any Hawaiian hawk nest. • Hawaiian hoary bat. It is recommended that woody plants greater than 15 feet tall should not be removed or trimmed during the Hawaiian hoary bat breeding season (June 1 to September 15). • Seabirds. If night work must be conducted, it should take place outside the sea bird fledging season (September 15 through December 15) and should utilize shielded lighting. *Air quality, noise, water quality.* Construction documents will include: • Standard dust control measures • Standard noise control measures • Best management practices for erosion and sedimentation control in accordance with approved Grading and NPDES permits *Land use plans consistency.* DHHL will amend the Hawai'i Island Plan to reflect the proposed Subsistence Agricultural use and update the County per MOU. *Solid Waste.* Construction documents will include requirement to mulch the green waste onsite and make available to DHHL homesteaders. Whenever green waste cannot be processed on site, the green waste will be hauled to the Hawaii County Green Waste Site in Hilo for final disposal. *Wastewater*. Find additional funding to install dry sewers as part of the Project for the Auwae Lots. Upon updating the master planning for the Auwae Lots area, determine the required wastewater capacity of a collection system and find a funding source to construct. *Toxics and Hazardous Waste.* ▪ Auwae Lots o Properly dispose of the illegal dumping solid waste

	at the end of Auwae Road; o Retain a Phase 1 consultant to conduct further research as follows: ▪ Inspect for any industrial use encroachment along the boundary of parcels [3] 2-1-025: parcels 092 and 093 with mitigation as needed to properly cleanup. ▪ Use best efforts to research the extent of historic military use of the Auwae Lots. o As long as groundwater is not pumped, no groundwater testing is necessary for potential impacts from the landfill or green waste site. ▪ Mahiai Lot. Retain a Phase 1 consultant for further research as follows: o Test the soil for arsenic; o Inspect the kennel drainage area and conduct further testing as appropriate. *Historic preservation.* Construction documents will include a condition that should burials or other traditional deposits be identified during intrusive activities, all work in the area will cease and the appropriate agencies will be contacted. *Coordination with DOT Airports.* DHHL or contractor will file FAA Form 7460-1 "Notice of Proposed Construction or Alteration" and also notify DOT when filing the grubbing and/or grading permit.
Approvals and Permits Required:	Subdivision, UIC, NPDES, Grubbing/Grading, Noise, Individual Wastewater System Approval (by future lessee of each lot), Building (by future lessee of each lot)
Determination:	Anticipated Finding of No Significant Impact

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APPENDICES

TABLES

FIGURES

(in Appendix A)

ACRONYMS

AFONSI	Anticipated Finding of No Significant Impact
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai‘i
BMP	Best Management Practices
CIA	Cultural Impact Assessment
CWRM	State of Hawai‘i Commission on Water Resource Management
CZM	Coastal Zone Management
DBEDT	State of Hawai‘i Department of Business, Economic Development, and Tourism
DHHL	Department of Hawaiian Home Lands
DLNR	State of Hawai‘i Department of Land and Natural Resources
DOE	State of Hawai‘i Department of Education
DOH	State of Hawai‘i Department of Health
DOT	State of Hawai‘i Department of Transportation
DPR	County of Hawai‘i Department of Parks and Recreation
DWS	County of Hawai‘i Department of Water Supply
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
gpd	Gallons per day
HAR	Hawai‘i Administrative Rules
HELCO	Hawai‘i Electric Light Company, Inc.
HRS	Hawai‘i Revised Statutes
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LSB	Land Study Bureau
LUC	State of Hawai‘i Land Use Commission
LUPAG	County of Hawai‘i General Plan Land Use Pattern Allocation Guide
MGD	Million gallons per day
NAHASDA	Native American Housing Assistance and Self-Determination Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination Systems
NRCS	Natural Resources Conservation Service
NPS	National Park Service
OEQC	State of Hawai‘i Office of Environmental Quality Control
ROW	Right-of-way
SCS	Scientific Consultant Services, Inc.
SHPD	State of Hawai‘i Historic Preservation Division
SMA	Special Management Area

TMK	Tax map key
UIC	Underground Injection Control
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UXO	Unexploded ordnance

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1 INTRODUCTION

The State Department of Hawaiian Home Lands (DHHL) is proposing to subdivide five approximately 10-acre parcels into 80 lots at a minimum lot size of half-acre, collectively referred to as the Pana'ewa Agricultural Lots Subdivision ("Project"). The proposed use of State lands triggers the preparation of an Environmental Assessment (EA) in compliance with Chapter 343, HRS.

1.1 LANDOWNER

The DHHL is the fee simple landowner and will lease the lots to qualified native Hawaiians.

1.2 PROPOSING/DETERMINING AGENCY

DHHL is the proposing/determining agency.

Contact: Department of Hawaiian Home Lands
ATTN: Niniau Simmons
91-5420 Kapolei Parkway
Kapolei, Hawai'i 96707
Phone: (808) 620-9513
Fax: (808) 620-9529

1.3 ENVIRONMENTAL CONSULTANT

PBR HAWAI'I is the environmental planning consultant.

Contact: PBR HAWAI'I & Associates, Inc.
ATTN: Roy Takemoto
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813
Telephone: (808) 521-5631
Fax: (808) 523-1402

1.4 COMPLIANCE WITH STATE OF HAWAI'I ENVIRONMENTAL LAWS

Preparation of this document is in accordance with the provisions of Chapter 343, HRS and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine "triggers" that require either an EA or an Environmental Impact Statement (EIS). The use of State or County lands or funds is one of these "triggers." The project will also use federal funds. DHHL will comply with the requirements of the National Environmental Policy Act by a separate document.

1.5 STUDIES CONTRIBUTING TO THIS EA

The information contained in this report has been developed from site visits, generally available information regarding the site and surrounding areas, and technical studies. Technical studies are attached as appendices to this EA. These studies include:

- Flora and Fauna Surveys
- Archaeological Inventory Survey
- Phase 1 Environmental Study.

2 PROJECT DESCRIPTION

2.1 BACKGROUND INFORMATION

2.1.1 Location and Property Description

The Project is proposed to be located in the Waiākea *ahupua’a*, South Hilo District, Island and County of Hawai‘i. One 10-acre parcel is located off Mahiai Street, north of a drainage channel (TMK (3) 2-2-061:002) (hereafter referred to as the “Mahiai Lot”), while the other four 10-acre parcels are located off the north end of Auwae Road (TMKs (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048) (hereafter referred to as the “Auwae Lots”) (the Mahiai Lot and Auwae Lots collectively referred to as the “Site”) (see Figure 1).

The five 10-acre parcels are part of the Pana‘ewa House and Farm Lots filed in 1976 in the Bureau of Conveyances as File Plan 1487 (see Figure 2). The Auwae Lots are Lots 6, 7, 47, and 48 of Section 1 of this File Plan. The Mahiai Lot is Lot 185 of Section 2.

2.1.2 Existing and Surrounding Land Uses

A portion of the Mahiai Lot is open land with a single home (DHHL canceled the existing lease and will demolish the home), and the other four parcels of the Auwae Lots are undeveloped.

The surrounding uses are as follows (see Figure 3):

	Mahiai Lot (TMK 322061002)	**Auwae Lots** (TMK 321025006, 321025007, 321025047, 321025048)
North	Orchard agricultural	Forested, undeveloped parcels designated by DHHL for Commercial use; quarry located approximately 1700’ from nearest boundary
South	Open undeveloped parcels	DHHL agricultural homestead lots
East	Mahiai Street; agricultural, low-density residential	County green waste site; landfill
West	Residential homes	DHHL agricultural homestead lots

2.2 PURPOSE AND NEED

The Project will enable the relocation of Maku‘u Farm Lot lessees threatened by the lava flow, accommodate other lessees who may need to be relocated (e.g., Pu‘ukapu lessees with UXO issues), and/or awarded to new lessees on the wait list.

2.3 PROJECT DESCRIPTION

The Project consists of subdividing the Mahiai Lot into 16 approximately half-acre lots, a road lot, and a road reserve for a future connection. The four 10-acre Auwae Lots will each be subdivided into 16 approximately half-acre lots and roadway lots. The resulting subdivision of the Mahiai Lot and Auwae Lots will total 80 lots for homestead agricultural leases. For lessees relocating from another homestead lot, these lessees will have the option to move their existing home to the new lots. The other lots will require new construction. The lots will be accessed by County-dedicated roadways built to County standards. The lots will be served by the County water system and individual onsite septic systems (see Figure 4).

2.4 DEVELOPMENT TIMETABLE AND PRELIMINARY COSTS

The estimated total construction cost is $5 million. Federal (Native American Housing Assistance and Self-Determination Act (NAHASDA) funds) and possibly State funds will be used. Construction will commence by the start of next year and will require approximately 12 months for construction.

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes existing conditions of the natural environment, potential impacts related to the Project, and mitigation measures to minimize impacts.

3.1 CLIMATE

Hawai'i Island's geological features heavily influence its climate. Mauna Loa (13,679 foot summit elevation) and Mauna Kea (13,796 foot summit elevation) dominate ground-based atmospheric influences. Northeast trade winds typically occur during the day, while winds from the southwest typically occur during the night due to cold air drainage from the mountains. The mean annual wind speed at the airport is about 8 miles per hour (mph), and usually varies between about 4 and 12 mph during the day.

Regional temperatures are generally cool due to the trade winds. Average annual temperatures range from 66-82 degrees Fahrenheit (County of Hawai'i Data Book).

According to *The Rainfall Atlas of Hawai'i*, the property receives an average annual rainfall of approximately 150" inches (Giambelluca, et al., 2012). Hilo's rainfall pattern is characterized by windward-leeward differences due to the orographic effect of the mountains and trade winds.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The Project will do its part to minimize climate change impacts by encouraging homestead lessees to install renewable sources and passive energy-conserving measures such as natural ventilation, solar water heating, and photovoltaic energy.

3.2 GEOLOGY AND TOPOGRAPHY

Of the five volcanoes that formed the island of Hawai'i—Kohala, Hualālai, Mauna Kea, Mauna Loa, and Kīlauea—only Mauna Loa and Kīlauea are presently considered active; the other three are considered dormant. The Site is located on the southeastern flank of Mauna Kea:

Both the Mahiai Lot and Auwae Lots are relatively level. The elevation of the Auwae Lots is approximately 100' above mean sea level; the Mahiai Lot elevation is approximately 200'.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. Due to the generally flat surface, minimal grading will be required. To minimize potential impacts, best practices to control erosion and sedimentation will be specified in the grading plans, in compliance with Chapter 10 (Erosion and Sedimentation Control) of the Hawai'i County Code and the NPDES Permit. Best practices to incorporate as applicable include:

- Minimizing the time of construction;
- Retaining existing ground cover as long as possible;
- Constructing drainage control features early;
- Using temporary area sprinklers in non-active construction areas when ground cover is removed;
- Providing a water truck on-site during the construction period to provide for immediate sprinkling, as needed;
- Using temporary berms and cut-off ditches, where needed, for control of erosion;
- Watering graded areas when construction activity for each day has ceased;
- Grassing or planting all cut and fill slopes immediately after grading work has been completed; and
- Installing silt screens, where appropriate.

3.3 SOILS

Three soil suitability studies prepared for lands in Hawai'i describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS) Soil Survey; 2) the University of Hawai'i Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH) system.

Natural Resource Conservation Service Soil Survey

Within the Site and surrounding area the soil type is Papai extremely stony muck (rPAE) (see Figure 5). This soil type is well drained, negligible to low runoff, permeability is very rapid in the soil and fragmental material and very slow in the underlying bedrock (Natural Resources Conservation Service, United States Department of Agriculture, Accessed April 2015). The NRCS rates the Site as "not prime farmland" (see Figure 6).

LSB Detailed Land Classification

The University of Hawai'i LSB document, Detailed Land Classification, Island of Hawai'i, classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The soils of the Site are classified as E ("very poor").

Agricultural Lands of Importance to the State of Hawai'i

The ALISH system classifies agricultural lands as Prime, Unique, or Other Agricultural Land. The soils of the Site are classified as "Other" under the ALISH system.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The Project will not reduce the inventory of agriculturally important land. Although rated as marginal for agriculture, the agricultural lease will permit and encourage agricultural activity for home use or commercial.

Impacts to the soils include the potential for soil erosion and the generation of dust during grading and construction. All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. As typically required for projects on land greater than one acre in size, a National Pollutant Discharge Elimination System (NPDES) Notice of General Permit Coverage (NGPC) for Storm Water Associated with Construction Activity will be necessary.

3.4 HYDROLOGY

The Site is located within the Hilo Watershed, which measures 470 square miles and encompasses seven sub-watershed areas including two large (Wailuku, Wailoa), one medium (Honoli'i), and four small (Mali'i, Pauka, Pukihae, Wainaku) sub-watersheds. A watershed area captures rainfall and atmospheric moisture from the air and allows the water to drip slowly into underground aquifers or enter stream channels and eventually to the ocean. The Hilo watershed includes the combined eastern slopes of Mauna Kea and Mauna Loa reaching maximum elevations of 13,796 and 13,679 feet, respectively. The saddle between the two mountains drains mostly through Hilo into Hilo Bay.

Surface Water

The headwaters of the tributaries of the Kaahakini Stream are located to the west of the Site and feed into a flood channel in proximity to the Mahiai Lot (see Figure 7). According to the National Wetlands Inventory, there are no wetlands within or in the vicinity of the Site ((U.S. Environmental Protection Agency, accessed May 2015).

Ground Water

Due to the relatively young and porous geology of Hawai'i island, most of the rainfall infiltrates to groundwater. Groundwater has been classified under an aquifer coding system to identify and describe these aquifers. The Site overlies the Hilo Aquifer System, a subset of the N.E. Mauna Loa Aquifer Sector. The geology of the Hilo Aquifer System is dominated by the Ka'ū volcanic series of Mauna Loa volcano, and extends from the coast to the inland boundary at the crest of Mauna Loa. Groundwater within this aquifer exists primarily as basal groundwater followed by high level dike and perched water. Cap rock, although thick and extensive, does not play an important role in the coastal regions of the aquifer.

Sustainable yield is the amount of groundwater that can be pumped without depleting the source. The sustainable yield of the Hilo Aquifer System is 349 MGD, and existing water use is 42.228 MGD (Wilson Okamoto Corporation, 2008).

Marine Waters

The Auwae Lots and Mahiai Lot are approximately 1.5 and 3 miles inland, respectively, from the nearest coastline at Hilo Bay. Near shore marine waters off the coast of Hilo Bay are classified as class "A" by the State Department of Health (2012).

According to DOH Water Quality Standards, "It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" (HAR §11-54-03).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The Project is not anticipated to have any significant adverse impact on groundwater or surface water resources. According to the USGS maps, the Mahiai Lot is located approximately 700' from the Pana'ewa Deep Well. However, septic systems would be required; no cesspools. Although the paved roads will increase the amount of impermeable surfaces, grass shoulders and swales would slow and filter the storm runoff, and promote infiltration. Any surface runoff will not directly discharge to Hilo Bay due to the distance of the Site to Hilo Bay.

3.5 NATURAL HAZARDS

Hawai'i island is susceptible to potential natural hazards, such as flooding, hurricanes, volcanic hazards, earthquakes, and wildfires. This section provides an analysis of the Site's vulnerability to such hazards.

The State of Hawai'i Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the State to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. The State has plans to modernize the system by replacing or adding new sirens. A proposed siren location is the Pana'ewa Park, approximately 2000' from the Auwae Lots. The closest existing or proposed siren for the Mahiai Lot is approximately 4,000'. The sirens have a range of 1,700 to 3,400' depending on the type of speaker array.

The nearest emergency evacuation shelters for hurricane are Waiakea and Waiakea-Waena Elementary Schools.

3.5.1.1 Flood

The Federal Emergency Management Agency (FEMA) publishes flood information in the form of Flood Insurance Rate Maps (FIRM) used by government and insurance agencies to determine the relative potential for damage during flood events. According to the FIRM, the Site is in Zone

X, which is outside the special flood hazard area and not subject to flood control regulation (see Figure 8).

3.5.1.2 Tsunami

The current tsunami evacuation zone is in the process of being updated by the Hawai‘i County Civil Defense Agency. The property is well outside of the current tsunami evacuation zone (Hawai‘i County Civil Defense Agency, accessed June 2015).

3.5.1.3 Hurricane

Since 1980, two hurricanes have had a devastating effect on Hawai‘i. They were Hurricane ‘Iwa in 1982 and Hurricane ‘Iniki in 1992. In 2007, Hurricane Flossie threatened to reach Hawai‘i, putting Hawai‘i on a hurricane watch. The hurricane, however, was downgraded from a hurricane to a tropical storm after passing Hawai‘i island, 95 miles south of South Point (Associated Press, 2007). While it is difficult to predict such natural occurrences, it is reasonable to assume that future incidents are likely, given historical events. Several studies sponsored by the NASA Office of Earth Science have developed new models for estimating the probability of hurricanes in the Pacific. While the island of Hawai‘i has not been in the direct path of a hurricane since recordation began in 1950, the models indicate that the island has a long-term hurricane hazard higher than any of the other islands.

3.5.1.4 Earthquake

In Hawai‘i, most earthquakes are linked to volcanic activity, unlike other areas where a shift in tectonic plates is the cause of an earthquake. Each year, thousands of earthquakes occur in Hawai‘i, the vast majority of which are so small they are detectable only with highly sensitive instruments. However, moderate and disastrous earthquakes have occurred in the islands.

Since 1868, nine disastrous earthquakes have occurred in Hawai‘i County. The largest earthquake series occurred between March 27 and April 2, 1868 with an epicenter a few miles north of Pāhala in the district of Ka‘ū. It is estimated that the magnitude of these earthquakes were 7.1 and 7.9. These earthquakes resulted in 77 deaths (46 from tsunami and 31 from landslides triggered by the earthquake). In 1929, an earthquake with an epicenter in Hualālai and a magnitude of 6.5 resulted in extensive damage. Another earthquake in 1951, with its epicenter in the Kona area and a magnitude of 6.9 also resulted in extensive damage. A series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay on October 15, 2006. These earthquakes resulted in more than $100 million in damages to the northwest area of the island (USGS, 2006).

3.5.1.5 Volcanic Hazards

Volcanic hazards include lava flows and emission of volcanic gases (vog).

Lava Flows

The volcanic hazard zone map for Hawai'i Island divides the island into zones ranked from one through nine, with one being the area of greatest hazard and nine being the area of least hazard. The zones are based chiefly on the location of active vents, frequency of past lava coverage, and topography. According to this map, the project area is within Zone 3, meaning only one to five percent of the area has been covered by lava since 1800 and 15-75 percent within the last 750 years (USGS, 1997) (see Figure 9). The Site is approximately 26 miles from Kīlauea, the nearest active vent.

Vog

Volcanic gases, which are visible as fog called vog, are emitted during all types of eruptions. Halema'uma'u, the crater located at the summit of Kīlauea is erupting large amounts of volcanic gas. Any hazard posed by volcanic gases is greatest immediately downwind from active vents; the concentration of the gases quickly diminishes as the gases mix with air and are carried by winds away from the source (USGS, 1997).

The Site is located 26 miles northeast of Kīlauea Volcano. The prevailing northeasterly trade wind flow tends to push vog and any airborne particulates away from the property. However, the amount of vog and other airborne particulates can significantly increase during periods when the winds are from the southwest.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. To mitigate the potential hazard from earthquakes and hurricanes, new homes must be designed in accordance with the latest building code which is the 2006 International Building Code (IBC) as amended by State of Hawai'i Building Code. The 2006 IBC provides minimum design criteria to address the potential for damage due to seismic and wind disturbances. Although the State Department of Defense recommended that DHHL include an emergency siren (see letter in Appendix B), a more appropriate location seems to be Pana'ewa Park for improved coverage and maintenance access which is already planned.

3.6 FLORA AND FAUNA

In April 2015, Robert Hobdy conducted a flora and fauna survey of the Site (Appendix C).

Flora - In summary, Mr. Hobdy found that the vegetation throughout the project area is dominated by non-native grasses, vines, ferns, shrubs and trees. The area has been heavily altered by historical land uses and continues to be invaded by aggressive weed species. All of the ten native species found in the two focus areas are widespread in Hawai'i and of no special conservation concern. No Federally listed Threatened or Endangered plant species were found on the property, nor were any found that are candidates for such status. No special native plant habitats were found here either.

Fauna – According to Mr. Hobdy, the fauna of these two project area components is largely made up of non-native species that have been either purposeful or accidental introductions to

Hawai'i. Just one native mammal, the 'ōpe'ape'a or Hawaiian hoary bat, was recorded as common in both focus areas during the surveys.

The 'ōpe'ape'a carries federal protections where it occurs. It occurs on at least five of the major Hawaiian islands and has its largest population on Hawai'i island. These bats are highly mobile and are known to occur in a variety of habitats from nearly 10,000 feet down to sea level. These movements are likely driven by food source availability and seasonal temperatures. 'Ōpe'ape'a were well represented in the project area during the time of the survey. Mitigation measures are set forth in the section below.

Hawaiian petrels (Pterodroma phaeopygia sandwichensis) and Newell's shearwaters (Puffinus auricularis newellii), (collectively known as seabirds) may transit over the project area when flying between the ocean and nesting sites in the mountains during their breeding season (March through November). Fatalities to these seabirds resulting from collisions with artificial structures that extend above the surrounding vegetation have been documented in Hawai'i where high densities of transiting seabirds occur. Additionally, artificial lighting such as floodlighting for construction work can adversely impact seabirds by causing disorientation which may result in collision with utility lines, buildings, fences and vehicles. Fledgling seabirds are especially affected by artificial lighting and have a tendency to exhaust themselves while circling the light sources and become grounded. Too weak to fly, these birds become vulnerable to predation by predators such as mongoose (Herpestes auropunctatus), cats (Felis catus) and dogs (Canis familiaris). These threats can be minimized by the shielding of any outdoor lighting so that the light is visible only from below.

The Blackburn's sphinx moth was not found in the project area. None of the specific host plants that the larvae feed upon were present on or around the project area, and none of the nectar producing plants that the adult moths feed upon were found here either. No Blackburn's sphinx moths, their eggs or larvae were seen.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. Mitigation measures include:

DHHL to provide notice to lessees:

- To protect night-flying seabirds, outdoors illumination be shielded so that the bulb is not visible at or above bulb-height.
- To protect the low-flying, foraging Hawaiian hoary bat, barbed wire not be used for fencing.

Construction scheduling and documents will incorporate the following applicable recommend-ations of the USFW:

- Hawaiian hawk. If construction occurs during the hawk's breeding season (March through September), the contractor will retain a qualified ornithologist to conduct a nest search of the area of the proposed construction site and surrounding area prior to

the advent of construction activities. Surveys should ensure that construction activity will not occur within 1,600 feet of any Hawaiian hawk nest.

- Hawaiian hoary bat. It is recommended that woody plants greater than 15 feet tall should not be removed or trimmed during the Hawaiian hoary bat breeding season (June 1 to September 15).

- Seabirds. If night work must be conducted, it should take place outside the sea bird fledging season (September 15 through December 15) and should utilize shielded lighting.

4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, preliminary potential impacts of the Project, and preliminary mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Scientific Consultant Services (SCS) conducted an archaeological inventory survey (AIS) of the Site and submitted to SHPD for review (Appendix D). The survey was conducted in accordance with Hawai‘i Administrative Rules Chapter 13-275 (Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports) and Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR Part 800). The archaeologist determined through archaeological survey that no historic properties exist within the area of potential effect and that no historic properties will be affected by the proposed undertaking. The report recommended that, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended and 36 CFR part 800.2(c), the State Historic Preservation Officer (SHPO) concur with the determination of no effect.

Historic Background

The project area is located in the *ahupua‘a* of Waiākea, Hilo Hanakāhi ‘Okana, in the *moku-o-loko* (district) of Hilo. The *ahupua‘a* of Waiākea is large, consists of roughly 95,000 acres, and according to the AIS was regarded as a region of abundant natural resources and numerous fishponds. Waiākea was also an early important political center, notably under chief Kulukulu‘a. Kamehameha lived and often returned to his *‘ili kūpono* (independent land division where all tributes were paid to the chief of the *‘ili* and not the *ahupua‘a*) lands of Pi‘opi‘o in the *ahupua‘a* of Waiākea. The *‘ili kūpono* lands and its royal fishpond were passed on to his son Liholiho after his death.

Early accounts of Waiākea portray it as divided into several distinct environmental regions. From the coast to a distance of five or six miles scattered subsistence agriculture was evident, followed by a region of tall fern and bracken, flanked at higher elevations by a forest region between 10 and 20 miles wide, beyond which was an expanse of grass and lava (Ellis 1963:403). The American Missionary C.S. Stewart wrote, “the first four miles of the country is open and uneven, and beautifully sprinkled with clumps, groves, and single trees of the bread-fruit, pandanus, and candle tree (Stewart 1970:361-363). The majority of Waiākea’s estimated 2,000 inhabitants (in 1825) lived within this coastal region (Ellis1963: 253). Taro, plantains, bananas, coconuts, sweet potatoes, and breadfruit were grown individually or in small garden plots. Fish, pig, dog, and birds were also raised and captured for consumption.

The present study area is situated inland of the coastal region, in the Pana‘ewa Forest. The project area lands are not located in an area of known traditional habitation. The Pana‘ewa forest area was traditionally known as a forbidding and dangerous landscape.

The forest is heavily wooded and dense with thickets. Travel through it is made more difficult by the broken and undulating ground surface. There is an historic trail that leads from the modern day Lili‘uokalani Gardens area to the Puna coast. The trail is often called the Puna Trail and/or the Old Government Road (Escott and Tolleson 2003). Remains of the trail cross the Hawai‘i Army Reserve National Guard (HIARNG) Keaukaha Military Reserve (KMR) property, and it has the current appearance of a gravel-covered dirt road (Figure 7 and Figure 8). While there may have been some scattered home sites and gardens in this area, most of the known habitation was along the coast. The probable use of the area prehistorically was for trapping birds and collecting plants, including the plentiful *pandanus* or *hala* (Kelly et al. 1981:20).

Prior to the Māhele, Waiākea Ahupua‘a belonged to King Kamehameha, then Lihiliho, and was later held by the chiefess Ka-unu-o-hua, granddaughter of Keawe-mau-hili (Kelly et al. 1981:40). Waiākea became Crown Lands during the Māhele of 1848 and in the following years twenty-six Land Claims were awarded within the *ahupua‘a* of Waiākea (Table 1). The awards were small in area, 25 of which went to native claimants. The vast majority of awards were further west in the area of Hilo Bay. No Land Commission awards were made within or near the current project area. The project area property is owned by the State of Hawai‘i lands and is administered by DHHL.

Between 1845 and 1865, traditional land-use and residential patterns underwent a change. In particular, the regular use of Hilo Bay by foreign vessels, the whaling industry, the establishment of missions in the Hilo area, the introduction of the sandalwood trade, the legalization of private land ownership, the introduction of cattle ranching, and the introduction of sugarcane cultivation all brought about changes in settlement patterns and long-established land-use patterns. Hilo became the center of population and traditional settlements along the shoreline in outlying regions declined or disappeared. While food was still grown for consumption, greater areas of land were continually given over to the specialized cultivation and processing of commercial foodstuffs for export. Sugarcane plantations and industrial facilities were established in areas that were once upland agricultural areas and coastal settlements, respectively.

Expected Archaeological Patterns

Based on previous archaeological studies, geological studies, historical research, archaeological sites in the area surrounding the current project should be associated primarily with Historic era and modern land-uses. This is likely since this area is not known to have been used for habitation or agricultural purposes, ever. The Pana‘ewa forest area where the project parcels only began to be accessed to a larger degree in the Historic era as new areas were explored to open up for agricultural pursuits. The Pana‘ewa region where the project area is located contains marginally thin soils and is not well suited to mechanical agricultural techniques.

It is possible that pre-Contact era site types such as trail segments, temporary habitation features associated with travel and forest resource extraction might be present on the project area. It is less likely, but possible, that scattered temporary habitation features adjacent to

planting features might be present. It is also possible that more modern features associated with WWII training and quarrying in the area might be present on the project area.

Results of Fieldwork

No archaeological sites and no remains of historic properties were identified during the pedestrian survey conducted at the project area. Three overgrown, bulldozed road alignments were identified in the northernmost 40 acres during the survey. The bulldozed road alignments are evident in a 1954 USDA aerial photograph (see Figure 8). The bulldozer roads were likely created in anticipation of future development for the expansion of Hilo.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. Given the findings of the AIS, no archaeological or historical properties are anticipated to be affected. Review comments from SHPD will be included in the Final EA.

The construction documents will include a provision that should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal or artifacts be inadvertently encountered during construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor will immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

4.2 CULTURAL RESOURCES

The archaeological assessment report included archival research with findings summarized in the previous section. Pre-assessment consultation and meetings included the Office of Hawaiian Affairs and Keaukaha-Pana'ewa Farmers Association.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. According to the AIS, the project area had not been used for traditional cultural purposes. Based on historical research and the responses from the above listed contacts, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no direct adverse effect upon cultural practices or beliefs. The Project is intended to benefit native Hawaiians by providing homestead leasing opportunities.

4.3 ROADWAYS AND TRAFFIC

Regional access to the Auwae Lots and Mahiai Lot is provided by Kanoelehua Avenue (Route 11). From Kanoelehua Avenue, local access is provided by East Kahaopea Street and Auwae Road for the Auwae Lots, and East Palai Street and Mahiai Street for the Mahiai Lot. The following describes these key roadways in the project vicinity:

Kanoelehua Avenue (Route 11) is a State arterial four-lane divided highway, also designated as Māmalahoa Highway, which extends through Hilo and is part of a network of roadways that

encircles the island of Hawai'i. This highway is located approximately 1.5 mile *west* of the Auwae Lots via a signalized intersection on East Kahaopea Street, and approximately 0.6 mile west of the Mahiai Lot via an unsignalized intersection at East Palai Street and Mahiai Street.

Kahaopea Street is a two-lane County collector that extends westerly from Kanoelehua Avenue to Auwae Road. The intersections along East Kahaopea Street are un-signalized, side-street stop intersections. This roadway currently does not have paved sidewalks in either direction.

Auwae Road is a two-lane, undivided, north-south County collector that currently deadends at the southern boundary of the Auwae Lots. File Plan 1487 created the 50' rights-of-way that extend Auwae Road and connect it to Railroad Avenue (refer to Figure 2).

East Palai Street is an east-west County 2-lane collector. There is a channelized left turn lane from Kanoelehua Avenue to enter this street.

Mahiai Street is a north-south County 2-lane collector that connects to East Palai Street and curves to connect to Railroad Avenue.

DHHL will construct the extension of Auwae Road through the Auwae Lots and stop at the project boundary. DHHL will construct the internal roads for the Auwae Lots as looped roads with 50' rights-of-way width. For the Mahiai Lot, will construct an internal road within a 50' wide right-of-way that will connect to Mahiai Road. Although this internal road ends in a cul-de-sac, a 50' wide roadway reserve will enable a future connection of this internal road to an extension of Kinai Street to provide an alternative access. All roads are intended to be dedicated to the County with shoulders and swales in keeping with the agricultural-rural character of the Project, and to minimize impervious surfaces.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. DHHL will construct the required roads within the Project to dedicable County standards. Since maintenance of County roads are primarily funded by fuel tax, which the lessees pay at the pump like other vehicle owners, the fiscal impact to the County would be insignificant. The Auwae Lots and the Mahiai Lot are surrounded by lower density agricultural lots where the existing level of traffic is relatively low. The Project is not expected to result in any significant traffic impacts to the roadway system in the Project vicinity. The intersections along the State Kanoelehua Highway that future Project residents will primarily use are already improved (signalized or channelized turning lanes).

4.4 NOISE

The Auwae Lots are located at its nearest points approximately 1,700' from an active quarry, approximately 1,000' from the County's landfill operation, and adjacent to the County's green waste operation. The Mahiai Lot is surrounded by residential or agricultural uses.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Unavoidable impact. The Auwae Lots lessees may hear background noise from the quarry and County solid waste heavy equipment. However, the County and quarry operations have typical weekday operations with no night or weekend operations. Although audible, the noise levels would not interrupt speech or require higher volumes to hear over the background noise.

Mitigable impact. During construction, temporary noise impacts will occur that are unavoidable. During the pre-assessment consultation, the State of Hawai'i Department of Health, District Environmental Health Program Chief wrote that:

> *Construction activities must comply with the provisions of Hawai'i Administrative Rules, Chapter 11-46, "Community Noise Control."*
>
> 1. *The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules.*
> 2. *Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers.*
> 3. *The contractor must comply with the requirements pertaining to construction activities as specified in the rules and conditions issued with the permit*.

4.5 AIR QUALITY

Air quality in the Hilo area is believed to be relatively good, except for occasional impacts from localized traffic congestion. The prevailing northeasterly trade wind flow tends to push any human-made or natural pollutants away. However, the amount of particulates and other air pollutants can significantly increase during periods when the winds shift to a southwesterly direction. Air flow from this direction carrying volcanic smog (more commonly referred to as vog), can lead to an increase in pollution and a decrease in visibility.

The State Department of Health (DOH) maintains a limited network of air monitoring stations around the State to gather data on certain regulated pollutants. Currently, no routine ambient air monitoring is conducted by DOH in the Hilo area. Historical monitoring during the 1970's and 1980's indicated very low pollutant levels in Hilo. The entire state has been an attainment area for the last several decades. There is little reason to believe this has changed significantly.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. Construction activity will be the principal source of short-term air quality impact. Construction vehicle activity will temporarily increase automotive pollutant

concentrations along the existing roadways as well as on the project site. Site preparation, earth moving, and building construction will create particulate emissions during the short term. Movement of construction vehicles on unpaved surfaces can also generate particulate emissions.

Short-term impacts that could result from the project would be the emission of fugitive dust during site preparation and construction. During the pre-assessment consultation, the State of Hawai'i Department of Health, District Environmental Health Program Chief wrote that: "The applicant would need to meet the requirements of our Department of Health Air Pollution Rules, Chapter 60.1, Title 11, State of Hawai'i for fugitive dust control."

Although the potential for fugitive dust is low due to the wet climate and low wind speeds of Hilo, adequate dust control measures will be employed, particularly during construction during low-rainfall periods. Dust control will be accomplished by frequent watering of unpaved roads within the project site and areas of exposed soil surfaces. As soon as it is feasible, landscaping of completed areas will also be employed. Dust control measures will comply with applicable provisions of HAR section 11-60.1-33 and Chapter 10 of the Hawai'i County Code ("Erosion and Sedimentation Control"). Measures to control dust during construction include:

- Providing an adequate water source at the site prior to start-up construction activities;
- Irrigating the construction site during periods of drought or high winds and all dry conditions;
- Disturbing only the areas of construction that are in the immediate zone of construction to limit the amount of time that the areas will be subject to erosion;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of construction activities; and
- Installing silt screening in the areas of disturbance.

Long-term negative impacts related to air quality are not expected.

4.6 VISUAL RESOURCES

The Site is surrounded by developed urban or agricultural land uses. The Site does not have any trees designated as Exceptional Trees by county code (HCC chapter 14, article 10). The General Plan does not identify natural beauty sites in the vicinity of the Project.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The conversion of the Site from its existing undeveloped condition to agricultural lots will not impact any significant visual resource.

4.7 Toxics and Hazardous Waste

Pursuant to Department of Health Hazard Evaluation and Emergency Response Office's recommendation, a Phase 1 study was conducted of the Site (see DOH letter in Appendix B referring to DOH's standard conditions). Findings from the study were as follows (see Appendix E):

- Auwae Lots. During the site reconnaissance on June 9, 2015, debris was observed near the end of Auwae Street on the subject property, including: a lawn mower tractor and an old television. The subject property was once within the boundaries of the "Hawaii National Guard" area, indicating it was once part of the Keaukaha Military Reservation. The adjacent property located at 485 Railroad Avenue (TMK: [3] 2-1-025: parcels 092 and 093) was occupied by Orchid Island Rubbish & Recycle, Ken's Towing Service, Inc., and Hilo Community Recycling Center, LLC. Historical activities, including recycling of used cooking oil, aluminum cans, cardboard, newspaper, magazines, paper, glass, and phone books and vehicle salvage, were conducted at the site from c. 1999 until 2009. Several "notices of violation" (NOV) were issued to the various business operators by the DOH Solid and Hazardous Waste Branch for improper materials storage, illegal dumping, and releases of cooking oil and the unpermitted storage of a large number of junk vehicles at the site. Activities historically conducted at the site may have encroached on and/or negatively impacted the subject property. The South Hilo Sanitary Landfill (SHSL) is located in a former quarry, approximately 1/8th mile southeast (down/crossgradient assuming groundwater flows to the northeast) of the subject property. The SHSL is an unlined (pre-RCRA Subtitle D) landfill that has been in operation since at least the 1960s. The Hilo Rubbish Dump site, is identified as a "County Dump Site" on a 1978 survey map and is listed by EDR as a CERCLA NFRAP (No Further Remedial Action Planned) site. This dump site is located within a former quarry/borrow pit less than 1/10th mile north (downgradient assuming groundwater flows to the northeast) of the subject property and is currently an active green waste facility (East Hawaii Organics Facility) owned and operated by the County of Hawaii.
- Mahiai Lot. Soil was imported to this site from an unknown agricultural source. The former occupant had kennels that drained to open sumps covered with lumber rather than a cesspool.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impacts. To ensure the health and safety of future residents of the Site, DHHL should implement the following mitigation measures:

- Auwae Lots
    - Properly dispose of the illegal dumping solid waste at the end of Auwae Road;
    - Retain a Phase 1 consultant to conduct further research as follows:

- Inspect for any industrial use encroachment along the boundary of parcels [3] 2-1-025: parcels 092 and 093 with mitigation as needed to properly cleanup.
- Use best efforts to research the extent of historic military use of the Auwae Lots.

- As long as groundwater is not pumped, no groundwater testing is necessary for potential impacts from the landfill or green waste site.

- Mahiai Lot. Retain a Phase 1 consultant for further research as follows:
  - Test the soil for arsenic;
  - Inspect the kennel drainage area and conduct further testing as appropriate.

4.8 INFRASTRUCTURE AND UTILITIES

4.8.1 Water System

According to the County Department of Water Supply (DWS) in its pre-assessment consultation comments (see Appendix B), water can be made available from an existing 8-inch County waterline within Auwae Road and an 8-inch County waterline within Mahiai Street, fronting the proposed project sites (see Figure 10). The required water system improvements, designed to deliver water at adequate pressure and volume under peak-flow and fire-flow conditions in accordance with the County of Hawai'i, Water System Standards 2002, as amended, and the Rules and Regulations of the Department of Water Supply, include, but not be limited to, mains (minimum 6 inches in diameter), service laterals to front each lot, and fire hydrants at the appropriate spacing. All construction plans, calculations, and specifications must be submitted by a professional engineer, registered in the State of Hawai'i, to DWS for review and approval. In addition to the above water system improvements, DHHL must also pay the prevailing facilities charge, which is subject to change, of $5,500.00 for each additional lot created. Payment is due and payable upon completion of the required water system improvements.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The County water system has adequate capacity to serve the Project. DHHL must construct and dedicate the water system improvements to the County and pay the prevailing facilities charge (estimated at $5,500 x 75 additional lots= $412,500) upon dedication of the water system to DWS.

4.8.2 Wastewater System

There are no sewer lines within Auwae Road or Mahiai Street that connect to the project sites (see Figure 11). Cesspools will not be allowed since the Auwae Lots are in the Critical Wastewater Disposal Area and the Mahiai Lot is in an area that requires a minimum lot size of 1-acre for a cesspool, pursuant to the Department of Health's wastewater systems rules

(Hawai'i Administrative Rules chapter 11-62) (see Figure 12). DHHL will require the Mahiai Lot lessees to install septic systems approved by the Department of Health (DOH).

For the Auwae Lots, in response to DOH consultation comments (see letter in Appendix B), DHHL examined an alternative to sewer these 64 lots by connecting to the County's sewer system at a manhole located near Home Depot on Railroad Avenue. A lift station would be required at Auwae Road. A force main minimally sized to accommodate the Auwae Lots approximately 3,000 l.f. in length would connect the lift station to the Home Depot manhole via a 10' sewer easement on DHHL land. The collection system within the Auwae Lots would require approximately 3,600 l.f. of collector lines and 12 manholes. The estimated additional cost for this sewer system is approximately $2.4 million, a 150% increase in the Project cost. Since DHHL is still in the process of re-examining their plans for this area to update the Island Plan, the future sewer needs are not certain. The proposal, therefore, is to install dry sewers as part of this Project and increase the Project funding by approximately $1.2 million to accommodate this proposal. This dry sewer proposal commits DHHL to a future sewer system, puts the future residents on notice to locate their interim septic system to cost-effectively connect to the sewer system when required, buys time to enable DHHL to plan this area to properly size the main collector system, facilitates finding the additional funds with a reduced cost estimate, and avoids having to dig up the roads within the Project to install sewer lines in the future.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. For the Mahiai Lot, the minimum one-half acre lot size provides adequate area for the septic system's leach field. The DOH requires a licensed engineer to design and inspect the completed septic system (Hawai'i Administrative Rules section 11-62-31.1). For the Auwae Lots, the dry sewer system and interim septic systems commit the area to a future sewer connection. DHHL will look into potential funding sources such as the U.S. Department of Agriculture water and wastewater loan and grant program.

4.8.3 Drainage System

The Site is located in an area described as "outside floodplain/minimal flooding area" on the Flood Insurance Rate Map (FIRM) (see Figure 8). The grass shoulders and swales along the roads would promote infiltration, consistent with Low Impact Design (LID) site design measures. LID measures are intended to accomplish the following: (1) decrease the erosive potential of increased runoff volumes and velocities associated with development-induced changes in hydrology; (2) remove suspended solids and associated pollutants entrained in runoff that result from activities occurring during and after development; and (3) retain hydrological conditions to closely resemble those of the pre-disturbance condition. Any runoff along the streets would drain into drywells that will be installed within the Project rights-of-way.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. Runoff would be minimized with the 2-lane pavement width and grass shoulders and swales. Any increase in runoff from roofs and pavement would flow into drywells within the Project and recharge the groundwater.

4.8.4 Solid Waste

The County of Hawai'i Solid Waste Division operates and maintains, either by County personnel or by contracted services, two landfills and twenty-one transfer stations. The South Hilo Sanitary Landfill, transfer station, and green waste processing site are located near the Auwae Lots. Since the volume and size of the Project's grubbed material exceed the capacity of the County's green waste facility, the grubbed material will be chipped on site. The stockpiled materials will not exceed 5' in height. The mulch will be made available to DHHL lessees.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigated impact. Construction documents will require chipping the grubbed material on site and making the mulch available to DHHL lessees. Whenever green waste cannot be processed on site, the green waste will be hauled to the Hawaii County Green Waste Site in Hilo for final disposal. Soil and rocks displaced from grading and clearing will be used as fill within the site as needed.

4.8.5 Utilities

The Hawai'i Electric Light Company, Inc. (HELCO), a privately-owned utility company regulated by the State Public Utilities Commission, provides electrical power to the island of Hawai'i. The HELCO network of power plants serving Hilo includes the Kanoelehua Power Plant, Puna Power Plant, Wailuku Hydro Power Plant, Hilo Coast Power Plant, and Shipman Power Plant.

Telecommunication services are provided by Hawaiian Telcom via overhead lines. Sandwich Isles Communication is the sole provider of fiber optics serving DHHL properties.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. Electrical and telephone services are currently sized, adequate, and available to supply the Project. In response to pre-assessment consultation, HELCO had no objections to service the Project (see Appendix B).

4.9 SOCIO-ECONOMIC CHARACTERISTICS

The overall population of Hawai'i County has exhibited relatively stable growth over the past decade. The County of Hawai'i Department of Research and Development reported that the population of Hawai'i County was 186,738 people in 2011, a 25.6 percent increase from the 2000 population of 148,677 people.

The South Hilo district had a population of 48,786 in 2010 which represented approximately 26 percent of the total population for Hawai'i Island. The City of Hilo contains the main offices of the County government, branch offices of federal and state agencies. The island's major deep draft harbor and international airport are also located in Hilo. In addition to industrial, commercial and social service activities, the University of Hawai'i at Hilo and Hawai'i Community College and affiliated research programs play an important role in Hilo's economy. The Site is currently underutilized. The Project would enable commercial or subsistence agriculture by the lessees.

As of February 2014, Hawai'i County's unemployment rate was 6.1 percent, compared to the State's overall rate of 4.6 percent, and it was decreased by .9 percent from February 2013 from the Hawai'i County's unemployment rate of 7.0 percent (State of Hawai'i Department of Labor and Industrial Relations, 2014).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. During the pre-assessment consultation process, the State Department of Human Services (DHS) noted that: "There are several DHS licensed family child care homes located in the vicinity that may be impacted by the construction project" (see Appendix B). Construction documents will require the contractor to follow noise and dust mitigation measures.

Construction of the Project will not require the relocation of residents, as the Site is currently vacant. DHHL had terminated the lease of the Mahiai Lot and will demolish the existing home. The Project will enable relocation of existing lessees threatened by lava flow (Puna) or potential unexploded ordnances (Pu'ukapu or Lālāmilo).

4.9.1 Environmental Justice

On February 11, 1994, President Clinton signed Executive Order (E.O.) 12898. This E.O. directs federal agencies to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of its activities on minority and low-income populations.

Each Federal agency must make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health, environmental, economic, and social effects of its programs, policies, and activities on minority and low-income populations. Since this Project will use Federal funds, it is subject to the Federal review process,

The project site is located in a predominantly mixed-race neighborhood typical of many in the State. No single cultural or ethnic group in the vicinity of the project site is disproportionately impacted relative to the Waiākea community.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impact. In response to pre-assessment consultation, the State Department of Human Services "advised that there are several OHS licensed family child care homes located in the near vicinity that may be impacted by the construction project" (see Appendix B for a copy of the letter). Construction documents will require the contractor to comply with noise and dust standards. Depending on the location of the license care homes, there may be some short-term construction vehicle traffic during the construction period.

Beneficial impact. The Project will provide homestead awards to native Hawaiians, many of whom are low-income families. Therefore, the Project will benefit rather than expose or disproportionately adversely affect minority or low-income persons in comparison to the rest of the population, and thereby is in compliance with E.O. 12898.

4.10 PUBLIC SERVICES AND FACILITIES

4.10.1 Schools

The closest State Department of Education (DOE) public schools are: Waiākeawaena Elementary School, Waiākea Elementary School, Waiākea Intermediate School, and Waiākea High School.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. Although the Project has the potential to increase the school-age population, DOE has confirmed that the public schools in the region have the capacity to accommodate the increase (see Appendix B for DOE's letter).

4.10.2 Police, Fire and Medical Services

Police Protection

The project site is located in South Hilo, Patrol District 1. The district extends from Hakalau in the north, to the mid-point of Kanoelehua Avenue between Hilo and Kea'au in the south, to the Saddle Road in the west. The district includes the main police station, located at 349 Kapi'olani Street, approximately 2 miles from the Auwae Lots and 3 miles from the Mahiai Lot.

Fire Protection

The Site is within the 5-mile response zones of Kawailani, Waiakea, Kaumana, and Central Fire Stations. The Hawai'i County Fire Department Kawailani Fire Station is an Engine Company with one engine, a tanker and a medic unit. Central Fire Station is an Engine Company and an ALS medic unit. Kaumana Fire Station is an Engine Company and HAZMAT Response capabilities. Waiakea Fire Station in Keaukaha is a Rescue Company providing firefighting response with an Engine, Light and Heavy Rescue, including helicopter response and ocean rescue response capabilities. Recently, Waiakea received a new 79' Ladder Truck. At this time, no tanker vehicles

are assigned to the Hilo area due to the adequate hydrant system and all of the Engines (also referred to as Pumpers) each carry 1,000 gallons of water.

Medical Services

Hilo Medical Center (HMC) is the primary health care facility serving the South Hilo district. HMC is located approximately 4 miles from the Auwae Lots and 4.5 miles from the Mahiai Lot at 1190 Waiānuenue Avenue. Ambulance service is provided by the Hawai'i Fire Department. Kawailani and Central Fire Stations have emergency medical service (EMS) capabilities.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. The Project will have fire hydrants. The Site is within adequate response zones of several fire stations.

During the pre-assessment consultation and Draft EA public review processes, the Police Department wrote: "Staff, upon reviewing the provided documents, does not anticipate any significant impact to traffic and/or public safety concerns."

4.10.3 Recreational Facilities

The entire South Hilo District contains 54 parks totaling 590 acres. In the vicinity of the Site, there is the Pana'ewa Park, Waiakeawaena Playground, and Malama Park (see Figure 13). Other recreational facilities, parks, and open spaces in the Hilo area include Hilo Municipal Golf Course, Kūhiō-Kalaniana'ole Park, Honoli'i Beach Park, Lili'uokalani Gardens, Reeds Bay, Onekahakaha Beach Park, Kealoha Beach Park, Carlsmith Beach Park and Richardson Ocean Park.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impact. There are a variety of recreational facilities to serve the Project within reasonable distance with adequate capacity to accommodate the future Project residents.

4.10.4 Airport

The Hilo International Airport provides interisland service, cargo, commuter, and tour services. It is also used by the military. The airport's primary runway (8-26) is 9,800 feet long and is used principally for air carrier operations. Crosswind Runway 3-21 is 5,600 feet long and is used mainly for general aviation operations.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Mitigable impacts. According to early consultation comments from the State Department of Transportation, the Auwae Lots and Mahiai Lot are located 5,462 feet and 12,913 feet, respectively, from the end of Runway 3 (see Appendix B for a copy of the letter). The Auwae Lots are located within the 10,000' recommended zone to restrict agricultural activities that

could attract wildlife that are potential hazards to aircraft operations. The Federal Aviation Administration (FAA) would assess the Project's impact upon DHHL's filing of a notice of proposed construction in accordance with Code of Federal Regulations, Title 14, Part 77.9 (FAA Form 7460-1 "Notice of Proposed Construction or Alteration" if construction is within 20,000 feet of a public use airport. The DOT-Airports Division also requested notification prior to any land disturbance activities that could present fugitive dust issues. This would include both general clearing, grading, and grubbing operations as well as blasting for excavation. DOT also expressed concern with photovoltaic systems if the lot is located in or near the approach path of aircraft into the airport; however, neither the Auwae Lots nor the Mahiai Lot is within the approach path.

5 LAND USE CONFORMANCE

State of Hawai'i and Hawai'i County land use plans, policies, and ordinances relevant to the Project are described below.

5.1 STATE OF HAWAI'I

5.1.1 Chapter 343, Hawai'i Revised Statutes

Compliance with Chapter 343, HRS is required as described in Section 1.4.

5.1.2 State Land Use Law, Chapter 205, Hawai'i Revised Statutes

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four Districts: Urban, Rural, Agricultural, or Conservation.

Both the Auwae Lots and Mahiai Lot are in the Agricultural District (see Figure 14). The State Land Use Law specifies a minimum lot size of one acre within this District (HRS §205-5). However, the Hawaiian Homes Commission Act (HHCA §§204 & 206) empowers DHHL with exclusive authority to control its land, whereby these lands are not subject to State or county land use controls. Therefore, the Project's one-half acre lots are permitted.

5.1.3 Coastal Zone Management Act, Chapter 205A, Hawai'i Revised Statutes

The entire state is defined to be within the Coastal Zone Management Area, pursuant to Hawai'i Revised Statutes (HRS) 205A-1, (definition of "coastal zone management area")." As such, the Project, although not within the regulated Special Management Area (SMA), is within the Coastal Zone Management Area that is subject to the objectives and policies of the Coastal Zone Management Act. The Project's relationship to the objectives and policies set forth in HRS 205A-2, is discussed below.

5.1.3.1 Recreational Resources

Objective*: Provide coastal recreational opportunities accessible to the public.*

Policies

- *(A) Improve coordination and funding of coastal recreational planning and management; and*
- *(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
  - *(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
  - *(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when*

such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of County, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and County authorities; and crediting such dedication against the requirements of section 46-6;

Discussion: The Project is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine resources for purposes including recreation, the State of Hawai'i has adopted water quality standards. Generally, these standards will require the submittal and adherence to a National Pollution Discharge Elimination System (NPDES) permit. This permit requires compliance with best management practices during construction to minimize soil erosion into adjacent waterways. The NPDES permit will also include requirements to maintain water quality during operation. A NPDES permit will be required for the Project.

5.1.3.2 Historic Resources

Objective*: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

Policies

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources;

Discussion: Based on an archaeological inventory survey, the archaeologist concluded that **no historic properties will be affected** by this Project (see Appendix D). The report has been submitted to the State Historic Preservation Division for review and concurrence. DHHL will require its contractors to comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. The construction documents will include a provision that should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal or artifacts be inadvertently encountered during construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor will immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

5.1.3.3 Scenic and Open Space Resources

Objective*: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

Policies

(A) Identify valued scenic resources in the coastal zone management area;

(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

(D) Encourage those developments that are not coastal dependent to locate in inland areas;

Discussion: The Project will be located inland, away from the shoreline; therefore, it is anticipated that there will be no effect on the quality of the coastal scenic resources.

5.1.3.4 Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policy A: Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

Policy B: Improve the technical basis for natural resource management;

Policy C: Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

Policy D: Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

Policy E: Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The Project will be located far inland from the coastline. Therefore, it is anticipated that there will be no effect on the quality of the coastal ecosystems.

5.1.3.5 Economic Uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policy A: Concentrate coastal dependent development in appropriate areas;

Policy B: Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

Policy C: Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

(iii) The development is important to the State's economy.

Discussion: The Project is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

5.1.3.6 Coastal Hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policy A: Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;

Policy B: Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;

Policy C: Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

Policy D: Prevent coastal flooding from inland projects.

Discussion: The Project is located far inland from the coastline and will not exacerbate any coastal hazards.

5.1.3.7 Managing Development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policy A: Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

Policy B: Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

Policy C: Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The Project is not a coastal development, is not located on the coastline, and is not in the SMA; however, this EA, provided opportunity for public input during the Draft EA Public Comment period. Pre-assessment consultation comments were obtained and are reproduced in Appendix B.

5.1.3.8 Public Participation

Objective: Stimulate public awareness, education, and participation in coastal management.

Policy A: Promote public involvement in coastal zone management processes;

Policy B: Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

Policy C: Organize workshops, policy dialogues, and site- specific mediations to respond to coastal issues and conflicts.

Discussion: The Project is not a coastal development, is not located on the coastline, and is not in the SMA; however, this EA, provided opportunity for public input during the Draft EA Public Comment period. Pre-assessment consultation comments were obtained and are reproduced in Appendix B.

5.1.3.9 Beach Protection

Objective: Protect beaches for public use and recreation.

Policy A: Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

Policy B: Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

Policy C: Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: The Project is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

5.1.3.10 Marine Resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policy A: Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

Policy B: Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

Policy C: Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

Policy D: Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

Policy E: Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Project is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine water quality the Project will be designed and built in compliance with all applicable Federal, State, and County regulations pertaining to storm water management including Chapter 10 (Erosion and Sedimentation Control) of the Hawai'i County Code and the DOH NPDES permit program.

5.1.4 Hawai'i State Plan

The Hawai'i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. Objectives and policies pertinent to the proposed project are as follows:

Section 226-5 Objective and policies for population:

(a) It shall be the objective in planning for the State's population to guide population growth

to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.

(b) To achieve the population objective, it shall be the policy of this State to:

(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.

***Discussion:** The Project is consistent with these objectives and policies by providing native Hawaiians with affordable housing and subsistence agricultural opportunities.*

Section 226-10 Objective and policies for the economy – potential growth activities:

(a) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaii's economic base.

(b) To achieve the potential growth activity objective, it shall be the policy of this State to:

(10) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives.

Discussion: This project will receive Federal and State funding to provide native Hawaiians with enhanced socio-economic opportunities through home ownership in an agricultural community in proximity to urban services.

Section 226-11 Objectives and policies for the physical environment – land-based, shoreline, and marine resources:

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives.

(2) Effective protection of Hawaii's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

Discussion: As part of the development process, DHHL retained services to assess the biological, archaeological, and hazardous waste assessment, and also consulted with various agencies such as SHPD and the U.S. Fish and & Wildlife Services. DHHL is committed to implement the mitigation measures identified in this environmental assessment to protect endangered species and other sensitive resources.

§226-19 Objectives and policies for socio-cultural advancement--housing.

(a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:

(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaii's population.

(2) The orderly development of residential areas sensitive to community needs and other land uses.

(b) To achieve the housing objectives, it shall be the policy of this State to:

(1) Effectively accommodate the housing needs of Hawaii's people.

(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.

(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.

(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.

(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.

(7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.

Priority Guidelines: §226-106 Affordable housing. Priority guidelines for the provision of affordable housing:

(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.

(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.

(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low- and moderate-income households, gap-group households, and residents with special needs.

(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner- occupied housing.

(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.

(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.

Discussion: The Project provides an opportunity for existing lessees threatened by lava or other hazards to relocate to a safer location. The Project utilizes marginal agricultural land in a suitable location in proximity to infrastructure and urban services. DHHL offers a diversity of programs to enable low- to moderate-income native Hawaiian families to construct a home on their awarded homestead lot (e.g., self-help, package home loans, down payment assistance). The Project will use agricultural standards for the streets (e.g., grass shoulders and swales) to minimize development costs, maintain a rural character, and reduce runoff.

5.1.5 DHHL Island and Regional Plans

The Hawaiian Homes Commission adopted the Hawai'i Island Plan in 2002. The Plan "provides summary description and evaluation of current Department of Hawaiian Home Lands (DHHL) holdings on Hawai'i Island, and presents land use plans developed to meet DHHL beneficiary needs. These are necessary components of the DHHL Hawai'i Island Plan, developed to guide award of lands to native Hawaiian beneficiaries on the Big Island. The project was undertaken per Section 213(e) of the Hawaiian Homes Commission Act (HHCA), which authorizes planning studies to provide the basis for identifying preferred DHHL land uses and appropriate management strategies for those lands" (PBR HAWAII, 2002, p. 1). In addition to administering the homesteading program, DHHL is authorized to lease and issue revocable permits, licenses, and rights-of-entry for lands not in current homestead use. Revenues from lands used for commercial, industrial, and other income-producing purposes support administration of the homestead program.

The Plan designated the Auwae Lots as Commercial, and the Mahiai Lot as Supplemental Agriculture (see Figure 15). The Project's one-half acre agricultural lots are not consistent with either designation. DHHL will update the Plan to reflect the proposed use with a designation of Subsistence Agriculture. The Plan describes Subsistence Agriculture as follows:

"Small agriculture/aquaculture lots. Marginal to good lands. Lifestyle areas intended to allow for home consumption of agricultural products. Occupancy required. Agriculture waiting list. Close proximity to existing infrastructure. <5 acres"

The Hawaiian Homes Commission adopted the Pana'ewa Regional Plan in 2009. This Regional Plan was "…prepared to facilitate the work of such partnerships as DHHL and others develop lands in Pana'ewa. Specifically, this report is intended to:

- Help identify opportunities for partnerships with DHHL in the development of its Pana'ewa lands;
- Provide information essential to the planning of projects, services, and entrepreneurial ventures;
- Identify key issues, opportunities, and constraints affecting regional development and area improvements;
- Assist in the efficient allocation of resources by DHHL and its partners; and
- Identify priority projects that are essential to moving development and community improvement projects forward." (PBR HAWAII, 2009, p. 2)

The Regional Plan, consistent with the Island Plan, identified the Auwae Lots for Industrial Development Opportunity. This Plan will also be updated to reflect the proposed Project and to reevaluate the income generation needs and objectives from the planned industrial uses of these lands, which were identified as a priority in the Regional Plan.

5.2 COUNTY OF HAWAI'I

County-specific land use plans and ordinances pertaining to the Project include the General Plan and the Zoning Code.

5.2.1 County of Hawai'i General Plan

The County of Hawai'i General Plan is the policy document for the long-range comprehensive development of the Island of Hawai'i. Among the purposes of the General Plan are to guide the pattern of development in Hawai'i County and to provide the framework for regulatory decisions and capital improvement projects. The General Plan undergoes a comprehensive review every ten years, with the last review being completed in 2005.

The policy land use map, referred to as the Land Use Pattern Allocation Guide (LUPAG) Map, is intended to guide the direction and quality of future developments in a coordinated and

rational manner. The LUPAG Map designates the Auwae Lots as "Urban Expansion" and the Mahiai Lot as "Low Density Urban" (see Figure 16). The Project is consistent with both designations.

> Low Density: Residential, with ancillary community and public uses, and neighborhood and convenience-type commercial uses; overall residential density may be up to six units per acre.
>
> Urban Expansion Area: Allows for a mix of high density, medium density, low density, industrial, industrial-commercial and/or open designations in areas where new settlements may be desirable, but where the specific settlement pattern and mix of uses have not yet been determined. (General Plan, §14.1.1)

Specific General Plan goals, policies, and courses of action most applicable to the Project are discussed below.

Housing

9.2 GOALS

(a) *Attain safe, sanitary, and livable housing for the residents of the County of Hawai'i.*

(b) *Attain a diversity of socio-economic housing mix throughout the different parts of the County.*

(c) *Maintain a housing supply that allows a variety of choices.*

(d) *Create viable communities with affordable housing and suitable living environments.*

(e) *Improve and maintain the quality and affordability of the existing housing inventory.*

(f) *Seek sufficient production of new affordable rental and fee-simple housing in the County in a variety of sizes to satisfactorily accommodate the needs and desires of families and individuals.*

(g) *Ensure that housing is available to all persons regardless of age, sex, marital status, ethnic background, and income.*

(h) *Make affordable housing available in reasonable proximity to employment centers.*

(i) *Encourage and expand home ownership opportunities for residents.*

9.3 POLICIES

(a) *Encourage a volume of construction and rehabilitation of housing sufficient to meet growth needs and correct existing deficiencies.*

(d) *Support the construction of housing for minimum wage and agricultural workers.*

(n) *Investigate, develop, and promote the creation of new innovative and timely financing techniques and programs to reduce the cost of housing.*

(o) *Encourage the use of suitable public lands for housing purposes in fee or lease.*

(p) *Encourage the construction of homes for lease or lease with option to purchase.*

(t) *Ensure that adequate infrastructure is available in appropriate locations to support the timely development of affordable housing.*

(x) *Vacant lands in urban areas and urban expansion areas should be made available for residential uses before additional agricultural lands are converted into residential uses.*

Discussion: The Project provides an opportunity for existing lessees threatened by lava or other hazards to relocate to a safer location. The Project utilizes marginal agricultural land in a suitable location in proximity to infrastructure, urban services, and employment centers. DHHL offers a diversity of programs to enable low- to moderate-income native Hawaiian families to construct a home on their awarded homestead lot (e.g., self-help, package home loans, down payment assistance). DHHL is also innovating with a rent to own program.

Transportation

13.2.2 Goals

(a) Provide a system of roadways for the safe, efficient and comfortable movement of people and goods.

(b) Provide an integrated State and County transportation system so that new major routes will complement and encourage proposed land policies.

13.2.3 Policies

(l) Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design, including landscaping and planted medians.

Discussion: The Project will use agricultural standards for the streets (e.g., grass shoulders and swales) to minimize development costs, maintain a rural character, and reduce runoff. The Project's streets have been laid out for connectivity, in lieu of long dead-end cul de sacs, that provide redundant accessibility. The Auwae Lots are looped roads. The Mahiai Lot has a road reserve to connect to a future extension of Kinai Street.

Land Use

14.1.2 Goals

(a) Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.

(b) Protect and encourage the intensive and extensive utilization of the County's important agricultural lands.

(c) Protect and preserve forest, water, natural and scientific reserves and open areas.

14.1.3 Policies

(a) Zone urban- types of uses in areas with ease of access to community services and employment centers and with adequate public utilities and facilities.

(b) Promote and encourage the rehabilitation and use of urban areas that are serviced by basic community facilities and utilities.

(c) Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.

Discussion: As further discussed in the next section on zoning, DHHL has preemptive authority over county land use regulations but has entered into a Memorandum of Agreement with the County of Hawaii to establish a common understanding and procedure. DHHL prepares an Island Plan where the County has an opportunity to review and comment. The Island Plan conveys DHHL's desired land use and DHHL submits to the County an appropriate zoning designation that matches the Island Plan designation. DHHL's Island Plan identifies residential and subsistence agricultural areas consistent with the County's General Plan policies to concentrate higher density in areas serviced by basic community infrastructure in accordance with projected needs of DHHL's wait list.

5.2.2 County of Hawai'i Zoning

The County zoning is MG-1a (general industrial district with 1-acre minimum lot size) and A-5a district (agricultural district with 5-acre minimum lot size) (see Figure 17). Under a Memorandum of Agreement between DHHL and the County of Hawai'i, DHHL has the power to determine the appropriate County zoning based on DHHL's land use designation in the island plan (Department of Hawaiian Home Lands, 2002). For the one-half acre agricultural lots, the appropriate DHHL land use designation is Subsistence Agriculture corresponding to the County's RA-0.5a (residential-agricultural district with a minimum lot size of half-acre).

However, under the current DHHL Hawai'i Island Plan (2002), the land use designations for the Site are Commercial and Supplemental Agriculture (see Figure 12). DHHL's Planning Office will process an amendment to the island plan's land use designation for approval by the Hawaiian Homes Commission, then submit a letter to the County for recognition of the appropriate zoning.

5.2.3 Special Management Area

The property is not located within the Special Management Area (SMA).

5.3 APPROVALS AND PERMITS

A listing of anticipated permits and approvals required for the Project is presented below:

Table 1: Anticipated Approvals and Permits

Permit/Approval	**Responsible Agency**
Chapter 343, HRS Compliance	Department of Hawaiian Home Lands Office of Environmental Quality Control
Subdivision	Hawai‘i County Planning Department
Underground Injection Control Permit	State Department of Health
National Pollutant Discharge Elimination System (NPDES) Permit	State Department of Health
Grubbing/Grading	Hawai‘i Department of Public Works
Noise Permit	State Department of Health
Individual Wastewater System Approval (by future lessee of each lot)	State Department of Health
Building Permit (by future lessee of each lot)	Hawai‘i County Department of Public Works

6 ALTERNATIVES

This section identifies and evaluates a range of alternatives in addition to the preferred alternative (i.e., the Project) that could meet the purpose and need and possibly avoid, reduce, or minimize adverse environmental effects. The reference point to compare alternatives is the "no action" alternative.

6.1 NO ACTION ALTERNATIVE

With the "no action" alternative, the Site remains underutilized. The option for commercial or industrial use for the Auwae Lots remains open as envisioned in the current Island and Regional Plans (see §5.1.5). However, homesteading opportunities to relocate existing lessees or to award new leases to those on the wait list would not be realized.

6.2 ALTERNATIVE SITES

An alternative DHHL-owned site for the Project is the Priority Tract identified in DHHL's Hawai'i Island Plan. The Island Plan designated this tract as Residential. However, the Pana'ewa Regional Plan, upon closer study, designated this tract as "Unencumbered Lands", acknowledging "…their lack of infrastructure will make it a challenge to find a feasible way to utilize these parcels." Another consideration was DHHL's desire to relocate existing lessee's with agricultural leases (e.g., Maku'u) with comparable agricultural leases although the acreage may be less than their existing lease. The preferred Site infills in areas surrounded by agricultural leases and available infrastructure.

6.3 ALTERNATIVE DESIGNS

One alternative lot layout to minimize pavement costs and maximize the size of the lots is to create long deadend cul de sacs. The additional right-of-way to create a loop road for the Auwae Lots is not significantly greater than a cul de sac layout since the land area needed for the turnaround of a cul de sac would instead be used for the loop road connection. The loop road provides a redundant means to access the lots in the event one of the road segments closes. For the Mahiai Lot, the addition of a road reserve to enable a future extension of Kinai Street is an unavoidable setaside of 7.876 s.f. that could have been included to increase lot sizes. However, the addition of this road reserve provides an emergency access until fully improved, and a convenient alternative access when constructed. The existing Kinai Street is not a cul de sac and is intended to be extended. With the avoidance of long cul de sacs, the Project is consistent with the subdivision code's preference that "A cul-de-sac shall be as short as possible and shall not be more than six hundred feet in length nor serve more than eighteen lots" (HCC §23-48).

Another alternative design is the road section. The existing County dedicable standard for a road without sidewalks and curbs is to completely pave the shoulders and swales (HCC §23-86

and Standard Details R-33 and R-34). DHHL has the authority to preempt county standards, and the Project proposes roads for dedication to the County (i.e., license) within a 50' right-of-way but with grass shoulders and swales. The request is consistent with the County General Plan Transportation policy to "Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design" (General Plan §13.2.3(l)).

7 FINDINGS AND DETERMINATION

To determine whether the construction of the Project may have a significant impact on the physical and human environment, all phases and expected consequences of the proposed project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Proposing Agency (Department of Hawaiian Home Lands) anticipates issuing a Finding of No Significant Impact (FONSI). The supporting rationale for this finding is presented in this chapter.

7.1 SIGNIFICANCE CRITERIA

The discussion below evaluates the significance of the Project's impacts based upon the Significance Criteria set forth in Hawai'i Administrative Rules section 11-200-12. An action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Discussion: The proposed project is not anticipated to involve any construction activity that may lead to a loss or destruction of any sensitive natural or cultural resource. The project site has been the subject of flora/fauna, archaeological and cultural studies conducted in and around the site. All of the studies reveal the absence of any resource potentially subject to irrevocable loss as a result of construction.

(2) Curtails the range of beneficial uses of the environment;

Discussion: Although the future option to use the Auwae Lots for commercial or industrial use would be curtailed, DHHL has determined that the homestead needs from these lands outweigh the income potential.

(3) Conflicts with the State's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

Discussion: The proposed project is not in conflict with the long-term environmental policies, goals, and guidelines of the State of Hawai'i. As presented earlier in this EA, the project's potential adverse impacts are associated only with the short-term construction-related activities, and such impacts can be mitigated through adherence to standard construction mitigation practices.

(4) Substantially affects the economic or social welfare of the community or State;

Discussion: The proposed project will have beneficial effects on the economy and social welfare of Hilo town or the County of Hawai'i by providing affordable housing opportunities for native Hawaiians in proximity to jobs, schools, shopping, and other urban services.

(5) Substantially affects public health;

Discussion: There will be temporary impacts to noise and air quality levels during the construction phase of the project; however, these potential impacts will be short-term and are not expected to substantially affect public health. Wastewater disposal will utilize individual septic systems approved by the Department of Health. All construction activities will comply with applicable regulations and will implement appropriate mitigation measures.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

Discussion: Although the Project will increase population in the immediate area, the surrounding roads, schools, parks, and other public facilities have the capacity to serve this increase.

(7) Involves a substantial degradation of environmental quality;

Discussion: Construction activities associated with the proposed project are anticipated to result in negligible short-term impacts to noise, air-quality, and traffic in the immediate vicinity. With the incorporation of the recommended mitigation measures during the construction period, the project will not result in degradation of environmental quality. No long term negative impacts are expected from project implementation.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

Discussion: DHHL's lands are intended for homesteading or income-producing uses. DHHL will amend the Island Plan to reflect the Project's proposed use and density. The Island Plan is the means for DHHL to coordinate and mitigate, as necessary, the cumulative impact of developing their lands.

(9) Substantially affects a rare, threatened or endangered species or its habitat;

Discussion: Although there are no known, threatened, or endangered species of flora, fauna, or associated habitats located on the project site, mitigation measures are included to prevent potential impacts during breeding seasons for the Hawaiian hawk, Hawaiian hoary bat, and seabirds.

(10) Detrimentally affects air or water quality or ambient noise levels;

Discussion: Construction activities for development of the Project could potentially impact noise and air and water quality levels on the project site. However, these impacts will be short-

term and are not expected to be detrimental. All construction activities will comply with applicable regulations and will implement appropriate mitigation measures as necessary. After construction, the development is not expected to adversely impact ambient noise levels or water and air quality. There will be a slight increase in impervious surfaces over the site's former undeveloped use; however, any increase in runoff will be accommodated by proposed drainage improvements and will not detrimentally affect water quality.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Discussion: The development will not affect any environmentally sensitive area. The project is located outside a FIRM-designated flood plain and inland from the coast. Homes will be constructed in compliance with County of Hawai'i building codes, and the drainage improvements will be designed to minimize any potential for localized flooding.

(12) Substantially affects scenic vistas and view planes identified in County or State plans or studies; or,

Discussion: The Site is not listed as a scenic view plane or area of natural beauty by the County.

(13) Requires substantial energy consumption.

Discussion: The new homes will increase energy consumption. DHHL is looking into programs to assist with financing solar or other renewable sources for homeowners as a means to reduce household utility costs.

7.2 ANTICIPATED DETERMINATION

Pursuant to Chapter 343, HRS, the determining agency, the Department of Hawaiian Home Lands anticipates issuing a Finding of No Significant Impact (FONSI) for this environmental assessment. This finding is based on analysis of impacts and mitigation measures examined in this document, public comments received during the pre-assessment consultation and public comment phases, and analyzed under the above criteria.

8 CONSULTATION

8.1 PRE-ASSESSMENT CONSULTATION

Pre-assessment consultation letters were mailed to various agencies and organizations listed below in March 2015. The purpose of the pre-assessment consultation was to consult with agencies, organizations and individuals with technical expertise, or an interest or will be affected by the proposed project. This process is part of the scoping process for the Draft EA. Comments and input received during this period were used to identify environmental issues and concerns to be addressed in the Draft EA, which in turn will undergo a 30-day public comment period.

Those that provided written comments (either by hardcopy or email) are highlighted in *italics*. Copies of the written comments and responses are reproduced in Appendix B.

8.1.1.1 State of Hawai'i

- *Department of Accounting and General Services*
- Department of Agriculture
- Department of Business, Economic Development & Tourism (DBEDT)
- DBEDT – Energy Division
- DBEDT – Hawai'i Housing Finance and Development Corporation
- DBEDT – Office of Planning
- *Department of Defense*
- *Department of Education*
- *Department of Health*
- *Department of Health—Wastewater Division*
- *Department of Human Services*
- Department of Labor and Industrial Relations
- Department of Land and Natural Resources (DLNR)
- *DLNR - State Historic Preservation Division*
- *Department of Transportation*
- Office of Environmental Quality Control
- Office of Hawaiian Affairs
- University of Hawai'i Water Resources Research Center
- State Representative R. Onishi
- State Senator Kauhale

8.1.1.2 Federal

- U.S. Army Corps of Engineers – Regulatory Branch
- U.S. Federal Aviation Administration
- U.S. Federal Emergency Management Agency
- U.S. Federal Highway Administration

- *U.S. Fish and Wildlife Service*

8.1.1.3 County of Hawai'i

- *Department of Environmental Management*
- Department of Parks & Recreation
- Department of Research & Development
- *Department of Water Supply*
- *Fire Department*
- Office of Housing and Community Development
- *Planning Department*
- *Police Department*
- Department of Public Works
- County Councilmember D. Onishi

Private Organizations & Individuals

- Oceanic Time Warner
- *Hawaiian Electric Light Co.*
- Hawaiian Telecom

DHHL also met with the Keaukaha Pana'ewa Farmers Association and will provide them a copy of the Draft EA for review.

8.2 PUBLIC REVIEW

This Draft EA was published in the OEQC Environmental Notice on July 23, 2015 initiating a 30-day public comment period that was scheduled to end on August 24, 2015. The Draft EA was mailed to all of the agencies and organizations previously consulted as listed above, as well as the Keaukaha Pana'ewa Farmers Association and Pana'ewa Hawaiian Home Lands Community Association. In addition, copies were mailed to the newspapers (Hawaii Tribune Herald, West Hawai'i Today, Star Advertiser) and Hilo Public Library to inform the general public.

9 REFERENCES

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Appendix A

FIGURES

PDF - Q:\Statewide\DHHL ERR\PDF\Hawaii\Panaewa\Regional Location.pdf
Path: Q:\Statewide\DHHL ERR\GIS\Hawaii\Panaewa\Regional Location.mxd

DATE: 2/19/2015

LEGEND

- Panaewa Parcels for Subdivsion
- Tax Map Key Parcels

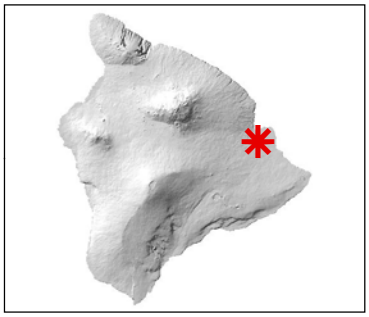


Figure 1
Regional Location

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

Linear Scale (miles)
0 .0625 .125 .25

PBR HAWAII & ASSOCIATES, INC.

Source: ESRI Online Basemaps.

FILE PLAN 1487

Figure 2: File Plan

PANAEWA HOUSE AND FARM LOTS

OWNER: HAWAIIAN HOME LANDS
ADDRESS: 550 HALEKAUWILA STREET
HONOLULU, HAWAII

SECTION 1

LAND SITUATED ON THE NORTHEASTERLY SIDE
OF RAILROAD AVENUE
AT WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

BEING A PORTION OF HAWAIIAN HOME LAND OF PANAEWA

SUBDIVIDED INTO LOTS 1 TO 129, INCLUSIVE
LOTS 189, R-1 AND R-4
AND DESIGNATION OF EASEMENT "A" OVER AND ACROSS
LOT 88

TOTAL AREA = 1319.788 ACRES

SECTION 2

LAND SITUATED ON THE SOUTHWESTERLY SIDE OF RAILROAD AVENUE
AND ON THE SOUTHERLY SIDE OF KAHAOPEA STREET
AT WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

BEING A PORTION OF HAWAIIAN HOME LAND OF PANAEWA

SUBDIVIDED INTO LOTS 130 TO 188, INCLUSIVE
AND LOTS R-2 AND R-3

TOTAL AREA = 341.328 ACRES

SECTION 3

LAND SITUATED ON THE NORTHERLY SIDE OF LAND COURT APPLICATION 1053
APPROXIMATELY 3150 FEET NORTHEASTERLY OF RAILROAD AVENUE
AT WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

BEING A PORTION OF THE GOVERNMENT (CROWN) LAND OF WAIAKEA CONVEYED TO DEPARTMENT OF HAWAIIAN HOME LANDS BY STATE OF HAWAII BY EXCHANGE DEED DATED JANUARY 8, 1962 AND RECORDED IN LIBER 4265, PAGES 456 AND 464 (LAND OFFICE DEEDS S-18729 AND S-18730)

TOTAL AREA = 194.189 ACRES

This map is from an actual survey on the ground made by or under the direct supervision of the undersigned between December 1, 1975 and January 22, 1976 and may be checked by the State Surveyor with our field books and calculation folders filed under Job Number 75-129.

WILLIAM HEE & ASSOCIATES, INC.

1020 Auahi St.
Honolulu, Hawaii
January 22, 1976

By: Jerry S. Nakagawa
Registered Professional Surveyor
Certificate Number 1698

I hereby certify that the desription of survey and map hereon has been examined and checked as to form and mathematical correctness but not on the ground and the same is approved in accordance with Sections 502-17, 18 and 19 of the Hawaii Revised Statutes.
Honolulu, Hawaii
March 22, 1976

Kazutaka Saiki
State Land Surveyor

State of Hawaii
Office of
Bureau of Conveyances
Received for filing this 22ND day of
March A.D. 1976 at 3:29 P.M.
and filed in File No. 1487
Charles F. Neumann III
Registrar of Conveyances

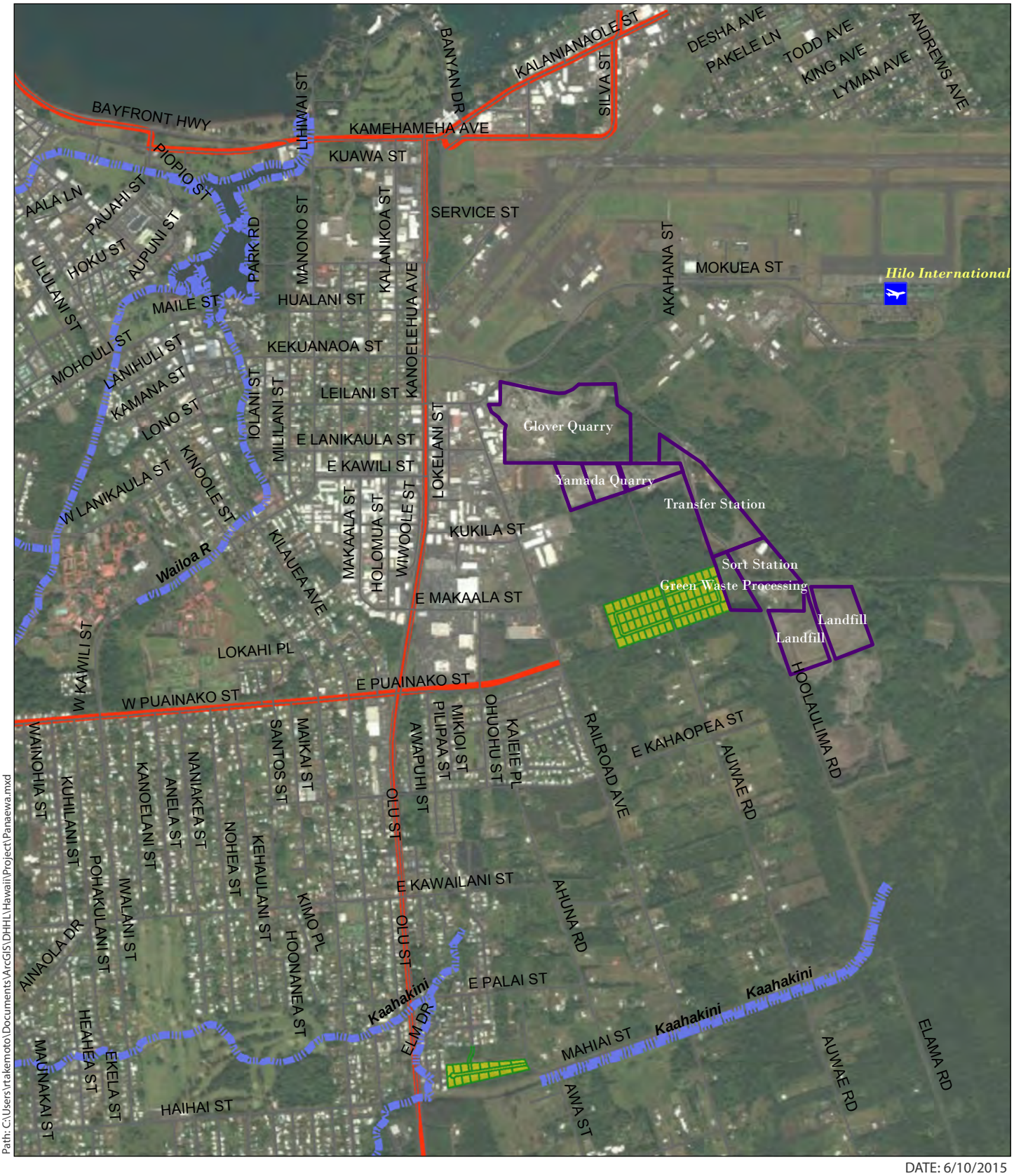
METES AND BOUNDS DESCRIPTION RECORDED
IN LIBER 11307 PAGES 250-255

NOTES:
Figures shown thus ③ indicate number of course in description.
Owners of adjoining lands as shown on plan are from records filed in the Tax Maps Branch.

Area of Easement "A" = 0.723 Ac.

Tax Map Key: 3rd. Div. 2-1-13-3, 12 to 141, inclusive and 152
2-2-47-7 to 87, inclusive
75-129

42" x 56" = 16.3 Sq. Ft.



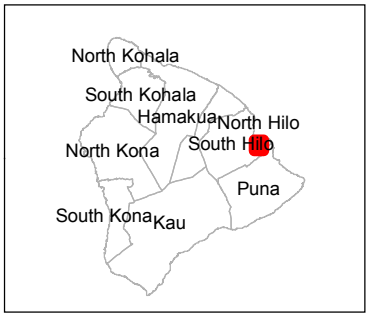
PDF - Q:\
Path: C:\Users\rtakemoto\Documents\ArcGIS\DHHL\Hawaii\Project\Panaewa.mxd

DATE: 6/10/2015

LEGEND

- airport
- Panaewa_Surrounding_Uses
- Proposed Subdivision Lots 6 & 7
- Proposed Subdivision Lots 47 $ 48
- Proposed Subdivision Lot 185
- Panaewa Ag Lots
- darstreams
- State Highways

Source: ESRI Online Basemaps.



Panaewa Ag Lots

Figure 3. Surrounding Uses

SFD New Construction

Department of Hawaiian Home Lands
Island of Hawaii

North

0 6501,300 2,600
Feet

PBR HAWAII & ASSOCIATES, INC.

Lot 5
(Hawaiian Home Lands)
Owner

Lot 47

Lot 48

— to Kahaopea Road

Lot 8-B-1

Lot 8-B-2

Lot 8-A-1
(Agnes N. Kaipo)
Lessee

Parcel 168
(State of Hawaii)
Owner

TRUE NORTH
Scale: 1 in = 50 ft

Figure 4A. Site Plan

PLAN SHOWING

CONSOLIDATION OF LOTS 6 AND 7 OF
HAWAIIAN HOME LANDS,
PANAEWA HOUSE AND FARM LOTS, SECTION 1

AND THE RESUBDIVISION OF SAID CONSOLIDATION INTO

**LOTS 6-A TO 6-H, 6-J TO 6-N, 6-P TO 6-R,
LOTS 7-A TO 7-H, 7-J TO 7-N, 7-P TO 7-R,
AND ROAD LOT A**

WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

Survey and Plan by Island Survey, Inc.
P. O. Box 4215, Hilo, Hawaii 96720
February 27, 2015

OWNER: LOTS 6 AND 7
HAWAIIAN HOME LANDS
162 Baker Avenue
Hilo, Hawaii 96720-4817

ROBERT T. SHIRAI
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5985
HAWAII U.S.A.

This work was prepared by me
or under my supervision.

ROBERT T. SHIRAI, PLS
State of Hawaii Cert. No. LS-5985
License Expires April 30, 2016

Tax Map Key: (3)2-1-025:006 and 007

R-1270-A

Size: 21" x 32" = 4.67 Sq. Ft.

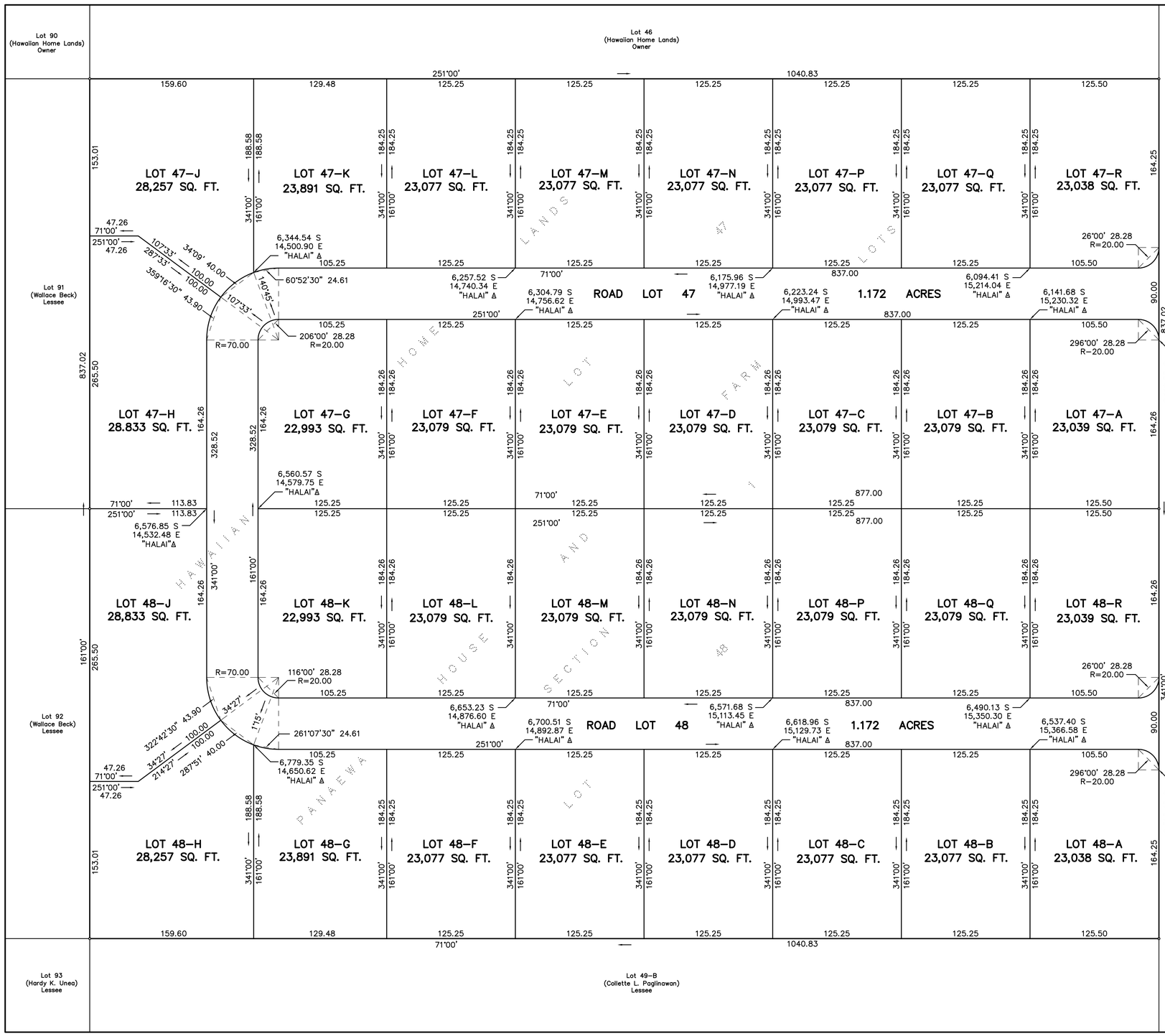


Figure 4B. Site Plan

PLAN SHOWING

SUBDIVISION OF LOT 47

INTO LOTS 47–A TO 47–H, 47–J TO 47–N, AND 47–P TO 47–R

AND SUBDIVISION OF LOT 48

INTO LOTS 48–A TO 48–H, 48–J TO 48–N, AND 48–P TO 48–R

BEING A PORTION OF HAWAIIAN HOME LANDS, PANAEWA HOUSE AND FARM LOTS, SECTION 1

WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

Survey and Plan by Island Survey, Inc.
P. O. Box 4215, Hilo, Hawaii 96720
February 27, 2015

OWNER: LOT 47 AND LOT 48
HAWAIIAN HOME LANDS
162 BAKER AVENUE
HILO, HAWAII 96720–4817

ROBERT T. SHIRAI LICENSED PROFESSIONAL LAND SURVEYOR No. 5985 HAWAII U.S.A.

This work was prepared by me or under my supervision.

ROBERT T. SHIRAI, PLS
State of Hawaii Cert. No. LS–5985
License Expires April 30, 2016

Tax Map Keys: (3)2–1–025:047 and 048

R–1270–B

Size: 21" x 32"=4.67 Sq. Ft

Figure 4C. Site Plan

PLAN SHOWING

SUBDIVISION OF LOT 185

INTO LOTS 185-A TO 185-H, 185-J TO 185-N, 185-P TO 185-R AND A ROAD RESERVE AND THE DESIGNATION OF A ROAD LOT

BEING A PORTION OF PANAEWA HOUSE AND FARM LOTS, SECTION 2

WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII

Survey and Plan by Island Survey, Inc.
P.O. Box 4215, Hilo, Hawaii 96720
March 25, 2015

ROBERT T. SHIRAI
LICENSED PROFESSIONAL LAND SURVEYOR
No. 5985
HAWAII, USA

This work was prepared by me or under my supervision.

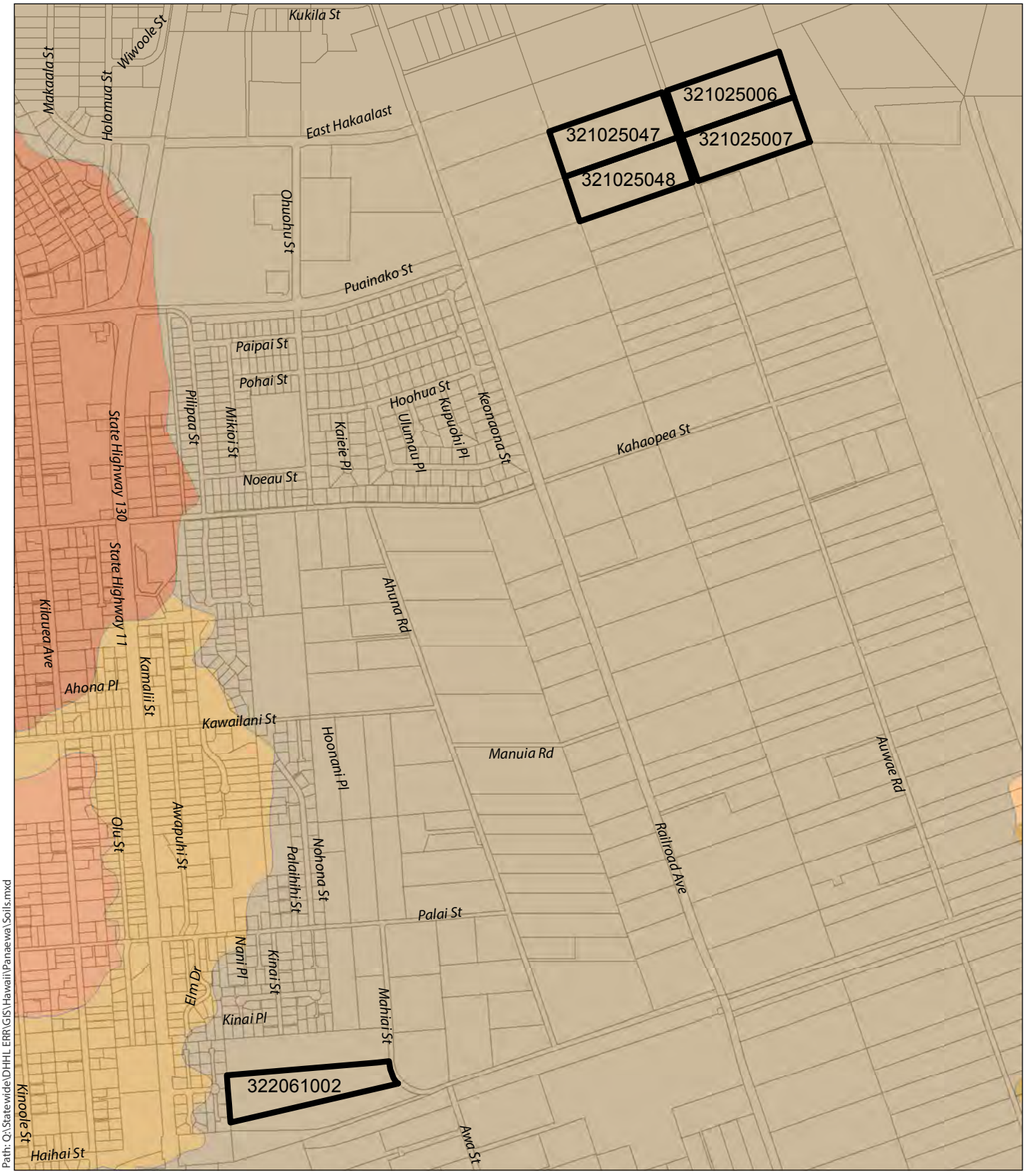
ROBERT T. SHIRAI, PLS
State of Hawaii Cert. No. LS-5985
License Expires April 30, 2016

OWNER: HAWAIIAN HOME LANDS
162 Baker Avenue
Hilo, Hawaii 96720

Tax Map Key: (3)2-2-061:002

R-1270-C

Size: 24" x 36" = 6.00 Sq. Ft.



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DATE: 2/5/2015

LEGEND

- Tax Map Key Parcels

Hawaii Soils

- OaC - Olaa silty clay loam, 0 to 10 percent slopes
- OlD - Olaa extremely stony silty clay loam, 0 to 20 percent slopes
- PeC - Panaewa very rocky silty clay loam, 0 to 10 percent slopes
- rKFD - Keaukaha extremely rocky muck, 6 to 20 percent slopes
- rLW - Lava flows, pahoehoe
- rPAE - Papai extremely stony muck, 3 to 25 percent slopes

Figure 5

Soils

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

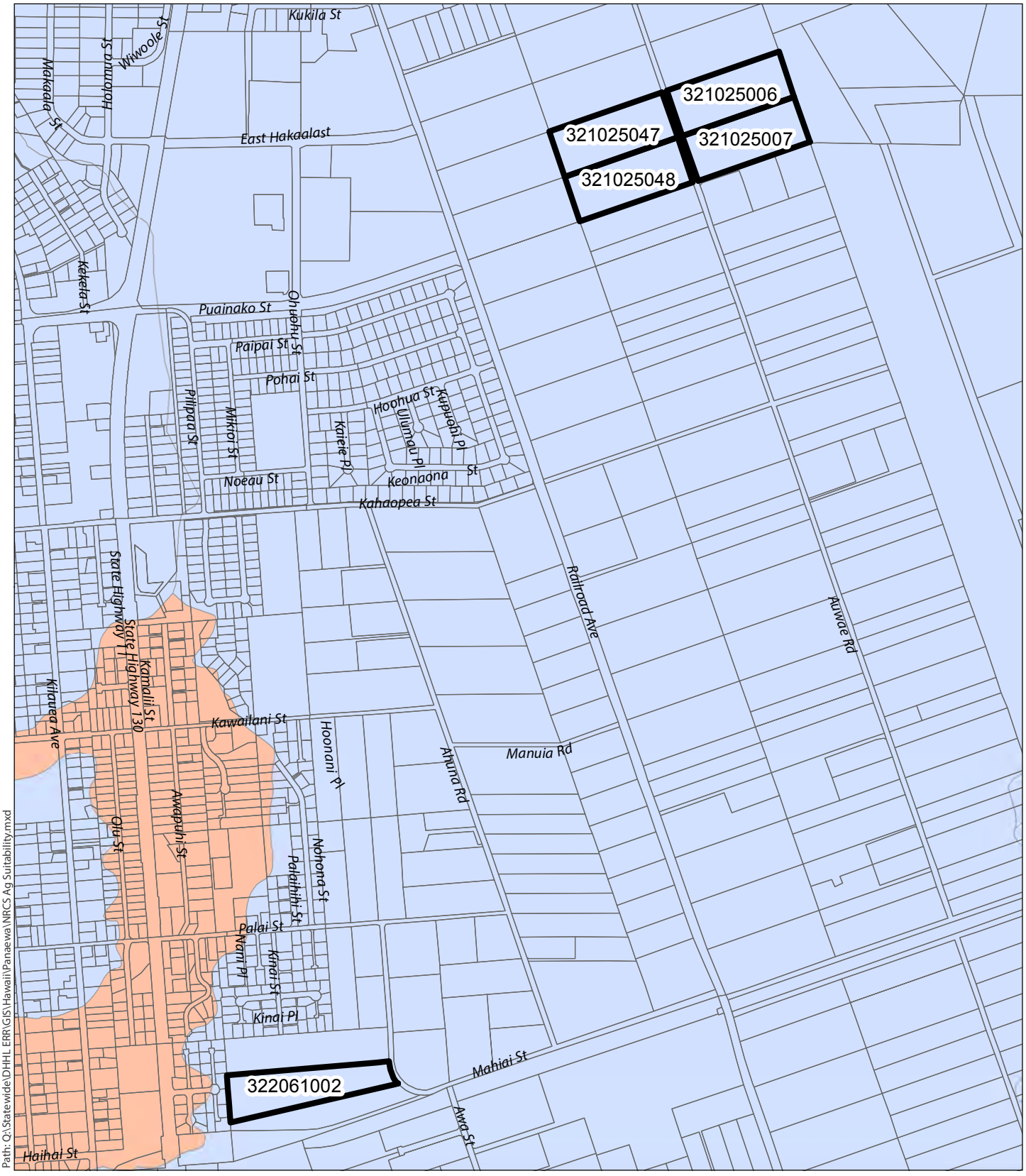
Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. USDA Natural Resources Conservation Service.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 2/25/2015

LEGEND

- Tax Map Key Parcels
- All areas are prime farmland
- Not prime farmland

Figure 6

NRCS Ag Suitability Map

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands — Island of Hawaii

North

Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. USDA Natural Resources Conservation Service.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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DATE: 2/5/2015

LEGEND

Tax Map Key Parcels

Streams

Not Perennial

Perennial

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Pond

Figure 7

Surface Water

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands

North

Linear Scale (feet)

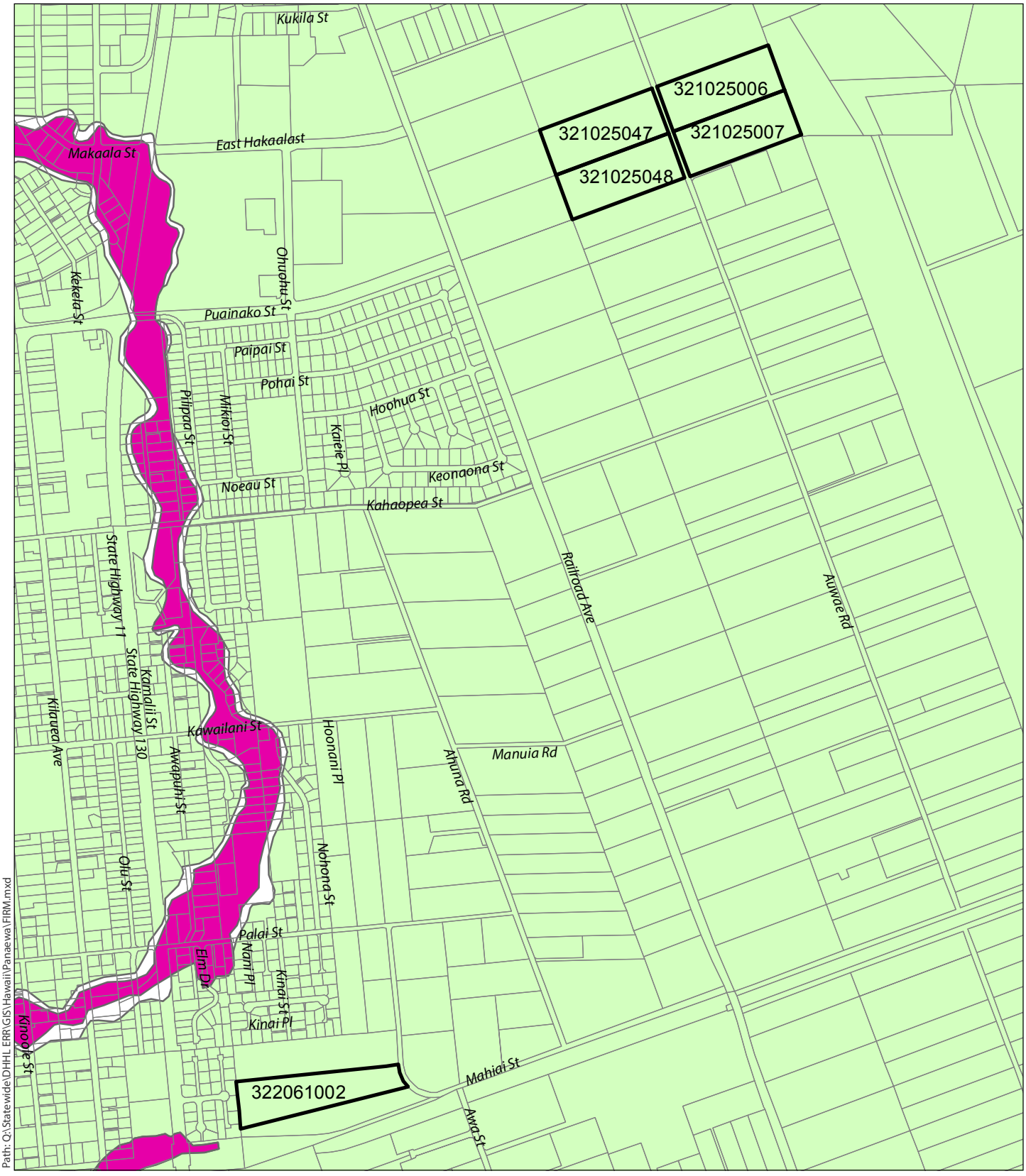
0 300 600 1200

Island of Hawaii

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. Hawaii Department of Land and Natural Resources Division of Aquatic Resources, 2008. Hawaii Department of Health, 2002. USFWS National Wetlands Inventory. GDSI, 1995.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 2/5/2015

LEGEND

Tax Map Key Parcels

Flood Zone

A *Areas subject to inundation by the 1-percent-annual-chance flood event*

X *Areas determined to be outside 0.2-percent-annual-chance floodplain*

Figure 8

Flood Insurance Rate Map

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. FEMA Flood Insurance Rate Map, 2007. [Panel 890C]

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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DATE: 2/5/2015

LEGEND

- Tax Map Key Parcels
- Tsunami Evacuation Zone

Volcanic Hazard Zones (1 highest, 9 lowest)

1	4	7
2	5	8
3	6	9

Figure 9

Natural Hazards

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. Pacific Disaster Center, 1998. U.S. Geological Survey, 1991.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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DATE: 2/27/2015

LEGEND

- Tax Map Key Parcels
- Node
- Pipe
- Pump
- Tank
- Valve

Figure 10
County Water System
PANAEWA SUBDIVISION

Department of Hawaiian Home Lands — Island of Hawaii

North

Linear Scale (feet)
0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. Hawaii Department of Land and Natural Resources Division of Aquatic Resources, 2008. Hawaii Department of Health, 2002. USFWS National Wetlands Inventory. GDSI, 1995.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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DATE: 2/27/2015

LEGEND

- Tax Map Key Parcels
- Hawaii Island Sewer Manholes
- Hawaii Island Sewer Mains

Figure 11

County Sewer System

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands — Island of Hawaii

North

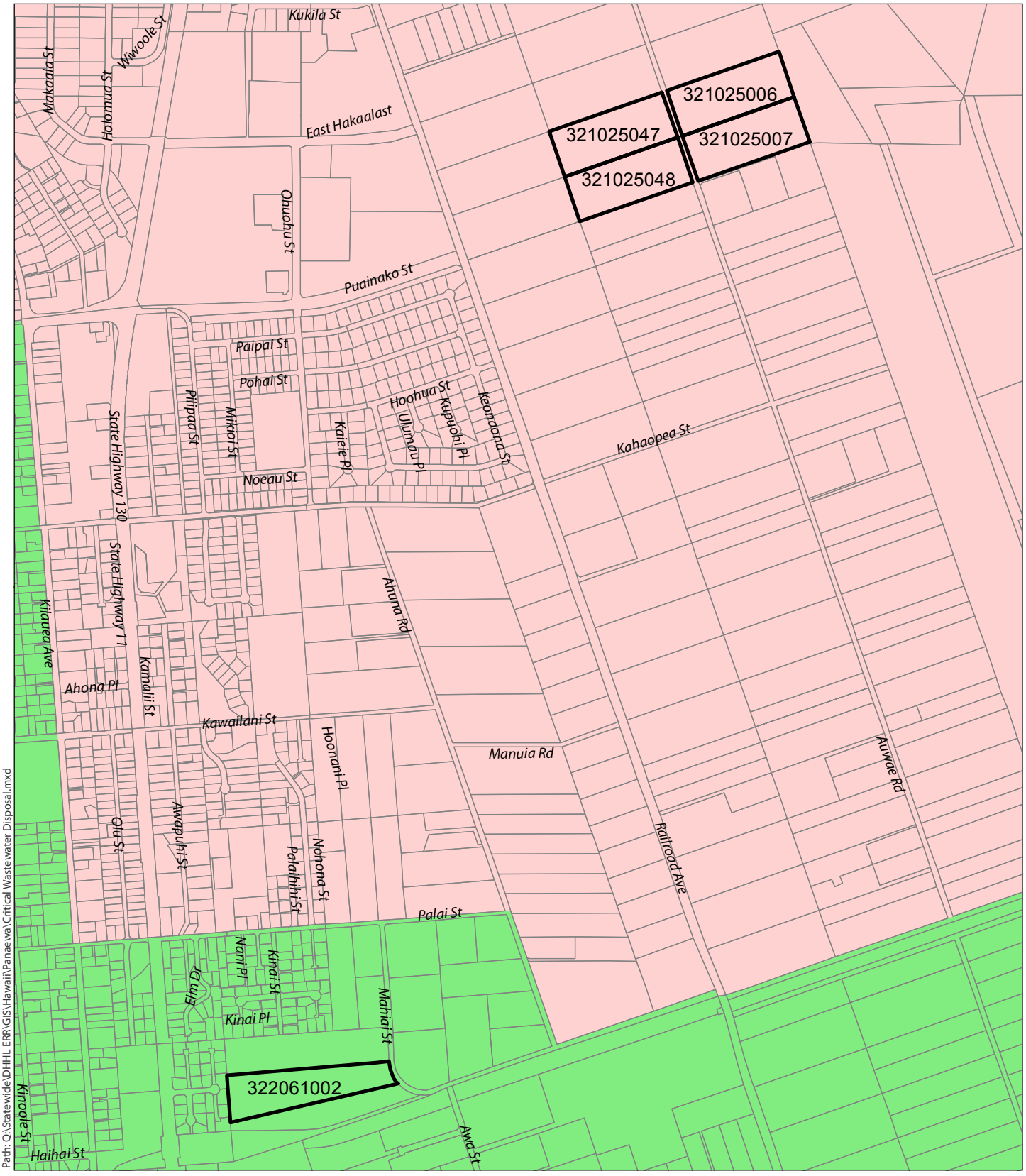
Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. Hawaii Department of Land and Natural Resources Division of Aquatic Resources, 2008. Hawaii Department of Health, 2002. USFWS National Wetlands Inventory. GDSI, 1995.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 2/6/2015

LEGEND

- Tax Map Key Parcels
- Critical Wastewater Disposal Area
- Cesspool 1

Figure 12
DOH Critical Wastewater Disposal
PANAEWA SUBDIVISION

Department of Hawaiian Home Lands — Island of Hawaii

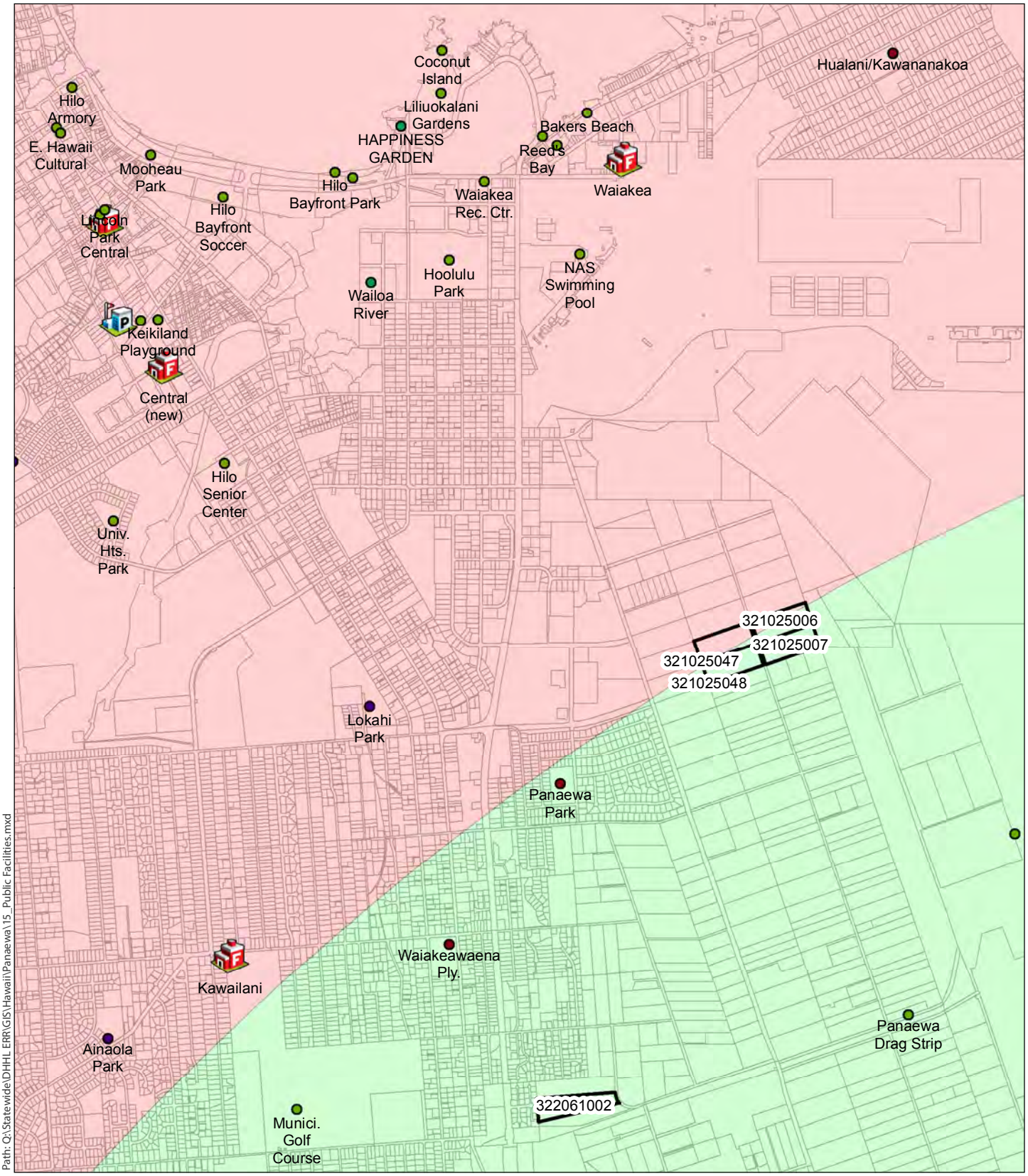
North

Linear Scale (feet)
0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014 & Department of Health, 2014.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 2/27/2015

LEGEND

- Tax Map Key Parcels
- Police Station
- Fire Stations
- Central
- Kaumana
- Kawailani
- Keaau
- Paradise Park
- Waiakea

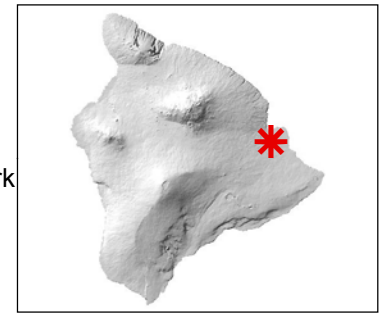

Figure 13
Public Facilities

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

Linear Scale (miles)
0 .125 .25 .5

PBR HAWAII & ASSOCIATES, INC.

Source: ESRI Online Basemaps.

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Path: Q:\Statewide\DHHL ERR\GIS\Hawaii\Panaewa\SLUD.mxd

DATE: 2/5/2015

LEGEND

Tax Map Key Parcels

State Land Use District

- A - Agriculture
- C - Conservation
- R - Rural
- U - Urban

Figure 14

State Land Use Districts

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

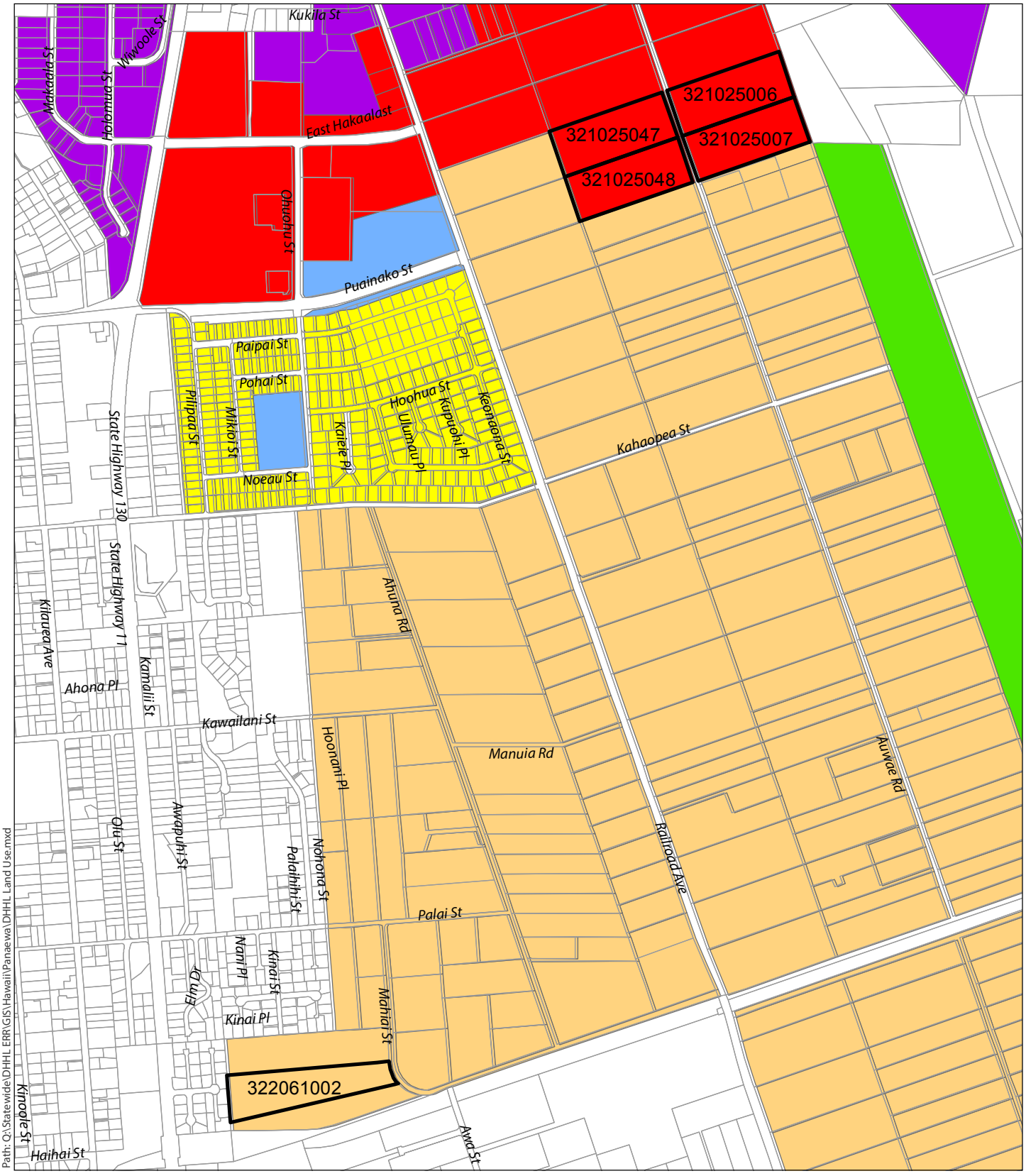
Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014. Hawaii State Land Use Commission, 2014.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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Path: Q:\Statewide\DHHL ERR\GIS\Hawaii\Panaewa\DHHL Land Use.mxd

DATE: 2/6/2015

LEGEND

- Tax Map Key Parcels

DHHL Designations

- Commercial
- Community Facility
- Industrial
- Residential
- Subsistence Agriculture
- Supplemental Agriculture

Source: County of Hawaii, 2014 & DHHL Hawaii Island Plan, 2002.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Figure 15

DHHL Land Use Designations

PANAEWA SUBDIVISION

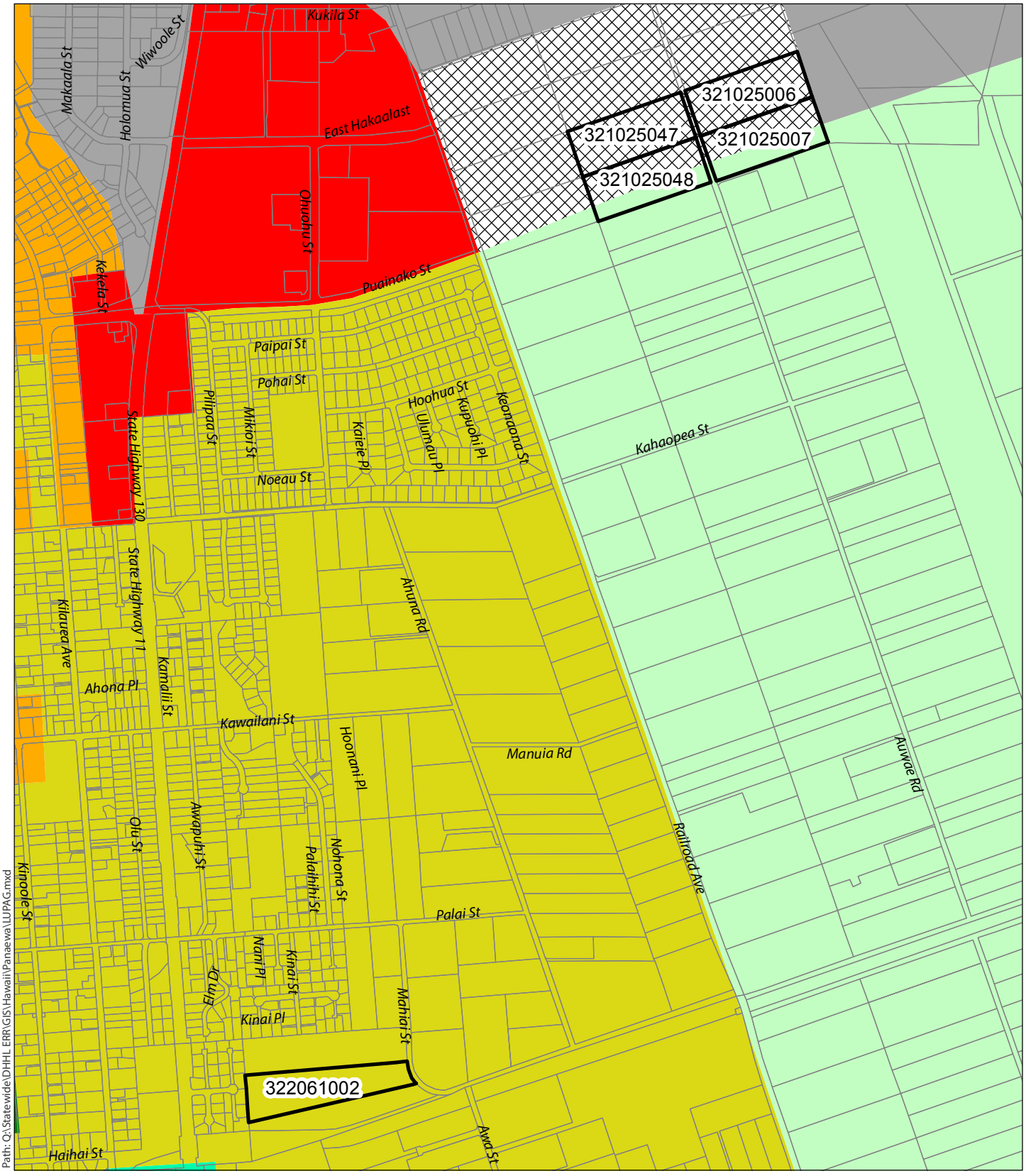
Department of Hawaiian Home Lands — Island of Hawaii

North

Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.



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Path: Q:\Statewide\DHHL ERR\GIS\Hawaii\Panaewa\LUPAG.mxd

DATE: 2/5/2015

LEGEND

- Tax Map Key Parcels
- Conservation
- Extensive Agriculture
- High Density Urban
- Important Ag. Lands
- Industrial
- Low Density Urban
- Medium Density Urban
- Open Area
- Urban Expansion

Figure 16

County General Plan LUPAG

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

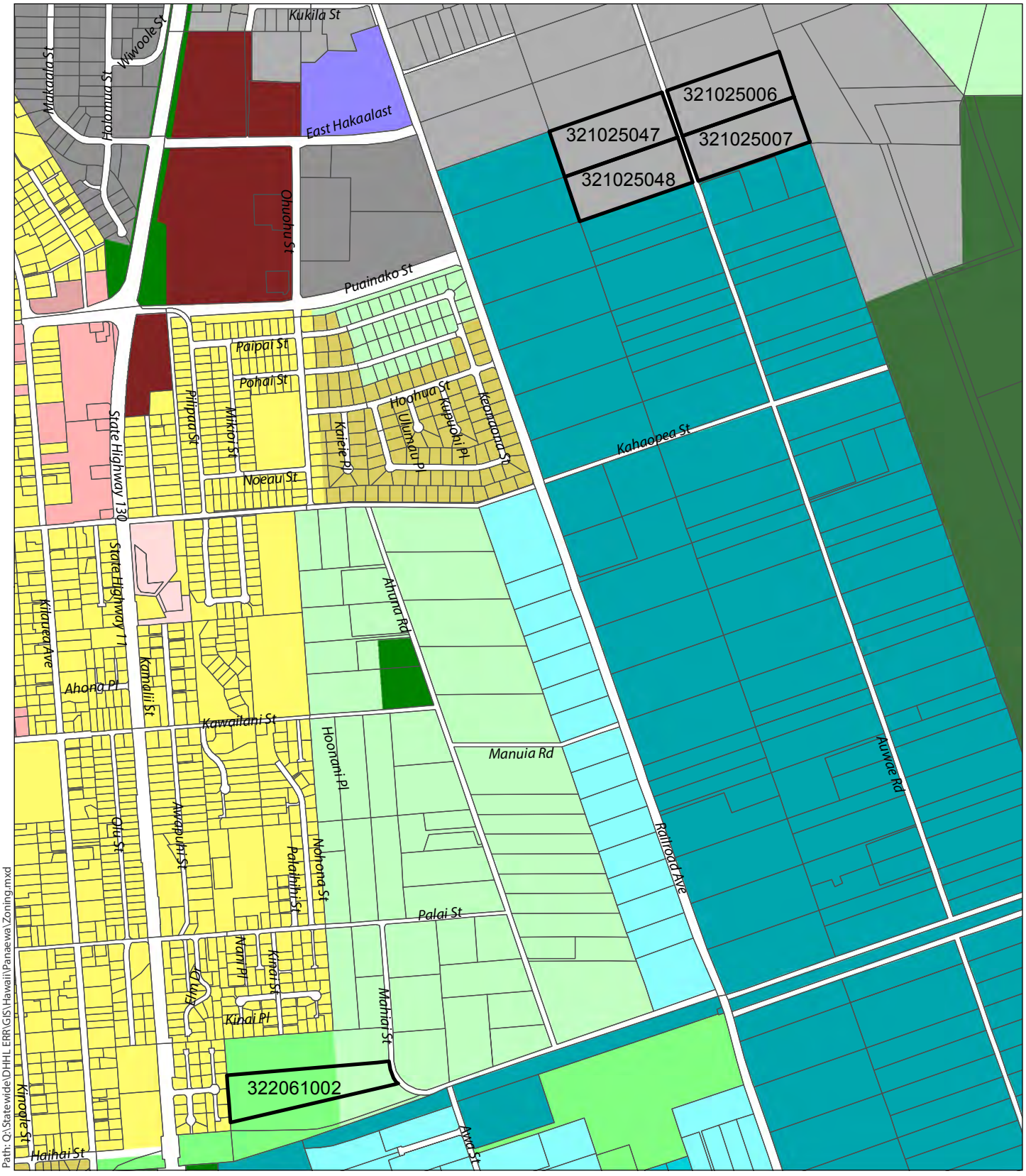
North

Linear Scale (feet)
0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



PDF - Q:\Statewide\DHHL ERR\PDF\Hawaii\Panaewa\Zoning.pdf
Path: Q:\Statewide\DHHL ERR\GIS\Hawaii\Panaewa\Zoning.mxd

DATE: 2/5/2015

LEGEND

Tax Map Key Parcels

Zoning

- A-10a
- A-1a
- A-20a
- A-3a
- A-5a
- CG-20
- CN-10
- CN-20
- CN-40
- CN-7.5
- FA-1a
- FR
- MCX-20
- MG-1a
- ML-20
- OPEN
- RS-10
- RS-15

Figure 17

Zoning

PANAEWA SUBDIVISION

Department of Hawaiian Home Lands
Island of Hawaii

North

Linear Scale (feet)

0 300 600 1200

PBR HAWAII & ASSOCIATES, INC.

Source: County of Hawaii, 2014.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Appendix B

PRE-ASSESSMENT CONSULTATION

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DAVID Y. IGE
GOVERNOR

DOUGLAS MURDOCK
Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

MAR 13 2015

(P)1047.5

Mr. Roy Takemoto
PBR Hawaii & Assoc., Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Dear Mr. Takemoto:

Subject: Pre-Assessment Consultation
Proposed Subdivision of the Panaewa Ag Lots
Waiakea, South Hilo District, Island of Hawaii
TMK: Various

This is in response to your letter dated March 2, 2015 regarding the subject project. The proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities, and we have no comments to offer at this time.

If there are any questions, please call me at 586-0526, or your staff may call Mr. David DePonte of the Planning Branch at 586-0492.

Sincerely,

JAMES K. KURATA
Public Works Administrator

DD:lnn
c: Mr. Jerry Watanabe, DAGS-Hawaii District Office

PBR HAWAII
& ASSOCIATES, INC.

July 12, 2015

Mr. James Kurata, Public Works Administrator
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Kurata,

Although you responded that you did not have any early consultation comments on the subject project, enclosed is a copy of the Draft EA that provides additional information on the project and anticipated impacts. Your review of the Draft EA would be appreciated. The enclosed transmittal includes the deadline for comments and address to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR

ARTHUR J. LOGAN
BRIGADIER GENERAL
ADJUTANT GENERAL

KENNETH S. HARA
COLONEL
DEPUTY ADJUTANT GENERAL

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

Mr. Roy Takemoto
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Subject: Pre-Assessment Consultation for the Proposed Subdivision of the Panaewa AG Lots located in the Ahupuaa of Waikea, South Hilo District, Island and County of Hawaii
Tax Map Key: (3) 2-2-061: 002, (3) 2-1-025: 006, (3) 2-1-025: 007, (3) 2-1-025: 047, and (3) 2-1-025: 048

Dear Mr. Takemoto,

Thank you for this opportunity to comment on the above project.

The State of Hawaii Department of Defense, Hawaii Emergency Management Agency (HIEMA) recommends the provision of one (1) omni-directional 121-db(c) siren mounted on a 45-foot H2 rated composite pole to ensure adequate siren coverage. HIEMA will work with the Department of Hawaiian Home Lands on the placement of the pole.

Should you have any questions, please contact Mr. Lloyd Maki, Assistant Chief Engineering Officer at 733-4250.

Sincerely,

ARTHUR J. LOGAN
Brigadier General
Hawaii National Guard
Adjutant General

c: Ms. Havinne Okamura, HIEMA

PBR HAWAII
& ASSOCIATES, INC.

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Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleiloke Street
Hilo, Hawai'i 96720-1533
Tel/Cell: (808) 315-6878

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July 12, 2015

Brigadier General Arthur Logan
State of Hawai'i
Department of Defense
3949 Diamond Head Road
Honolulu, HI 96816

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear General Logan,

Thank you for your comments on the subject project. Enclosed is a Draft EA that includes a discussion of your recommendation to include an emergency siren. The Draft EA states that a more appropriate location is the Pana'ewa Park that should be audible to the Project residents. We would appreciate your review of the Draft EA. The enclosed transmittal includes the deadline and contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR

CRAIG K. HIRAI
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM
HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
Honolulu, Hawaii 96813
FAX: (808) 587-0600

IN REPLY REFER TO:
15:PEO/17

March 6, 2015

PBR Hawaii & Associates, Inc.
Attn: Roy Takemoto
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Takemoto:

Re: Pre-Assessment Consultation for the Proposed Subdivision of the Pana˝ewa Ag Lots Located in the Ahupua˝a of Waiākea, South Hilo District, Island and County of Hawai˝i, TMK: (3)2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:48

Thank you for seeking our comments on the proposed Pana˝ewa Ag Lots Subdivision located in the Ahupua˝a of Waiākea, South Hilo District, Island and County of Hawai˝i. We have no housing-related comments to offer at this time.

Sincerely,

Craig K. Hirai
Executive Director

PBR HAWAII
& ASSOCIATES, INC.

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1001 Bishop Street, Suite 650
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Fax: (808) 535-3163

HILO OFFICE
1719 Haleiloke Street
Hilo, Hawai'i 96720-1533
Tel/Cell: (808) 315-6878

July 12, 2015

Mr. Craig Hirai, Executive Director
State of Hawai'i
Hawai'i Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, HI 96813

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Hirai,

Although you responded that you did not have any early consultation comments on the subject project, enclosed is a copy of the Draft EA that provides additional information on the project and anticipated impacts. Your review of the Draft EA would be appreciated. The enclosed transmittal includes the deadline for comments and address to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

March 24, 2015

Mr. Roy Takemoto
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Re: Pre-Assessment Consultation for the Proposed Subdivision of the Panaewa AG Lots Located in the Ahupuaa of Waiakea, South Hilo District, Island and County of Hawaii, TMK: (3)2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Takemoto:

The Department of Education (DOE) has reviewed the Pre-Assessment Consultation for the proposed subdivision of the 90 Panaewa AG lots located in the Ahupuaa of Waiakea on the Island and County of Hawaii.

The proposed subdivision and development of the Panaewa AG Lots are located in the Waiakea complex area. Students residing in the proposed subdivision identified as TMK: (3)2-2-061:002 would be attending Waiakeawaena Elementary School, Waiakea Intermediate School and Waiakea High School. The proposed subdivision consisting of the following lots: TMK: (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048 would have students attend Waiakea Elementary School, Waiakea Intermediate School and Waiakea High School.

The DOE does not expect that this project will have a significant impact on its facilities.

We appreciate the opportunity to provide comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 377-8301.

Respectfully,

Kenneth G. Masden II
Public Works Manager
Planning Section

KGM:jmb

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PBR HAWAII
& ASSOCIATES, INC.

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Honolulu, Hawai'i 96813-3484
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1719 Haleiloke Street
Hilo, Hawai'i 96720-1533
Tel/Cell: (808) 315-6878

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July 12, 2015

Mr. Kenneth Masden, Public Works Manager
Planning Section
State of Hawaii, Department of Education
PO Box 2360
Honolulu, HI 96804

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Masden,

Thank you for responding to our pre-assessment consultation. In your letter dated March 24, 2015, you provided very helpful information identifying the schools that the Project school-aged children would attend and confirming that these schools have adequate capacity. We incorporated your comment in the enclosed Draft EA (section 4.9.1). Your review of the Draft EA would be appreciated to assess whether accurately reflected your information, and to add any other comments you may have. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 916
HILO, HAWAII 96721-0916

MEMORANDUM

DATE: March 20, 2015

TO: PBR Hawaii & Associates. Inc.

FROM: Newton Inouye
District Environmental Health Program Chief

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIAKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I.
TMK: (3) 2-2-061:002, (3) 2-1-025:006, (3) 2-1-025:007, (3) 2-1-025:047, and (3) 2-1-025:048

The applicant would need to meet the requirements of our Department of Health Air Pollution Rules, Chapter 60.1, Title 11, State of Hawaii for fugitive dust control. If there is need to discuss these requirements, please contact our Clean Air Branch staff at Ph. 933-0401.

Construction activities must comply with the provisions of Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control."

1. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules.
2. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers.
3. The contractor must comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit.

Should there be any questions on this matter, please contact the Department of Health at 933-0917.

We recommend that you review all of the Standard Comments on our website: http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

The same website also features a Healthy Community Design Smart Growth Checklist (Checklist) created by Built Environment Working Group (BEWG) of the Hawaii State Department of Health. The BEWG recommends that state and county planning departments, developers, planners, engineers and other interested parties apply the healthy built environment principles in the Checklist whenever they plan or review new developments or redevelopments projects. We also ask you to share this list with others to increase community awareness on healthy community design.

c: EPO

WORD: Panaewa Ag Lots

PBR HAWAII
& ASSOCIATES, INC.

PRINCIPALS

THOMAS S. WITTEN, ASLA
Chairman

R. STAN DUNCAN, ASLA
President

RUSSELL Y. J. CHUNG, FASLA, LEED®AP BD+C
Executive Vice President

VINCENT SHIGEKUNI
Vice President

GRANT T. MURAKAMI, AICP, LEED®AP BD+C
Vice President

TOM SCHNELL, AICP
Principal

W. FRANK BRANDT, FASLA
Chairman Emeritus

ASSOCIATES

RAYMOND T. HIGA, ASLA
Senior Associate

KIMI MIKAMI YUEN, LEED®AP BD+C
Senior Associate

SCOTT ALIKA ABRIGO, LEED®AP BD+C
Managing Director - Kapolei

ROY TAKEMOTO
Managing Director - Hilo

SCOTT MURAKAMI, ASLA, LEED®AP
Associate

DACHENG DONG, LEED®AP
Associate

MARC SHIMATSU, ASLA
Associate

CATIE CULLISON, AICP
Associate

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Hilo, Hawai'i 96720-1553
Tel/Cell: (808) 315-6878

printed on recycled paper

July 12, 2015

Mr. Newton Inouye, District Environmental Health Program Chief
State of Hawai'i
Department of Health
P.O. Box 916
Hilo, HI 96721-0916

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Inouye,

Thank you for responding to our pre-assessment consultation. In your letter dated March 20, 2015, you provided very helpful information identifying the requirements to comply with fugitive dust and noise from construction activities, as well as reference to DOH's other standard comments and the healthy communities checklist. We incorporated your comments in the enclosed Draft EA in various sections addressing air quality, water quality, noise, and stormwater runoff. Your review of the Draft EA would be appreciated to assess whether we accurately reflected your information, and to add any other comments you may have. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

LUD - 3 2 2 061 002 etc Prop Subd
Panaewa Ag Lots-ID2165

March 30, 2015

Mr. Roy Takemoto
Managing Director, Hilo Office
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813- 3484

Dear Mr. Takemoto:

Subject: Pre-Assessment Consultation for Proposed Subdivision of the Panaewa Ag Lots Located in the Ahupuaa of Waiakea, South Hilo District, Island and County of Hawaii
TMK (3) 2-2-061: 002, (3) 2-1-025: 006, (3) 2-1-025: 007
TMK (3) 2-1-025: 047 and (3) 2-1-025: 048

Thank you for allowing us the opportunity to provide comments on the above subject project. We have the following information to offer. The subject project TMKs are located in the critical wastewater disposal area with one (1) acre lot exception as determined by the Hawaii County Wastewater Advisory Committee. We do not have any individual wastewater system (IWS) information on file.

In the drawings, Makaala Street is mislabeled as Hakaala. Makaala is sewered and services the commercially developed area between the highway and Railroad Avenue. The Prince Kuhio Plaza (mall), Wal-Mart, Target, Safeway, Home Depot and numerous fast food restaurants and other businesses are located in that area. All these businesses are served by County sewer.

The lot between the commercial area and the proposed subdivision, TMK (3) 2-1-025: 091 is used as a farmer's market by DHHL (the sole owner) for owners in the lots to sell their products.

The next lot, TMK (3) 2-1-025: 046 is undeveloped and zoned commercial and DHHL is the sole owner.

Although a direct sewer lateral connection to the County of Hawaii's sewer system is presently not available for the subject properties at TMK (3) 2-1-025, considering the relative close proximity in order to connect to the County sewer system, the DHHL should pursue connecting proposed project to the County system. Hilo WWB estimates the distance from the existing sewer line to the nearest portion of the TMK (3) 2-1-025 subdivision to be just over a third of a mile, about half a kilometer. Also, since DHHL is the sole owner of the intermediate, undeveloped, and commercially zoned properties in this area, it should be straightforward to proceed with a sewer easement, even a pumping station should it be required. In addition, any future DHHL developments in this area will also benefit by being able to connect to the County sewer system for wastewater treatment and disposal.

The property, TMK (3) 2-2-061: 002 is presently considered by the WWB to be far beyond the area served by the County sewer.

Until the wastewater and treatment and disposal concerns for the proposed project are appropriately addressed we are not able to provide our support for the proposed project.

Please be informed that the proposed wastewater systems for the subdivision/development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices. In addition, all wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please contact Mark Tomomitsu of our Oahu office at (808) 586-4294.

Sincerely,

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LM/MST:lmj

c: Ms. Laura McIntyre, DOH-Environmental Planning Office
Ms. Amy Cook, DOH-WWB's Hilo Staff

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
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Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cell: (808) 315-6878

July 12, 2015

Sina Pruder, P.E., Chief
Wastewater Branch
State of Hawai'i
Department of Health
P. 0. Box 3378
Honolulu, HI 96801-3378

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Thank you for your comments dated March 30, 2015. Enclosed is a Draft EA that includes a discussion of the wastewater alternatives including your suggestion to connect to the existing County sewer via a sewer easement (see §4.7.2 of the enclosed Draft EA). We would appreciate your review of the Draft EA. The enclosed transmittal includes the deadline and contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR

RACHAEL WONG, DrPH
DIRECTOR

PANKAJ BHANOT
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813

March 18, 2015

Re: 15-0110

PBR HAWAII & Associates, Inc.
Attn: Roy Takemoto
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Takemoto:

Subject: Pre-Assessment Consultation for the proposed subdivision of the Panaewa AG Lots Located in the Ahupua'a of Waiakea, South Hilo District, Island and County of Hawaii (TMK (3) 2-2-061:002, (3)2-1-025:006, (3) 2-1-025:007, (3) 2-1-025:047, and (3) 2-1-025:048

This is in response to your letter dated March 2, 2015 requesting the Department of Human Services (DHS) comment on the proposed subdivision of the Pana'ewa AG Lots project located in the Ahupua'a of Waiakea, South Hilo, Hawaii.

The DHS has reviewed the subdivision lay out for the proposed Pana'ewa project. Please be advised that there are several DHS licensed family child care homes located in the near vicinity that may be impacted by the construction project.

If you have any questions or need further information, please contact Ms. Jill Arizumi, Child Care Program Specialist, at (808) 586-5240.

Sincerely,

Scott Nakasone
Assistant Division Administrator

c: Rachael Wong, DrPH, Director

AN EQUAL OPPORTUNITY AGENCY

PBR HAWAII
& ASSOCIATES, INC.

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printed on recycled paper

July 12, 2015

Dr. Rachel Wong, Director
State of Hawai'i
Department of Human Services
1390 Miller Street, Room 209
Honolulu, HI 96813

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Dr. Wong,

Thank you for responding to our pre-assessment consultation. In your letter dated March 18, 2015, you advised us that there are several OHS licensed family child care homes located in the near vicinity that may be impacted by the subject project. We incorporated your comment in the enclosed Draft EA (section 4.8.1). Your review of the Draft EA would be appreciated to assess whether your concerns have been adequately addressed, and to add any other comments you may have. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
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AQUATIC RESOURCES
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 29, 2015

Niniau K. Simmons
Department of Hawaiian Home Lands
PO Box 1879
Honolulu, HI 96805

LOG NO: 2015.01397
DOC NO: 1504SN08
Archaeology

Aloha Ms. Simmons:

SUBJECT: **Chapter 6E-8 and National Historic Preservation Act Section 106 Review –**
Proposed Subdivision of the Pana'ewa AG Lots
Waiākea Ahupua'a, South Hilo District, Island of Hawai'i
TMK: (3) 2-1-025:006, 007, 047, and 048; (3) 2-2-061:002

Mahalo for your letter dated April 7, 2015, initiating consultation on the proposed subdivision of the Pana'ewa AG lots. Also included with your letter was a draft letter report prepared by Scientific Consultant Services (SCS) for the five parcels. The draft letter report states that the entire 50-acre APE was surveyed utilizing pedestrian transects spaced 10 m apart and that no historic properties were identified.

Your submittal letter indicates that the Department of Hawaiian Home Lands (DHHL) is conducting an environmental assessment and NEPA review for the proposed project. The project will be funded using Native American Housing Assistance and Self-Determination Act (NAHASA) funds from the U.S. Department of Housing and Urban Development (HUD). The DHHL is acting as the responsible agency for the NHPA Section 106 consultation process. The proposed undertaking will subdivide 90 1/2-acre parcels for single-family housing on undeveloped DHHL state-owned land in Pana'ewa.

The Area of Potential Effect (APE) for this undertaking is the aforementioned TMKs. The acreage of the APE totals approximately 50 acres. Four parcels (TMK: (3) 2-1-025:006, 007, 047, and 048) are located adjacent to each other on Auwae Street. The fifth parcel (TMK: (3) 2-2-061:002) is located on Mahi'ai Street.

Our records indicate that we do not have an Archaeological Inventory Survey (AIS) on file for the APE. The draft SCS letter report was not prepared at the request of SHPD and has not been officially submitted to our division for review. Thus, we have insufficient information to evaluate the efficacy of the SCS surface survey or the potential for the proposed project to affect historic properties.

The State Historic Preservation Officer (SHPO) requests the following:

(1) A letter from DHHL documenting the consultation process and results, including a list of consulting parties, method of consultation, and consultation comments shared by Native Hawaiian Organizations (NHOs) and other interested parties;
(2) A letter from DHHL identifying the historic properties within the APE, the DHHL's determination of eligibility for each identified historic property and, if historic properties may be affected, DHHL's proposed mitigation recommendations; and

(3) An AIS including subsurface testing be conducted and that an AIS report meeting the requirements of Hawaii Administrative Rule (HAR) §13-276 and the *Secretary of the Interior's Standards for Archaeological Documentation* be submitted for SHPD review and acceptance prior to DHHL submitting a project effect determination to SHPD for concurrence.

We look forward to working with you throughout the Section 106 process. Please contact Sean Nāleimaile at (808) 933-7651 or Sean.P.Naleimaile@Hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Catie Cullison
1001 Bishop Street, Suite 650
Honolulu, HI 96813

PBR HAWAII
& ASSOCIATES, INC.

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printed on recycled paper

July 12, 2015

Mr. Alan Downer, Administrator
State of Hawai'i
DLNR, State Historic Preservation Division
Kakuhihewa Building
601 Kamokila Blvd., Suite 555
Honolulu, HI 96707

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Downer,

Thank you for your comments dated April 29, 2015. Enclosed is a Draft EA for your review. The Draft EA includes an archaeological inventory survey as Appendix D. The archaeologist also submitted a copy of the study directly to your division for review. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DAVID Y. IGE
GOVERNOR

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:

STP 8.1783

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

April 8, 2015

Mr. Roy Takemoto
Managing Director, Hilo Office
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Takemoto:

Subject: Panaewa Agricultural Lots
Pre-Assessment Consultation for Environmental Assessment and National Environmental Policy Act (NEPA) Environmental Review Record
Waiakea, South Hilo, Hawaii
TMK: (3) 2-2-061:002, 2-1-025:006, 2-1-025:007, 2-1-025:047, 2-1-025:048

Our Department of Transportation's (DOT) comments on the subject project are as follows:

Airports Division

1. It should be noted that the project is located approximately 5,462 feet and 12,913 feet from the end of Runway 3 at Hilo International Airport (Airfield). As such, the applicant should be aware of potential noise, fumes, smoke and vibrations from aircraft flying into and out of the Airfield.

2. We are concerned about the proposed land uses of the subject project due to the potential wildlife attractants which could create hazards for operations at the Airfield. In accordance with the attached Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, land use practices such as agricultural activities, should not be located within 10,000 feet from the aircraft operations area of the Airfield. FAA also recommends a distance of 5 statute miles between the farthest edge of the airport's air operations area (AOA) and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

3. The Department of Hawaiian Home Lands (DHHL) should submit a Federal Aviation Administration (FAA) Form 7460-1 "Notice of Proposed Construction or Alteration," in accordance with Code of Federal Regulations, Title 14, Part 77.9, if construction of alteration is within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. In addition, a FAA Form 7460-1 should be submitted for any tall equipment, such as cranes, that may be used during construction. This form and criteria for submittal can be found at the following website: https://oeaaa.faa.gov/oeaaa/external/portal.jsp
If they file a FAA Form 7460-1, we request a copy be provided to DOT-Airports Division when they receive the FAA determination.

4. Additionally, if photovoltaic (PV) systems are being considered, then the DHHL should be aware that photovoltaic (PV) systems, located in or near the approach path of aircraft into an airport, can create a hazardous condition for a pilot due to possible glint and glare reflected from the PV array. The following website may assist with preparation of a glint and glare analysis: www.sandia.gov/glare

5. We recommend that landscaping shall be carefully chosen to avoid species that will attract migratory birds or wildlife that could pose a threat to air navigation nearby. Lessees should be cognizant of mature heights of trees planted in the subject area so they do not become a hazard/obstruction to aircraft operations at Hilo International Airport.

6. The DOT-Airports Division should be notified prior to any land disturbance activities that could present fugitive dust issues. This would include both general clearing, grading, and grubbing operations as well as blasting for excavation.

Highways Division

A traffic assessment shall be prepared and submitted to our Highways Division for review and acceptance to evaluate the cumulative traffic impact of the project on the State highway facilities in the area.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,

FORD N. FUCHIGAMI
Director of Transportation

Attachment: FAA Advisory Circular

c: Gordon Wong, Federal Aviation Administration

U.S. Department of Transportation

Federal Aviation Administration

Advisory Circular

Subject: HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS	**Date:** 8/28/2007	**AC No:** 150/5200-33B
	Initiated by: AAS-300	**Change:**

1. PURPOSE. This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. APPLICABILITY. The Federal Aviation Administration (FAA) recommends that public-use airport operators implement the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D (Part 139), may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. Airports that have received Federal grant-in-aid assistance must use these standards. The FAA also recommends the guidance in this AC for land-use planners, operators of non-certificated airports, and developers of projects, facilities, and activities on or near airports.

3. CANCELLATION. This AC cancels AC 150/5200-33A, *Hazardous Wildlife Attractants on or near Airports*, dated July 27, 2004.

4. PRINCIPAL CHANGES. This AC contains the following major changes, which are marked with vertical bars in the margin:

a. Technical changes to paragraph references.

b. Wording on storm water detention ponds.

c. Deleted paragraph 4-3.b, *Additional Coordination*.

5. BACKGROUND. Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a threat to aircraft safety, they are not equally hazardous. Table 1

ranks the wildlife groups commonly involved in damaging strikes in the United States according to their relative hazard to aircraft. The ranking is based on the 47,212 records in the FAA National Wildlife Strike Database for the years 1990 through 2003. These hazard rankings, in conjunction with site-specific Wildlife Hazards Assessments (WHA), will help airport operators determine the relative abundance and use patterns of wildlife species and help focus hazardous wildlife management efforts on those species most likely to cause problems at an airport.

Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA). Constructed or natural areas—such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

6. MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES. The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) in July 2003 to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation's valuable environmental resources.

DAVID L. BENNETT
Director, Office of Airport Safety
and Standards

Table 1. Ranking of 25 species groups as to relative hazard to aircraft (1=most hazardous) based on three criteria (damage, major damage, and effect-on-flight), a composite ranking based on all three rankings, and a relative hazard score. Data were derived from the FAA National Wildlife Strike Database, January 1990–April 2003.[1]

Species group	Ranking by criteria			Composite ranking[2]	Relative hazard score[3]
	Damage[4]	Major damage[5]	Effect on flight[6]		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/pheasants	9	7	11	9	33
Herons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock pigeon	13	10	14	13	23
Owls	14	13	20	14	23
H. lark/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	4
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

[1] Excerpted from the *Special Report for the FAA, "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003"*. Refer to this report for additional explanations of criteria and method of ranking.

[2] Relative rank of each species group was compared with every other group for the three variables, placing the species group with the greatest hazard rank for $\geq$ 2 of the 3 variables above the next highest ranked group, then proceeding down the list.

[3] Percentage values, from Tables 3 and 4 in Footnote 1 of the *Special Report*, for the three criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values and the greatest potential hazard to aircraft.

[4] Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

[5] Aircraft incurred damage or structural failure, which adversely affected the structure strength, performance, or flight characteristics, and which would normally require major repair or replacement of the affected component, or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.

[6] Aborted takeoff, engine shutdown, precautionary landing, or other.

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Table of Contents

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SECTION 1.

GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

1-1. INTRODUCTION. When considering proposed land uses, airport operators, local planners, and developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife strikes.

The FAA recommends the minimum separation criteria outlined below for land-use practices that attract hazardous wildlife to the vicinity of airports. Please note that FAA criteria include land uses that cause movement of hazardous wildlife onto, into, or across the airport's approach or departure airspace or air operations area (AOA). (See the discussion of the synergistic effects of surrounding land uses in Section 2-8 of this AC.)

The basis for the separation criteria contained in this section can be found in existing FAA regulations. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet and 90 percent occur under 3,000 feet above ground level), and (3) National Transportation Safety Board (NTSB) recommendations.

1-2. AIRPORTS SERVING PISTON-POWERED AIRCRAFT. Airports that do not sell Jet-A fuel normally serve piston-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 5,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance measured from the nearest aircraft operations areas.

1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT. Airports selling Jet-A fuel normally serve turbine-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 10,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance from the nearest aircraft movement areas.

1-4. PROTECTION OF APPROACH, DEPARTURE, AND CIRCLING AIRSPACE. For all airports, the FAA recommends a distance of 5 statute miles between the farthest edge of the airport's AOA and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

SECTION 2.

LAND-USE PRACTICES ON OR NEAR AIRPORTS THAT POTENTIALLY ATTRACT HAZARDOUS WILDLIFE.

2-1. GENERAL. The wildlife species and the size of the populations attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. This section discusses land-use practices having the potential to attract hazardous wildlife and threaten aviation safety. In addition to the specific considerations outlined below, airport operators should refer to *Wildlife Hazard Management at Airports,* prepared by FAA and U.S. Department of Agriculture (USDA) staff. (This manual is available in English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: http://wildlife-mitigation.tc.FAA.gov.). And, *Prevention and Control of Wildlife Damage,* compiled by the University of Nebraska Cooperative Extension Division. (This manual is available online in a periodically updated version at: ianrwww.unl.edu/wildlife/solutions/handbook/.)

2-2. WASTE DISPOSAL OPERATIONS. Municipal solid waste landfills (MSWLF) are known to attract large numbers of hazardous wildlife, particularly birds. Because of this, these operations, when located within the separations identified in the siting criteria in Sections 1-2 through 1-4, are considered incompatible with safe airport operations.

a. Siting for new municipal solid waste landfills subject to AIR 21. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) (AIR 21) prohibits the construction or establishment of a new MSWLF within 6 statute miles of certain public-use airports. Before these prohibitions apply, both the airport and the landfill must meet the very specific conditions described below. These restrictions do not apply to airports or landfills located within the state of Alaska.

The airport must (1) have received a Federal grant(s) under 49 U.S.C. § 47101, et. seq.; (2) be under control of a public agency; (3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and (4) have total annual enplanements consisting of at least 51 percent of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

The proposed MSWLF must (1) be within 6 miles of the airport, as measured from airport property line to MSWLF property line, and (2) have started construction or establishment on or after April 5, 2001. Public Law 106-181 only limits the construction or establishment of some new MSWLF. It does not limit the expansion, either vertical or horizontal, of existing landfills.

NOTE: Consult the most recent version of AC 150/5200-34, *Construction or Establishment of Landfills Near Public Airports,* for a more detailed discussion of these restrictions.

Figure 1. Separation distances within which hazardous wildlife attractants should be avoided, eliminated, or mitigated.

PERIMETER A: For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from the nearest air operations area.

PERIMETER B: For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest air operations area.

PERIMETER C: 5-mile range to protect approach, departure and circling airspace.

b. **Siting for new MSWLF not subject to AIR 21.** If an airport and MSWLF do not meet the restrictions of Public Law 106-181, the FAA recommends against locating MSWLF within the separation distances identified in Sections 1-2 through 1-4. The separation distances should be measured from the closest point of the airport's AOA to the closest planned MSWLF cell.

c. **Considerations for existing waste disposal facilities within the limits of separation criteria.** The FAA recommends against airport development projects that would increase the number of aircraft operations or accommodate larger or faster aircraft near MSWLF operations located within the separations identified in Sections 1-2 through 1-4. In addition, in accordance with 40 CFR 258.10, owners or operators of existing MSWLF units that are located within the separations listed in Sections 1-2 through 1-4 must demonstrate that the unit is designed and operated so it does not pose a bird hazard to aircraft. (See Section 4-2(b) of this AC for a discussion of this demonstration requirement.)

d. **Enclosed trash transfer stations.** Enclosed waste-handling facilities that receive garbage behind closed doors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles generally are compatible with safe airport operations, provided they are not located on airport property or within the Runway Protection Zone (RPZ). These facilities should not handle or store putrescible waste outside or in a partially enclosed structure accessible to hazardous wildlife. Trash transfer facilities that are open on one or more sides; that store uncovered quantities of municipal solid waste outside, even if only for a short time; that use semi-trailers that leak or have trash clinging to the outside; or that do not control odors by ventilation and filtration systems (odor masking is not acceptable) do not meet the FAA's definition of fully enclosed trash transfer stations. The FAA considers these facilities incompatible with safe airport operations if they are located closer than the separation distances specified in Sections 1-2 through 1-4.

e. **Composting operations on or near airport property.** Composting operations that accept only yard waste (e.g., leaves, lawn clippings, or branches) generally do not attract hazardous wildlife. Sewage sludge, woodchips, and similar material are not municipal solid wastes and may be used as compost bulking agents. The compost, however, must never include food or other municipal solid waste. Composting operations should not be located on airport property. Off-airport property composting operations should be located no closer than the greater of the following distances: 1,200 feet from any AOA or the distance called for by airport design requirements (see AC 150/5300-13, *Airport Design*). This spacing should prevent material, personnel, or equipment from penetrating any Object Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway. Airport operators should monitor composting operations located in proximity to the airport to ensure that steam or thermal rise does not adversely affect air traffic. On-airport disposal of compost by-products should not be conducted for the reasons stated in 2-3f.

f. **Underwater waste discharges.** The FAA recommends against the underwater discharge of any food waste (e.g., fish processing offal) within the separations identified in Sections 1-2 through 1-4 because it could attract scavenging hazardous wildlife.

g. **Recycling centers.** Recycling centers that accept previously sorted non-food items, such as glass, newspaper, cardboard, or aluminum, are, in most cases, not attractive to hazardous wildlife and are acceptable.

h. **Construction and demolition (C&D) debris facilities.** C&D landfills do not generally attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. However, C&D landfills have similar visual and operational characteristics to putrescible waste disposal sites. When co-located with putrescible waste disposal operations, C&D landfills are more likely to attract hazardous wildlife because of the similarities between these disposal facilities. Therefore, a C&D landfill co-located with another waste disposal operation should be located outside of the separations identified in Sections 1-2 through 1-4.

i. **Fly ash disposal.** The incinerated residue from resource recovery power/heat-generating facilities that are fired by municipal solid waste, coal, or wood is generally not a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants and are acceptable as long as they are maintained in an orderly manner, admit no putrescible waste of any kind, and are not co-located with other disposal operations that attract hazardous wildlife.

   Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the FAA considers the ash from general incinerators a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Sections 1-2 through 1-4.

2-3. WATER MANAGEMENT FACILITIES. Drinking water intake and treatment facilities, storm water and wastewater treatment facilities, associated retention and settling ponds, ponds built for recreational use, and ponds that result from mining activities often attract large numbers of potentially hazardous wildlife. To prevent wildlife hazards, land-use developers and airport operators may need to develop management plans, in compliance with local and state regulations, to support the operation of storm water management facilities on or near all public-use airports to ensure a safe airport environment.

a. **Existing storm water management facilities.** On-airport storm water management facilities allow the quick removal of surface water, including discharges related to aircraft deicing, from impervious surfaces, such as pavement and terminal/hangar building roofs. Existing on-airport detention ponds collect storm water, protect water quality, and control runoff. Because they slowly release water

after storms, they create standing bodies of water that can attract hazardous wildlife. Where the airport has developed a Wildlife Hazard Management Plan (WHMP) in accordance with Part 139, the FAA requires immediate correction of any wildlife hazards arising from existing storm water facilities located on or near airports, using appropriate wildlife hazard mitigation techniques. Airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

Where possible, airport operators should modify storm water detention ponds to allow a maximum 48-hour detention period for the design storm. The FAA recommends that airport operators avoid or remove retention ponds and detention ponds featuring dead storage to eliminate standing water. Detention basins should remain totally dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, the detention facility should include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide nesting habitat.

When it is not possible to drain a large detention pond completely, airport operators may use physical barriers, such as bird balls, wires grids, pillows, or netting, to deter birds and other hazardous wildlife. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office.

The FAA recommends that airport operators encourage off-airport storm water treatment facility operators to incorporate appropriate wildlife hazard mitigation techniques into storm water treatment facility operating practices when their facility is located within the separation criteria specified in Sections 1-2 through 1-4.

b. **New storm water management facilities.** The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport's AOA, airport operators should use physical barriers, such as bird balls, wires grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages

the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

c. **Existing wastewater treatment facilities.** The FAA strongly recommends that airport operators immediately correct any wildlife hazards arising from existing wastewater treatment facilities located on or near the airport. Where required, a WHMP developed in accordance with Part 139 will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should encourage wastewater treatment facility operators to incorporate measures, developed in consultation with a wildlife damage management biologist, to minimize hazardous wildlife attractants. Airport operators should also encourage those wastewater treatment facility operators to incorporate these mitigation techniques into their standard operating practices. In addition, airport operators should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

d. **New wastewater treatment facilities.** The FAA strongly recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in Sections 1-2 through 1-4. Appendix 1 defines wastewater treatment facility as "any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes." The definition includes any pretreatment involving the reduction of the amount of pollutants or the elimination of pollutants prior to introducing such pollutants into a publicly owned treatment works (wastewater treatment facility). During the site-location analysis for wastewater treatment facilities, developers should consider the potential to attract hazardous wildlife if an airport is in the vicinity of the proposed site, and airport operators should voice their opposition to such facilities if they are in proximity to the airport.

e. **Artificial marshes.** In warmer climates, wastewater treatment facilities sometimes employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA strongly recommends against establishing artificial marshes within the separations identified in Sections 1-2 through 1-4.

f. **Wastewater discharge and sludge disposal.** The FAA recommends against the discharge of wastewater or sludge on airport property because it may improve soil moisture and quality on unpaved areas and lead to improved turf growth that can be an attractive food source for many species of animals. Also, the turf requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw, both of which can attract hazardous wildlife. In addition, the improved turf may attract grazing wildlife, such as deer and geese. Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

2-4. WETLANDS. Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species (Table 1).

NOTE: If questions exist as to whether an area qualifies as a wetland, contact the local division of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant qualified to delineate wetlands.

a. **Existing wetlands on or near airport property.** If wetlands are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports. Where required, a WHMP will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

b. **New airport development.** Whenever possible, the FAA recommends locating new airports using the separations from wetlands identified in Sections 1-2 through 1-4. Where alternative sites are not practicable, or when airport operators are expanding an existing airport into or near wetlands, a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the state wildlife management agency should evaluate the wildlife hazards and prepare a WHMP that indicates methods of minimizing the hazards.

c. **Mitigation for wetland impacts from airport projects.** Wetland mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4.

   (1) Onsite mitigation of wetland functions. The FAA may consider exceptions to locating mitigation activities outside the separations identified in Sections 1-2 through 1-4 if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge, which cannot be replicated when moved to a different location. Using existing airport property is sometimes the only feasible way to achieve the mitigation ratios mandated in regulatory orders and/or settlement agreements with the resource agencies. Conservation easements are an additional means of providing mitigation for project impacts. Typically the airport operator continues to own the property, and an easement is created stipulating that the property will be maintained as habitat for state or Federally listed species.

Mitigation must not inhibit the airport operator's ability to effectively control hazardous wildlife on or near the mitigation site or effectively maintain other aspects of safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. The FAA will review any onsite mitigation proposals to determine compatibility with safe airport operations. A wildlife damage management biologist should evaluate any wetland mitigation projects that are needed to protect unique wetland functions and that must be located in the separation criteria in Sections 1-2 through 1-4 before the mitigation is implemented. A WHMP should be developed to reduce the wildlife hazards.

(2) Offsite mitigation of wetland functions. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4 unless they provide unique functions that must remain onsite (see 2-4c(1)). Agencies that regulate impacts to or around wetlands recognize that it may be necessary to split wetland functions in mitigation schemes. Therefore, regulatory agencies may, under certain circumstances, allow portions of mitigation to take place in different locations.

(3) Mitigation banking. Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for airport projects, as wetland impacts mitigated outside of the separations identified in Sections 1-2 through 1-4 can still be located within the same watershed. Wetland mitigation banks meeting the separation criteria offer an ecologically sound approach to mitigation in these situations. Airport operators should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

2-5. DREDGE SPOIL CONTAINMENT AREAS. The FAA recommends against locating dredge spoil containment areas (also known as Confined Disposal Facilities) within the separations identified in Sections 1-2 through 1-4 if the containment area or the spoils contain material that would attract hazardous wildlife.

2-6. AGRICULTURAL ACTIVITIES. Because most, if not all, agricultural crops can attract hazardous wildlife during some phase of production, the FAA recommends against the used of airport property for agricultural production, including hay crops, within the separations identified in Sections 1-2 through 1-4. . If the airport has no financial alternative to agricultural crops to produce income necessary to maintain the viability of the airport, then the airport shall follow the crop distance guidelines listed in the table titled "Minimum Distances between Certain Airport Features and Any On-Airport Agricultural Crops" found in AC 150/5300-13, *Airport Design*, Appendix 17. The cost of wildlife control and potential accidents should be weighed against the income produced by the on-airport crops when deciding whether to allow crops on the airport.

a. **Livestock production.** Confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg laying operations) often attract flocking birds, such as starlings, that pose a hazard to aviation. Therefore, The FAA recommends against such facilities within the separations identified in Sections 1-2 through 1-4. Any livestock operation within these separations should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Free-ranging livestock must not be grazed on airport property because the animals may wander onto the AOA. Furthermore, livestock feed, water, and manure may attract birds.

b. **Aquaculture.** Aquaculture activities (i.e. catfish or trout production) conducted outside of fully enclosed buildings are inherently attractive to a wide variety of birds. Existing aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4 must have a program developed to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should also oppose the establishment of new aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4.

c. **Alternative uses of agricultural land.** Some airports are surrounded by vast areas of farmed land within the distances specified in Sections 1-2 through 1-4. Seasonal uses of agricultural land for activities such as hunting can create a hazardous wildlife situation. In some areas, farmers will rent their land for hunting purposes. Rice farmers, for example, flood their land during waterfowl hunting season and obtain additional revenue by renting out duck blinds. The duck hunters then use decoys and call in hundreds, if not thousands, of birds, creating a tremendous threat to aircraft safety. A wildlife damage management biologist should review, in coordination with local farmers and producers, these types of seasonal land uses and incorporate them into the WHMP.

2-7. GOLF COURSES, LANDSCAPING AND OTHER LAND-USE CONSIDERATIONS.

a. **Golf courses.** The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese and some species of gulls. These species can pose a threat to aviation safety. The FAA recommends against construction of new golf courses within the separations identified in Sections 1-2 through 1-4. Existing golf courses located within these separations must develop a program to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should ensure these golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.

b. **Landscaping and landscape maintenance.** Depending on its geographic location, landscaping can attract hazardous wildlife. The FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. A wildlife damage management biologist should review all landscaping plans. Airport operators should also monitor all landscaped areas on a continuing basis for the presence of hazardous wildlife. If

hazardous wildlife is detected, corrective actions should be immediately implemented.

Turf grass areas can be highly attractive to a variety of hazardous wildlife species. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one grass management regime will deter all species of hazardous wildlife in all situations. In cooperation with wildlife damage management biologist, airport operators should develop airport turf grass management plans on a prescription basis, depending on the airport's geographic locations and the type of hazardous wildlife likely to frequent the airport

Airport operators should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet, rye grass, or other large-seed producing grasses, the FAA recommends disking, plowing, or another suitable agricultural practice to prevent plant maturation and seed head production. Plantings should follow the specific recommendations for grass management and seed and plant selection made by the State University Cooperative Extension Service, the local office of Wildlife Services, or a qualified wildlife damage management biologist. Airport operators should also consider developing and implementing a preferred/prohibited plant species list, reviewed by a wildlife damage management biologist, which has been designed for the geographic location to reduce the attractiveness to hazardous wildlife for landscaping airport property.

c. **Airports surrounded by wildlife habitat.** The FAA recommends that operators of airports surrounded by woodlands, water, or wetlands refer to Section 2.4 of this AC. Operators of such airports should provide for a Wildlife Hazard Assessment (WHA) conducted by a wildlife damage management biologist. This WHA is the first step in preparing a WHMP, where required.

d. **Other hazardous wildlife attractants.** Other specific land uses or activities (e.g., sport or commercial fishing, shellfish harvesting, etc.), perhaps unique to certain regions of the country, have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, airport operators must take prompt remedial action(s) to protect aviation safety.

2-8. SYNERGISTIC EFFECTS OF SURROUNDING LAND USES. There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants or that are located outside of the separations identified in Sections 1-2 through 1-4 that are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace. An example of this situation may involve a lake located outside of the separation criteria on the east side of an airport and a large hayfield on the west side of an airport, land uses that together could create a flyway for Canada geese directly across the airspace of the airport. There are numerous examples of such situations;

therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community when developing the WHMP.

SECTION 3.

PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF PUBLIC-USE AIRPORTS.

3.1. INTRODUCTION. In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA may require the development of a Wildlife Hazard Management Plan (WHMP) when specific triggering events occur on or near the airport. Part 139.337 discusses the specific events that trigger a Wildlife Hazard Assessment (WHA) and the specific issues that a WHMP must address for FAA approval and inclusion in an Airport Certification Manual.

3.2. COORDINATION WITH USDA WILDLIFE SERVICES OR OTHER QUALIFIED WILDLIFE DAMAGE MANAGEMENT BIOLOGISTS. The FAA will use the Wildlife Hazard Assessment (WHA) conducted in accordance with Part 139 to determine if the airport needs a WHMP. Therefore, persons having the education, training, and expertise necessary to assess wildlife hazards must conduct the WHA. The airport operator may look to Wildlife Services or to qualified private consultants to conduct the WHA. When the services of a wildlife damage management biologist are required, the FAA recommends that land-use developers or airport operators contact a consultant specializing in wildlife damage management or the appropriate state director of Wildlife Services.

NOTE: Telephone numbers for the respective USDA Wildlife Services state offices can be obtained by contacting USDA Wildlife Services Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157 *(http://www.aphis.usda.gov/ws/)*.

3-3. WILDLIFE HAZARD MANAGEMENT AT AIRPORTS: A MANUAL FOR AIRPORT PERSONNEL. This manual, prepared by FAA and USDA Wildlife Services staff, contains a compilation of information to assist airport personnel in the development, implementation, and evaluation of WHMPs at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, WHAs, WHMPs, and sources of help and information. The manual is available in three languages: English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: http://wildlife-mitigation.tc.FAA.gov/. This manual only provides a starting point for addressing wildlife hazard issues at airports. Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, qualified wildlife damage management biologists must direct the development of a WHMP and the implementation of management actions by airport personnel.

There are many other resources complementary to this manual for use in developing and implementing WHMPs. Several are listed in the manual's bibliography.

3-4. WILDLIFE HAZARD ASSESSMENTS, TITLE 14, CODE OF FEDERAL REGULATIONS, PART 139. Part 139.337(b) requires airport operators to conduct a Wildlife Hazard Assessment (WHA) when certain events occur on or near the airport.

Part 139.337 (c) provides specific guidance as to what facts must be addressed in a WHA.

3-5. WILDLIFE HAZARD MANAGEMENT PLAN (WHMP). The FAA will consider the results of the WHA, along with the aeronautical activity at the airport and the views of the airport operator and airport users, in determining whether a formal WHMP is needed, in accordance with Part 139.337. If the FAA determines that a WHMP is needed, the airport operator must formulate and implement a WHMP, using the WHA as the basis for the plan.

The goal of an airport's Wildlife Hazard Management Plan is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport.

The WHMP must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard. It must also prioritize the management measures.

3-6. LOCAL COORDINATION. The establishment of a Wildlife Hazards Working Group (WHWG) will facilitate the communication, cooperation, and coordination of the airport and its surrounding community necessary to ensure the effectiveness of the WHMP. The cooperation of the airport community is also necessary when new projects are considered. Whether on or off the airport, the input from all involved parties must be considered when a potentially hazardous wildlife attractant is being proposed. Airport operators should also incorporate public education activities with the local coordination efforts because some activities in the vicinity of your airport, while harmless under normal leisure conditions, can attract wildlife and present a danger to aircraft. For example, if public trails are planned near wetlands or in parks adjoining airport property, the public should know that feeding birds and other wildlife in the area may pose a risk to aircraft.

Airport operators should work with local and regional planning and zoning boards so as to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Sections 1-2 through 1-4. Pay particular attention to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. At the very least, airport operators must ensure they are on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, so they will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife.

3-7 COORDINATION/NOTIFICATION OF AIRMEN OF WILDLIFE HAZARDS. If an existing land-use practice creates a wildlife hazard and the land-use practice or wildlife hazard cannot be immediately eliminated, airport operators must issue a Notice to Airmen (NOTAM) and encourage the land–owner or manager to take steps to control the wildlife hazard and minimize further attraction.

SECTION 4.

FAA NOTIFICATION AND REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS

4-1. FAA REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS.

a. The FAA discourages the development of waste disposal and other facilities, discussed in Section 2, located within the 5,000/10,000-foot criteria specified in Sections 1-2 through 1-4.

b. For projects that are located outside the 5,000/10,000-foot criteria but within 5 statute miles of the airport's AOA, the FAA may review development plans, proposed land-use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. The FAA considers sensitive airport areas as those that lie under or next to approach or departure airspace. This brief examination should indicate if further investigation is warranted.

c. Where a wildlife damage management biologist has conducted a further study to evaluate a site's compatibility with airport operations, the FAA may use the study results to make a determination.

4-2. WASTE MANAGEMENT FACILITIES.

a. Notification of new/expanded project proposal. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) limits the construction or establishment of new MSWLF within 6 statute miles of certain public-use airports, when both the airport and the landfill meet very specific conditions. See Section 2-2 of this AC and AC 150/5200-34 for a more detailed discussion of these restrictions.

The Environmental Protection Agency (EPA) requires any MSWLF operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, Section 258.10, *Airport Safety*). The EPA also requires owners or operators of new MSWLF units, or lateral expansions of existing MSWLF units, that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft. (See 4-2.b below.)

When new or expanded MSWLF are being proposed near airports, MSWLF operators must notify the airport operator and the FAA of the proposal as early as possible pursuant to 40 CFR 258.

b. **Waste handling facilities within separations identified in Sections 1-2 through 1-4.** To claim successfully that a waste-handling facility sited within the separations identified in Sections 1-2 through 1-4 does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 2-2.d. The FAA strongly recommends against any facility other than that as outlined in 2-2.d (enclosed transfer stations). The FAA will use this information to determine if the facility will be a hazard to aviation.

c. **Putrescible-Waste Facilities.** In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, no such facility has been able to demonstrate an ability to reduce and sustain hazardous wildlife to levels that existed before the putrescible-waste landfill began operating. For this reason, demonstrations of experimental wildlife control measures may not be conducted within the separation identified in Sections 1-2 through 1-4.

4-3. OTHER LAND-USE PRACTICE CHANGES. As a matter of policy, the FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 statute miles of their airports to promptly notify the FAA. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport.

The airport operator, project proponent, or land-use operator may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents similar to FAA Form 7460-1 to notify the appropriate FAA Regional Airports Division Office. Project proponents can contact the appropriate FAA Regional Airports Division Office for assistance with the notification process.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land-use operator or project proponent should also forward specific details of the proposed land-use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

a. **Airports that have received Federal grant-in-aid assistance.** Airports that have received Federal grant-in-aid assistance are required by their grant assurances to take appropriate actions to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations. The FAA recommends that airport operators to the extent practicable oppose off-airport land-use changes or practices within the separations identified in Sections 1-2 through 1-4 that may attract hazardous wildlife. Failure to do so may lead to noncompliance with applicable grant assurances. The FAA will not approve the placement of airport

development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures. Increasing the intensity of wildlife control efforts is not a substitute for eliminating or reducing a proposed wildlife hazard. Airport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

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APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

1. **GENERAL.** This appendix provides definitions of terms used throughout this AC.

   1. **Air operations area.** Any area of an airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved areas or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiways, or apron.

   2. **Airport operator.** The operator (private or public) or sponsor of a public-use airport.

   3. **Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.

   4. **Bird balls.** High-density plastic floating balls that can be used to cover ponds and prevent birds from using the sites.

   5. **Certificate holder.** The holder of an Airport Operating Certificate issued under Title 14, Code of Federal Regulations, Part 139.

   6. **Construct a new MSWLF.** To begin to excavate, grade land, or raise structures to prepare a municipal solid waste landfill as permitted by the appropriate regulatory or permitting agency.

   7. **Detention ponds.** Storm water management ponds that hold storm water for short periods of time, a few hours to a few days.

   8. **Establish a new MSWLF.** When the first load of putrescible waste is received on-site for placement in a prepared municipal solid waste landfill.

   9. **Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.

   10. **General aviation aircraft.** Any civil aviation aircraft not operating under 14 CFR Part 119, Certification: Air Carriers and Commercial Operators.

   11. **Hazardous wildlife.** Species of wildlife (birds, mammals, reptiles), including feral animals and domesticated animals not under control, that are associated with aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a strike hazard

   12. **Municipal Solid Waste Landfill (MSWLF).** A publicly or privately owned discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR § 257.2. An MSWLF may receive

other types wastes, such as commercial solid waste, non-hazardous sludge, small-quantity generator waste, and industrial solid waste, as defined under 40 CFR § 258.2. An MSWLF can consist of either a stand alone unit or several cells that receive household waste.

13. **New MSWLF.** A municipal solid waste landfill that was established or constructed after April 5, 2001.

14. **Piston-powered aircraft.** Fixed-wing aircraft powered by piston engines.

15. **Piston-use airport.** Any airport that does not sell Jet-A fuel for fixed-wing turbine-powered aircraft, and primarily serves fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.

16. **Public agency.** A State or political subdivision of a State, a tax-supported organization, or an Indian tribe or pueblo (49 U.S.C. § 47102(19)).

17. **Public airport.** An airport used or intended to be used for public purposes that is under the control of a public agency; and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft is publicly owned (49 U.S.C. § 47102(20)).

18. **Public-use airport.** An airport used or intended to be used for public purposes, and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft may be under the control of a public agency or privately owned and used for public purposes (49 U.S.C. § 47102(21)).

19. **Putrescible waste.** Solid waste that contains organic matter capable of being decomposed by micro-organisms and of such a character and proportion as to be capable of attracting or providing food for birds (40 CFR §257.3-8).

20. **Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.

21. **Retention ponds.** Storm water management ponds that hold water for several months.

22. **Runway protection zone (RPZ).** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.

23. **Scheduled air carrier operation.** Any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial

operator for which the air carrier, commercial operator, or their representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 119 or as a public charter operation under 14 CFR Part 380 (14 CFR § 119.3).

24. **Sewage sludge.** Any solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (40 CFR 257.2)

25. **Sludge.** Any solid, semi-solid, or liquid waste generated form a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. (40 CFR 257.2)

26. **Solid waste.** Any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including, solid liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by product material as defined by the Atomic Energy Act of 1954, as amended, (68 Stat. 923). (40 CFR 257.2)

27. **Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.

28. **Turbine-use airport.** Any airport that sells Jet-A fuel for fixed-wing turbine-powered aircraft.

29. **Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 CFR Section 403.3 (q), (r), & (s)).

30. **Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, wildlife includes feral animals and domestic animals out of the control of their owners (14 CFR Part 139, Certification of Airports).

31. **Wildlife attractants.** Any human-made structure, land-use practice, or human-made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace or the airport's AOA. These attractants can include architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands.

32. **Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport.

33. **Wildlife strike.** A wildlife strike is deemed to have occurred when:

    a. A pilot reports striking 1 or more birds or other wildlife;

    b. Aircraft maintenance personnel identify aircraft damage as having been caused by a wildlife strike;

    c. Personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;

    d. Bird or other wildlife remains, whether in whole or in part, are found within 200 feet of a runway centerline, unless another reason for the animal's death is identified;

    e. The animal's presence on the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal) (Transport Canada, Airports Group, *Wildlife Control Procedures Manual*, Technical Publication 11500E, 1994).

2. RESERVED.

PBR HAWAII & ASSOCIATES, INC.

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July 12, 2015

Mr. Ford Fuchigami, Director
State of Hawai'i
Department of Transportation
Ali'iaimoku Building
869 Punchbowl Street
Honolulu, HI 96813

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Fuchigami,

Thank you for responding to our pre-assessment consultation. In your letter dated April 8, 2015, you provided comments related to potential wildlife attractants near airports and a request for a traffic impact study. Enclosed is a Draft EA for your review. We would appreciate any comments, particularly whether we have adequately addressed your concerns regarding wildlife attractants, photovoltaic systems, and traffic (see Draft EA sections 4.3 and 4.9.4). We have not conducted a traffic impact assessment since the Project does not directly access a State highway and the primary intersections on the State highway that future residents would use are already improved. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
EPIF00-2015-I-0258
EPIF00-2015-I-0261
EPIF00-2015-I-0262

JUN 04 2015

Ms. Jobie Masagatani
Chair, Department of Hawaiian Home Lands
Hale Kalanianaole
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

Subject: Informal Consultation for Department of Hawaiian Home Lands Addressing Development and Rehabilitation of Homes at Punaewa and Keaukaha, Hawaii Island and New Construction at Kalamaula, Molokai

Dear Ms. Masagatani:

The U.S. Fish and Wildlife Service (Service) received letters from your Native American Housing Assistance and Self Determination Act (NAHASDA) Manager Niniau Simmons, describing an award of NAHASDA funds from the U.S. Department of Housing and Urban Development (HUD) to the State of Hawaii Department of Hawaiian Home Lands (DHHL) to develop the Punaewa Agricultural Lots, Waiakea, Hawaii Island, rehabilitation and development of homes in Keaukaha, Hilo, Hawaii Island, and New Construction at Kalamaula, Molokai. The letters were dated April 17, 2015, April 27, 2015, and May 1, 2015, respectively. Pursuant to HUD regulations, DHHL is the responsible entity for the purposes of consultation relating to section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). The letter indicated DHHL's determination that the proposed action may affect but is not likely to adversely affect adversely affect the endangered Hawaiian hoary bat (Opeapea, *Lasiurus cinereus semotus*), Hawaiian hawk (Io, *Buteo solitarius*), Hawaiian goose (Nene, *Branta sandvicensis*), Hawaiian petrel (Uau, *Pterodroma phaeopygia sandwichensis*) and Blackburn's sphinx moth (*Manduca blackburni*) and the threatened Newell's shearwater (Ao, *Puffinus auricularis newelli*) and it requested our concurrence with that determination pursuant to section 7 of the ESA.

Project Description

Proposed rehabilitation work including minor interior and exterior improvements such as painting, roof repairs, electrical and plumbing work, termite treatment, repair of damage by termites or wood rot, and kitchen and bath cabinet repairs. Demolition and new construction of homes and retaining walls and construction of new homes on vacant lots is also proposed.

Construction will entail installation of water and sewer or septic systems, grading, driveway installation, drainage improvements, use of herbicide and insecticide to control weeds and fire ants, and construction of the residence buildings and fences.

The proposed subdivision and development of the Punaewa Agricultural Lots is being undertaken to enable the relocation of families and homes threatened by a lava flow at Makuu Farm Lots. The proposed subdivision would result in the development of approximately 50 acres off Mahiai Street (10 acres) and Auwae Road (40 acres) in the Punaewa Agricultural Lots, Waiakea, South Hilo, Hawaii Island. The rehabilitation and development of homes in Keaukaha, Hilo, Hawaii Island, will entail rehabilitation of three homes, and new construction on four vacant lots and two two-lot subdivisions to infill within the existing subdivision. At Kalamaula, Molokai, five vacant lots will be developed within an existing subdivision.

Proposed Conservation Measures

In May 12 and June 1, 2015, emails, Ms. Simmons confirmed the commitments in the letters that the following measures will be implemented at all of the project sites to minimize potential adverse effects to listed species. These conservation measures are considered part of the project description. Any changes to, modifications of, or failure to implement these conservation measures may result in the need to reinitiate this consultation.

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, leaves young unattended in "nursery" trees and shrubs. If trees or shrubs suitable for bat roosting are cleared during the bat breeding season, there is a risk that young bats could inadvertently be harmed or killed. Additionally, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground. When barbed wire is used in fencing, Hawaiian hoary bats can become entangled. To avoid and minimize potential project impacts to Hawaiian hoary bats, the following measures are included in the project description:

- No woody plants over 15 feet tall will be removed or pruned during the sensitive bat pup birthing and rearing season of June 1 to September 15.
- If a bat is present at the project site, the area will be avoided. If a bat arrives in the construction area after work begins, work will cease until the animal leaves on its own accord.
- The only barbed wire used for fencing for the proposed project will be within 2 inches of the ground surface.

Nene

Nene may be present within the project area. Therefore, all on-site project personnel should be apprised that Nene may be in the vicinity of the project at any time during the year. To avoid and minimize potential project impacts to Nene, the following measures are included in the project description:

- If a Nene appears within 100 feet (30.5 meters) of ongoing work, all activity will be temporarily suspended until the animal leaves the area of its own accord. Moreover, if

any number of Nene are observed loafing or foraging within the project area during the Nene breeding season (October through March), a biologist familiar with the nesting behavior of Nene will survey in and around the project area prior to the resumption of any work, or after any subsequent delay of work of three or more days (during which the birds may attempt to nest). If a nest is discovered within a radius of 150 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins, all work will cease immediately and the Service will be contacted for further guidance.

Seabirds

The Hawaiian petrel and the Newell's shearwater (collectively known as seabirds) may transit the project area flying to upland breeding colonies. Outdoor lighting at this project site could result in seabird disorientation, fallout, and injury or mortality. The seabirds are attracted to lights and after circling the lights they may collide with nearby wires, buildings, or other structures or they may land on the ground due to exhaustion. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable. To avoid and minimize potential project impacts to listed seabirds, the following measures are included in the project description:

- To minimize potential project impacts to seabirds during their breeding season, all outdoor lights at the subject properties will be retrofit or replaced with lighting that is fully shielded so the bulb can only be seen from below bulb height and only used when necessary.
- No nighttime construction will occur during the seabird fledging period, September 15 through December 15.
- If nighttime construction occurs during other times of the year, all lighting will be shielded and directed toward the ground to avoid attracting adult seabirds as they travel from the ocean to their breeding areas.

In her May 14, 2015, email confirmation, Ms. Simmons reconfirmed the commitment in the letters that the following measures will be implemented the Kalamaula project site on Molokai to minimize potential adverse effects to the Blackburn's sphinx moth. The Hawaiian hawk does not occur on Molokai, so hawk surveys would not be done at that project location.

Hawaiian hawk

The reproductive success of the Hawaiian hawk may be reduced if they are disturbed at their nest site during the breeding season. Therefore, where noise greater than 60 dB (at five feet) or vegetation clearing is proposed during the March through September Hawaiian hawk breeding season, surveys of the trees within 328 feet (100 meters) of the project site shall be conducted and if a hawk nest is found, such work shall be delayed until the nest is no longer occupied.

Blackburn's sphinx moth

The adult Blackburn's sphinx moth feeds on nectar from native plants including beach morning glory (*Ipomoea pes-caprae*), ilie'e (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*).

Blackburn's sphinx moth larvae feed upon non-native tree tobacco (*Nicotiana glauca*), which occupies disturbed areas such as open fields and roadway margins, and the native aiea (*Nothocestrum sp.*). To pupate, Blackburn's sphinx moth larvae burrow into the soil near host plants and can remain in a state of torpor for up to a year (or more) before emerging from the soil. To avoid and minimize potential project impacts to the Blackburn's sphinx moth, the following measures are included in the project description: 1) If any tree removal, brush clearing, or soil disturbance activities are anticipated, a qualified biologist will survey the project area for the presence of larval host plants; and 2) if host plants are discovered in the area affected by the activity, the plant will not be cut or removed and the soil within 10 meters (33 feet) of the plant not be disturbed.

Conclusion

Based on the project's incorporation of the above avoidance and minimization measures, we concur with your determination that the proposed project may affect, but is not likely to adversely affect the Hawaiian hoary bat, Hawaiian hawk, Hawaiian goose, Hawaiian petrel, and Blackburn's sphinx moth, and the threatened Newell's shearwater. Unless the project description changes, or new information reveals that the proposed project may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to section 7 of the ESA is necessary.

If you have any questions or concerns regarding this consultation, please contact Dawn Bruns (phone: 808-792-9469, email: dawn_bruns@fws.gov).

Sincerely,

Kristi Young
Acting Field Supervisor

Cc: Ms. Catie Cullison, PBR Hawaii
Ms. Claudine Allen, U.S. Department of Housing and Urban Development

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& ASSOCIATES, INC.

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July 12, 2015

Ms. Kristi Young, Acting Field Supervisor
USFWS – Pacific Islands Office
300 Ala Moana Blvd., Rm 3-122
Box 50088
Honolulu, HI 96850

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Ms. Young,

Thank you for your comments dated June 4, 2015 (EPIF00-2015-1-0258, EPIF00-2015-1-0261, EPIF00-201.5-1-0262). Enclosed is a Draft EA for your review. The Draft EA includes a flora and fauna survey as Appendix C. We would appreciate your review of the Draft EA and flora/fauna survey to assess whether we have adequately incorporated your recommended mitigation measures. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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William P. Kenoi
Mayor

BJ Leithead Todd
Director

John A. Medeiros
Deputy Director

County of Hawai'i
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
345 Kekūanaō'a St., Suite 41• Hilo, Hawai'i 96720
(808) 961-8083 · Fax (808) 961-8086

March 31, 2015

Mr. Roy Takemoto
Managing Director, Hilo Office
PBR Hawai'i and Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

RE: Pre-Assessment Consultation for the Proposed Subdivision of the Pana'ewa Ag lots located in the Ahupua'a of Waiākea, South Hilo District,
TMK: 2-2-061:002, 2-1-025:006, 2-1-025:007, 2-1-025:047 and 2-1-025:048

Our Solid Waste Division will be meeting with DHHL regarding this project in the near future.

Thank you for allowing us to review and comment.

Sincerely,

BJ Leithead Todd
DIRECTOR

cc: Greg Goodale, SWD Chief

Green Waste Processing and Disposal Meeting

April 24, 2015 at WRSA Hilo Office

Attendance:

Isaac Takahashi	DHHL
Louie Hao	DHHL
Leslie Wilson	Earth Karvers Hawaii
Bob Shirai	Island Survey
Dan Bautista	WRSA
Dennis Lee	WRSA

Discussion:

1. Slide Presentation – a slide presentation (enclosed) was conducted in the meeting. The Green Waste Processing & Disposal proposal included the Panaewa Subdivision of Lots 6, 7, 47, & 48. A Sat Photo showed the subdivision in relation to the existing County Green Waste site. The second part of the presentation included the Options for Green Waste Processing Proposal. Three options was proposed: (a) – Level and Process Trees and Dispose on Site; (b) – Level Trees and Haul to County Green Waste Site and County Process Trees; and (c) – Level Trees and Dispose on Site with No Processing of Trees. The third part of the presentation the Demolition and Removal of a house on Panaewa Subdivision of Lot 185. The fourth part of the presentation was the Subdivision Improvement of Panaewa Subdivision of Lot 185.

2. Discussion on Options – the discussion on the options were as follows:

A. Level and Process Trees and Dispose on Site – a cost estimate was provided by Leslie at the meeting on the processing cost of the trees and disposal on site ($8,500 per acre for processing and $12,500 for grubbing). The total cost for the 40 acres is $840,000 for grubbing and processing. The mob/demob fee is 6% of the total cost or around $45,000, so the grand total cost is around $900,000. The shredded green waste would be stored on site for DHHL homesteaders to take for their use on their agricultural or residential leased lands. This option seems to be the best out of the all the options because it is the cheapest and quickest to do and also provides a benefit to the DHHL homesteaders.

B. Level Trees and Haul to County Green Waste Site and County Process Trees – the negative aspect of this option is the cost. A cost estimate (enclosed) was provided earlier by Leslie Wilson to clear and grub, reduce the tree size for County acceptance, preparing a haul road within the

subdivision, and hauling the green waste to the County site. The total cost was around $40,000 per acre or $1.6 M for 40 acres.

C. Level Trees and Dispose on Site with No Processing of Trees – this option may be the cheapest of all the options but not acceptable to DOH or County regulations. The green waste could be buried but that option is not acceptable for a subdivision development.

3. Discussion of Demolition and Removal of the house on Panaewa Lot 185 – a cost estimate (enclosed) was provided by Leslie Wilson. The cost to demolish and remove the house is $11,000. The Lauhala Trees (3) will remain. The other trees will be removed, save the Samoan Coconut Tree. The cost for tree removal and disposal is around $4,000. The total cost is around $15,000.

4. Discussion on Subdivision Improvements for Panaewa Lot 185 – a preliminary Engineer's Cost Estimate was provided in the slide presentation. A waterline was included in the improvement, which included an extension on the road reserve for future tie-ins and 5 fire hydrants. The cost of the water system is around $250,000. The cost of the road construction and lot grading is around $500,000. The grand total cost is around $750,000.

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& ASSOCIATES, INC.

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July 12, 2015

Ms. BJ Leithead Todd, Director
County of Hawai'i
Department of Environmental Management
25 Aupuni Street
Hilo, HI 96720

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Ms. Leithead Todd,

Thank you for meeting with the Project engineers on April 24, 2015. We incorporated the understanding from the meeting regarding green waste disposal. Enclosed is a Draft EA for the subject project. We would appreciate your review, particularly whether we have accurately incorporated your comments on green waste disposal (Draft EA section 4.7.4). The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

April 8, 2015

Mr. Roy Takemoto
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

PRE-ENVIRONMENTAL ASSESSMENT
PROPOSED SUBDIVISION OF THE PANAEWA AG LOTS
TAX MAP KEY 2-1-025:006, 007, 047, 048 AND 2-2-061:002

This is in response to your Pre- Environmental Assessment letter dated March 2, 2015.

Please be informed that there are existing service laterals to Parcels 7, 48 and 2.

For TMK 2-1-025: 2-1-025:006, 007, 047 and 048

Water can be made available from the end of the existing 8-inch waterline within Auwae Road fronting parcels 7 and 48, in accordance with the Department's current water availability conditions, which are subject to change without notice.

For TMK 2-2-061:002

Water can be made available from an existing 8-inch waterline along Mahiai Street fronting this parcel, in accordance with the Department's current water availability conditions, which are subject to change without notice.

The subdivisions will require water system improvements in accordance with the County of Hawai'i, Water System Standards 2002, as amended, and the Rules and Regulations of the Department of Water Supply.

In general, the subdivision water system shall be designed to deliver water at adequate pressure and volume under peak-flow and fire-flow conditions. The water system shall include, but not be limited to, mains (minimum 6 inches in diameter), service laterals to front each lot, and fire hydrants at the appropriate spacing.

All construction plans, calculations, and specifications for the above must be submitted by a professional engineer, registered in the State of Hawai'i, to this Department for review and approval.

In addition to the above water system improvements, the developer must also pay the prevailing facilities charge, which is subject to change, of $5,500.00 for each additional lot created. Payment is due and payable upon completion of the installation of the required water system improvements.

Upon completion of the above water system improvements, payment of the prevailing facilities charges, and

proper dedication and conveyance of said water system to the Water Board of the County of Hawai'i, all requirements of this Department will have been fulfilled.

Please keep in mind that this letter shall not be construed as a water commitment. In other words, unless a water commitment is officially effected, water availability is subject to change, depending on the water situation.

Should there be any questions, please contact Ryan Quitoriano of our Water Resources and Planning Branch at 961-8070, extension 256.

Sincerely yours,

Quirino Antonio, Jr., P.E.
Manager-Chief Engineer

RQdfg

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July 12, 2015

Mr. Quirino Antonio, Manager
County of Hawai'i
Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, HI 96720

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Antonio,

Thank you for responding to our pre-assessment consultation. In your letter dated April 8, 2015, we appreciate your confirmation that water is available to serve the Project. Enclosed is a Draft EA for the subject project. We would appreciate your review, particularly whether we have accurately incorporated your comments (Draft EA section 4.7.1). The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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William P. Kenoi
Mayor

Darren J. Rosario
Fire Chief

Renwick J. Victorino
Deputy Fire Chief

County of Hawai'i
HAWAI'I FIRE DEPARTMENT

25 Aupuni Street • Room 2501 • Hilo, Hawai'i 96720
(808) 932-2900 • Fax (808) 932-2928

March 9, 2015

Mr. Roy Takemoto
PBR Hawaii & Associates, Inc.
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Takemoto,

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS
TMKs: (3) 2-2-061:002, (3) 2-1-025:006, (3) 2-1-025:007, (3) 2-1-025:047 AND (3) 2-1-025:048

The Hawai'i Fire Department does not have any comments to offer at this time regarding the above-referenced project pre-assessment consultation.

Thank you for the opportunity to comment.

Sincerely,

for DARREN J. ROSARIO
Fire Chief

KV:lpc

Hawai'i County is an Equal Opportunity Provider and Employer.

PBR HAWAII
& ASSOCIATES, INC.

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Hilo, Hawai'i 96720-1553
Tel/Cell: (808) 315-6878

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July 12, 2015

Chief Darren Rosario
County of Hawai'i
Fire Department
25 Aupuni Street, #2603
Hilo, HI 96720

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Rosario,

Although you responded that you did not have any early consultation comments on the subject project, enclosed is a copy of the Draft EA that provides additional information on the project and anticipated impacts. Your review of the Draft EA would be appreciated. The enclosed transmittal includes the deadline for comments and address to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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William P. Kenoi
Mayor

Duane Kanuha
Director

Bobby Command
Deputy Director

West Hawai'i Office
74-5044 Ane Keohokalole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i
PLANNING DEPARTMENT

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
Phone (808) 961-8288
Fax (808) 961-8742

April 2, 2015

Mr. Roy Takemoto
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Dear Mr. Takemoto:

Subject: **Pre-Consultation for Draft Environmental Assessment**
Project: Subdivision of Pana'ewa Agricultural Lots
TMK: (3) 2-2-061:002, (3) 2-1-025:006, (3) 2-1-025:007, (3) 2-1-025:047, and (3) 2-1-025:048; Waiākea, South Kohala, Hawai'i

Thank you for your letter dated March 2, 2015, requesting comments from this office regarding the preparation of a Draft Environmental Assessment (DEA) for the subject project.

The State of Hawai'i, Department of Hawaiian Home Lands (DHHL) is proposing to subdivide and develop five existing lots, creating a total of 90 lots that will enable the relocation of Maku'u Farm Lot families and homes threatened by the lava flow. Some of the existing Maku'u homes will be cut and moved to the new lots; other lots will require new construction. The lots will be accessed by County-dedicated roadways built to County standards and served by the County water system and individual onsite septic systems.

The subject properties are under the control of the Department of Hawaiian Home Lands (DHHL). Zoning will ultimately be determined by DHHL per the 2002 Memorandum of Agreement (MOA) with Hawai'i County. The table below provides the current County zoning, State Land Use designation and Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) Map designation for the subject properties. In addition, none of the properties are located within the Special Management Area (SMA).

TMK	County Zoning	State Land Use	General Plan LUPAG
(3) 2-2-061:002	A-1a, A-5a	Agricultural	Low Density Urban
(3) 2-1-025:006	MG-1a	Urban	Urban Expansion
(3) 2-1-025:007	MG-1a	Urban	Urban Expansion/ Important Agricultural Land

TMK	County Zoning	State Land Use	General Plan LUPAG
(3) 2-1-025:047	MG-1a	Urban	Urban Expansion
(3) 2-1-025:048	MG-1a	Urban	Urban Expansion/ Important Agricultural Land

Please note that pursuant to the 2002 MOA, DHHL will determine the appropriate County zoning districts that shall apply to the properties. In addition, the MOA provides that all normal land use controls will be applied by Hawai'i County to DHHL property according to the zoning district selected by DHHL.

We have no further comments to offer, at this time. However, please provide our department with a copy of the Draft Environmental Assessment for our review and comment.

If you have any questions, or if you need further assistance, please feel free to contact Bethany Morrison of this office at (808) 961-8138.

Sincerely,

DUANE KANUHA
Planning Director

BJM:cs
\\COH33\planning\public\wpwin60\Bethany\EA-EIS Review\preconsultdmftea DHHL Panaewa Ag Lot Subdivision.doc

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& ASSOCIATES, INC.

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R. STAN DUNCAN, ASLA
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Managing Director - Kapolei

ROY TAKEMOTO
Managing Director - Hilo

SCOTT MURAKAMI, ASLA, LEED® AP
Associate

DACHENG DONG, LEED® AP
Associate

MARC SHIMATSU, ASLA
Associate

CATIE CULLISON, AICP
Associate

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July 12, 2015

Mr. Duane Kanuha, Director
County of Hawai'i
Planning Department
Aupuni Center
101 Pauahi Street, Suite 3
Hilo, HI 96720

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Kanuha,

Thank you for your comments dated April 2, 2015. Enclosed is a Draft EA that includes a discussion of the MOA between DHHL and the County, and the appropriate zoning designation that would apply to the Project area (see §5.2.2 of the enclosed Draft EA). We would appreciate your review of the Draft EA. The enclosed transmittal includes the deadline and contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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William P. Kenoi
Mayor

Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai`i
POLICE DEPARTMENT
349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

March 16, 2015

PBR HAWAII & Associates, Inc.
Attn: Roy Takemoto
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Dear Mr. Takemoto:

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIAKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAII

Staff, upon reviewing the provided documents, does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you for allowing us the opportunity to comment.

If there are any questions, please contact Captain Richard Sherlock, Commander of the South Hilo District, at (808) 961-2214.

Sincerely,

HENRY J. TAVARES, JR.
ASSISTANT POLICE CHIEF
AREA I OPERATIONS BUREAU

RS:lli
150154

"Hawai'i County is an Equal Opportunity Provider and Employer"

PBR HAWAII
& ASSOCIATES, INC.

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July 12, 2015

Henry Tavares, Jr., Assistant Police Chief
County of Hawai'i
Police Department
349 Kapiolani Street
Hilo, HI 96720

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Tavares,

Thank you for your comments dated March 16, 2015. We appreciate your assessment that the subject project should not have any significant traffic impact or other public safety concerns. Enclosed is a Draft EA for your further review, The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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Nathalie Razo

From: Roy Takemoto
Sent: Tuesday, March 31, 2015 1:04 PM
To: Nathalie Razo
Cc: Isaac.M.Takahashi@hawaii.gov; Dennis Lee
Subject: FW: Pre-Assessment Consultation For The Proposed Subdivision of the Pana'ewa AG Lots Located in the Ahupua'a of Waiakea, South Hilo District

Nathalie, please file as a early consultation comment for Panaewa. Isaac and Dennis, nice of HELCO to respond; FYI, they want to be kept informed as design progresses.

From: Kuwaye, Kristen [mailto:kristen.kuwaye@hawaiianelectric.com]
Sent: Tuesday, March 31, 2015 12:52 PM
To: Roy Takemoto
Cc: Liu, Rouen; '1.11.153750@ecollab.heco.com'
Subject: Pre-Assessment Consultation For The Proposed Subdivision of the Pana'ewa AG Lots Located in the Ahupua'a of Waiakea, South Hilo District

Kristen Kuwaye on behalf of Rouen Liu

Dear Mr. Roy Takemoto,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should HECO have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities.
We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed subdivision and development of the Pana'ewa Ag Lots comes to fruition, please continue to keep us informed. Further along in the design, we will be better able to evaluate the effects on our system facilities.
If you have any questions, please call me at 543-7245.

Sincerely,
Rouen Q. W. Liu
Permits Engineer

PBR HAWAII
& ASSOCIATES, INC.

July 12, 2015

Mr. Kerstan Wong, Manager
Hawaiian Electric Company, Inc.
Engineering Department (Mail Stop: WA2-BA)
P.O. Box 2750
Honolulu, HI 96840

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR THE PROPOSED SUBDIVISION OF THE PANA'EWA AG LOTS LOCATED IN THE AHUPUA'A OF WAIĀKEA, SOUTH HILO DISTRICT, ISLAND AND COUNTY OF HAWAI'I, TMK: (3) 2-2-061:002, (3)2-1-025:006, (3)2-1-025:007, (3)2-1-025:047, and (3)2-1-025:048

Dear Mr. Wong,

Thank you for the email comments dated March 31, 2015. Although HELCO expressed no objection to the subject project, enclosed is a Draft EA for your further review. The enclosed transmittal includes the deadline for comments and the contact information to send any comments.

Thank you for your participation in the environmental review process.

Sincerely,
PBR HAWAII

Roy Takemoto
Managing Director, Hilo Office

Attachments: Draft EA

Cc: Department of Hawaiian Home Lands

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Appendix C

FLORA AND FAUNA SURVEY AND ASSESSMENT

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FLORA AND FAUNA SURVEY AND ASSESSMENT

FOR

THE DEPARTMENT OF HAWAIIAN HOME LANDS PROJECT

5 PARCELS AT PANAEWA, HILO - HAWAII

by

ROBERT W. HOBDY
ENVIRONMENTAL CONSULTANT
Kokomo, Maui
April 2015

Prepared for:
Department of Hawaiian Home Lands

INTRODUCTION

The Department of Hawaiian Home Lands, Panaewa Project encompasses five parcels of land on the eastern edge of Hilo Town. Four of these parcels, each 10 acres in size, are adjacent in a single block at the north end of Auwae Street, TMK's (3) 2-1-025:006, 007, 047, 048 (see Figures 1 - 7). The fifth parcel, 10.171 acres in size, is nearby on Mahi′ai Street, TMK (3) 2-2-061:02. The Department plans to develop these parcels into residential lots. This study was initiated in response to environmental requirements of the planning process.

SITE DESCRIPTION

All of these five parcels lie on nearly level ′ā′ā lava substrate classified as Papa′i Extremely Stony Muck (rPAE) which is a thin organic soil over the lava (Sato et al, 1973). Rainfall averages 150 inches a year. The four contiguous parcel are a dense, wet forest with many large trees over a thick shrub and vine understory. The fifth parcel was previously cleared and has a now dilapidated structure on it. The area is mostly an open grassland but is mostly overgrown with deep grass and scattered shrubs.

BIOLOGICAL HISTORY

The relatively recent 'a'ā lava flows in the upper and eastern parts of Hilo were originally colonized by young, vigorous 'ōhi'a (*Metrosideros polymorpha*) and hala (*Pandanus tectorius*) forests and such other pioneer species as uluhe fern (*Dicranopteris linearis*), kupukupu fern (*Nephrolepis exaltata*) and 'ie'ie (*Freycinetia arborea*). This native species composition began to change during the 1900s as Hilo became a center for flower culture. Many exotic plant species were introduced by nurseries, landscape professionals and plant lovers because everything grew so well in Hilo. Many of these introductions began to naturalize and move out into the wild. Today, the Hilo area is inundated with hundreds of species of these introductions that have proliferated and have replaced the original native species, forming dense and nearly impenetrable jungles. This is what was encountered in most of the project area.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Department of Hawaiian Homes Panaewa Project conducted in April 2015. The objectives of the survey were to:

1. Document what plant, and animal species occur on the property or may likely occur in the existing habitat.

2. Document the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.

4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used following routes to ensure that all parts of these parcels were covered. Areas most likely to harbor native or rare plants such as the rocky outcrops and gullies were more intensively examined. Notes were made on plant species, distribution and abundance as well as on terrain and substrate. Inventories of the disjunct 4 parcel block and the single parcel were kept separately and are shown in two separate columns.

DESCRIPTION OF THE VEGETATION

The four parcel block and the single parcel were very different in aspect. While they had many species in common, they were dominated by different plants.

The four parcel block was a dense jungle. Species that were abundant included: albizia trees (*Falcataria moluccana*), strawberry guava (*Psidium cattleianum*), melastoma (*Melastoma candida*) and basket grass (*Oplismenus hirtellus*). Common species included: hala (*Pandanus tectorius*), miconia (*Miconia calvescens*), maile hohono (*Paederia foetida*), cecropia (*Cecropia obtusifolia*) and dissotis (*Dissotis rotundifolia*).

Forty nine plant species were recorded in the four parcel block. Of these eight species were native to Hawaii. These included three species that are endemic to Hawaii: ʻōhiʻa (*Metrosideros polymorpha*), hāpuʻu pulu (*Cibotium glaucum*), and hāpuʻu ʻīʻī (*Cibotium menziesii*), and five indigenous species that are native here as well as in other parts of the Pacific: uluhe fern *(Dicranopteris linearis*), pākahakaha fern (*Lepisorus thunberginaus*), puapuamoa fern (*Ophioderma pendulum S*ubsp. *falcatum*), moa (*Psilotum nudum*) and hala. All of these native species are widespread and common in Hawaii.

The single parcel was previously cleared but is now an overgrown grassland. Just one species was abundant, pangola grass (*Digitaria eriantha*). Common species included: broad-leaved carpetgrass (*Axonopus compressus*), wedelia (*Sphagneticola trilobata*), sensistive plant (*Mimosa pudica*), maile pilau (*Paederia foetida*) and ōwī (*Stachytarpheta australis*).

Sixty two plant species were recorded in the single parcel. Of these six species were native to Hawaii. These included two species that are endemic to Hawaii: hāpuʻu pulu and ʻōhiʻa, and an

additional four indigenous species: (*Cyperus polystachyos*) no common name, nanea (*Vigna marina*), pākahakaha and hala. All of these native species are widespread and common in Hawaii.

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project area is dominated by non-native grasses, vines, ferns, shrubs and trees. The area has been heavily altered by historical land uses and continues to be invaded by aggressive weed species. All of the ten native species found in the two focus areas are widespread in Hawaii and of no special conservation concern.

No Federally listed Threatened or Endangered plant species (USFWS, 2015) were found on the property, nor were any found that are candidates for such status. No special native plant habitats were found here either.

Because of the above existing conditions, it is determined that the future development of these five parcels will not have a significant negative impact on the botanical resources in this part of Hawaii island. No recommendations regarding the botanical resources are deemed appropriate or necessary.

PLANT SPECIES LIST

Following is a checklist with two columns, each representing a separate focus area of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within four groups: Conifers, Ferns, Monocots and Dicots. Taxonomy and nomenclature of the ferns follow Palmer (2003), while the Conifers, Monocots and Dicots are in accordance with Wagner et al. (1999) and Staples and Herbst (2005).

For each species, the following information is provided:

1. Scientific name with author citation

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

Polynesian = all those plants brought to Hawaii during the course of Polynesian migrations.

non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

abundant = forming a major part of the vegetation within the project area.

common = widely scattered throughout the area or locally abundant within a portion of it.

uncommon = scattered sparsely throughout the area or occurring in a few small patches.

rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
			Single Parcel	Four Parcels
FERNS				
BLECHNACEAE (Chain Fern Family)				
*Blechnum appendiculatum*Willd.	palm fern	non-native		U
DICKSONIACEAE (Dicksonia Family)				
Cibotium glaucum (Sm.) Hook. & Arn.	*hāpu'u pulu*	endemic	R	R
Cibotium menziesii Hook.	*hāpu'u* ʻīʻī	endemic		R
GLEICHENIACEAE (False Staghorn Fern Family)				
Dicranopteris linearis (Burmf.) Underw.	*uluhe*	indigenous		U
LINDSAEACEAE (Lindsaea Fern Family)				
Lindsaea ensifolia Sw.	----------	non-native		R
NEPHROLEPIDACEAE (Sword Fern Family)				
Nephrolepis brownii (Desv.) Hovencamp & Miyamoto	Asian sword fern	non-native	U	U

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
			Single Parcel	Four Parcels
OPHIOGLOSSACEAE (Adder's Tongue Fern Family)				
Ophioderma pendulum (L.) C. Presl subsp. *falcatum* (C. Presl) R.T. Clausen	puapua moa	indigenous		R
POLYPODIACEAE (Polypody Fern Family)				
Lepisorus thunbergianus (Kaulf.) Ching	*pākahakaha*	indigenous	R	R
Phlebodium aureum (L.) J. Sm.	rabbits foot fern	non-native	R	R
Phymatosorus grossus (Langsd. & Fisch.) Brownlie	*laua'e*	non-native	R	R
PSILOTACEAE (Whisk-fern Family)				
Psilotum nudum (L.) P. Beauv.	*moa*	indigenous		R
PTERIDACEAE (Brake Fern Family)				
Pityrogramma calomelanos (L.) Link	silver fern	non-native	R	
Pteris vittata L.	ladder brake fern	non-native	R	
THELYPTERIDACEAE (Marsh Fern Family)				
Christella parasitica (L.) H. Lev.	----------	non-native		U
CONIFERS				
CUPRESSACEAE (Cypress Family)				
Cupressus sempervirens L.	Italian cypress	non-native	R	
MONOCOTS				
ARACEAE (Aroid Family)				
Epipremnum pinnatum (L.) Engl.	taro vine	non-native		R
Monstera deliciosa Liebmann	monstera	non-native	R	
ARECACEAE (Palm Family)				
Archontophoenix alexandrae (V. Muell) Wendl. & Drude	king palm	non-native	U	
Cocos nucifera L.	*niu*, coconut	Polynesian	U	
Dypsis lutescens (Wendl.) Beentje & Dransfield	Golden- fruited palm	non-native	R	
Veitchia merrillii (Becc.) H.E. Moore	Manila palm	non-native	U	
ASPARAGACEAE (Asparagus Family)				
Cordyline fruticosa (L.) A. Chev.	*ki*, ti	Polynesian	U	U
COMMELINACEAE (Spiderwort Family)				
Commelina diffusa N.L. Burm.	honohono	non-native	R	R
CYPERACEAE (Sedge Family)				
Cyperus haspan L.	----------	non-native	U	
Cyperus polystachyos Rottb.	----------	indigenous	R	
Kyllinga brevifolia Rottb.	*kili'o'opu*	non-native	R	
Rhynchospora caduca Elliot	----------	non-native	U	
ORCHIDACEAE (Orchid Family)				
Arundina graminifolia (D.Don) Hochr.	bamboo orchid	non-native		U
Phaius tankarvilliae (Banks ex L'Her.) Blume	Chinese ground orchid	non-native		R
PANDANACEAE (Screw Pine Family)				
Pandanus tectorius S. Parkinson ex Z.	hala	indigenous	U	C
POACEAE (Grass Family)				
Andropogon virginicus L.	broomsedge	non-native	U	
Axonopus compressus (Sw.) P. Beauv.	broad-leaved carpet grass	non-native	C	

Cenchrus purpureus (Schumach.) Morrone	Napier grass	non-native		U
Digitaria eriantha Steud.	pangola grass	non-native	A	
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	U	U
Melinis minutiflora P. Beauv.	molasses grass	non-native	R	
Melinis repens (Willd.) Zizka	Natal redtop	non-native	U	
Oplismenus hirtellus (L.) P. Beauv.	basket grass	non-native		A
Panicum repens L.	torpedo grass	non-native	U	
Paspalum scrobiculatum L.	rice grass	non-native	U	
Sacciolepis indica (L.) Chase	Glenwood grass	non-native	U	
Schizachyrium condensatum (Kunth) Nees	bushy beardgrass	non-native	R	
Setaria palmifolia (J. Kong) Stapf	palm grass	non-native		U
Urochloa mutica (Forssk.) T. Q. Nguyen	California grass	non-native	U	
DICOTS				
ACANTHACEAE (Acanthus Family)				
Blechum brownie-Juss.	----------	non-native	U	
APOCYNACEAE (Dogbane Family)				
Alstonia scholaris R. Br.	devil tree	non-native		R
Plumeria rubra L.	plumeria	non-native	R	
ARALIACEAE (Ginseng Family)				
Schefflera actinophylla (Endl.) Harms	octopus tree	non-native		U
ASTERACEAE (Sunflower Family)				
Ageratum conyzoides L.	maile hohono	non-native		R
Conyza bonariensis (L.) Cronq.	hairy horseweed	non-native	R	
Emilia sonchifolia (L.) DC.	violet pualele	non-native	R	
Pluchea carolinensis (Jacq.) G. Don	sourbush	non-native	R	
Sphagneticola trilobata (L.) Pruski	wedelia	non-native	C	U
SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
			Single Parcel	Four Parcels
BALSAMINACEAE (Impatiens Family)				
Impatiens walleriana J.D. Hook.	impatiens	non-native		R
BEGONIACEAE (Begonia Family)				
Begonia hirtella Link	----------	non-native		R
BIGNONIACEAE (Bignonia Family)				
Spathodea campanulata P. Beauv.	African tulip tree	non-native	R	R
CANNABACEAE (Hemp Family)				
Trema orientalis (L.) Blume	gunpowder tree	non-native		U
CONVOLVULACEAE (Morning Glory Family)				
Ipomoea alba L.	moon flower	non-native		R
CUCURBITACEAE (Gourd Family)				
Momordica charantia L.	bitter melon	non-native	R	R
EUPHORBIACEAE (Spurge Family)				
Aleurites moluccana (L.) Willd.	kukui	Polynesian	U	
Macaranga mappa (L.) Willd.	bingabing	non-native	R	U
FABACEAE (Pea Family)				
Bauhinia x blakeana Dunn	Hong Kong orchid tree	non-native	R	

Chamaecrista nictitans (L.) Moench	partridge pea	non-native	U	
Desmodium heterophyllum(Willd.) DC.	variable leaved tick trefoil	non-native	U	
Desmodim incanum DC.	kaimi clover	non-native		R
Falcataria moluccana (Mig.) Barneby & Grimes	albizia	non-native	U	A
Mimosa pudica L.	sensitive plant	non-native	C	
Vigna marina (J. Burm) Merr.	*nanea*	indigenous	R	
LAMIACEAE (Mint Family)				
Hyptis pectinata (L.) Poit.	comb hyptis	non-native	R	
MALVACEAE (Mallow Family)				
Melochia umbellata (Houtt.) Stapf	melochia	non-native	R	R
MELASTOMATACEAE (Melastoma Family)				
Clidemia hirta (L.) D. Don	Koster's curse	non-native	R	U
Dissotis rotundifolia (Sm.) Triana	dissotis	non-native	U	C
Melastoma candidum D. Don	melastoma	non-native	U	A
Miconia calvescens DC.	miconia	non-native		C
MYRTACEAE (Myrtle Family)				
Metrosideros polymorpha Gaud.	*'ōhi'a*	endemic	R	U
Psidium cattleinanum Sabine	strawberry guava	non-native		A
Syzygium malaccense (L.) Merr. & Perry	′ōhi′a′ai	Polynesian	R	
PHYLLANTHACEAE (Phyllanthus Family)				
Phyllanthus debilis Klein ex Willd.	niruri	non-native	U	
RUBIACEAE (Coffee Family)				
Gardenia augusta (L.) Merrill	gardenia	non-native	R	
SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
			Single Parcel	Four Parcels
Morinda citrifolia L.	*noni*	Polynesian	R	
Paederia foetida L.	*maile pilau*	non-native	C	C
SCROPHULARIACEAE (Figwort Family)				
Buddleia asiatica Lour.	dog tail	non-native	U	
SOLANACEAE (Nightshade Family)				
Cestrum diurnum L.	day cestrum	non-native		U
URTICACEAE (Nettle Family)				
Cecropia obtusifolia Bertol.	cecropia	non-native		C
VERBENACEAE (Verbena Family)				
Citharexylum caudatum L.	----------	non-native	R	U
Lantana camara L.	lantana	non-native		U
Stachytarpheta australis Moldenke	ōwī	non-native	C	R
Stachytarpheta cayennensis (Rich.) Vahl	nettle-leaved vervain	non-native	U	R

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area including all habitat types were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

Just one mammal species was recorded during four site visits in the project area. Taxonomy and nomenclature follow Tomich (1986). This mammal was the ʻōpeʻapeʻa or the Hawaiian hoary bat.

An evening survey was conducted at two locations in the project area in order to ascertain the presence of the endemic and Endangered 'ōpe'ape'a or Hawaiian hoary bat. A bat detecting device (Batbox IIID) was employed, set to the frequency of 27,000 Hertz which these bats are known to use for echolocation. As soon as this device was turned on at each location, multiple bats were detected emitting their echolocation calls as they flew about in search of flying insects. This level of activity indicated a substantial population of these bats at the time of the survey.

Other non-native mammals that would be expected to be present in this habitat but which were not seen include mice (*Mus domesticus*), rats (*Rattus* spp.), mongoose (*Herpestes auropunctatus*), cats (*Felis catus*) and the feral pig (*Sus scrofa*). Mice and rats feed on seeds, fruits and herbaceous vegetation, while the mongoose and cats would prey on these rodents and birds. Feral pigs are common throughout much of the Big Island.

BIRDS

Birdlife was moderate in the single parcel where eight species were recorded and sparse in the dense forest in the four parcel block where smaller numbers of six non-native species were seen. Taxonomy and nomenclature follow American Ornithologists' Union (2013). Most common in both areas were the common myna (*Acridotheres tristis*), zebra dove (*Geopelia striata*) and Japanese white-eye (*Zosterops japonicus*). Less common were the northern cardinal (*Cardinalis cardinalis*), spotted dove (*Streptopelia chinensis*), house finch (*Carpodacus mexicanus*), nutmeg mannikin (*Lonchura punctulata*) and the hwamei (*Leucodioptron canorum*).

A few other non-native birds would be occasional users of this site, but the habitat is unsuitable for Hawaii's native forest birds which presently occupy native forest uplands beyond the elevational range of mosquitoes and the avian diseases they carry and transmit. These two areas also do not provide habitat for the other native Endangered birds like the ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*), the alae ke'oke'o or Hawaiian coot (*Fulica alai*) and the nēnē or Hawaiian goose (*Branta sandvicensis*). None of these native birds were seen. The Endangered ʻio or Hawaiian hawk is known from forests around Hilo and is occasionally sighted, but was not seen during this survey.

INSECTS

There were moderate amounts of insect life in the single parcel where eight non-native species were recorded. Most common were the beet webworm moth (*Spoladea recurvalis*) and the dung fly (*Musca sorbens*). Uncommon were the longtail blue butterfly (*Lampides boeticus*), small rice grasshopper (*Oxya japonica*) and the spittle bug (*Philaenus spumarius*). Three other non-native species were rare.

The four parcel block had just six species of non-native insects. Three species were common in the dense forest: the day mosquito (*Aedes albopictus*), the Southern day mosquito (*Culex quinquefasciatus*) and the little fire ant (*Wasmannia auropunctata*). Less common were the dungfly (*Musca sorbens*) and the beet webworm moth (*Spoladea recurvalis*).

No native insects were observed in either area. The Endangered Blackburn's sphinx moth (*Manduca blackburni*) was not seen. None of the specific host plants utilized by either the larvae or adults were found in the project areas.

AMPHIBIANS

Just one non-native amphibian the Puerto Rican coqui frog (*Eleutherodactylus coqui*) was found to be abundant in occurrence in both project focus areas during evening surveys. Their piercing calls can be heard at distances up to a hundred yards.

REPTILES AND MOLLUSKS

No reptiles or mollusks were observed during the survey.

DISCUSSION AND RECOMMENDATIONS

The fauna of on these two project area components is largely made up of non-native species that have been either purposeful or accidental introductions to Hawaii. Just one native mammal, the ʻōpeʻapeʻa or Hawaiian hoary bat, was recorded as common in both focus areas during the surveys.

The ʻōpeʻapeʻa carries federal protections where it occurs. It occurs on at least five of the major Hawaiian islands and has its largest population on Hawaii island. These bats are highly mobile and are known to occur in a variety of habitats from nearly 10,000 feet down to sea level. These movements are likely driven by food source availability and seasonal temperatures. ʻŌpeʻapeʻa were well represented in the project area during the time of the survey. The U.S. Fish and Wildlife Service has guidelines for the removal of vegetation from the project area, and the timing of such removal, that minimize potential harm to these bats. They should be consulted regarding these guidelines.

Hawaiian petrels (*Pterodroma phaeopygia sandwichensis*) and Newell's shearwaters (*Puffinus auricularis newellii*), (collectively known as seabirds) may transit over the project area when flying between the ocean and nesting sights in the moutains during their breeding season (March through November). Fatalities to these seabirds resulting from collisions with artificial structures that extend above the surrounding vegetation have been documented in Hawaii where high densities of transiting seabirds occur. Additionally, artificial lighting such as floodlighting for construction work can adversely impact seabirds by causing disorientation which may result in collision with utility lines, buildings, fences and vehicles. Fledgling seabirds are especially affected by artificial lighting and have a tendency to exhaust themselves while circling the light sources and become grounded. Too weak to fly, these birds become vulnerable to predation by predators such as mongoose (*Herpestes auropunctatus*), cats (*Felis catus*) and dogs (*Canis familiaris*). These threats can be minimized by the shielding of any outdoor lighting so that the light is visible only from below.

The Blackburn's sphinx moth was not found in the project area. None of the specific host plants that the larvae feed upon were present on or around the project area, and none of the nectar producing plants that the adult moths feed upon were found here either. No Blackburn's sphinx moths, their eggs or larvae were seen.

No other fauna concerns are foreseen and no other recommendations are offered regarding the fauna resources on this project.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within four groups: Mammals, Birds, Insects and Amphibians. For each species the following information is provided:

1. Common name

2. Scientific name

3. Bio-geographical status. The following symbols are used:

endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

abundant = many flocks or individuals seen throughout the area at all times of day.

common = a few flocks or well scattered individuals throughout the area.

uncommon = only one flock or several individuals seen within the project area.

rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
			1 parcel	4 parcels
MAMMALS				
*Lasiurus cinereus semotus*Allen	ʻōpe'ape'a, Hawaiian bat	endemic	C	C
BIRDS				
Geopelia striata L.	zebra dove	non-native	C	C
Acridotheres tristis L.	common myna	non-native	C	U
Zosterops japonicus Temminck & Schlegel	Japanese white-eye	non-native	U	C

Cardinalis cardinalis L.	northern cardinal	non-native	U	U
Streptopelia chinensis Scopoli	spotted dove	non-native	U	U
Carpodacus mexicanus Muller	house finch	non-native	R	U
Lonchura punctulata L.	nutmeg mannikin	non-native	U	
Leucodioptron canorum L.	hwamei	non-native	R	
AMPHIBIANS				
Eleutherodactylus coqui Thomas	coqui frog	non-native	A	A

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE	
INSECTS			1 parcel	4 parcels
Order DIPTERA - flies				
CULICIDAE (Mosquito Family)				
Aedes albopictus Seuse	day mosquito	non-native		C
Culex quinquefasciatus Say	Southern house mosquito	non-native		C
MUSCIDAE (Housefly Family)				
Musca sorbens Wiedemann	dung fly	non-native	C	U
Order HEMIPTERA - true bugs				
ALEYRODIDAE (Whitefly Family)				
Aleurodicus dispersus Russell	spiraling whitefly	non-native		R
APHROPHORIDAE (Spittle Bug Family)				
Philaenus spumarius L.	spittle bug	non-native	U	
Order HYMENOPTERA - bees, wasps, ants				
FORMICIDAE (Ant Family)				
Wasmannia auropunctata Roger	little fire ant	non-native		C
Order LEPIDOPTERA - butterflies, moths				
CRAMBIDAE (Grass Moth Family)				
Spoladea recurvalis Fabricius	beet webworm moth	non-native	C	U
HESPERIIDAE (Skipper Butterfly Family)				
Hylephila phyleus Drury	fiery skipper	non-native	R	
LYCAENIDAE (Gossamer-winged Butterfly Family)				
Lampides boeticus L.	long tail blue butterfly	non-native	U	
NYMPHALIDAE (Brush-footed Butterfly Family)				
Agraulis vanillae L.	passion flower butterfly	non-native	R	
Order ORTHOPTERA - grasshoppers, crickets				
ACRIDIDAE (Grasshopper Family)				
Oxya japonica Thunberg	small rice grasshopper	non-native	U	
TETTIGONIIDAE (Katydid Family)				
Elimaea punctifera Walker	katydid	non-native	R	

FIGURE 1. Project area on the east side of Hilo – Five parcels highlighted.


FIGURE 2. Single parcel along Mahi′ai Street.

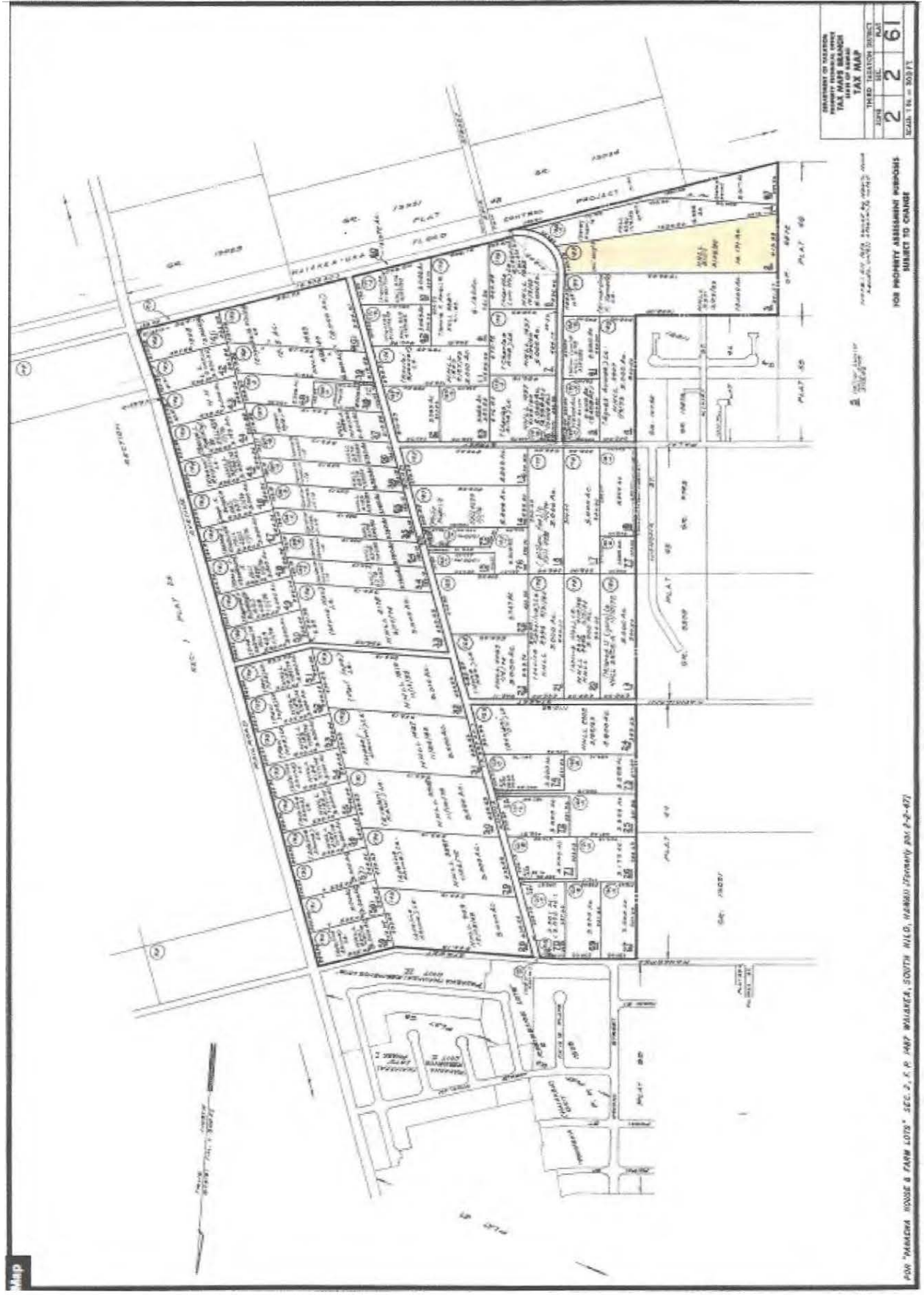

Figure 3 Project Map TMK (3-2-2-061:02. Single Parcel

FIGURE 4 - SINGLE PARCEL TMK (3) 2-2-061:02 A formerly mowed lawn surrounding a residence, now overgrown with deep grass and scattered shrubs.

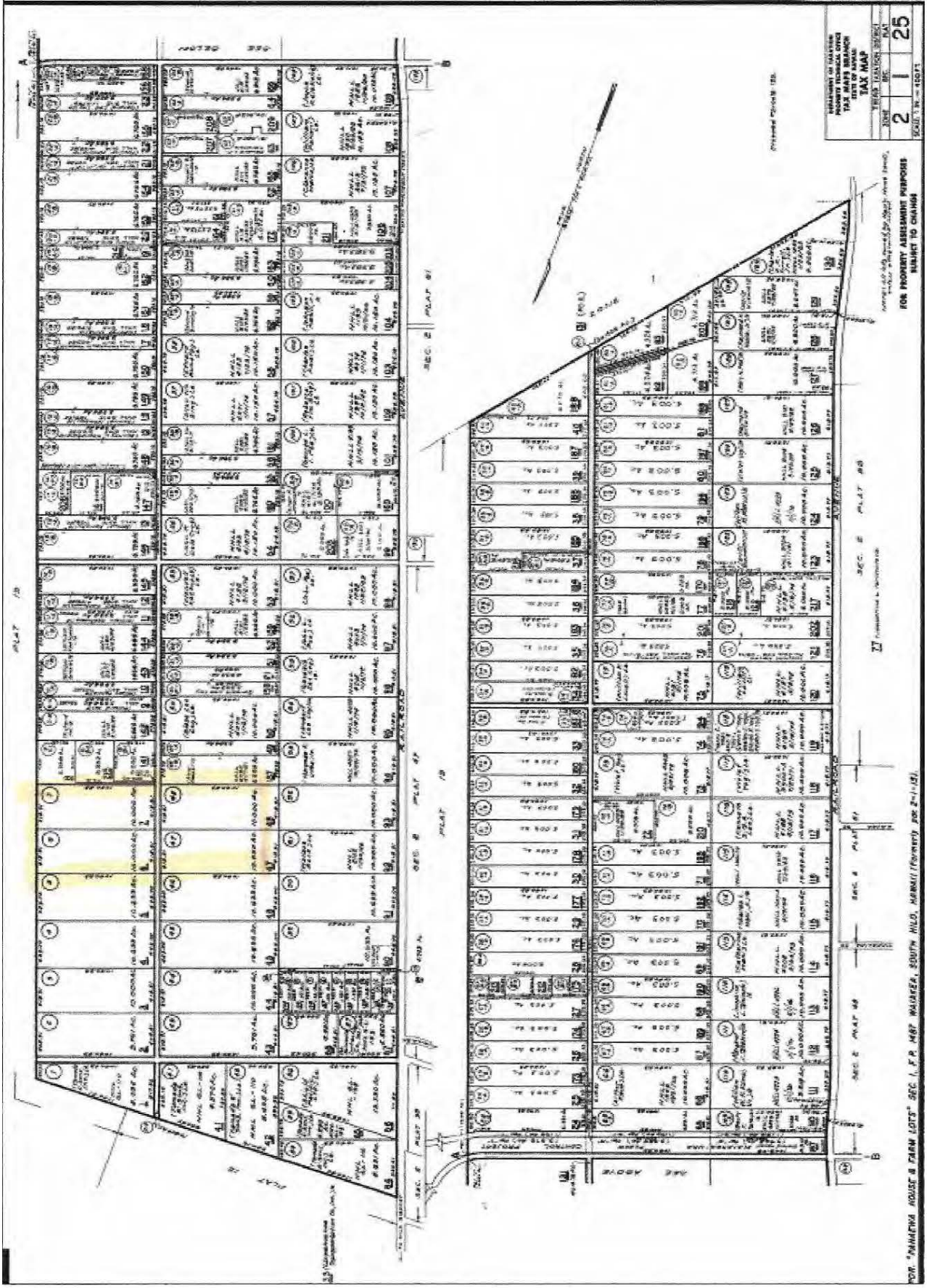

Figure 5 – 4 PARCELS TMK's (3) 2-1-25: 06, 07, 47, 48.

FIGURE 6. Four parcel block – The entire 40 acres is a dense wet jungle.

FIGURE 7. Four parcel block – Typical dense wet forest with large albizia trees.

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Appendix D

ARCHAEOLOGICAL INVENTORY SURVEY

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SCIENTIFIC CONSULTANT SERVICES Inc.
Hawai‘i Island Office: PO Box 155 Kea‘au, HI 96749

June 10, 2015

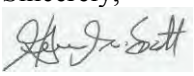
Sean Naleimaile
Hawai‘i Island Archaeologist
State Historic Preservation Division
40 Po‘okela Street
Hilo, HI 96720

Submittal of Draft Report: An Archaeological Assessment of Five 10-Acre DHHL Parcels in the Pana‘ewa Region of Waiākea Ahupua‘a, South Hilo District, Island of Hawai‘i, Hawai‘i [TMK: (3) 2-1-025: 006, 007, 047, 048; & 2-1-061: 002].

Aloha e Sean:

Thank you in advance for your review of the above referenced draft report. The proposed project addressed in the report is federally funded and constitutes an undertaking as defined under Section 106 of the National Historic Preservation Act (36 CFR Section 800.16(y). The Archaeological Assessment report is supporting documentation for Section 106 requirements. The report is attached with this letter. The review fee for the draft report has been sent to the SHPD Kapolei office. Please feel free to contact me if you have questions or concerns.

Sincerely,



Glenn G. Escott, MA
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SCS Hawai‘i Island Ops Mgr
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Enclosure A: Draft Report

SCS Project Number 1706-1

AN ARCHAEOLOGICAL ASSESSMENT OF FIVE 10-ACRE DHHL PARCELS IN THE PANA‘EWA REGION OF WAIĀKEA AHUPUA‘A, SOUTH HILO DISTRICT, HAWAI‘I ISLAND, HAWAI‘I [TMK: 2-1-025: 006, 007, 047, 048; & 2-1-061: 002]

Prepared By:
Glenn G. Escott, M.A.

June 2015
DRAFT

Prepared for:
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ABSTRACT

At the request of PBR Hawai‘i, Scientific Consultant Services, Inc. (SCS) conducted an archaeological assessment of 50.0 acres of Department of Hawaiian Home Lands (DHHL) land [TMK: (3) 2-1-025: 006, 007, 047, 048; and (3) 2-1-061: 002] located in the Pana‘ewa region of Waiākea Ahupua‘a, South Hilo District, Island of Hawai‘i, Hawai‘i. DHHL is proposing to subdivide the five 10-acre parcels into 90 half-acre lots to enable relocation of Maku'u Farm Lot lessees who may have to move due to threat of the lava flow, and other lessees who may have to relocate for various reasons (e.g., UXO issues), as well as awarding to those on the wait list.

The proposed project will be conducted, in part, using federal funds and constitutes an undertaking as defined under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR Part 800). The proposed project is also covered under Hawai‘i Revised Statutes, Title 13, Chapter 6-E Historic Preservation Review regulations. The undertaking Area of Potential Effect (APE) is defined as the five 10-acre parcels.

The northern most four parcels form a contiguous 40-acre area of undeveloped land at the northern end of ‘Auwae Street. The land is approximately 95 feet (29 meters) above mean sea level (amsl). The southwest corner of the 40-acres is bordered by a grubbed and graded residential lot containing a house. The east and west boundaries are bordered by grubbed and graded macadamia nut orchards and garden fields, respectively. The northern boundary borders undeveloped land.

The southernmost 10-acre parcel, TMK (3) 2-2-061:002, is located at 230 Mahi‘ai Street at an elevation of between 180 and 200 feet (55 to 60 meters) amsl. The property is bounded to the north by grubbed and graded gardens and orchards. The east and west boundaries are bordered by residential lots, and the southern boundary is bordered by undeveloped land. The entire 10-acre property is grubbed, graded, and landscaped. There is a house on the property built in the mid 1980s.

A pedestrian survey was carried out in March 2015 by Glenn Escott, M.A and Suzan Keris, B.A.. A series of transects spaced ten meters apart were walked across the entire project area. The northernmost 40-acres had some areas of thick forest, but ground surface visibility was good. The southernmost 10-acre parcel ground surface was grass lawn and visibility was excellent. No archaeological sites or historic properties were identified during the survey. This archaeological assessment report is intended as supporting documentation for Section 106 consultation.

It has been determined through archaeological survey that no historic properties exist within the APE and that no historic properties will be affected by the proposed undertaking. This report recommends that, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended and 36 CFR part 800.2(c), the SHPO concur with the determination of no effect.

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LIST OF FIGURES

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INTRODUCTION

PROJECT AREA DESCRIPTION

At the request of PBR Hawai‘i, Scientific Consultant Services, Inc. (SCS) conducted an archaeological assessment of five 10-acre parcels of Department of Hawaiian Home Lands (DHHL) property [TMK: (3) 2-1-025: 006, 007, 047, 048; and (3) 2-1-061: 002] located in the Pana‘ewa region of Waiākea Ahupua‘a, South Hilo District, Island of Hawai‘i, Hawai‘i (Figure 1 and Figure 2). The Department of Hawaiian Home Lands (DHHL) is proposing to subdivide the five 10-acre parcels into 90 half-acre lots to enable relocation of Maku'u Farm Lot lessees who may have to move due to threat of the lava flow, and other lessees who may have to relocate for various reasons (e.g., UXO issues), as well as awarding to those on the wait list.

The proposed project will be conducted, in part, using federal funds and constitutes an undertaking as defined under Section 106 of the National Historic Preservation (36 CFR Section 800.16[y]). The undertaking Area of Potential Effect (APE) is defined as the five 10-acre parcels. This archaeological assessment report is intended as supporting documentation for Section 106 requirements.

The northern most four parcels form a contiguous 40-acre area of undeveloped land at the northern end of ‘Auwae Street (Figure 3). The land is approximately 95 feet (29 meters) above mean sea level (amsl). The southwest corner of the 40-acres is bordered by a grubbed and graded residential lot containing a house. The east and west boundaries are bordered by grubbed and graded d macadamia nut orchards and garden fields, respectively. The northern boundary borders undeveloped land.

The southernmost 10-acre parcel, TMK (3) 2-2-061:002, is located at 230 Mahi‘ai Street at an elevation of between 180 and 200 feet (55 to 60 meters) amsl (Figure 4). The property is bounded to the north by grubbed and graded gardens and orchards. The east and west boundaries are bordered by residential lots, and the southern boundary is bordered by undeveloped land. The entire 10-acre property is grubbed, graded, and landscaped. There is a house on the property built in the mid 1980s.

METHODS

Because the proposed undertaking is a governmental project covered, in part, under Sections 6E-7 and 6E-8, the archaeological assessment was conducted in

accordance with Hawai‘i Administrative Rules 13§13-284 and was performed in compliance with the Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports contained in Hawai‘i Administrative Rules 13§13-275/276. Because the proposed undertaking will also be conducted using federal funds, it is also covered under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR Part 800).

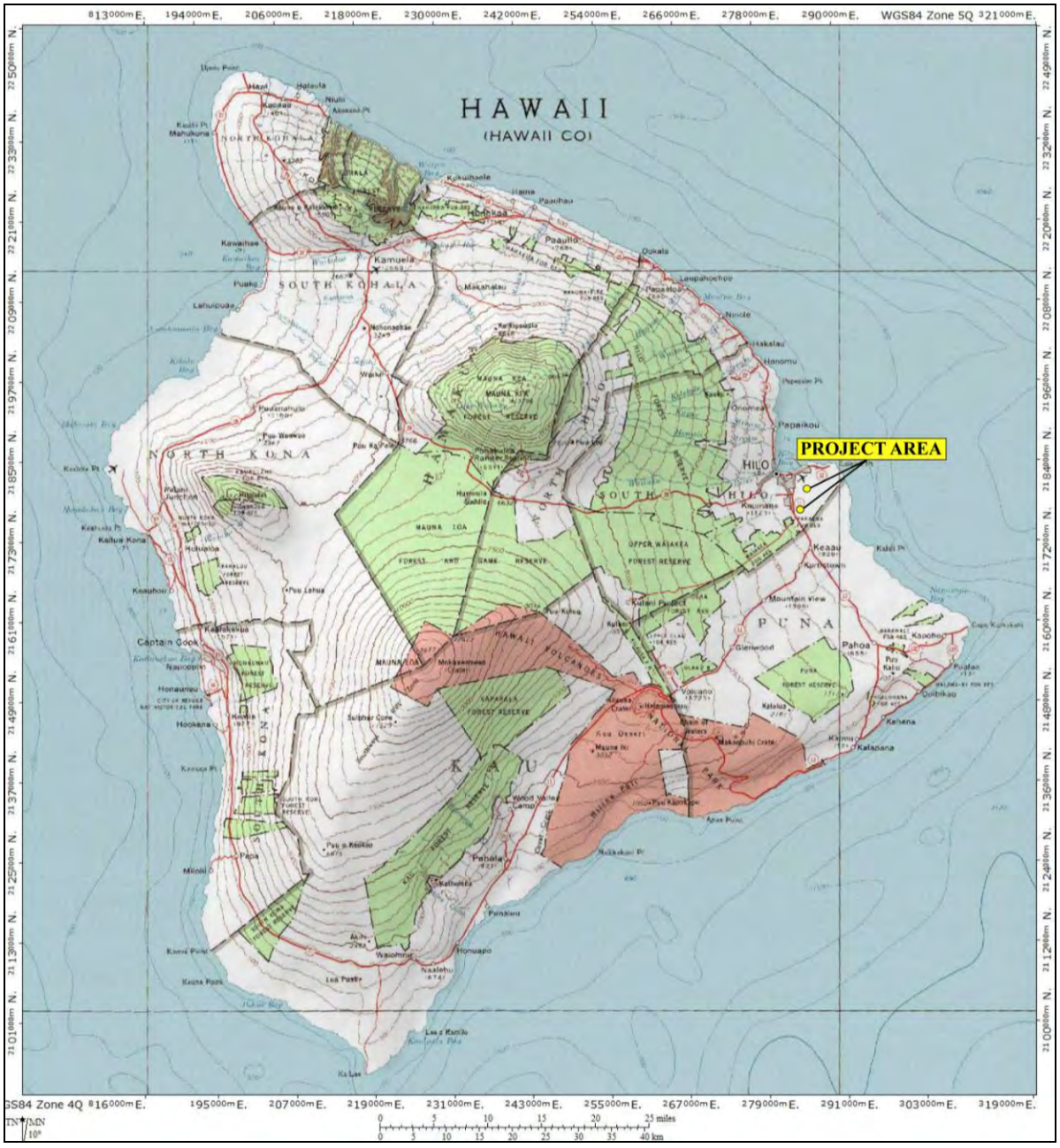

Figure 1: 5,500 K-Series Map of Hawai‘i Showing Location of Project Area (National Geographic Topo!, 2003. Sources: National Geographic Society, USGS).

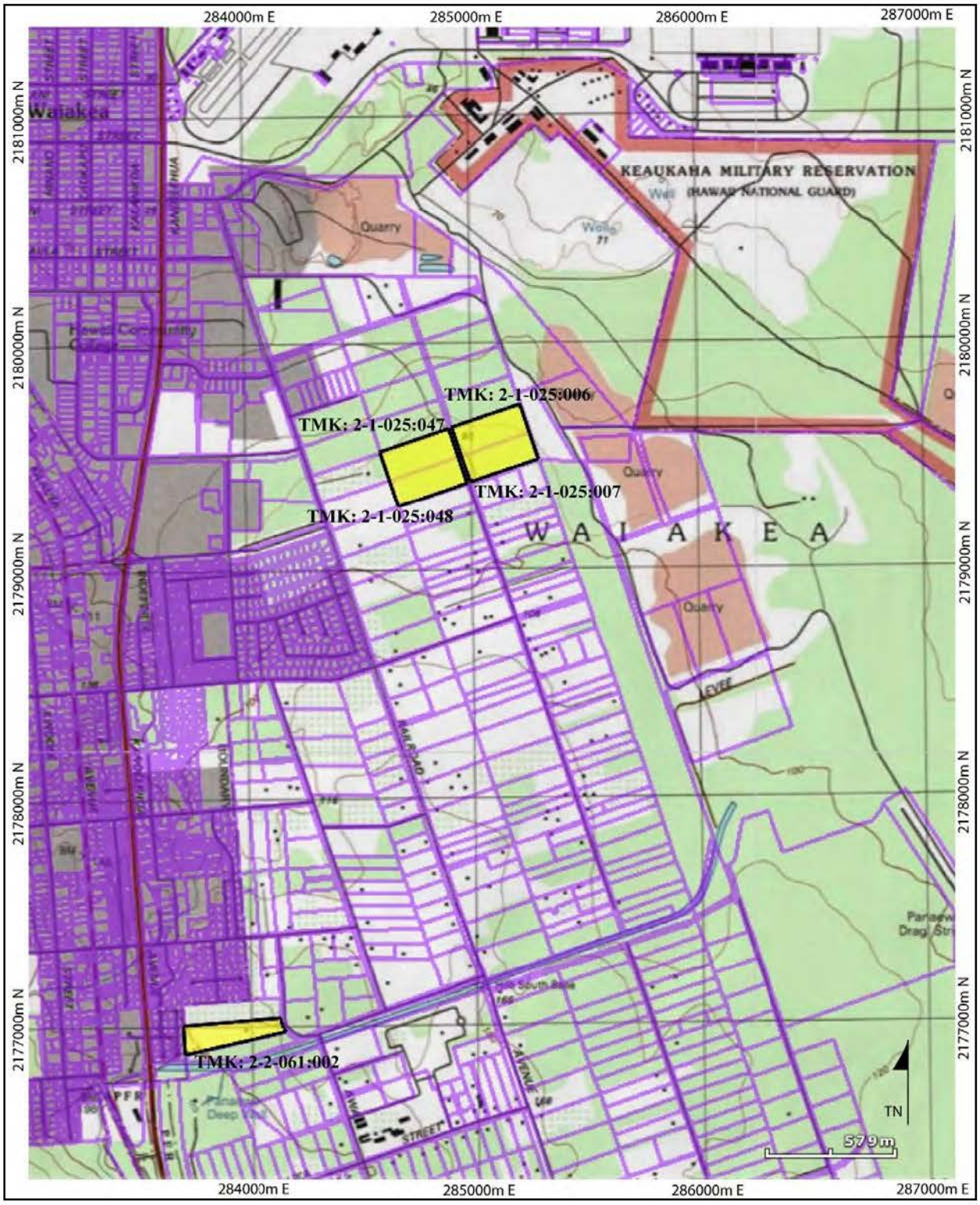

Figure 2: 7.5-Minute Series USGS Topographic Map Showing Location of Project Area Shaded Yellow (ESRI, 2011. Sources: National Geographic Society, USGS Hilo Quadrangle).

Figure 3: Aerial Photograph Showing Northern Four Project Area Parcels (Google Earth, 2013 Image. Hilo, HI, 5Q 284875m E 2179315m N).

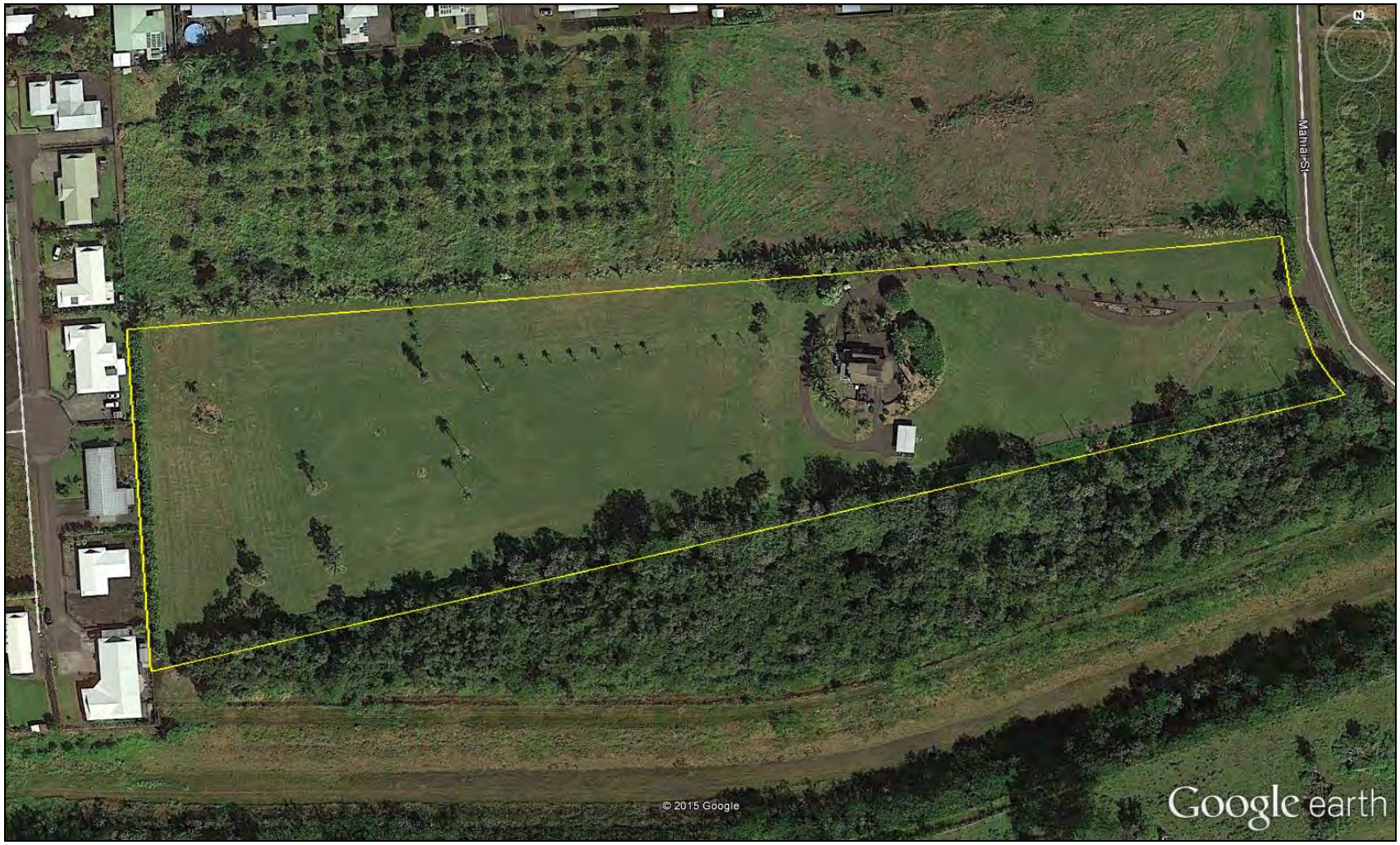

Figure 4: Aerial Photograph Showing Northern Four Project Area Parcels (Google Earth, 2013 Image. Hilo, HI, 5Q 283981m E 2176888m N).

The investigation included the following procedures:

1. Historical and archaeological archival research was conducted, including a search of historic maps, aerial photos, written records, Land Commission Award documents, State and County Planning Division documents, and previous archaeological reports. The research was aimed at determining past land-use in the project area.

2. A 100 percent pedestrian survey of the project area. All sites and features were located, mapped (GIS), described, drawn at appropriate scales, and photographed. Sites were assigned temporary numbers pending State Historic Preservation Division (SHPD) assignment of State Inventory of Historic Property site numbers.

Archival Methods

Prior to commencing field work, archival research was conducted in the State Historic Preservation Division (SHPD) report database and library facility (Hilo, HI), the Hawai‘i County land records office, the *Waihona ‘Āina Māhele* database website, the Hawaiian collections holdings at the University of Hawai‘i-Hilo Library, and the Hawai‘i State Library system.

Archival work consisted of general research on the history and cultural practices specific to the project area, as well as research of previous archaeological studies in and around the subject parcels. Historic land use data, land ownership, maps, and narrative information were obtained from the Hawai‘i County land records office, the *Waihona ‘Āina Māhele* database website, and the University of Hawai‘i, Hilo, Special Collections.

Based on previous studies, none of the five 10-acre parcels are within areas of traditional pre-Contact Hawaiian settlement and habitation. The parcels are inland of the coast where early settlements were located. In 1825, the majority of Waiākea’s estimated 2,000 inhabitants lived along the coast (Ellis1963: 253). While there were settlements along the coast at Keaukaha and in Puna District to the southeast, the majority of habitation and gardens were along, what is now, Hilo Bay.

Field Methods

A pedestrian survey was conducted by Glenn Escott, M.A. and Suzan Keris Escott between March 10 and 19, 2015. The field effort totaled 96 man-hours. The

pedestrian survey consisted of a series of north/south transects spaced ten meters apart across the entire project area. The northernmost 40-acres had some areas of thick forest, but ground surface visibility was good. The southernmost 10-acre parcel ground surface was grass lawn and visibility was excellent. No archaeological sites or historic properties were identified during the survey. Glenn Escott is the principal investigator for the project.

This report contains background information outlining the project area environmental and cultural contexts, a presentation of previous archaeological work within the study area and in the immediate vicinity, and current survey expectations based on that previous work, as well as an explanation of project methods.

ENVIRONMENTAL SETTING

The ground surface at all five parcels is level to slightly undulating Paipai Series (rPAE) extremely stony muck (Sato et al. 1973: 46) overlaying a Mauna Loa lava flow dated between 750 and 1,500 years before present (ybp) (Wolf and Morris 1996). There are exposed ʻaʻa bedrock outcrops and low ridges on the ground surface across the properties. Annual rainfall ranges from 120 to 160 inches.

Vegetation within the south, east, and northeast portions of the contiguous four parcels, where ground disturbance is evident, is composed of a suite of invasive plant species dominated by albizia trees (*Falcataria moluccana*) and guava (*Psidium* sp.) (Starr Environmental 2014). Vegetation on the remainder of 40 acres is primarily ʻōhiʻa (*Metrosideros polymorpha*, *hala* (*Pandanus odoratissimus*), as well as invasive species including guava, gunpowder tree (*Trema orientalis*), miconia (*Miconia calvescens*), Asian Melastoma (*Melastoma septemnervium*), and bingabing (*Macaranga mappa*). The entire southernmost 10-acre parcel is grubbed, graded, and landscaped. There is a house on the property built in the mid 1980s.

HISTORICAL AND CULTURAL CONTEXTS

The rich marine resources of Hilo Bay and the gently sloping forests of Mauna Loa and Mauna Kea provided abundant resources. Fresh water was available from the Wailoa and Wailuku rivers and smaller streams such as Waiākea, Waiolama, Pukihae, and ʻAlenaio.

The project area is located in the *ahupua‘a* of Waiākea, Hilo Hanakāhi ‘Okana, in the *moku-o-loko* (district) of Hilo (Maly 1996:4–5) (Figure 5). The *ahupua‘a* of Waiākea is large, consists of roughly 95,000 acres, and was regarded as a region of abundant natural resources and numerous fishponds. Waiākea was also an early important political center, notably under chief Kulukulu‘a (Kelly et al. 1981:3). Kamehameha lived and often returned to his *‘ili kūpono* (independent land division where all tributes were paid to the chief of the *‘ili* and not the *ahupua‘a*) lands of Pi‘opi‘o in the *ahupua‘a* of Waiākea (Figure 6). The *‘ili kūpono* lands and its royal fishpond were passed on to his son Liholiho after his death.

PRE-CONTACT ACCOUNTS OF HILO

The earliest account of Hilo appears in ‘Umi-a-Liloa’s (1600–1620) conquest of the Island of Hawai‘i, which establishes Hilo as a royal center by the seventeenth century. In the account, ‘Umi-a-Liloa began his conquest of the Island of Hawai‘i by defeating chief Kulukulu‘ā, who lived in Waiākea, and the other chiefs of Hilo (Kamakau 1992:16–17). ‘Umi-a-Liloa’s second son, Keawe-nui-a-‘Umi, ruled Hamākua, Hilo, and Puna from his residence at Hilo (*ibid*: 34). It was from Hilo that he waged war on the Kona chiefs and unified the island. Keawe-nui-a-‘Umi’s descendants single handedly continued to rule, from Hilo, for many generations.

After the death of Keawe-nui-a-‘Umi the kingdom was divided into three parts and was established under warring chiefs; Hilo was ruled by Kumalae-nui-pu‘awa-lau and his son Makua *(ibid*: 45). It was during the period of time that Kamehameha I was born. Kalani‘ōpu‘u’s grandson, Keoua Kuahu‘ula and nephew Kamehameha vied for control over the six chiefdoms constituting the island kingdom and Keoua conquered Hilo chief Keawe-mau-hili and harvested the benefits for a short time only to be killed by Kamehameha late in 1791. Kamehameha’s son Liholiho was born in Hilo in November 1797 (Kamakau 1992:22). Waiākea was inherited by Lihiliho after Kamehameha’s death. The *‘ili kūpono* of Pi‘opi‘o and its royal fishpond were given to his favorite wife, Ka‘ahumanu (Figure 6).

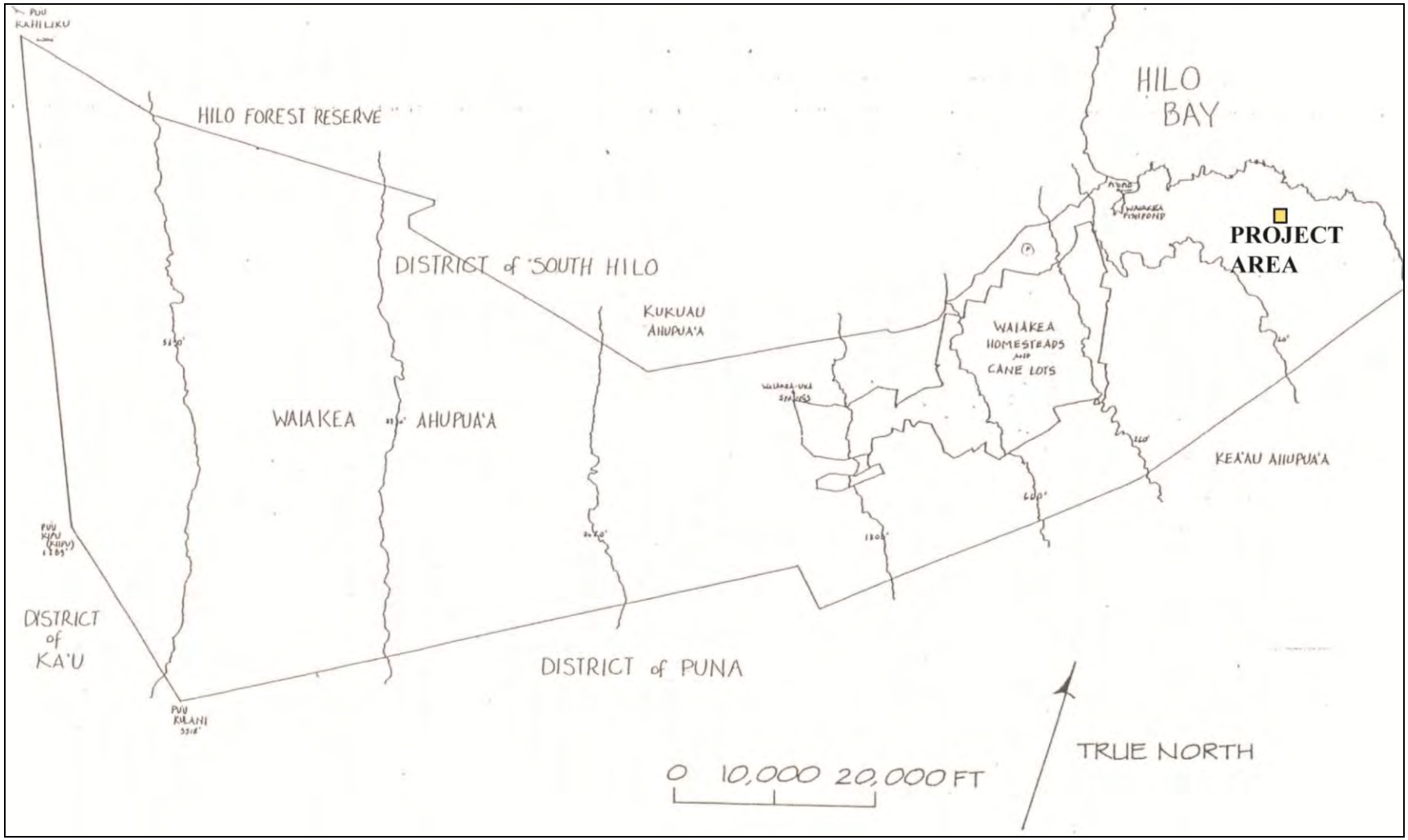

Figure 5: Map of Waiākea Ahupua‘a Showing Location of Project Area (adapted from Bush et al. 2000).

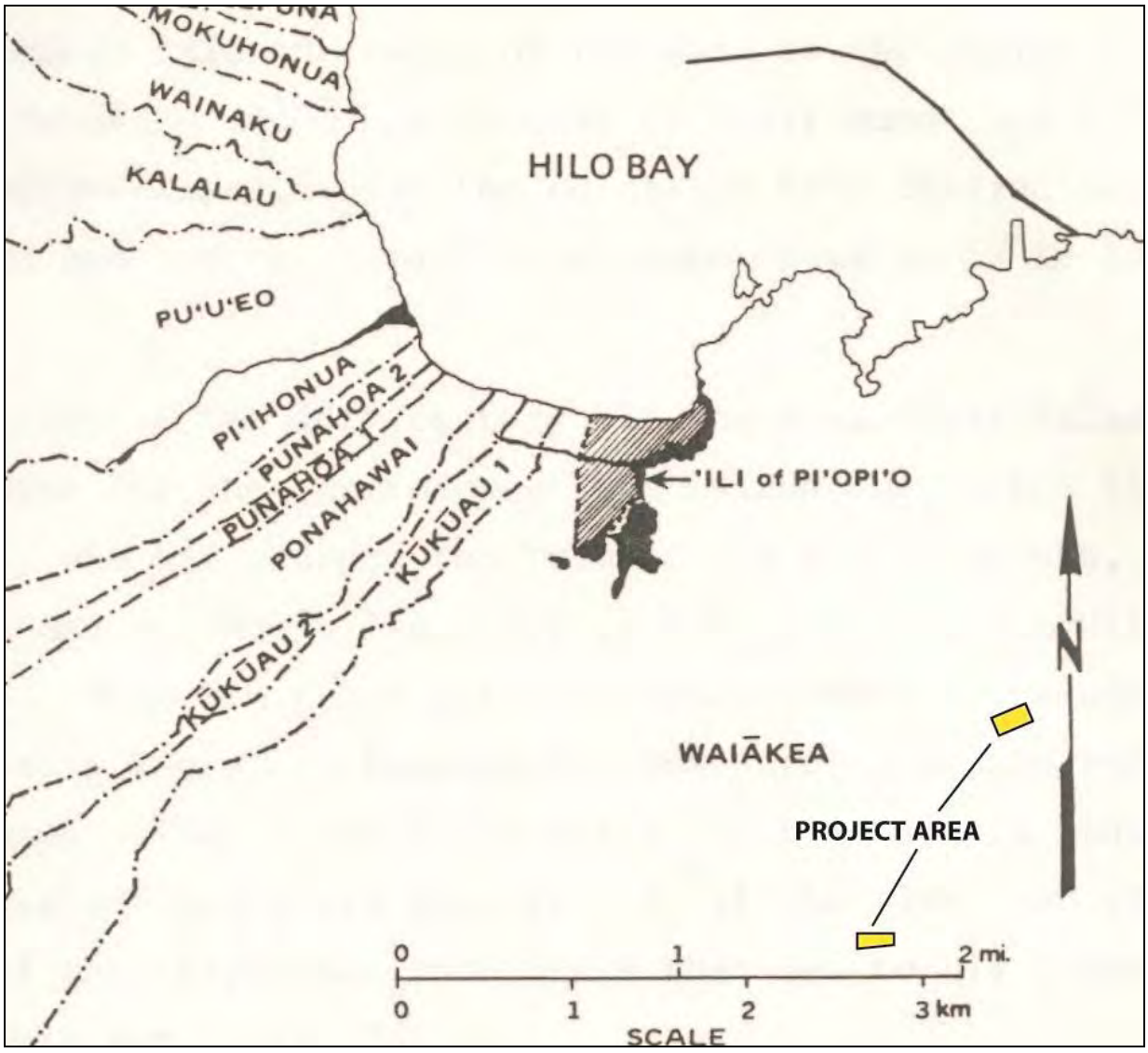

Figure 6: Map of Kamehameha,s *'Ili Kūpono* Lands of Pi'opi'o in the *Ahupua'a* of Waiākea Showing Project Area Location (adapted from Kelly et al. 1981).

TRADITIONAL SETTLEMENT PATTERNS, SUBSISTENCE, AND LAND-USE

Historical accounts and archaeological/cultural studies pertaining to the *ahupua'a* of Waiākea (Bingham 1969; Bird 1974; Ellis 1963; Handy and Handy 1972; Kelly et al. 1981; Maly 1996; McEldowney 1979) provide a wealth of information on traditional residence patterns, land-use, and subsistence horticulture of the area. It is widely held that these historical accounts of residence patterns, land-use, and subsistence horticulture, indicative of traditional practices, developed long before contact with Europeans (McEldowney 1979). These are synthesized below in order to explain the types of cultural resources possibly located within the current project area.

Early accounts of Waiākea portray it as divided into several distinct environmental regions. From the coast to a distance of five or six miles scattered subsistence agriculture was evident, followed by a region of tall fern and bracken, flanked at higher elevations by a forest region between 10 and 20 miles wide, beyond which was an expanse of grass and lava (Ellis 1963:403). The American Missionary C.S. Stewart wrote, "the first four miles of the country is open and uneven, and beautifully sprinkled with clumps, groves, and single trees of the bread-fruit, pandanus, and candle tree (Stewart 1970:361-363). The majority of Waiākea's estimated 2,000 inhabitants (in 1825) lived within this coastal region (Ellis1963: 253). Taro, plantains, bananas, coconuts, sweet potatoes, and breadfruit were grown individually or in small garden plots. Fish, pig, dog, and birds were also raised and captured for consumption.

The present study area is situated inland of the coastal region, in the Panaʻewa Forest. The project area lands are not located in an area of known traditional habitation. The Panaʻewa forest area was traditionally known as a forbidding and dangerous landscape. The legendary origin of the Panaʻewa Forest is associated with Pele's search for a suitable home in the island chain of Hawaiʻi.

> When a suitable place was finally discovered on Hawaii, the Paoa staff was planted in Panaewa and became a living tree, multiplying itself until it was a forest. The writer's informant says that it is a tree known to the present generation of men. "I have seen sticks cut from it," said he, "but not the living tree itself" [Emerson 2005:xi].

When Pele sent her sister Hiʻiakapoliopele (referred to as Hiʻiaka) to travel to Kauaʻi to contact Lohiʻau, Hiʻiaka passed through the Panaʻewa Forest. Hiʻiaka could have passed around the forest, taking the pathway along the shoreline from Hāʻena (southeast of the project area) to Waiākea and Hilo, but she instead chose to cut through the forest taking a more direct, and shorter route.

> Two routes offered themselves for Hiiaka's choice, a makai road, circuitous but safe, the one ordinarily pursued by travelers; the other direct but bristling with danger, because it traversed the territory of the redoubtable witch-moʻo, Pana-ewa. … When Hiiaka announced her determination to take the short road, the one of danger that struck through the heart of Pana-ewa, Pa-pulehu drew back in dismay and expostulated:

> "That is not a fit road for us, or for any but a band of warriors. If we go that way we shall be killed" [Emerson 1:2005:30].

Pana'ewa did not let her pass without a fight.

> The battle that ensued when Pana'ewa sent to the attack his nondescript pack of mo'o, dragonlike anthropoids, the spawn of witchcraft, inflamed with the spite of demons, was hideous and uncanny. Tooth and claw ran amuck. Flesh was torn, limbs rent apart, blood ran like water. If it had been only a battle with enemies in the open Hiiaka would have made short work of the job. Her forces lay ambushed in every wood and brake and assumed every imaginable disguise. A withered bush, a bunch of grass, a moss-grown stone, any, the most innocent object in nature, might prove to be an assailant ready to spit venom or tear with hook and talon [Emerson 2005:35].

The mo'o Pana'ewa and all of his minions were defeated by Hi'iaka and her assistants. "Hawaii for once, and for all time, was rid of that pestilential, man-eating, mo'o band headed by Pana-ewa who, from the time of Pele's coming, had remained entrenched in the beautiful forest-land that still bears the name – Pana-ewa" (Emerson 2005:46).

The forest is heavily wooded and dense with thickets. Travel through it is made more difficult by the broken and undulating ground surface. There is an historic trail that leads from the modern day Lili'uokalani Gardens area to the Puna coast. The trail is often called the Puna Trail and/or the Old Government Road (Escott and Tolleson 2003). Remains of the trail cross the Hawai'i Army Reserve National Guard (HIARNG) Keaukaha Military Reserve (KMR) property, and it has the current appearance of a gravel-covered dirt road (Figure 7 and Figure 8). While there may have been some scattered home sites and gardens in this area, most of the known habitation was along the coast. The probable use of the area prehistorically was for trapping birds and collecting plants, including the plentiful *pandanus* or *hala* (Kelly et al. 1981:20).

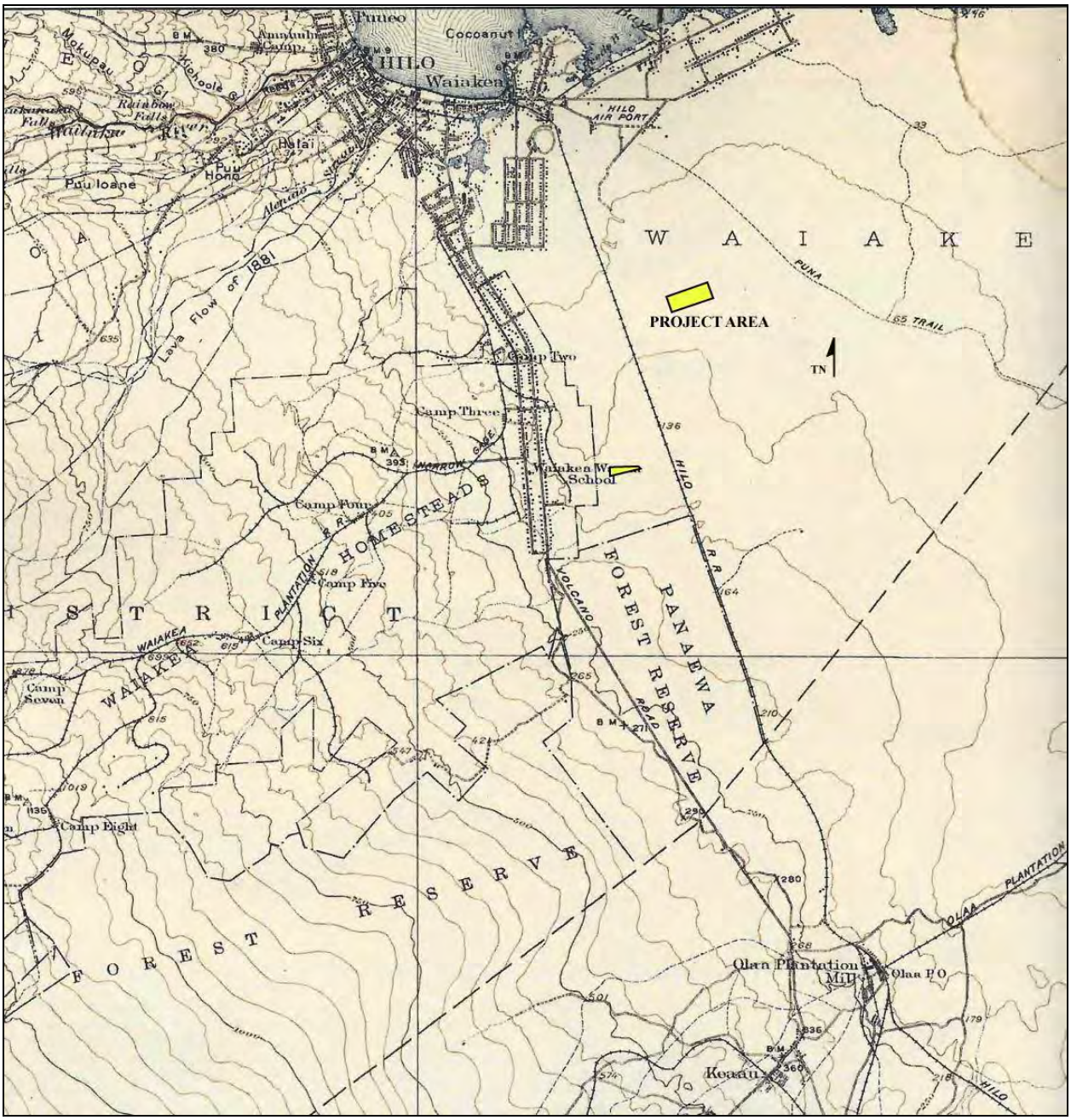

Figure 7: Portion of 1932 15-Minute Series USGS Topographic Map Showing Puna Trail and Location of Project Area (USGS Hilo Quadrangle).

Figure 8: Portion of 1954 USDA Aerial Photograph of Hilo Airport Showing Location of Northern Project Area.

THE MĀHELE OF 1848 AND LAND COMMISSION AWARDS

Prior to the Māhele, Waiākea Ahupua‘a belonged to King Kamehameha, then Lihiliho, and was later held by the chiefess Ka-unu-o-hua, granddaughter of Keawe-mauhili (Kelly et al. 1981:40). Waiākea became Crown Lands during the Māhele of 1848 and in the following years twenty-six Land Claims were awarded within the *ahupua‘a* of Waiākea (Table 1). The awards were small in area, 25 of which went to native claimants. The vast majority of awards were further west in the area of Hilo Bay. No Land Commission awards were made within or near the current project area. The project area property is owned by the State of Hawai‘i lands and is administered by DHHL.

Table 1: Land Commission Awards in Waiākea *Ahupua‘a*.

Grantee	LCA	Acreage
Barenaba	2327	12.25
Halai, L.K.	1279	0.60
Hale	40004	4.25
Kahue	2663	3.75
Kaiana, J.B.	2281	10.25
Kaihenui	11050-B	5.19
Kalolo	1333	2.25
Kalua	8854	3.40
Kaluhikaua	1738	2.98
Kamamalu, V.	7713	*‘ili ‘aina*
Kamanuhaka	8803	1.02
Kapu	1-F	1.60
Kealiko	11174	1.00
Keaniho	2402	5.00
Keawe	5018	0.24
-	10505	-
Kuaio	4344	1.22
Leoi	9982	0.80
Lolo	4738-B	1.27
Mahoe	1-E	4.46
Moealoha	4737	1.03
Nakai	4785	1.05
Napeahi	2603	1.30
Wahine	4737-B	1.01
Wahinealua	11173	2.50
Wahinenohoihilo	10004	1.69

CHANGING RESIDENTIAL AND LAND-USE PATTERNS (1845-1865)

Between 1845 and 1865 traditional land-use and residential patterns underwent a change. In particular, the regular use of Hilo Bay by foreign vessels and the whaling industry, in addition to the establishment of missions in the Hilo area, the introduction of the sandalwood trade, the legalization of private land ownership, the introduction of cattle ranching, and the introduction of sugar cane cultivation, all brought about changes in settlement patterns and long-established land-use patterns (Kelly et al. 1981).

As Hilo became the center of population, settlements in outlying regions declined or disappeared. While food was still grown for consumption, greater areas of land were continually given over to the specialized cultivation and processing of commercial foodstuffs for export. Sugar cane plantations, and industrial, transportation, and military facilities were established in areas that were once upland agricultural areas and coastal settlements, respectively. In particular, the land immediately north of the current project area was used as the location of a jail, an airfield, and the Keaukaha Military Reserve (KMR).

HISTORIC OVERVIEW OF KMR

KMR comprises 503.6 acres located between General Lyman Field (Hilo International Airport) to the north, and the current project area to the south. The area lies in rugged, broken, undulating lava flows, and where unmodified by bulldozing, a dense forest of mixed and native flora abounds. Rainfall in this portion of Hilo keeps the jungle wet, and the ground surface slippery.

In 1914, the Territory of Hawai‘i, via Executive Order Number (EO) 26 set aside 213.43 acres of government lands in Waiākea, north of the current project area, for a National Guard rifle range. In 1925, the Territory withdrew 33 acres for the building of Lyman Airfield by the Army Corp of Engineers.

In August of 1938, a territorial prison camp was constructed on 13.55 acres in Waiākea, north of the current project area. The complex included a Jailer's and acting Jailer's cottage, and a large fenced area with two dormitories, a mess/laundry building, and a recreation/workshop. The prison camp was moved in 1946 and all buildings were removed.

The Army Corp of Engineers constructed a coral runway at KMR beginning in 1925. Hawaiian Airlines used the airport at the outbreak of World War II. The Navy expanded the airfield to three runways, built storage for 450,000 gallons of gasoline, and 24 airplane revetments. KMR became a Naval Station in August 1943 under the 14th Naval District Command Servicing Carrier Aircraft Service Unit (CASU) No. 31 and Air Group One. Extensive building took place including officer and enlisted men's quarters, a swimming pool, two clubs, a three-tank tank farm, water systems, cesspools, tennis courts, and other infrastructure. Personnel at KMR hit a wartime peak of 4,500 upon completion of construction in 1945.

Naval Air Station Hilo officially closed on August 31, 1947. On May 10, 1943, Hilo Airport was officially renamed General Lyman Field. In May 1946, while the Naval Station at KMR was being reduced to caretaker status, the Army Air Force announced that the 7th Army Air Corps (AAC) would begin 24-hour operations at Lyman Field.

In 1947, reactivation of the Hawai‘i Army Reserve and National Guard (HIARNG) resulted in the HIARNG using several Navy buildings. During this time, many buildings were demolished or sold to the public as war surplus. KMR is the headquarters for the island of Hawai‘i National Guard units of the 2nd Battalion, 299th Infantry Company D and 2nd Battalion 299th Infantry, as well as Army Air Guard units 451Bt Aviation Detachment, and the 452nd Aviation Attachment. KMR has firing ranges, training areas, barracks, support facilities, an armory and offices. During annual or special training operations, several hundred to thousands of Guardsmen are housed in cabins and tents pitched in the encampment area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Many archaeological and historical studies have been conducted in Waiākea Ahupua‘a from Hilo Bay west of the current project area, to the Waiākea Sugar Mill sugarcane fields southwest of the current project area, to the KMR lands just north of the current project area. Summaries of 38 of these studies are provided in Table 2 below. Figure 7 shows the locations of archaeological studies in the region surrounding the current project area. A rough model of archaeological site types and distribution can be formulated from these regional archaeological studies.

Table 2: Inventory of Previous Archaeological Investigations in Waiākea.

Reference	Study	Location	Results
Ching and Staruder (1974)	Reconnaissance	Proposed Road alignment from S. Hilo to Puna	Wall, enclosure, platform burial, and habitation site near Puna boundary
Bonk (1979)	Survey	West of KMR	Historic wall and road alignment
McEldowney (1979)	Historical research	Hilo	Settlement pattern
Kelly, Nakamura and Barrère (1981)	Historical research	Hilo	Chronology
Kam (1983)	Site inspection	Reed's Bay	1 site, heiau
Smith and Tourtellotte (1988)	Burial removal	Wailoa Bridge	One individual encountered
Rosendahl, M. (1988)	Reconnaissance	Various parcels in Hilo Town	No sites
Rosendahl, M. and L. Talea (1988)	Reconnaissance	North West of KMR	No sites
Rosendahl, P. (1988)	Reconnaissance		No sites
Pietrusewsky (1989)	Skeletal analysis	Wailoa Bridge	1 Individual
Stokes (1991)	Intermittent survey	Various Parcels	Heiau locations
Hunt and McDermott (1993)	Inventory Survey	Puainako Street Extension	11 sites, historic sugarcane
Borthwick et al. (1993)	Inventory Survey	UH Hilo	Sugar cane remains in uplands
Maly (1996)	Cultural History	Puainako- Komohana Street area	Sugar cane history
Robbins and Spear (1996)	Inventory Survey	Puainako Street	Sugar cane sites in the uplands
Eblé et al. (1997)	Supplemental Testing	Puainako Street	Sugar cane sites in the uplands
Deveroux, et al. (1997)	Reconnaissance	KMR	2 sites
Carson (1999)	Inventory Survey	Pana‘ewa	No sites
McGerty and Spear (1999)	Inventory Survey	Puainako Street Extension	1 site
Dega and Benson (1999)	Reconnaissance	Puainako Street Extension	Possible prehistoric *‘auwai*

Reference	Study	Location	Results
Dega (2000)	Inventory Survey	Puainako Street Extension	*'Auwai* equals historical ditch
Bush et al. (2000)	Inventory Survey	Puainako Street Extension	Burial in cave in uplands
Hammatt & Bush (2000)	Inventory Survey	KMR	Mounds and Puna Trail
McDermott and Hammatt (2001)	Inventory Survey	Puainako Street Extension	2 historical sites in uplands
Tolleson and Godby 2001		KMR	Historic era sites and Puna Trail
Rosendahl, P. (2002)	Assessment Survey	Quarry Site on Southeast Edge of KMR	No sites
Escott and Tolleson (2002)	Inventory Survey	KMR	Trail and planting features
Haun & Henry (2002)		Southwest of KMR	No sites
Rechtman (2003)	Archaeological study and limited CIA	Western edge of KMR	No site
Escott (2004)	Inventory Survey	Puainkao Street and Komohana Street area	WWII sites in the uplands
Wolforth (2004)	Inventory Survey	Reed's Bay	Fishponds, railroad, Historic era foundations
Wolforth (2006)	Inventory Survey	Western edge of KMR	Modern military building remains
Rechtman (2006)	Inventory Survey	Quarry site south of KMR	No sites
Hammatt & Uyeoka (2007)	Archaeological Monitoring	Southeast of KMR	No sites
Tulchin & Hammatt (2007)	Field Inspection	Wal-Mart Property	No sites
Escott (2013a)	Archaeological Assessment	Quarry site west of KMR	No sites
Escott (2013b)	Archaeological Assessment	Quarry site west of KMR	No sites
Wheeler et al. (2014)	Inventory Survey	KMR	Eleven sites, some pre-Contact era, some historic, and some more modern including military features

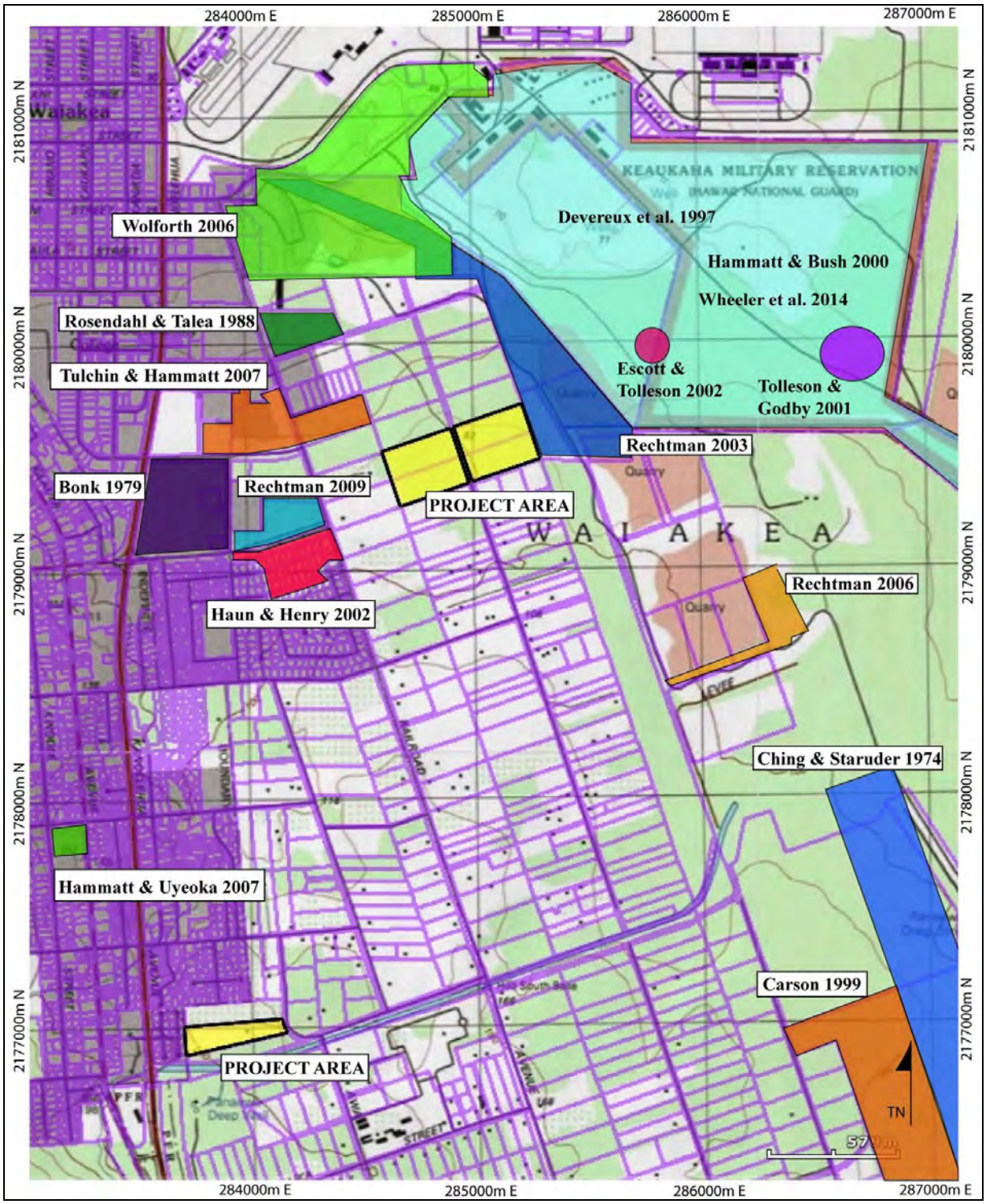

Figure 9: 7.5-Minute Series USGS Topographic Map Showing Location of Previous Archaeological Studies Near the Project Area (ESRI, 2011. Sources: National Geographic Society, USGS Hilo Quadrangle).

The current project area lands are situated inland of the Coastal Settlement Zone of the east Hawai‘i settlement model (McEldowney 1979). As reflected in the name of that zone, prehistoric habitation is focused along the coastline. Fishponds for *ali‘i* and *maka‘āinana* were created, maintained, and used all along the coast. The basic cultivated crops such as irrigated and dry taro, bananas, breadfruit, *kukui* nuts, pandanus and *ti* were grown in these lower elevations. They did not grow uniformly over the coastal zone, however. The heavily weathered soils on the Mauna Kea flows along the western portion of Hilo Bay were particularly well suited for agriculture. This bias towards the western area is evident in the distribution of fields portrayed in an early depiction of the Hilo Bay (Figure 10). The eastern half of the Hilo Bay area and further south and east are covered by younger Mauna Loa flows that lack soil the level of soil development present in the Mauna Kea flows.

Few archaeological sites have been recorded as a result of the projects conducted in the lower elevations of Waiākea. It is likely that the extent of disturbance by the 200 years of development in Hilo town is partially to blame for the lack of recorded lowland sites. In the case of archaeological projects conducted very close to the current project area, it is more likely that the lack of habitation is the result of this region being an inland, rugged, forest area that was not settled. Also, modern disturbance from historic and modern uses have likely removed some archaeological remains.

Paul H. Rosendahl Inc. (PHRI) (Rosendahl and Talea1988) conducted research on five 5-acre lots dispersed through the South Hilo area, recording no cultural deposits due to extensive landform changes caused by the development of Hilo Town (see Figure 9). A reconnaissance survey by PHRI (M. Rosendahl 1988) conducted at the eastern end of General Lyman Field again resulted in no extant archaeological remains due to previous land disturbance.

Devereux et al (1997) conducted a reconnaissance level survey for HIARNG on selected portions of KMR along a corridor parallel to the Puna Trail (see Figure 9). Two sites (assigned temporary site numbers CSH 1 and CSH 2) were recorded: as a prehistoric C-shaped enclosure and a coral mound, the team also addressed 10 historic structures over 50 years of age. CSH2 was later interpreted as a modern bulldozer push.

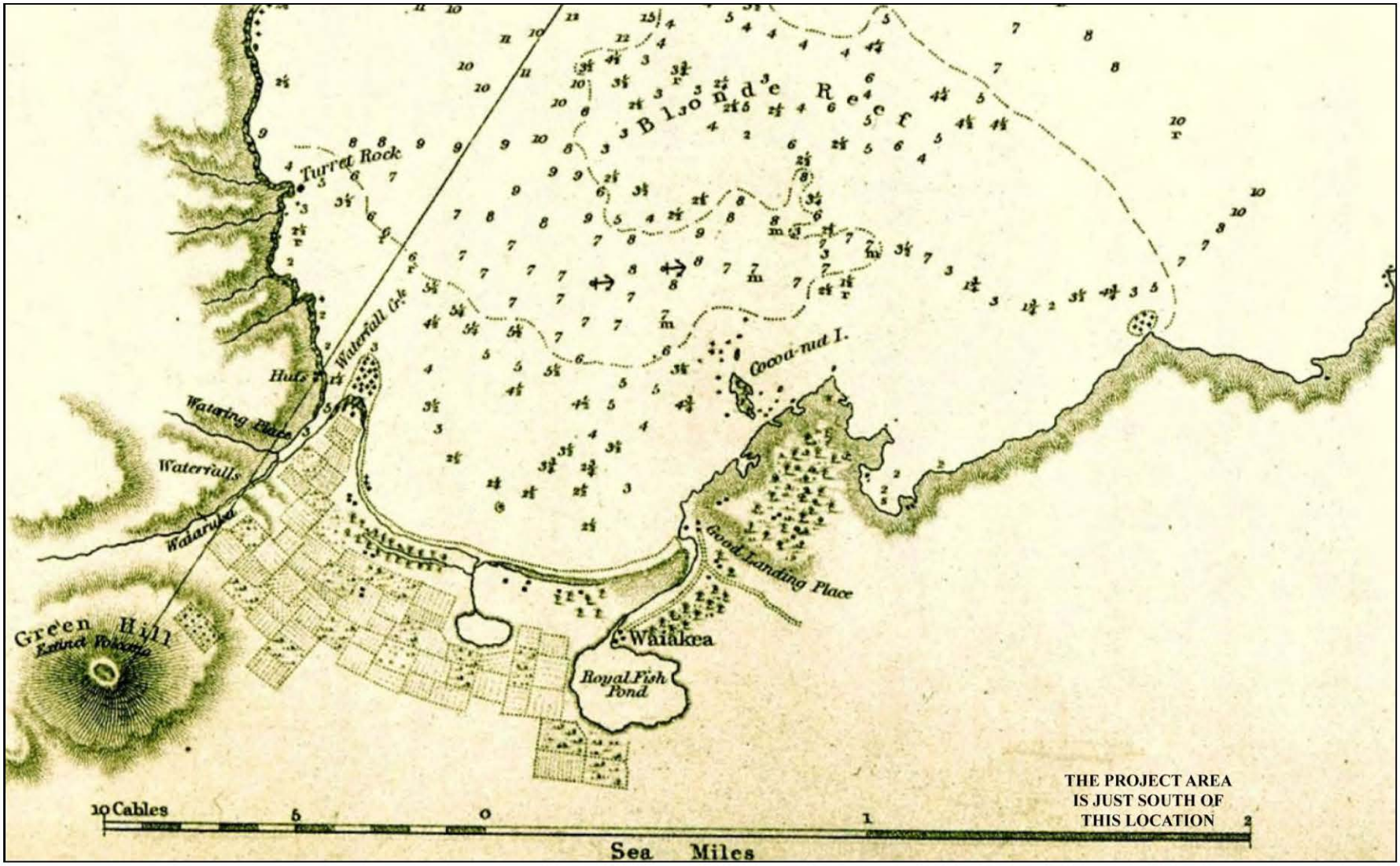

Figure 10: Portion of 1825 Map of Hilo Bay Showing Location of Major Habitation and Agricultural Fields (Malden 1825).

Hammatt and Bush (2000) conducted an inventory level survey of KMR adjacent to the portion of the Puna Trail that extends through the facility. In this report, they discussed the history of the Puna Trail that continues down to south Puna where it meets with the Old Gov't Road (also called the Puna trail). They noted extensive mechanical grading of the ground surface at KMR during military occupation that has effectively removed all surface traces of historic/prehistoric occupation. However, the entire facility was not completely surveyed. Hammatt and Bush recorded three archaeological sites, a C-shaped enclosure, thought to be military in origin, a group of five *ahu,* possibly markers to denote the trail set parallel to the Puna Trail and a modified natural lava blister interpreted as a traditional Hawaiian agricultural planting feature.

Tolleson and Godby (2001) conducted archaeological data recovery at Site 21771 located adjacent to the paved portion of the Puna Trail the traverses KMR. This site consists of a complex comprised of a low platform, an enclosure, a possible *imu*, fruit trees, and a meadow. Artifacts, such as horse/mule shoes, sharpening implements, a sharpening wheel, and hoof files suggest the site is related to historical road construction along the Puna Trail.

PHRI (P. Rosendahl 2002) conducted an archaeological assessment survey of 14.99-acres of the quarry site within the current project area. No archaeological sites were identified during the study.

Escott and Tolleson (2003) conducted an archaeological inventory survey just east of the current project area. A single site (Site 23273) consisting of a remnant trail segment and two planting features were recorded along the south west boundary of the project area.

Wolforth (2006) conducted an archaeological inventory survey of 147 acres south of the Hilo International Airport. Four sites (SIHP 50-10-35-25538, 25539, 25540, and 25541) associated with a Naval Air Station facilities and quarry were recorded. No pre-Contact orearly post-Contact era sites were documented on the project area.

Scientific Consultant Services, Inc. (Escott 2013a, Escott 2013b) conducted two archaeological assessments of 50 and 85 acres of land along the eastern edge of the KMR. No archaeological sites or historic properties were identified during the study.

The study did document modern dirt roads that were cut by bulldozers, likely in anticipation of building out this area. The dirt roads were straight and were oriented northwest/southeast. A search was made of Hawai‘i County Planning documents, historic maps, and archival documents to ensure the dirt road was not constructed over a pre-existing trail or government road. In addition, SCS consulted with Ala Kahakai and Na Ala Hele. There were no documents showing a traditional trail or government road in the location of the dirt road identified during the current study.

Cultural Surveys Hawai‘i, Inc. recently conducted an archaeological inventory survey of the KMR (Wheeler et al. 2014). During that study eleven sites were documented, including seven early post-Contact era to modern era sites, and four pre-Contact to Historic era sites (Wheeler et al. 2014:64). The pre-Contact era to Historic era sites included two trails, a modified lava tube, and a modified outcrop complex. The trails were associated with travel and transportation through the area, and the latter two sites were associated with temporary habitation, possibly while traveling through the area, or while collecting forest resources.

The early post-Contact to modern era sites included three trail segments, a military position, and two possible homesteads with small agricultural garden plots.

EXPECTED ARCHAEOLOGICAL PATTERNS

Based on previous archaeological studies, geological studies, historical research, archaeological sites in the area surrounding the current project should be associated primarily with Historic era and modern land-uses. This is likely since this area is not known to have been used for habitation or agricultural purposes, ever. The Pana‘ewa forest area where the project parcels only began to be accessed to a larger degree in the Historic era as new areas were explored to open up for agricultural pursuits. The Pana‘ewa region where the project area is located contains marginally thin soils and is not well suited to mechanical agricultural techniques.

It is possible that pre-Contact era site types such as trail segments, temporary habitation features associated with travel and forest resource extraction might be present on the project area. It is less likely, but possible, that scattered temporary habitation features adjacent to planting features might be present. It is also possible that more

modern features associated with WWII training and quarrying in the area might be present on the project area.

RESULTS OF FIELDWORK

No archaeological sites and no remains of historic properties were identified during the pedestrian survey conducted at the project area. Three overgrown, bulldozed road alignments were identified in the northernmost 40 acres during the survey. The bulldozed road alignments are evident in a 1954 USDA aerial photograph (see Figure 8). The bulldozer roads were likely created in anticipation of future development for the expansion of Hilo.

CONCLUSION AND RECOMMENDATIONS

No archaeological sites or historic properties were identified within the project area APE during the archaeological survey. The results of the survey support the results of the ethnographic and historical archival record for this area. According to ethnographic and historical documentation, the Pana‘ewa forest was traditionally considered an inhospitable place. The forest was thick and was difficult to travel through. The Pana‘ewa forest was not a traditional location for settlements or gardens. Settlements and garden areas were located along the coast on the outside edges of the forest.

Previous archaeological studies in the region have identified archaeological sites further north, closer to the Hilo International Airport. The majority are the remains of post-Contact era to modern era trails, military sites and individual homestead sites. There are a small number of pre-Contact era sites that include small rock mound complexes and trail segments. All of these sites have been identified north of the current project area.

It has been determined through archaeological survey that no historic properties exist within the APE and that no historic properties will be affected by the proposed undertaking. SCS recommends that, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended and 36 CFR part 800.2(c), the SHPO concur with the determination of no effect. This archaeological assessment report is intended as supporting documentation for Section 106 requirements.

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Appendix E

PHASE 1 STUDY

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element environmental llc
environmental · engineering · water resources

July 6, 2015

Mr. Roy Takemoto, Managing Director, Hilo Office
PBR HAWAII & Associates, Inc.
1719 Haleloke Street
Hilo, Hawaii 96720

Subject: **Phase I Environmental Site Assessment**
Department of Hawaiian Home Lands
Four Parcels of Undeveloped Land
Hilo, Hawaii, Hawaii
Tax Map Key: (3) 2-1-025: Parcels 006, 007, 047, and 048

Dear Mr. Takemoto:

Element Environmental LLC (E2) has performed a Phase I Environmental Site Assessment (ESA) of the subject properties, referenced above. The purpose of this assessment was to evaluate the environmental condition of the subject property and identify recognized environmental conditions. The property will be subdivided into half-acre lots to provide house lots for DHHL Makuu Farm Lots residents forced to relocate due to advancing Kilauea lava flows.

The accompanying report summarizes our findings and relates our opinions with respect to the property and potential sources of contamination at the properties. Our findings and opinions are based on information that we obtained on given dates through records review, site reconnaissance, interviews, and related activities. It is possible that other information exists or subsequently has become known, just as it is possible for conditions we observed to have changed after our observation. For these and associated reasons, E2 and many of its peers routinely advise clients for ESA services that it would be a mistake to place unmerited faith in findings and opinions conveyed via ESA reports. E2 cannot under any circumstances warrant or guarantee that not finding indicators of hazardous substances or petroleum products means that hazardous substances or petroleum products do not exist on the property.

It has been a pleasure conducting this assessment for you. If you have questions regarding this report please contact me on my mobile phone at 551-9552.

Respectfully submitted,

Element Environmental LLC

Arlene H. Campbell

Arlene H. Campbell, L.G.
Senior Geologist

98-030 Hekaha Street Unit 9 Aiea Hawaii 96701 **tel:** (808) 488-1200 **fax:** (808) 488-1300
www.e2hi.com

ELEMENT ENVIRONMENTAL LLC
ENVIRONMENTAL CERTIFICATION

E2 Project No. 150024

Report:	Phase I Environmental Site Assessment, ASTM E1527-13
Inspection Dates:	June 9, 2015
Report Date:	July 6, 2015
Site:	Four Parcels of Undeveloped Land Hilo, Hawaii, Hawaii Tax Map Key: (3) 2-1-025: Parcels 006, 007, 047, and 048
Weather Conditions:	Mostly cloudy with periodic light rain showers, 82°
Client:	PBR HAWAII & Associates, Inc.

Report Prepared By:

Angela Peltier

Angela Peltier Date: July 6, 2015

ENVIRONMENTAL PROFESSIONAL CERTIFICATION

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10 of 40 Code of Federal Regulations (CFR) 312.

Arlene H. Campbell

Arlene H. Campbell, L.G Date: July 6, 2015

DIRECTING ENVIRONMENTAL PROFESSIONAL CERTIFICATION

The *Environmental Professional* who directed this project has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property.

We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

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APPENDICES

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List of Acronyms and Abbreviations

ACM	asbestos-containing material
AST	aboveground storage tank
ASTM	ASTM International
c.	circa
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	Corrective Action Sites under RCRA
CREC	controlled recognized environmental condition
CSH	Cultural Surveys Hawaii, Inc.
CWB	Clean Water Branch
CWRM	Commission on Water Resources Management
DAGS	Department of Accounting and General Services
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources, State of Hawaii
E2	Element Environmental LLC
EDR	Environmental Data Resources, Inc.
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
HDOH	State of Hawaii, Department of Health
HELCO	Hawaiian Electric Light Company
HEER	Hazard Evaluation and Emergency Response
HREC	historical recognized environmental condition
IEC	Institutional / Engineering Controls
IRHB	Indoor & Radiological Health Branch
KMR	Keaukaha Military Reservation
LBP	lead-based paint
LUST	leaking underground storage tank
msl	mean sea level
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List (Superfund sites)
PBR HAWAII	PBR HAWAII & Associates, Inc.
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
SCS	Scientific Consultant Services, Inc.
SDWB	Safe Drinking Water Branch
SHSL	South Hilo Sanitary Landfill
SHWB	Solid and Hazardous Waste Branch

List of Acronyms and Abbreviations (Cont.)

SHWS	State of Hawaii Hazardous Waste Sites
TMK	tax map key
TSD	treatment, storage and disposal (category of RCRA facility)
U.S.	United States of America
U.S.C	United States Code
USGS	United States Geological Survey (U.S. Department of the Interior)
UST	underground storage tank
VRP	Voluntary Response Program
WWB	Wastewater Branch

Executive Summary

Element Environmental LLC (E2) was retained by PBR HAWAII & Associates, Inc. (PBR HAWAII) to conduct a Phase I Environmental Site Assessment (ESA) in conformance with ASTM International (ASTM) Practice E 1527-13, Standard Practice for Environmental Site Assessments. The subject property consists of four 10-acre parcels of undeveloped land located in Hilo, Hawaii, Hawaii, designated as Tax Map Key (TMK): (3) 2-1-025: parcels 006, 007, 047, and 048; hereinafter referred to as "*the site, the subject property and/or the property*". The site is owned by the State of Hawaii Department of Hawaiian Home Lands (DHHL).

At the time of the site reconnaissance, conducted on June 9, 2015, the subject property was undeveloped and entirely covered with dense, wet forest consisting of large trees, and a thick shrub and vine understory. The subject property is bounded on the north and southeast sides by undeveloped land; to the east side by a former borrow pit/quarry that is also undeveloped; on the west side by grubbed and graded macadamia nut orchards, garden fields, and a vehicle salvage/junk yard (Ken's Towing Service, Inc.); and on the southwest side by a grubbed and graded residential lot containing a house.

The east and west boundaries are bordered by grubbed and graded macadamia nut orchards and garden fields, respectively.

The purpose of this Phase I ESA was to identify recognized environmental conditions (REC). ASTM guidance defines a REC as the presence or likely presence of any hazardous substances or petroleum products, in, on, or at the property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

Recognized Environmental Concerns

This assessment has not revealed evidence of RECs associated with the site, with the exception of the following:

1. During the site reconnaissance on June 9, 2015, debris was observed near the end of Auwae Street on the subject property, including: a lawn mower tractor and an old television.

   REC: The presence of solid waste at the facility qualifies as a release to the environment.

2. The subject property was once within the boundaries of the "Hawaii National Guard" area, indicating it was once part of the Keaukaha Military Reservation.

   REC: The possibility that historical military activities were conducted on or near the subject property qualifies as a condition indicative of a release to the environment.

Potential Environmental Conditions

The following, while not considered to be RECs, are considered to be potential environmental concerns because of the nature of the historical land use:

1. The adjacent property located at 485 Railroad Avenue (TMK: [3] 2-1-025: parcels 092 and 093) was occupied by Orchid Island Rubbish & Recycle, Ken's Towing Service, Inc., and Hilo Community Recycling Center, LLC. Historical activities, including recycling of used cooking oil, aluminum cans, cardboard, newspaper, magazines, paper, glass, and phone books and vehicle salvage, were conducted at the site from c. 1999 until 2009. Several

"notices of violation" (NOV) were issued to the various business operators by the HDOH SHWB for improper materials storage, illegal dumping, and releases of cooking oil and the unpermitted storage of a large number of junk vehicles at the site.

Potential Environmental Concern: Activities historically conducted at the site may have encroached on and /or negatively impacted the subject property.

2. The South Hilo Sanitary Landfill (SHSL) is located in a former quarry, approximately 1/8th mile southeast (down/crossgradient assuming groundwater flows to the northeast) of the subject property. The SHSL is an unlined (pre-RCRA Subtitle D) landfill that has been in operation since at least the 1960s. The SHSL is owned and operated by the County of Hawaii.

   Potential Environmental Concern: It is possible that groundwater beneath the site could be negatively impacted by activities conducted at the landfill; therefore, its proximity to the subject property is considered to be a potential environmental concern.

3. The Hilo Rubbish Dump site, is identified as a "County Dump Site" on a 1978 survey map and is listed by EDR as a CERCLA NFRAP site. This dump site is located within a former quarry/borrow pit less than 1/10th mile north (downgradient assuming groundwater flows to the northeast) of the subject property and is currently an active green waste facility (East Hawaii Organics Facility) owned and operated by the County of Hawaii.

   Potential Environmental Concern: It is possible that buried waste is present at this site and groundwater beneath the site could be negatively impacted by activities conducted at the dump site; therefore, its proximity to the subject property is considered to be a potential environmental concern.

Section 1 Introduction

1.1 Overview

Element Environmental LLC (E2) was retained by PBR HAWAII & Associates, Inc. (PBR HAWAII) to conduct a Phase I Environmental Site Assessment (ESA) in conformance with ASTM International (ASTM) Practice E 1527-13, Standard Practice for Environmental Site Assessments. The subject property consists of four parcels of undeveloped land in Hilo, Hawaii, Hawaii, designated as Tax Map Key (TMK): (3) 2-1-025: parcels 006, 007, 047, and 048; hereinafter referred to as "*the site, the subject property and/or the property".* The objective of this assessment was to determine the presence or absence of recognized environmental conditions (REC), as defined in ASTM 1527-13. There are no exceptions or deletions from ASTM Practice E 1527-13.

The subject property consists of four 10-acre parcels of land that is owned by the State of Hawaii Department of Hawaiian Home Lands (DHHL) (County of Hawaii 2015).

1.2 Purpose

This Phase I ESA was requested by the client, PBR HAWAII, to evaluate the environmental condition of the subject property and identify RECs associated with the property. The purpose of this practice is to define good commercial and customary practice in the United States of America (U.S.) for conducting an ESA of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S. Code [U.S.C.] §9601) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the "landowner liability protections," or "LLPs"): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35)(B).

For the purposes of this practice:

- The definition of a release includes contamination in the soil vapor phase, as well as in soil or groundwater.
- "Migrate' and "migration" refer to the movement of hazardous substances or petroleum products in any form, including solid and liquid at the surface or subsurface and vapor in the subsurface.
- Vapor migration/intrusion *does not fall under the category of an Indoor Air Quality concern*, which is not included in the ASTM 1527 scope of work.

ASTM guidance defines a REC as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment (ASTM 2013).

Controlled RECs (CREC) are defined as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action [NFA] letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous

substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls) (ASTM 2013).

Historical RECs (HREC) are defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls) (ASTM 2013).

RECs do not include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies (ASTM 2013).

1.3 Detailed Scope-of-Services

This Phase I ESA was performed under the conditions of, and in general accordance with E2s' Proposal, dated March 2, 2015, and with the ASTM *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Designation E 1527-13). Adherence to the ASTM standard is intended to limit liability of property owners from inherited environmental contamination.

The Phase I ESA included the following tasks:

- **Review of regulatory records.** E2 reviewed standard environmental record sources including the U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) database, U.S. EPA's Resource Conservation and Recovery Act (RCRA) database, U.S. Institutional Controls database, U.S. Engineering Controls database, U.S. EPA's Emergency Response Notification System (ERNS) database, State of Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Office site list, HDOH Underground Storage Tank (UST) lists, HDOH list of landfills and other solid waste facilities, HDOH Voluntary Response Program (VRP) sites list, and the HDOH Brownfield sites list.
- **Review of site history.** E2 reviewed reasonably ascertainable standard historical sources including historical maps; aerial photographs; building permits, zoning records, and property tax records available online; various printed publications as well as publications posted on the internet; and documents and/or records provided by the owner's representative.
- **Review of site geology and hydrogeology.** E2 reviewed reasonably ascertainable published information on surface and subsurface conditions at the site and surrounding area. E2 used this information to assess topography, drainage, surface water bodies, anticipated subsurface geology, and groundwater occurrence and usage in the area.
- **Site reconnaissance.** E2 performed a site reconnaissance of the property to note visual signs of contamination, and conducted a limited assessment of portions of the neighboring properties visible from the subject property boundaries. During the site reconnaissance E2 specifically looked for hazardous substances; petroleum products; aboveground storage tanks (AST) and USTs; odors; pools of liquid; drums; electrical and hydraulic equipment; means of heating and cooling structures; stains or corrosion; drains and sumps; pits, ponds,

or lagoons; stained soil or pavement; stressed vegetation; solid waste; wastewater; wells; and septic systems.

- **Interviews**. E2 interviewed available personnel familiar with the site conditions and/or history of site use.
- **Data evaluation and report preparation.** E2 evaluated the information collected and prepared this report that documents our assessment and presents our findings, opinions, and conclusions.

1.4 Significant Assumptions

Significant assumptions include the following:

1) The information provided by the owner/user and the owner/user representatives is complete and accurate;
2) The information provided by the regulatory database search service is complete and accurate; and
3) The responses of government agencies to public requests for information are complete and accurate.

1.5 Limitations and Exceptions

Phase I ESAs, by their very nature, are limited. E2 has endeavored to meet what it believes is the applicable standard of care and, in so doing is obliged to advise its client, PBR HAWAII, of Phase I ESA limitations. This Phase I ESA did not assess environmental issues or conditions at the property that are outside the scope of ASTM Practice E1527-13, including, but not limited to, asbestos-containing material (ACM), biological agents, cultural and historical resources, ecological resources, endangered species, health and safety, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, industrial hygiene, lead-based paint (LBP), lead in drinking water, mold, radon, regulatory compliance, and wetlands, nor did it include any sampling or testing for biological agents and mold, radon, methane, ACM, LBP, or other environmental contaminants. Our investigation was limited to the procedures described in the Phase I ESA Standard Practice (ASTM 2013).

The conclusions presented in this report are professional opinions based solely upon visual observations of the site and vicinity and our interpretation of the available historical and regulatory information and documents reviewed. They are intended exclusively for the purpose outlined herein and apply only to the site location and project indicated.

The findings and opinions are based on information that E2 obtained on given dates through records review, site reconnaissance, interviews, and related activities. It is possible that other information exists or subsequently has become known, just as it is possible for conditions E2 observed to have changed after our observation. For these and associated reasons, E2 and many of its peers routinely advise clients for ESA services that it would be a mistake to place unmerited faith in findings and opinions conveyed via ESA reports. E2 cannot under any circumstances warrant or guarantee that not finding indicators of hazardous substances or petroleum products means that hazardous substances or petroleum products do not exist on the site.

1.6 Special Terms and Conditions

E2's services are performed, within the limits prescribed by our clients, with the usual thoroughness and competence of the consulting profession in accordance with the standard for professional services at the time those services are rendered. No warranty or representation, either expressed or implied, is included or intended in the proposals, contracts, or reports.

Findings and opinions presented herein apply to site conditions existing at the time of E2's investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which E2 is not aware and has not had the opportunity to evaluate.

1.7 Data Gaps

Based on the information obtained during this ESA, it is the professional opinion of E2 that a historical data failure, as defined in the ASTM guidelines, has occurred in attempting to document the history of the subject property back to the earlier part of 1940 or the first developed usage of the property in five year increments, as follows:

1. Historical information regarding the subject property from 1915 to 1924, 1933 to 1940, 1942 to 1952, 1955 to 1960, 1966 to 1972, and 1982 to 1987 was limited.
2. The property is occupied by a dense jungle; therefore, assessment of the site was severely restricted due to a lack of access.

Based on the information obtained, the lack of documentation is not deemed critical and did not affect the ability to identify potential REC(s) associated with the subject property.

1.8 User Reliance

This report is intended for the use of PBR HAWAII and its assignees. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

Section 2 Site Description

2.1 Location and Legal Description

The subject property is located in the Panaewa portion of the Waiakea Ahupuaa, South Hilo District, Hawaii, Hawaii, as shown on Figure 1, included in Appendix A. The property consists of four equal parcels of undeveloped land with an area of 10 acres each, designated as TMK: (3) 2-1-025: parcels 006, 007, 047, and 048 (County of Hawaii 2015).

2.2 Site and Vicinity General Characteristics

The property is located on the windward coast of Hawaii Island on the lower east slope of Mauna Loa. The subject property is located approximately two miles south of the Hilo Bay portion of the Pacific Ocean and approximately one-half mile east of Mamalahoa Highway (Route 11) (Google Earth 2015).

The climate in the region of Hilo has mean monthly temperatures ranging from 64 to 84 degrees Fahrenheit (Western Regional Climate Center 2015) with an average annual rainfall of approximately 133.6 inches per year (Giambelluca et al. 1986). Trade winds are generally from the northeast.

2.3 Current Use of the Property

The subject property is undeveloped and entirely covered with dense, wet forest consisting of large trees, and a thick shrub and vine understory.

2.4 Descriptions of Structures, Roads, and Other Improvements on the Site

The property consists of four parcels of land with a total area of 40 acres. Access to the site is from Auwae Road, which terminates at the south central portion of the subject property. The property is rectangular in shape with level to slightly undulating topography and a general topographic gradient towards the north northeast. A relatively steep rock face is present on the eastern edge of the property. The elevation of the property is approximately 95 feet above mean sea level (msl) (Environmental Data Resources [EDR] 2015a). Figure 2 shows the site layout. Photographs of the subject property are included in Appendix A.

2.5 Current Uses of the Adjacent Properties

Table 2-1 lists the parcel numbers, owners/occupants, and owner/occupant activities for the adjacent properties. The subject property is bounded on the north and southeast sides by undeveloped land; to the east side by a former borrow pit/quarry that is also undeveloped; on the west side by grubbed and graded macadamia nut orchards, garden fields, and a vehicle salvage/junk yard (Ken's Towing Service, Inc.); and on the southwest side by a grubbed and graded residential lot containing a house. Figure 2 shows the locations of adjacent properties.

Table 2-1: Adjacent Properties

Parcel Number	Owner/Occupant	Owner/Occupant Activities
Parcels adjacent to the north		
2-1-025:046	DHHL (owner) No associated address	Undeveloped industrial-zoned land
2-1-025:005	DHHL (owner) No associated address	Undeveloped industrial-zoned land
Parcel adjacent to the east		
2-1-013:168	DHHL (owner) No associated address	Undeveloped industrial-zoned land Formerly a Quarry / Borrow Pit Site
Parcels adjacent to the south		
2-1-025:008	DHHL (owner) Agnes Kaipo (lessee)	Agricultural
2-1-025:157	DHHL (owner) Colette L Paglinawan (lessee) 394 Auwae Road	Agricultural
Parcel adjacent to the southwest		
2-1-025:094	DHHL (owner) Hardy K Unea (lessee) 411 Railroad Avenue	Agricultural/Residential
Parcels adjacent to the west		
2-1-025:093	DHHL (owner) Wallace Beck (lessee) 485 Railroad Avenue	Agricultural Orchid Island Rubbish & Recycle Ken's Towing Service, Inc. Hilo Community Recycling Center, LLC
2-1-025:092	DHHL (owner) Wallace Beck (lessee) No associated address	Agricultural
Parcel adjacent to the northwest		
2-1-025:091	DHHL (owner) No associated address	Undeveloped industrial-zoned land

Section 3 User Provided Information

Mr. Isaac Takahashi, Acting Branch Chief, Housing Projects Branch for DHHL, completed an ASTM E1527-13 Questionnaire. The ASTM questionnaire is provided in Appendix A, and Mr. Takahashi's responses are provided in the following sections.

3.1 Title Records

Title records were not provided by the user.

3.2 Environmental Liens or Activity and Use Limitations

During the course of this investigation, the user did not provide E2 with any information pertaining to activity and/or use limitations associated with the subject property.

3.3 Specialized Knowledge

No specialized knowledge in connection with the subject property was identified by the user.

3.4 Commonly Known or Reasonably Ascertainable Information

The user did not provide information regarding any commonly known or reasonably ascertainable information within the local community that is material to RECs in connection with the property.

3.5 Valuation Reduction for Environmental Issues

E2 was not provided with an appraisal for the subject property. No environmental issues were identified by the user that could result in property value reduction.

3.6 Owner, Property Manager, and Occupant Information

DHHL is the current property owner. The land owner contact is Ms. Niniau K. Simmons, Housing Administrator with the Native American Housing Assistance & Self Determination Act, Office of the Chairman, DHHL, and the site access contact is Mr. Louis Hao, East Hawaii District Manager, with DHHL Hawaii District Office.

3.7 Reason for Performing the Phase I ESA

The purpose of this Phase I ESA was to evaluate the environmental condition of the subject property and identify RECs. The property will be subdivided into half-acre lots to provide house lots for DHHL Makuu Farm Lots residents forced to relocate due to advancing Kilauea lava flows.

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Section 4 Records Review

4.1 Standard Environmental Record Sources

4.1.1 Overview

To identify the presence of adverse environmental conditions at the subject property, several published sources of environmental records were reviewed. This section lists the records that were searched and the results of each search.

ASTM E1527-13 specifies search distances for specific environmental record sources. The following record sources were searched for incidents or sites within the listed search distances of the subject property:

Standard Environmental Record Sources	Search Distance (miles)	Number of Sites Identified
Federal NPL site list	1.0	0
Federal Delisted NPL site list	0.5	0
Federal CERCLIS list	0.5	0
Federal CERCLIS NFRAP site list	0.5	1
Federal RCRA CORRACTS facilities list	1.0	0
Federal RCRA Non-CORRACTS TSD facilities list	0.5	0
Federal RCRA generators list	Subject and Adjacent properties	0
Federal IEC registries	Subject property only	0
Federal ERNS list	Subject property only	0
State list of hazardous waste sites identified for investigation or remediation (NPL or CERCLIS equivalents)	1.0	6
State landfill and/or solid waste disposal site lists	0.5	1
State LUST list	0.5	3
State registered UST list	Subject and Adjacent properties	0
State IEC registries	Subject and Adjacent properties	0
State VRP sites	0.5	0
State Brownfield sites	0.5	1

Note: NPL = National Priorities List
NFRAP = No Further Remedial Action Planned
CORRACTS = facilities subject to Corrective Action under RCRA
TSD = treatment, storage, and disposal
IEC = institutional / engineering controls
LUST = leaking underground storage tank

E2 used an online regulatory database search service, provided by EDR, to review the above Federal and State government databases. A copy of the EDR report is included in Appendix C.

The following sections summarize the findings of the regulatory database search. In reviewing the environmental databases, it should be noted that such databases are not instantaneously updated by the specific regulatory agencies. Depending on the database and the agency, update frequency may be as infrequent as annually. The dates of the most recent updates for the searched environmental databases are listed in the EDR report in Appendix C.

The subject and adjoining properties were not listed on any of the databases searched by EDR (EDR 2015a).

The SHWB file contained copies of violations and notices of improper storage of solid waste at the adjacent 485 Railroad Avenue on TMK (3) 2-1-025: parcels 092 and 093 (Orchid Island Rubbish & Recycle, Ken's Towing Service, Inc., and Hilo Community Recycling Center, LLC).

4.1.2 Federal NPL Site List

The Federal NPL is a subset of CERCLIS and identifies over 1,200 sites identified for priority cleanup under the Superfund Program. The ASTM-designated search distance for the Federal NPL is one mile. EDR did not identify Federal NPL sites within one mile of the subject property.

4.1.3 Federal Delisted NPL Site List

The National Oil and Hazardous Substances Pollution Contingency Plan establish the criteria that the U.S. EPA uses to delete sites from the NPL. In accordance with 40 Code of Federal Regulations (CFR) 300.425(e), sites may be deleted from the NPL where no further response is appropriate. The ASTM-designated search distance for Federal delisted NPL sites is one-half mile. EDR did not identify Federal delisted NPL sites within one-half mile of the subject property.

4.1.4 Federal CERCLIS List

The CERCLIS list contains data on potentially hazardous sites that have been reported to the U.S. EPA by states, municipalities, private companies, and private persons pursuant to Section 103 of CERCLA. CERCLIS contains sites which are either proposed to be, or on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL. The ASTM-designated search distance for Federal CERCLIS sites is one-half mile. EDR did not identify Federal CERCLIS sites within one-half mile of the subject property.

4.1.5 Federal CERCLIS NFRAP Site List

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of U.S. EPA's knowledge, assessment at a site has been completed and that U.S. EPA has determined no further steps will be taken to list this site on the 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. The ASTM-designated search distance for Federal CERCLIS NFRAP sites is one-half mile. EDR identified one Federal CERCLIS NFRAP site within one-half mile of the subject property. General information on the CERCLIS NFRAP site is provided below, and more detailed information is provided in the EDR report in Appendix C.

Federal CERCLIS NFRAP Site Name	Location Relative to the Subject Property	Site Status/Comments
Hilo Rubbish Dump Leilani Street Hilo, HI 96720	⅛ to ¼ mile northeast (lower elevation / cross/downgradient)	11/01/1979: Discovery 10/01/1984: Preliminary Assessment low priority for further assessment 11/21/1988: Preliminary Assessment low priority for further assessment 02/25/1991: NFRAP – Site does not qualify for the NPL based on existing Information. 01/23/1996: Archive Site

It is possible that the Hilo Rubbish Dump site has negatively impacted the subject property due to due its proximity and location relative to the subject property (i.e., hydraulically cross/downgradient, etc.).

4.1.6 Federal RCRA CORRACTS Facilities List

U.S. EPA's facilities subject to CORRACTS or Corrective Action Sites database, identifies facilities that generate, treat, store, or dispose of hazardous wastes where RCRA corrective action activity has occurred. These sites have experienced spills or releases of hazardous chemicals prompting the need for corrective action. The ASTM-designated search distance for the Federal RCRA CORRACTS list is one mile. EDR did not identify Federal RCRA CORRACTS site within one mile of the subject property.

4.1.7 Federal RCRA Non-CORRACTS TSD Facilities List

The Federal RCRA Non-CORRACTS TSD facilities list is the U.S. EPA's list of TSD facilities that are not currently subject to corrective action. The RCRAInfo is U.S. EPA's comprehensive information system, providing access to data supporting the RCRA of 1976 and the Hazardous and Solid Waste Amendments of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the RCRA. The RCRAInfo list includes facilities that treat, store, dispose of, or incinerate hazardous waste (TSD facilities). The ASTM-designated search distance for Federal RCRA Non-CORRACTS TSD facilities is one-half mile. EDR did not identify Federal RCRA Non-CORRACTS TSD sites within one-half mile of the subject property.

4.1.8 Federal RCRA Generators List

In addition to TSD facilities discussed above in Section 4.1.7, the RCRAInfo list also includes selective information on sites which generate hazardous waste as defined by the RCRA. Conditionally exempt small quantity generators generate less than 100 kilograms of hazardous waste, or less than one kg of acutely hazardous waste per month. Small quantity generators generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators generate over 1,000 kg of hazardous waste, or over one kg of acutely hazardous waste per month. The ASTM-designated search distance for Federal RCRA generators is the subject property and adjacent properties. EDR did not identify the subject or adjacent properties as Federal RCRA Generator sites.

4.1.9 Federal Institutional / Engineering Controls Registries

Federal IEC Registries are lists of sites that have institutional and/or engineering 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. 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. The ASTM-designated search distance for Federal IEC Registries is the subject property only. EDR did not identify the subject property as a Federal IEC Registry site.

4.1.10 Federal ERNS List

ERNS is a national database of more than 365,000 records, which contains information on specific notification of releases of oil and hazardous substances to the environment. The ASTM-designated search distance for Federal ERNS incidents is the subject property only. No reported Federal ERNS incidents have occurred on the subject property.

4.1.11 State of Hawaii Hazardous Waste Sites List

The State of Hawaii Hazardous Waste Sites (SHWS) list is Hawaii's equivalent to the NPL or CERCLIS. These sites may or may not already be listed on the federal NPL or 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 HDOH HEER Office maintains a *Sites of Interest Database*, which includes sites that HDOH HEER has an interest in, has investigated, or may investigate under Hawaii Revised Statute 128D (the State Superfund law). The ASTM-designated search distance for the SHWS List is one mile. EDR identified six SHWS sites within one mile of the subject property. E2 reviewed the SHWS sites identified by EDR within the search radius. The closest SHWS site (located within one-half mile of the site) is listed below. Refer to the EDR report (Appendix C) for a full listing of the remaining SHWS sites.

SHWS Site Name	Location Relative to the Subject Property	Site Status/Comments
HELCO Kanoelehua Operations Center 54 Halekauila Street Hilo, HI 96720	¼ to ½ mile west northwest (lower elevation / crossgradient)	NFA – Unrestricted Restricted Use as of 07/10/2012. (contaminants of concern: total petroleum hydrocarbons)

It is not likely that the closest SHWS site listed above, and the remaining five SHWS sites listed in the EDR report (Appendix C) have negatively impacted the subject property due to their status (i.e., NFA), distance from, and/or location relative to the subject property (i.e., hydraulically crossgradient, etc.).

4.1.12 State of Hawaii Landfill and/or Solid Waste Disposal Site List

HDOH Solid and Hazardous Waste Branch (SHWB) has a list of permitted solid waste disposal facilities and landfills in the State of Hawaii. The ASTM-designated search distance for permitted solid waste disposal sites / landfills is one-half mile of the subject property. EDR identified one HDOH SHWB site within one-half mile of the subject property. General information on the HDOH SHWB site is provided below, and more detailed information is provided in the EDR report in Appendix C.

Federal CERCLIS NFRAP Site Name	Location Relative to the Subject Property	Site Status/Comments
Hilo Landfill (South Hilo Sanitary Landfill) Hilo, HI 96720	¼ to ½ mile east southeast (lower elevation / cross/downgradient)	1984 – Present. Accepts municipal solid waste and construction debris. Located on TMK: (3) -1-013: parcels 142, 152, and 156

The Hilo Landfill (South Hilo Sanitary Landfill [SHSL]) is located within a former quarry, approximately 1/8th mile southeast (down/cross gradient assuming groundwater flows to the northeast) of the subject property. The SHSL is an unlined (pre-RCRA Subtitle D) landfill that has been in operation since at least the 1960s. The SHSL is owned and operated by the County of

Hawaii. It is possible that groundwater beneath the site could be negatively impacted by activities conducted at the landfill; therefore, the proximity of the SHSL to the subject property is considered to be a potential environmental concern.

4.1.13 State of Hawaii LUST List

The State of Hawaii LUST database, compiled by the HDOH SHWB UST Section, contains an inventory of reported LUST incidents. The ASTM-designated search distance for State of Hawaii LUST sites is one-half mile. EDR identified three State of Hawaii LUST sites within one-half mile of the subject property. General information on the State of Hawaii LUST sites is provided below, and more detailed information is provided in the EDR report in Appendix C.

LUST Site Name	Location Relative to the Subject Property	Site Status/Comments
Hilo Warehouse 95 Pohaku Street Hilo, HI 96720	¼ to ½ mile west (lower elevation / crossgradient)	930031: NFA as of 07/30/1993
Helco Kanoelehua Operations Center 54 Halekauila Street Hilo, HI 96720	¼ to ½ mile west northwest (lower elevation / crossgradient)	000013: NFA as of 07/14/2000
Sears Roebuck & Company 111 E Puainako Street Hilo, HI 96720	¼ to ½ mile west southwest (lower elevation / crossgradient)	030002: NFA as of 10/31/2002 940040: NFA as of 01/04/1998

It is not likely that the any of the LUST sites identified by EDR, have negatively impacted the subject property due to their status (i.e., NFA), distance from, and/or location relative to the subject property (i.e., hydraulically crossgradient, etc.).

4.1.14 State of Hawaii Registered UST List

State of Hawaii Registered USTs are regulated under RCRA and must be registered with the state department responsible for administering the UST program. The list of registered UST sites is compiled by the HDOH SHWB UST Section. The ASTM-designated search distance for State of Hawaii Registered UST sites is the subject property and adjacent properties. EDR did not identify the subject or adjacent properties as State of Hawaii Registered UST sites.

4.1.15 State of Hawaii Institutional / Engineering Controls Registry

The ASTM-designated search distance for State of Hawaii IEC registries is the subject and adjacent properties. EDR did not identify any State of Hawaii IEC registries on the subject or adjacent properties.

4.1.16 State of Hawaii Voluntary Cleanup Sites

The ASTM-designated search distance for State of Hawaii VRP sites is one-half mile. EDR did not identify State of Hawaii VRP sites within one-half mile of the subject property.

4.1.17 State of Hawaii Brownfield Sites

The ASTM-designated search distance for State of Hawaii Brownfield sites is one-half mile. EDR identified one State of Hawaii Brownfield site within one-half mile of the subject property. General information on the State of Hawaii Brownfield site is provided below, and more detailed information is provided in the EDR report in Appendix C.

State of Hawaii Brownfield Site Name	Location Relative to the Subject Property	Site Status/Comments
Hilo Transfer Station Leilani Street Hilo, HI 96720	⅛ to ¼ mile north northeast (lower elevation / upgradient)	Phase II ESA – No contaminant found

It is not likely that the State of Hawaii Brownfield site, listed above, has negatively impacted the subject property due to its site status (no contaminant found), distance from, and/or location relative to the subject property (i.e., hydraulically upgradient).

4.1.18 Additional Environmental Record Sources

4.1.18.1 Zoning and Land Use

The State Land Use Ordnance zoning for the subject property and surrounding property is Urban. The subject and surrounding properties are zoned A-10a (Agricultural District, minimum building site of 10 acres) (County of Hawaii 2015).

4.1.18.2 Hawaii Seismic and Lava Flow Hazard Zones

The site is located within the Hawaii Seismic Zone Assignment 4 (US Geological Survey [USGS] 2001). The South Hilo area is rated Lava Flow Hazard Zone 3 on a scale of ascending risk 9 to 1. Zone 3 have has only one to five percent of their surfaces covered by lava since 1800, and 15 to 75 percent of their surfaces covered by lava within the past 750 years (USGS 2006).

4.1.18.3 Local Electric Utility Company

Electricity is not supplied to the subject property and there are no transformers located on the subject property. One transformer (36133) is located on an adjacent property, 394 Auwae Road, according to Mr. James Moules, Commercial Account Manager with Hawaiian Electric Light Company (HELCO) the transformer does not contain polychlorinated biphenyls (PCB).

4.2 Other Information Sources

The following sections describe information obtained from other information sources.

4.2.1 State of Hawaii Department of Health File Review

E2 submitted requests to access public information for the subject and adjacent properties and received responses from the following HDOH sections/branches:

4.2.1.1 Clean Water Branch

On June 15, 2015, Mr. Bobbie Teixeira, Environmental Health Specialist with the Clean Water Branch (CWB) confirmed that CWB has no relevant information regarding the subject property. On June 24, 2015, Ms. Angela Peltier, Geologist with E2, reviewed the *Hawaii Environmental Health Portal* and *Water Pollution Control Viewer*. No RECs or environmental concerns were identified.

4.2.1.2 Hazard Evaluation and Emergency Response Office

On June 15, 2015, Ms. Mae Domingo, Administrative Assistant for the HEER Office, confirmed there are no records for the subject or adjacent properties.

4.2.1.3 Indoor and Radiological Health Branch

The Indoor and Radiological Health Branch (IRHB) has not yet responded to the Request to Access Government Records sent to their office on June 3, 2015.

4.2.1.4 Safe Drinking Water Branch

On June 15, 2015, Mr. Norris Uehara, Supervisor of the Groundwater Pollution Control Section for the Safe Drinking Water Branch (SDWB), confirmed there are no Underground Injection Control permits associated with the subject and adjacent properties.

4.2.1.5 Solid and Hazardous Waste Branch

On June 16, 2015, Ms. Amy Susana Liana, Planner for SHWB, confirmed there are no records on the subject or adjacent properties for the UST and Hazardous Waste Sections; however, the Solid Waste Section has records for an adjacent property. On June 26, 2015, Ms. Arlene Campbell, Senior Geologist with E2, reviewed the Solid Waste Section files, and identified the following environmental concern at an adjacent property located at 485 Railroad Avenue on TMK: (3) 2-1-025: parcels 092 and 093 as follows:

Recycling of used cooking oil, aluminum cans, cardboard, newspaper, magazines, paper, glass, and phone books and salvage of junk vehicles, was conducted at the site from circa (c.) 1999 until 2009 as Orchid Island Rubbish & Recycle, Ken's Towing Service, Inc., and Hilo Community Recycling Center, LLC. Several NOVs were issued to the business owners by the HDOH SHWB regarding the improper storage, illegal dumping, and releases from cooking oil and the unpermitted storage of junk vehicles at the site. The site operated without 1) a valid Solid Waste Management Permit from June 2004 through c. 2009 and 2) a National Pollutant Discharge Elimination System General Permit authorizing discharges of storm water associated with industrial activities. In September 2006, HDOH SHWB and Mr. Wallace Beck (tenant) entered into a settlement agreement (Docket No. 06-SHW-SWS-003) requiring Mr. Beck to reduce the number of vehicles at the subject property to 25 or less by March 1, 2007 and immediately cease and desist from bringing more waste vehicles or other solid waste onto the site. According to the HDOH SHWB files Mr. Beck continued to violate the restriction against accumulation of used cooking oil, vehicles, and phone books until 2009.

The activities conducted at the adjacent property are considered to be a potential environmental concern because it is not known if historical and/or current activities conducted at the site have negatively impacted the subject property.

4.2.1.6 Waste Water Branch

On June 3, 2015, Ms. Lori Morikami, Planner for the Planning & Design Section of the Waste Water Branch (WWB), confirmed there are no records for the subject or adjacent properties.

4.2.2 Department of Land and Natural Resources Commission on Water Resources Management

E2 interviewed Mr. Jonas Burgon with the Department of Land and Natural Resources (DLNR) Commission on Water Resources Management (CWRM) on June 6, 2015. According to the maps and documents provided by Mr. Burgon, no wells are located on the subject or adjacent properties. No municipal wells are located within 1-mile of the subject property.

4.3 Physical Setting Sources

4.3.1 U.S. Geological Survey Topographic Map Coverage

Topographic map coverage of the site is included on the USGS 7.5-minute Honolulu quadrangle map, as shown on Figure 1. The property is located at 19° 41' 58.92'' north latitude and 155° 3' 9.72'' west longitude. The elevation of the subject property is approximately 93 feet msl (EDR 2015a).

4.3.2 Geologic and Hydrogeologic Setting

E2 reviewed published geologic and hydrogeologic reports and maps to obtain information regarding subsurface conditions in the general area of the site and to evaluate potential migration of contaminants.

4.3.2.1 Geology

The island of Hawaii has an area of 4,028 square miles and is comprised of five separate shield volcanoes (from oldest to youngest): 1) Kohala; 2) Mauna Kea; 3) Hualalai; 4) Mauna Loa; and 5) Kilauea. Moana Loa, makes up more than half of the Big Island. The site is located approximately two miles south of Hilo Bay in South Hilo, on the southeast flank of the Mauna Loa Volcano in the saddle near the boundary of the Kilauea Volcano. Mauna Loa rocks are divided into the oldest Ninole Volcanic Series, then the Kahuku Volcanic Series, Pahala Ash layer, then the newest Kau Volcanic Series (Macdonald et al. 1983). The Kuhuku Series is capped by Pahala Ash, and is believed to be coeval with the Hilina Series of Kilauea (Macdonald et al. 1983). The Kau Series overlies the Pahala ash and is correlative with the Puna Series of Kilauea (Macdonald et al. 1983). Lava flows of the Kau Series interfinger with the Puna Series of Kilauea interfinger along the boundary between the two volcanoes (Macdonald et al. 1983). The site is located on the pre-historic rocks of the Kau Volcanic Series with an age of 5,000-11,000 years before present (Macdonald et al. 1983).

The geology of the region has been heavily influenced by lava flows from two active volcanoes, Kilauea and Mauna Loa. Lava tubes and lava tube caves are a notable geological feature underlying the area. In many cases, the presence of a lava tube is not known unless a cave roof collapses from construction activity or vegetation clearing otherwise results in the discovery of a skylight. The depth of lava tube caves often canoe be determined without detailed surveying.

4.3.2.2 Soils

The ground surface is level to slightly undulating Paipai Series extremely stony muck overlaying a Mauna Loa lava flow dated between 750 and 1,500 years before present. There are exposed a'a bedrock outcrops and low ridges on the ground surface across the property (Scientific Consultant Services, Inc. [SCS] 2015).

4.3.2.3 Hydrogeology

Groundwater resources beneath the site are part of the Hilo Aquifer System of the Northeast Mauna Loa Sector. The aquifer is classified as basal, unconfined, where the water table is the upper surface of the saturated aquifer, and occurs in flank deposits (horizontally extensive basalt lavas). The aquifer is listed as currently used as a drinking water aquifer. This aquifer has fresh salinity (<250 milligram per liter chloride), is listed as irreplaceable, and is highly vulnerable to contamination (Mink and Lau 1993).

The subsurface conditions under the subject property are interpreted from available data and may vary. Groundwater is assumed to flow downgradient, based on topography and nearby water features, in a north northeast direction toward the shoreline of Hilo Bay. The depth to and direction of groundwater flow beneath the property are not definitively known. Characterization would require subsurface exploration, installation of groundwater monitoring wells, and surveys of groundwater elevations.

4.3.2.4 Surface Water

The closest surface water body to the site is ponds associated with the Glover Quarry located approximately ½ mile (800 meters) north of the subject property. The Glover Quarry, was formerly the Mana Quarry and encompassed most of the old rubbish dump, the Army Ordinance Area, the old County quarry, possibly the Navy Asphalt Plant, and a significant portion of DLNR property.

4.4 Historical Use Information

4.4.1 Standard Historical Sources

Historical use of the subject and adjacent properties was obtained by reviewing the following standard historical sources: aerial photographs (1954 - 2014); property tax records available online; recorded land title records; historical topographic maps (1914 – 1995); other historical maps (1886 – 1973); local street directories; various printed publications and publications posted on the internet; documents, maps, and information from interviews with the owner's representative.

4.4.1.1 Aerial Photograph Review

E2 reviewed available historical aerial photographs of the subject property dated 1954, 1965, 1975, 1977, 1988, 1992, 2010, 2011, 2012, 2013, and 2014 (EDR 2015b, University of Hawaii 2015, SCS 2015, and Google Earth 2015). One potential environmental concern was identified during the review of the aerial photographs:

- A large number of abandoned vehicles are present on the adjacent properties to the west of the site (485 Railroad Avenue) in the 2010 through 2014 aerial photos. This is considered a potential environmental concern because it is not known if activities conducted on the adjacent properties have negatively impacted the subject property.

4.4.1.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were not available for this area from EDR (EDR 2015c).

4.4.1.3 Real Property Tax Records

According to real property tax records available online, the subject property is owned by DHHL. The parcels consist of ten acres each of industrial undeveloped land.

4.4.1.4 Historical Topographic Map Review

E2 reviewed available USGS topographic maps of the area dated 1914, 1932, 1963, 1965, 1980, 1981, and 1995 (EDR 2015d, SCS, Inc. 2015, and University of Hawaii 2015). One REC was identified for the subject property during the review of topographic maps:

- The "Hawaii National Guard" site, shown on a 1965 topographic map of Hilo, indicates the subject property was once part of the Keaukaha Military Reservation (KMR), see Figure 3

in Appendix A. It is possible that historical military activities were conducted on or near the subject property.

4.4.1.5 Other Historical Maps Review

E2 reviewed other available historical maps of the area dated 1886, 1906, 1914, 1925, 1927, 1929, 1938, 1941, 1953, 1961, 1962, and 1973 (Cultural Surveys Hawaii, Inc. [CSH] 1996, Inter Island Environmental Services, Inc. 1997, Department of Accounting and General Services [DAGS] 2015, and County of Hawaii 2015). One potential environmental concern was identified in the vicinity of the subject property during the review of other historical maps:

- The "County Dump Site", shown on a 1978 survey map (DAGS 2105), also located within a former quarry/borrow pit, is located less than 1/10th mile north (downgradient assuming groundwater flows to the northeast) of the subject property and is currently occupied by an active green waste facility (East Hawaii Organics Facility) owned and operated by the County of Hawaii. This site was also identified by EDR as a CERCLA NFRAP site. It is possible that buried waste is present at this site and groundwater beneath the site could be negatively impacted by activities conducted at the dump site; therefore, its proximity to the subject property is considered to be a potential environmental concern.

4.4.1.6 Local Street Directories

E2 reviewed local street directories dated 1992, 1995, 1999, 2003, 2008, and 2013 for Auwae and Railroad Roads (EDR 2015e). A copy of the local street directories is included in Appendix C. No RECs were identified during the review of the local street directories; however, one potential environmental concern was identified, as follows:

- The adjacent property to the west of the site, 485 Railroad Avenue, in 2008 is listed as Hilo Community Recycling Center, LLC and Orchid Island Rubbish & Recycling. It is unknown if activities historically conducted at the site have negatively impacted the subject property

4.4.2 Summary of Historical Land Use

E2 reviewed the historical use of the subject and adjacent properties from readily available standard historical sources. A brief summary of the historical use of the area and subject and adjacent properties is provided below.

A review of standard historical sources indicates that the area to the west of Railroad Avenue (which is west of the subject property) were within areas formerly occupied by sugar cane fields from c. 1870s until c. 1966. The subject property was once within the boundaries of the KMR; however, does not appear to have ever been developed.

Section 5 Site Reconnaissance

5.1 Methodology

Site reconnaissance was conducted by Ms. Arlene Campbell, Senior Geologist and Mr. Marvin Haskett, Senior Scientist with E2, on June 9, 2015. Site reconnaissance included visual surveys of the property and brief surveys of the visible portions of the adjacent parcels. Site photographs are included in Appendix A.

5.2 Limiting Conditions

The property is occupied by a dense jungle with exposed ‘a‘a bedrock outcrops and low ridges on the ground surface across the property, making access to the site difficult. Assessment of the site and adjacent properties was limited due to lack of access.

5.3 General Site Setting and Observations

The subject property was assessed on foot. At the time of the site reconnaissance on June 9, 2015, the subject property was vacant and undeveloped; there were no visible improvements on the property. Observations made during the site reconnaissance are summarized below, in their pertinent section/subsection.

5.3.1 Hazardous Substances and Petroleum Products in Connection with Identified Uses

E2 did not observe any hazardous substances and/or petroleum products associated with identified uses at the site during the site reconnaissance.

5.3.2 Hazardous Substance and Petroleum Products Containers (Not Necessarily in Connection with Identified Uses)

E2 did not observe hazardous substances and petroleum products that were not associated with identified uses at the site during the site reconnaissance.

5.3.3 Storage Tanks

E2 did not observe the presence of storage tanks on the subject property during the site reconnaissance.

5.3.4 Odors

E2 did not note any unusually strong, pungent, or noxious orders in or at the subject property during the site reconnaissance.

5.3.5 Pools of Liquid

E2 did not observe the presence of standing water or pools of liquid on the subject property at the time of the site reconnaissance.

5.3.6 Drums

E2 did not observe the presence of drums on the subject property at the time of the site reconnaissance.

5.3.7 Unidentified Substance Containers

E2 did not observe unidentified substance containers on the subject property at the time of the site reconnaissance.

5.3.8 Polychlorinated Biphenyls

E2 did not observe electrical transformers, electrical equipment, or other signs of PCBs on the subject property at the time of the site reconnaissance.

5.3.9 Pits, Ponds, or Lagoons

E2 did not observe pits, ponds, or lagoons on the subject property during the site reconnaissance.

5.3.10 Stained Soil or Pavement

E2 did not observe stained soil or pavement at the site during the site reconnaissance.

5.3.11 Stressed Vegetation

E2 did not observe stressed vegetation on the subject property during the site reconnaissance.

5.3.12 Solid Waste

With the exception of the following, E2 did not observe the presence of solid waste on the subject property at the time of the site reconnaissance:

- Debris was observed near the end of Auwae Street on the subject property, including: a lawn mower tractor and an old television.

5.3.13 Wastewater

E2 did not observe wastewater and/or wastewater generation on the subject property during the site reconnaissance.

5.3.14 Wells

E2 did not observe wells on the subject property during the site reconnaissance.

5.3.15 Septic Systems

E2 did not observe septic systems on the subject property during the site reconnaissance.

Section 6 Interviews

Information obtained during interviews is included in the pertinent sections of this report. Questionnaires and/or documentation completed/received as a result of the interviews are included in Appendix B.

6.1 Subject Property Owner and Manager

E2 interviewed Mr. Isaac Takahashi, Acting Branch Chief, Housing Project Branch for DHHL, Ms. Niniau K. Simmons, Housing administrator with the Native American Housing Assistance & Self Determination Act, Office of the Chairman, DHHL, and Mr. Louis Hao, East Hawaii District Manager, with DHHL Hawaii District Office regarding past and current use and activities on the property and adjacent properties. A copy of the User and Site Evaluation Questionnaires are included in Appendix B.

6.2 Local Government Agencies

6.2.1 State of Hawaii Department of Health

E2 interviewed the following HDOH representatives regarding the subject and adjacent properties: Mr. Bobbie Teixeira, Environmental Health Specialist with the CWB; Ms. Mae Domingo, Administrative Assistant for the HEER Office; Mr. Norris Uehara, Supervisor of the Groundwater Pollution Control Section for the SDWB; Ms. Amy Susana Liana, Planner for the SHWB; and Ms. Lori Morikami, Planner for the Planning & Design Section of the WWB. The CWB, HEER Office, and SDWB confirmed that there were no files for the subject or adjacent properties; however, the SHWB had records for an adjacent property (see Section 4.2.1.5).

6.2.2 Department of Land and Natural Resources Commission on Water Resources Management

E2 interviewed Mr. Jonas Burgon, Engineer Technician with the DLNR CWRM, regarding wells located in the vicinity of the subject property. Well information provided by Mr. Burgon is included in Section 4.2.2.

6.2.3 Hawaiian Electric Light Company

E2 interviewed Mr. James Moules, Commercial Account manager with HELCO, regarding a transformer located on an adjacent property. Transformer information provided by Mr. Moules is included in Section 4.1.18.3.

6.3 Other Interviews

No other interviews were conducted.

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Section 7 Findings, Opinions, and Conclusions

E2 was retained by PBR HAWAII to conduct a Phase I ESA in conformance with ASTM Practice E 1527-13, Standard Practice for Environmental Site Assessments. The subject property is located on four parcels of undeveloped land in Hilo, Hawaii, Hawaii, and designated as TMK: (3) 2-1-025: parcels 006, 007, 047, and 048. Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

Recognized Environmental Concerns

This assessment has not revealed evidence of RECs associated with the site, with the exception of the following:

1. During the site reconnaissance on June 9, 2015, debris was observed near the end of Auwae Street on the subject property, including: a lawn mower tractor and an old television.

   REC: The presence of solid waste at the facility qualifies as a release to the environment.

2. The subject property was once within the boundaries of the "Hawaii National Guard" area, indicating it was once part of the KMR.

   REC: The possibility that historical military activities were conducted on or near the subject property qualifies as a condition indicative of a release to the environment.

Potential Environmental Conditions

The following, while not considered to be RECs, are considered to be potential environmental concerns because of the nature of the historical land use:

1. The adjacent property located at 485 Railroad Avenue (TMK: [3] 2-1-025: parcels 092 and 093) was occupied by Orchid Island Rubbish & Recycle, Ken's Towing Service, Inc., and Hilo Community Recycling Center, LLC. Historical activities, including recycling of used cooking oil, aluminum cans, cardboard, newspaper, magazines, paper, glass, and phone books and vehicle salvage, were conducted at the site from c. 1999 until 2009. Several NOVs were issued to the various business operators by the HDOH SHWB for improper materials storage, illegal dumping, and releases of cooking oil and the unpermitted storage of a large number of junk vehicles at the site.

   Potential Environmental Concern: Activities historically conducted at the site may have encroached on and /or negatively impacted the subject property.

2. The SHSL is located in a former quarry, approximately 1/8th mile southeast (down/cross gradient assuming groundwater flows to the northeast) of the subject property. The SHSL is an unlined (pre-RCRA Subtitle D) landfill that has been in operation since at least the 1960s. The SHSL is owned and operated by the County of Hawaii.

   Potential Environmental Concern: It is possible that groundwater beneath the site could be negatively impacted by activities conducted at the landfill; therefore, its proximity to the subject property is considered to be a potential environmental concern.

3. The Hilo Rubbish Dump site, is identified as a "County Dump Site" on a 1978 survey map (DAGS 2015) and is listed by EDR as a CERCLA NFRAP site. This dump site is located within a former quarry/borrow pit less than 1/10th mile north (downgradient assuming groundwater flows to the northeast) of the subject property and is currently an active green waste facility (East Hawaii Organics Facility) owned and operated by the County of Hawaii.

Potential Environmental Concern: It is possible that buried waste is present at this site and groundwater beneath the site could be negatively impacted by activities conducted at the dump site; therefore, its proximity to the subject property is considered to be a potential environmental concern.

Section 8 Deviations

In conducting this Phase I ESA, there were no deletions from the standard practice (ASTM Designation E1527-13 and E2600-10) and no client-imposed constraints.

In addition to the limitations described in Sections 1.5 and 5, the following data gaps were encountered:

1. Historical information regarding the subject property between 1915 to 1924, 1933 to 1940, 1942 to 1952, 1955 to 1960, 1966 to 1972, and 1982 to 1987 was limited; however, the data gaps are not considered significant since use of the site and adjacent properties did not change much throughout the years.
2. The property is occupied by a dense jungle; therefore, assessment of the site was severely restricted due to a lack of access.
3. IRHB did not respond to the Request to Access Government Records sent to their office on June 3, 2015.

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Section 9 Additional Services

Although E2 was not contracted to conduct additional services; as a courtesy to the client, the following additional services were performed:

- E2 listed potential environmental concerns, which were not considered to be RECs due to a lack of /or limited information, for adjacent properties based on their historical use.

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Section 10 Qualifications of Environmental Professionals

Qualifications of the Environmental Professionals are included in Appendix D.

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Section 11 References

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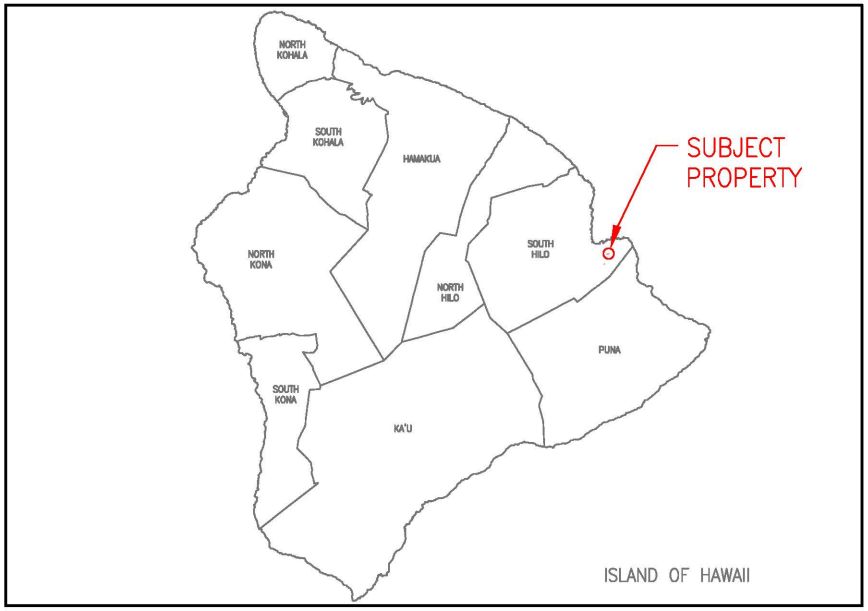
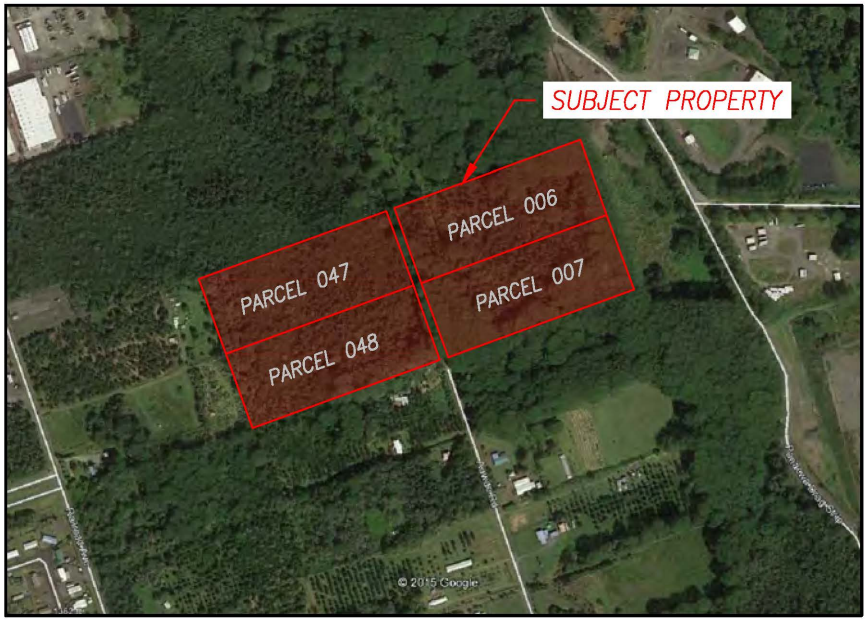
APPENDIX A

FIGURES AND PHOTOGRAPHS

Figures





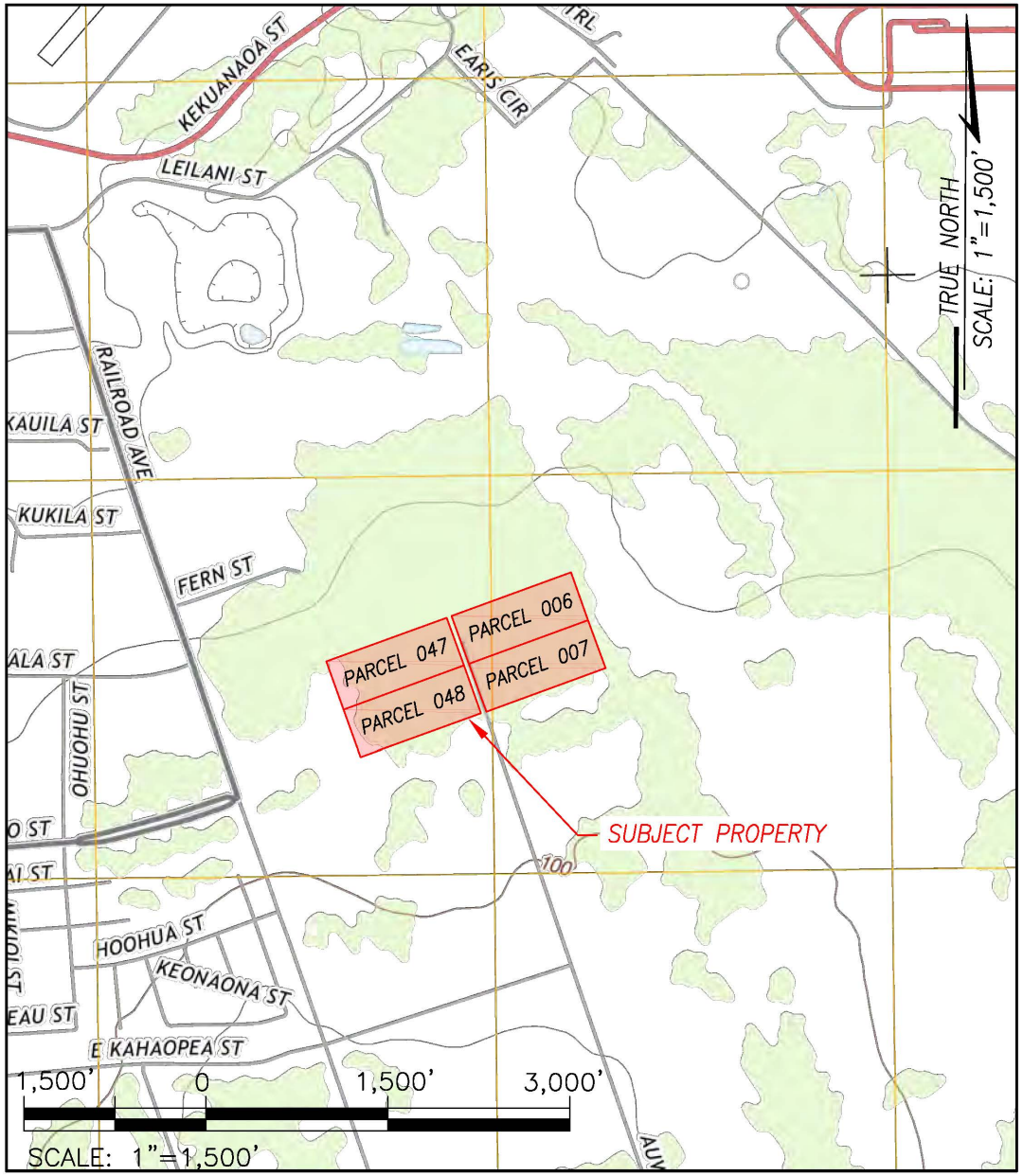


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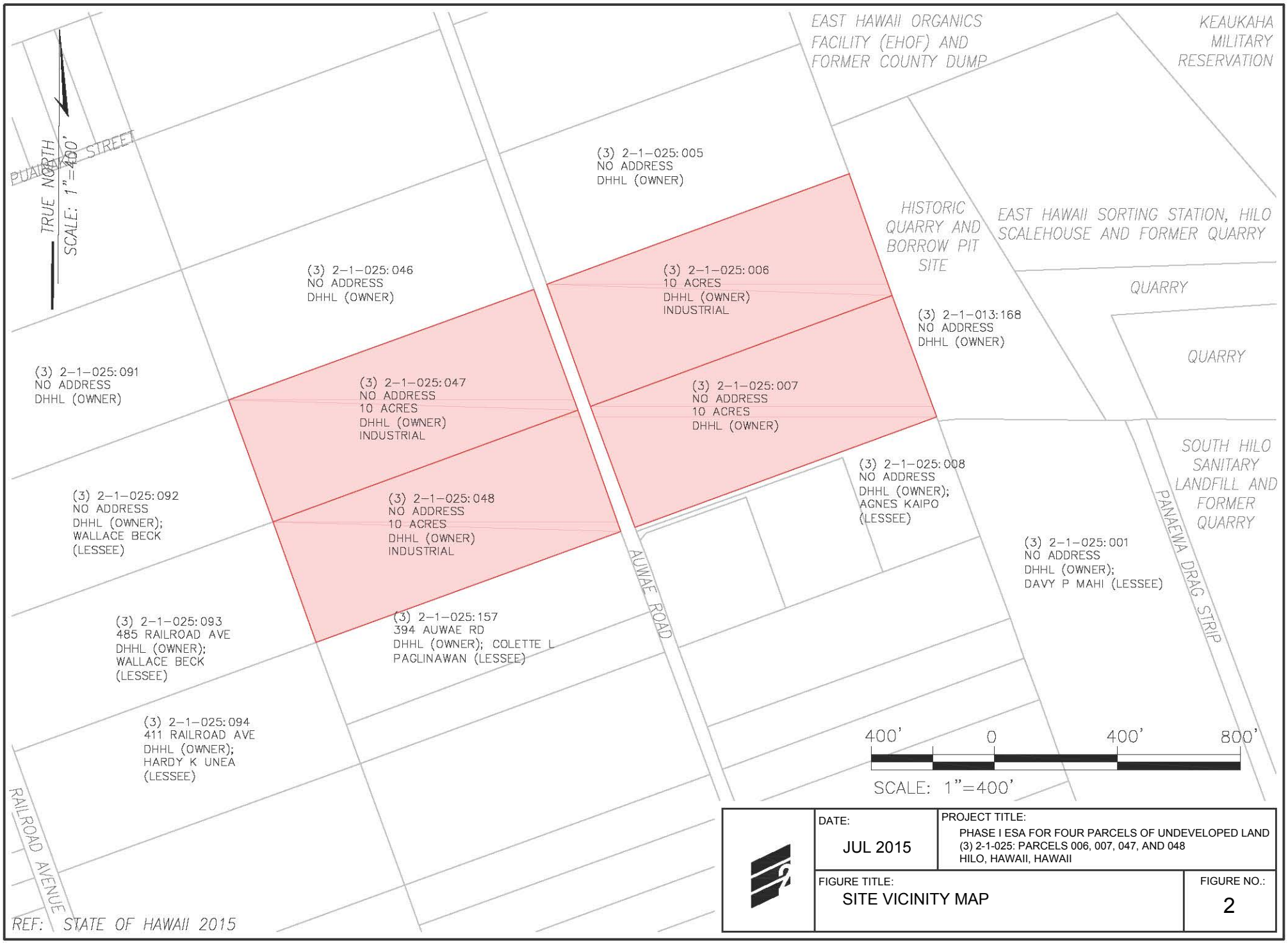
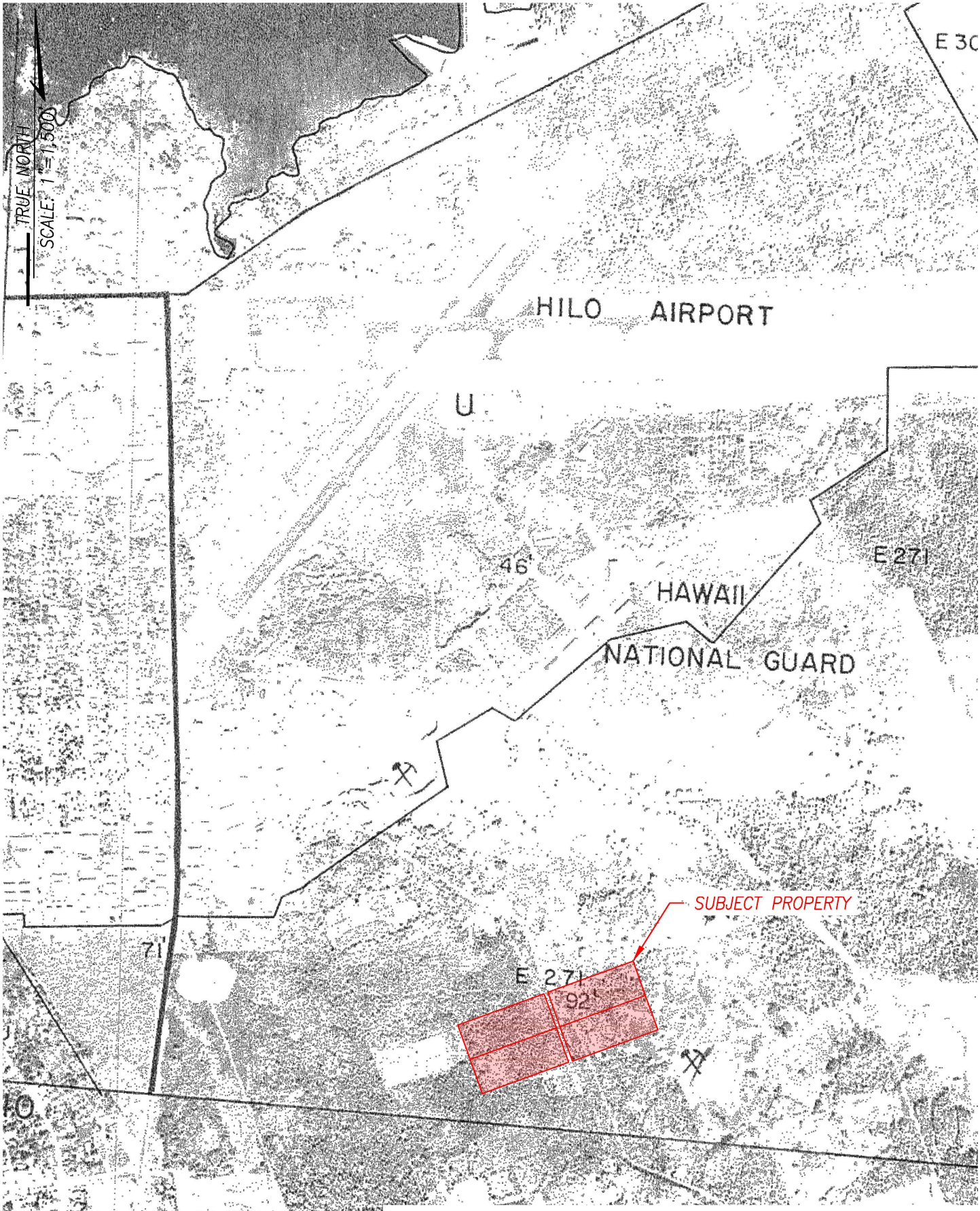
	FIGURE TITLE: SITE LOCATION MAP	FIGURE NO.: 1

REF: GOOGLE EARTH 2015; USGS 2013; AND STATE OF HAWAII 2015



	DATE: JUL 2015	PROJECT TITLE: PHASE I ESA FOR FOUR PARCELS OF UNDEVELOPED LAND (3) 2-1-025: PARCELS 006, 007, 047, AND 048 HILO, HAWAII, HAWAII
	FIGURE TITLE: SITE VICINITY MAP	FIGURE NO.: 2



REF: UNIVERSITY OF HAWAII 2015

DATE: JUL 2015	PROJECT TITLE: PHASE I ESA FOR FOUR PARCELS OF UNDEVELOPED LAND (3) 2-1-025: PARCELS 006, 007, 047, AND 048 HILO, HAWAII, HAWAII	
FIGURE TITLE: SITE VICINITY MAP		FIGURE NO.: 3

Site Reconnaissance Photographs

E2 Project No.:			
150024	**Description**	Transformer and wire located near the entrance to the subject property at the end of Auwae Street, view looking north.	**Photo 1**
	Site Name	DHHL Phase I ESA, Four Parcels of Undeveloped Land, Hilo, Hawaii, Hawaii TMK (3) 2-1-025: parcels 006, 007, 047, and 048	**Photo Date** 06/09/2015
	Client	PBR HAWAII & Associates, Inc.	

E2 Project No.:			
150024	**Description**	Dense vegetation on subject property at the end of Auwae Street, view looking north.east	**Photo 2**
	Site Name	DHHL Phase I ESA, Four Parcels of Undeveloped Land, Hilo, Hawaii, Hawaii TMK (3) 2-1-025: parcels 006, 007, 047, and 048	**Photo Date** 06/09/2015
	Client	PBR HAWAII & Associates, Inc.	

E2 Project No.:	Description	Illegal dumping of lawn-mower tractor on subject property surrounded by dense vegetation within 50 feet of Auwae Road terminus.	Photo 3
150024	Site Name	DHHL Phase I ESA, Four Parcels of Undeveloped Land, Hilo, Hawaii, Hawaii TMK (3) 2-1-025: parcels 006, 007, 047, and 048	Photo Date 06/09/2015
	Client	PBR HAWAII & Associates, Inc.	

E2 Project No.:	Description	Illegal dumping of an old television set, located within 50 feet of the Auwae Road terminus.	Photo 4
150024	Site Name	DHHL Phase I ESA, Four Parcels of Undeveloped Land, Hilo, Hawaii, Hawaii TMK (3) 2-1-025: parcels 006, 007, 047, and 048	Photo Date 06/09/2015
	Client	PBR HAWAII & Associates, Inc.	

E2 Project No.: **150024**	**Description**	Google Earth 2015 aerial photograph showing solid waste disposal (junk vehicles) on adjacent properties to the west.	**Photo 5**
	Site Name	DHHL Phase I ESA, Four Parcels of Undeveloped Land, Hilo, Hawaii, Hawaii TMK (3) 2-1-025: parcels 006, 007, 047, and 048	**Photo Date** 01/23/2013
	Client	PBR HAWAII & Associates, Inc.	

APPENDIX B

QUESTIONNAIRES

Owner Questionnaire

INTERVIEW QUESTIONNAIRE

Date: June 25, 2015

Project Name: DHHL Phase I ESAs

Site 1: 230 Mahiai Street TMK (3) 2-2-061: parcel 002

Site 2: TMK: (3) 2-1-025: parcels 006, 007, 047, and 048

1. NAME AND PHONE NUMBER OF PERSON BEING INTERVIEWED.

Ms. Niniau K. Simmons, Housing Administrator, Native American Housing Assistance & Self Determination Act Office of the Chairman, DHHL, 91-5420 Kapolei Parkway, Kapolei, HI 96707 (808) 620-9513

2. PERSON'S RELATIONSHIP TO THE PROPERTY (i.e., past or present owner or occupant, key site manager, neighboring owner or occupant). owner - trust lands

3. HOW LONG HAS THE PROPERTY BEEN DEVELOPED? WHAT WAS THE PROPERTY USED FOR IN THE PAST?

Site 1 19+ years
Site 2 Undeveloped lands

4. CAN YOU PROVIDE A LIST OF TENANTS AND THE NATURE OF THEIR BUSINESS?

N/A

5. IS THERE A HEATING OR COOLING SYSTEM FOR BUILDINGS ON THE PROPERTY? WHAT IS THE FUEL SOURCE (i.e., heating oil, gas, electric, radiators from steam boiler fueled by gas).

NO

6. IS THERE A DISCHARGE OF WASTEWATER OR STORM WATER FROM THE PROPERTY? IS THERE A WASTEWATER DISCHARGE PERMIT OR A NPDES PERMIT?

NO

7. ARE THERE ANY ABOVE-GROUND OR UNDERGROUND STORAGE TANKS? NO

SIZE/TYPE	CONTENT	AGE	REGISTERED WITH DOH?	HAVE THEY LEAKED?
None.				

8. ARE THERE ANY HYDRAULIC LIFTS OR OTHER HYDRAULIC EQUIPMENT? NO

9. IS OR WAS THERE A DRY CLEANER, PHOTO PROCESSING SHOP, GAS STATION, MOTOR REPAIR FACILITY, COMMERCIAL PRINTING FACILITY, JUNK YARD, LANDFILL, OR WASTE DISPOSAL OR RECYCLING FACILITY ON THE PROPERTY OR ON ADJOINING PROPERTIES? NO

10. ARE THERE ANY WASTE OR CHEMICAL PIPELINES, PITS, PONDS, OR LAGOONS ON THE PROPERTY OR ON ADJOINING PROPERTIES? NO

11. ARE THERE ANY WELLS ON THE PROPERTY (including water wells, dry wells, irrigation wells, injection wells, abandoned wells, or other wells)? NO

12. HAVE ANY OF THE FOLLOWING MATERIALS BEEN USED ON THE PROPERTY? NO

PESTICIDES/HERBICIDES (Are they EPA registered pesticides?):

FERTILIZERS:

PETROLEUM PRODUCTS (oils, lubricants, gasoline, waste oil): NO

SOLVENTS (cleansers, degreasers, paint thinners, coolants): NO

PCBs (electrical or hydraulic equipment):

ACIDS/BASES (lead-acid batteries): NO

IGNITABLE OR REACTIVE MATERIALS: NO

METALS (Arsenic, Cadmium, Chromium, Lead, Mercury, Silver): NO

RADIOACTIVE MATERIALS: NO

13. HOW WERE THESE MATERIALS DISPOSED OF? N/A

14. DO YOU KNOW OF ANY SPILLS OR LEAKS OF THESE MATERIALS ON THE PROPERTY? NO

15. WERE ANY OTHER TYPES OF WASTE GENERATED? IF YES, WHAT TYPES OF WASTES? NO

16. ARE YOU AWARE OF ANY WASTE DISPOSAL AREAS ON THE PROPERTY OR NEARBY PROPERTIES (including mounds or depressions or areas that are filled or graded by non-natural causes or filled by fill of unknown origin suggesting trash, construction debris, demolition debris, or other solid waste disposal or)? NO

17. ARE YOU AWARE OF ANY CONTAMINATION, ODORS, STAINED SOIL OR PAVEMENT, OR STRESSED VEGETATION (from something other than insufficient water) ON THE PROPERTY OR ON NEARBY PROPERTIES? NO

18. IS THERE ANY RUNOFF FROM ADJACENT PROPERTIES ON TO THE PROPERTY? NONE

19. ARE ANY OF THE FOLLOWING ENVIRONMENTAL DOCUMENTS AVAILABLE? NO

- Old site plans that show former buildings and other appurtenances
- Recent site plans that show buildings and other appurtenances
- Environmental site assessment reports
- Environmental compliance audit reports
- Environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits)
- Registrations for underground and above-ground storage tanks
- Registrations for underground injection systems
- Material Safety Data Sheets
- Community right-to-know plan
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc.
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property
- Hazardous waste generator notices or reports
- Geotechnical studies
- Risk assessments
- Recorded activity and land use limitations

User Questionnaire

USER QUESTIONNAIRE
Department of Hawaiian Home Lands Parcels
Undeveloped Land, Hilo, Hawaii
TMK: (3) 2-1-025: parcels 006, 007, 047, and 048

In order to qualify for one of the Landowner Liability Protections (LLPs)[1] offered by the Small Business Liability Relief and Brownfield information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

(1.) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? NO

(2.) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).
Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? NO

(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28). As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? NO

(4.) Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29). Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? NO

(5.) Commonly known or reasonably ascertainable information about the property (40 CFR 312.30). Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

(a.) Do you know the past uses of the property? NO

---

[1] *Landowner Liability Protections*, or *LLPs*, is the term used to describe the three types of potential defenses to Superfund liability in EPA's *Interim Guidance Regarding Criteria Landowners Must Meet in Order to Qualify for Bona Fide Prospective Purchaser, Contiguous Property Owner, or Innocent Landowner Limitations on CERCLA Liability* ("*Common Elements*" Guide) issued on March 6, 2003.

(b.) Do you know of specific chemicals that are present or once were present at the property? NO

(c.) Do you know of spills or other chemical releases that have taken place at the property? NO

(d.) Do you know of any environmental cleanups that have taken place at the property? NO

(6.) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31). As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? NO

Please provide the following additional information:

(a) The reason why the Phase I environmental site assessment is required. Subdivision

(b) The type of property and type of property transaction, for example, sale, purchase, exchange, etc.
Subdivision of property into 1/2 acre subsistence AG lots.

(c) The complete and correct address for the property (a map or other documentation showing property location and boundaries is helpful).

(d) The scope of services desired for the Phase I (including whether any parties to the property transaction may have a required standard scope of services on whether any considerations beyond the requirements of Practice E 1527 are to be considered).

(e) Identification of all parties who will rely on the Phase I report.

(f) Identification of the site contact and how the contact can be reached.
Louise Hao, East Hawaii District Manager, 808 974-4250.

(g) Any special terms and conditions which must be agreed upon by the environmental professional.

(h) A copy of the title report for the property. N/A

(i) Any proceedings involving the property, for example:

(1) Any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property; NO

(2) Any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property; NO

(3) Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. NO

(j) Any other knowledge or experience with the property that may be pertinent to the environmental professional (for example, copies of any available prior environmental site assessment reports, documents, correspondence, etc., concerning the property and its environmental condition.) Documents that would be helpful include the following:

- Environmental site assessment reports:
- Environmental compliance audit reports:
- Environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits):
- Registrations for underground and above-ground storage tanks:
- Registrations for underground injection systems:
- Material Safety Data Sheets:
- Community right-to-know plan:
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc:
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property:
- Hazardous waste generator notices or reports:
- Geotechnical studies:
- Risk assessments:
- Recorded activity and land use limitations:

Form Completed by:

Isaac Takahashi Acting Branch Chief, Housing Project Branch 6/25/2015

Name, Title Date

Department of Hawaiian Home Lands

Company

APPENDIX C

EDR REPORTS

The EDR Radius Map™ Report with GeoCheck®

DHHL Hilo Properties 3 2-1-025 6,7,47,48
AUWAE RD
Hilo, HI 96720

Inquiry Number: 4315061.2s
July 06, 2015

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

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 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

AUWAE RD
HILO, HI 96720

COORDINATES

Latitude (North):	19.6997000 - 19° 41' 58.92''
Longitude (West):	155.0527000 - 155° 3' 9.72''
Universal Tranverse Mercator:	Zone 5
UTM X (Meters):	284833.5
UTM Y (Meters):	2179420.5
Elevation:	93 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	19155-F1 HILO, HI
Most Recent Revision:	Not reported

MAPPED SITES SUMMARY

Target Property Address:
AUWAE RD
HILO, HI 96720

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	HILO RUBBISH DUMP	LEILANI ST	CERC-NFRAP	Lower	415, 0.079, NE
2	HILO TRANSFER STATIO	LEILANI ST	US BROWNFIELDS	Lower	826, 0.156, NNE
A3	TARGET STORE T2682	391 E MAKAALA ST	RCRA-SQG	Lower	839, 0.159, West
A4	SAFEWAY FUEL CENTER	371 EAST MAKAALA ST	UST, Financial Assurance	Lower	1025, 0.194, West
A5	SAFEWAY STORE #2893	381 EAST MAKAALA STR	RCRA-CESQG	Lower	1025, 0.194, West
A6	HOME DEPOT USA HD 84	380 MAKAALA ST	RCRA-SQG	Lower	1026, 0.194, West
7	HILO LANDFILL		SWF/LF	Lower	1711, 0.324, ESE
8	HILO WAREHOUSE	95 POHAKU ST	LUST, UST, SPILLS, Financial Assurance	Lower	1761, 0.334, West
9	HELCO KANOELEHUA OPE	54 HALEKAUILA ST	SHWS, UIC, LUST, UST, SPILLS, AIRS, Financial...	Lower	2562, 0.485, WNW
10	SEARS ROEBUCK & COMP	111 E PUAINAKO ST	LUST, UST, Financial Assurance	Lower	2585, 0.490, WSW
11	HAWAII PEST CONTROL	56 WIWOOLE ST	SHWS	Lower	3250, 0.616, WNW
12	HILO MECHANICAL, INC	50 HOLOMUA ST	SHWS	Lower	3750, 0.710, WNW
13	KANOELEHUA INDUSTRIA	20 POOKELA ST	SHWS, BROWNFIELDS	Lower	3824, 0.724, WNW
14	STATIONERS CORPORATI	708 KANOELEHUA AVE	SHWS, SPILLS	Lower	4401, 0.834, NW
15	HILO SODA WORKS	270 E KAWILI ST	SHWS, LUST, UST	Lower	4605, 0.872, WNW

EXECUTIVE SUMMARY

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

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
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 RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls
LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST ---- Underground Storage Tanks on Indian Land
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

VCP ---- Voluntary Response Program Sites
INDIAN VCP ---- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS ---- Brownfields Sites

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---- Clandestine Drug Labs
CDL ---- Clandestine Drug Lab Listing
US HIST CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS ---- Release Notifications
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
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
US MINES ---- Mines Master Index File

EXECUTIVE SUMMARY

TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide 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
RMP	Risk Management Plans
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
Financial Assurance	Financial Assurance Information Listing
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
COAL ASH DOE	Steam-Electric Plant Operation Data
2020 COR ACTION	2020 Corrective Action Program List
PRP	Potentially Responsible Parties

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat	EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List
RGA LUST	Recovered Government Archive Leaking Underground Storage Tank
RGA HWS	Recovered Government Archive State Hazardous Waste Facilities List

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 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.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

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 10/25/2013 has revealed that there is 1 CERC-NFRAP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HILO RUBBISH DUMP	LEILANI ST	NE 0 - 1/8 (0.079 mi.)	1	7

Federal RCRA generators list

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 03/10/2015 has revealed that there are 2 RCRA-SQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
TARGET STORE T2682	391 E MAKAALA ST	W 1/8 - 1/4 (0.159 mi.)	A3	12
HOME DEPOT USA HD 84	380 MAKAALA ST	W 1/8 - 1/4 (0.194 mi.)	A6	23

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 03/10/2015 has revealed that there is 1 RCRA-CESQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SAFEWAY STORE #2893	381 EAST MAKAALA STR	W 1/8 - 1/4 (0.194 mi.)	A5	22

EXECUTIVE SUMMARY

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 12/02/2014 has revealed that there are 6 SHWS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HELCO KANOELEHUA OPE	***54 HALEKAUILA ST***	***WNW 1/4 - 1/2 (0.485 mi.)***	***9***	***28***
HAWAII PEST CONTROL	56 WIWOOLE ST	WNW 1/2 - 1 (0.616 mi.)	11	39
HILO MECHANICAL, INC	50 HOLOMUA ST	WNW 1/2 - 1 (0.710 mi.)	12	39
KANOELEHUA INDUSTRIA	***20 POOKELA ST***	***WNW 1/2 - 1 (0.724 mi.)***	***13***	***40***
STATIONERS CORPORATI	***708 KANOELEHUA AVE***	***NW 1/2 - 1 (0.834 mi.)***	***14***	***41***
HILO SODA WORKS	***270 E KAWILI ST***	***WNW 1/2 - 1 (0.872 mi.)***	***15***	***42***

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Department of Health's Permitted Landfills in the State of Hawaii database.

A review of the SWF/LF list, as provided by EDR, and dated 09/17/2012 has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HILO LANDFILL		ESE 1/4 - 1/2 (0.324 mi.)	7	26
Facility Status: ACTIVE LANDFILLS NEIGHBOR ISLANDS				

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 06/04/2015 has revealed that there are 3 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HILO WAREHOUSE	***95 POHAKU ST***	***W 1/4 - 1/2 (0.334 mi.)***	***8***	***27***
Facility Id: 9-600564				
Release ID: 930031				
Facility Status: Site Cleanup Completed (NFA)				
HELCO KANOELEHUA OPE	***54 HALEKAUILA ST***	***WNW 1/4 - 1/2 (0.485 mi.)***	***9***	***28***
Facility Id: 9-600238				
Release ID: 000013				
Facility Status: Site Cleanup Completed (NFA)				
SEARS ROEBUCK & COMP	***111 E PUAINAKO ST***	***WSW 1/4 - 1/2 (0.490 mi.)***	***10***	***38***
Facility Id: 9-603106				
Facility Id: 9-601834				
Release ID: 030002				
Release ID: 940040				
Facility Status: Site Cleanup Completed (NFA)				

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 06/04/2015 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SAFEWAY FUEL CENTER	***371 EAST MAKAALA ST***	***W 1/8 - 1/4 (0.194 mi.)***	***A4***	***21***
Facility Id: 9-603921				
Tank Status: Currently In Use				
Tank Status: Currently in Use				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 03/23/2015 has revealed that there is 1 US BROWNFIELDS site within approximately 0.5 miles of the target property.

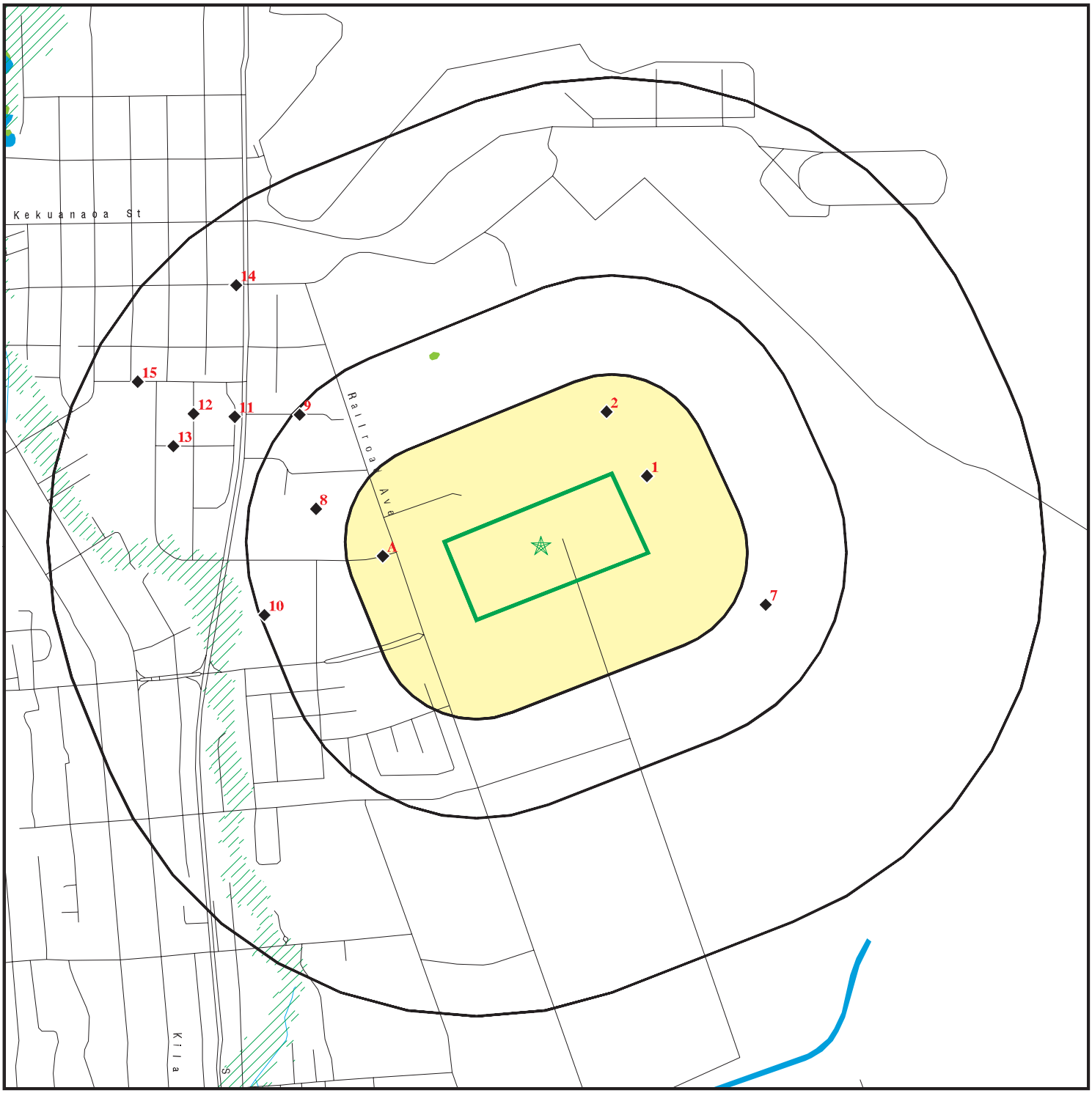
Lower Elevation	Address	Direction / Distance	Map ID	Page
HILO TRANSFER STATIO	LEILANI ST	NNE 1/8 - 1/4 (0.156 mi.)	2	7

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name	Database(s)
HILO JUDICIARY CENTER PROJECT	SHWS, ENG CONTROLS, INST CONTROL
HILO SAFEWAY/TARGET	SHWS, ENG CONTROLS, INST CONTROL
ARMY AVIATION SUPPORT FACILITY #2	SHWS

OVERVIEW MAP - 4315061.2S



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
National Priority List Sites
Dept. Defense Sites

0 1/4 1/2 1 Miles

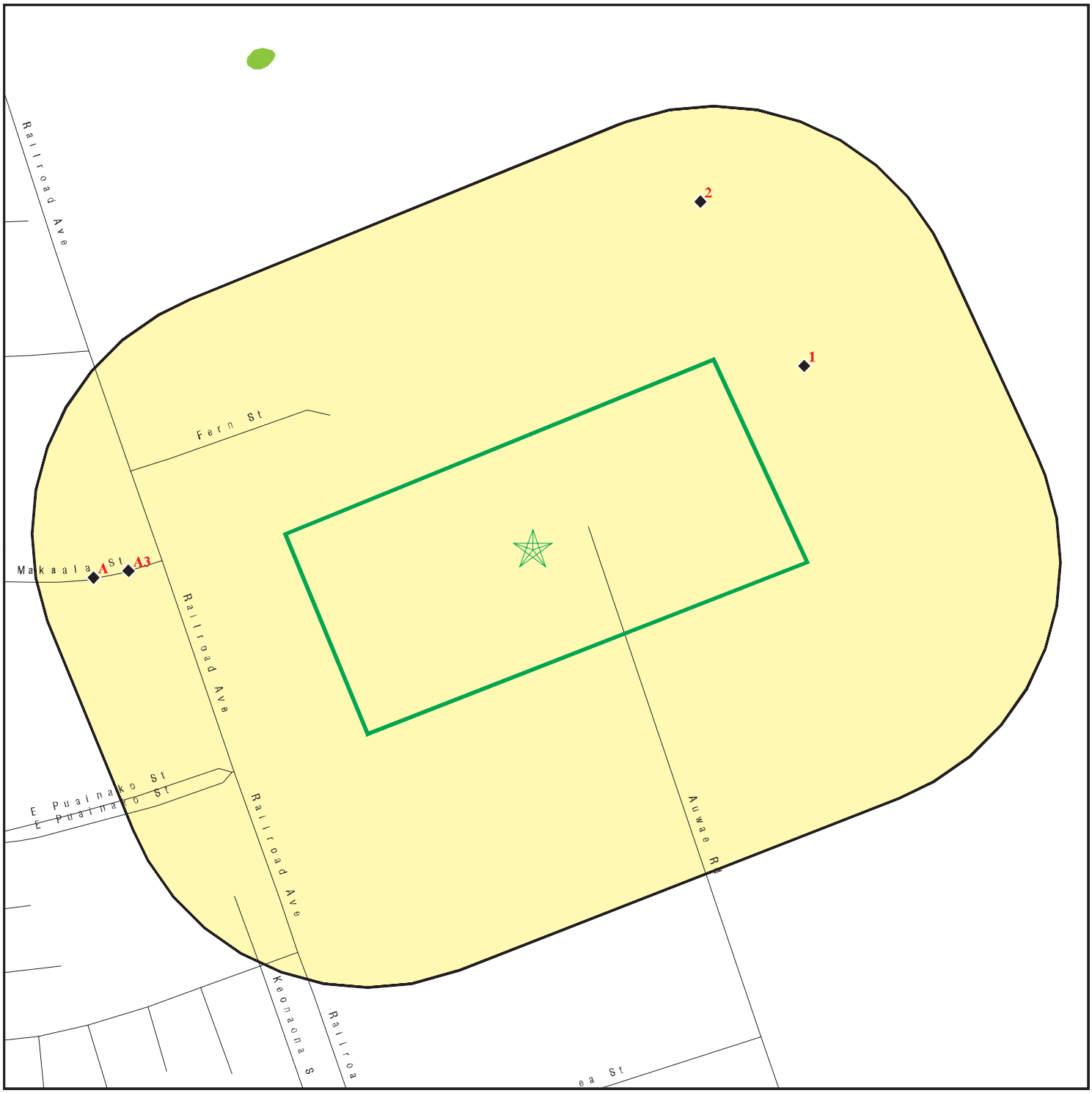
Indian Reservations BIA
100-year flood zone
500-year flood zone
National Wetland Inventory

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: DHHL Hilo Properties 3 2-1-025 6,7,47,48 ADDRESS: AUWAE RD Hilo HI 96720 LAT/LONG: 19.6997 / 155.0527	CLIENT: Element Environmental , LLC CONTACT: Angela Peltier INQUIRY #: 4315061.2s DATE: July 06, 2015 12:10 pm

DETAIL MAP - 4315061.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	DHHL Hilo Properties 3 2-1-025 6,7,47,48	CLIENT:	Element Environmental , LLC
ADDRESS:	AUWAE RD Hilo HI 96720	CONTACT:	Angela Peltier
LAT/LONG:	19.6997 / 155.0527	INQUIRY #:	4315061.2s
		DATE:	July 06, 2015 12:10 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		1	0	0	NR	NR	1
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	2	NR	NR	NR	2
RCRA-CESQG	0.250		0	1	NR	NR	NR	1
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	1	5	NR	6
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	1	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		0	0	3	NR	NR	3
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	1	NR	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	1	0	NR	NR	1
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 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
RMP	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
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
RGA HWS	TP		NR	NR	NR	NR	NR	0
- Totals --		0	1	5	5	5	0	16

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
NE
< 1/8
0.079 mi.
415 ft.

HILO RUBBISH DUMP
LEILANI ST
HILO, HI 96720

CERC-NFRAP

1003879108
HID000606582

Relative:
Lower

Actual:
81 ft.

CERC-NFRAP:
Site ID: 0902829
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13037476.00000
Person ID: 9000059.00000

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: HILO LANDFILL
Alias Address: Not reported
HI

CERCLIS-NFRAP Assessment History:
Action: PRELIMINARY ASSESSMENT
Date Started: 10/01/84
Date Completed: 02/01/85
Priority Level: Low priority for further assessment

Action: DISCOVERY
Date Started: / /
Date Completed: 11/01/79
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 11/21/88
Priority Level: Low priority for further assessment

Action: ARCHIVE SITE
Date Started: / /
Date Completed: 01/23/96
Priority Level: Not reported

Action: SITE INSPECTION
Date Started: / /
Date Completed: 02/25/91
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

---

2
NNE
1/8-1/4
0.156 mi.
826 ft.

HILO TRANSFER STATION
LEILANI ST
HILO, HI 96720

US BROWNFIELDS

1009569567
N/A

Relative:
Lower

Actual:
78 ft.

US BROWNFIELDS:
Recipient name: R9 TBA (STAG Funded)
Grant type: TBA
Property name: HILO TRANSFER STATION
Property #: 21013150000, 210131670000, 210131680000

HILO TRANSFER STATION (Continued) **1009569567**

Parcel size:	60.2
Property Description:	1995: Area open or wooded with a quarry just NW w/ 3 ponds assocaited with quarry; 3 quarries S/SE, Hawaii National Guard NE of site w/ 2 wells; area south shows scattered buildings assumed to be homes.
Latitude:	19.70466
Longitude:	-155.05016
HCM label:	Unknown
Map scale:	Not reported
Point of reference:	Center of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	27801
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	32500
Assessment funding source:	US EPA - TBA Funding
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	Not reported
Cleanup funding entity:	Not reported
Grant type:	H
Accomplishment type:	Phase I Environmental Assessment
Accomplishment count:	1
Cooperative agreement #:	n/a
Ownership entity:	Government
Current owner:	3150 County of Hawaii 3167-3168 State of Hawaii
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Yes
Institutional controls required:	U
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Unknown
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported

HILO TRANSFER STATION (Continued) **1009569567**

Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Y
Soil cleaned up:	Y
Surface water cleaned:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	Not reported
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported
Arsenic cleaned up:	Not reported
Cadmium cleaned up:	Not reported
Chromium cleaned up:	Not reported
Copper cleaned up:	Not reported
Iron cleaned up:	Not reported
mercury cleaned up:	Not reported
nickel cleaned up:	Not reported
No clean up:	Not reported
Pesticides cleaned up:	Not reported
Selenium cleaned up:	Not reported
SVOCs cleaned up:	Not reported
Unknown clean up:	Not reported
Arsenic contaminant found:	Not reported
Cadmium contaminant found:	Not reported
Chromium contaminant found:	Not reported
Copper contaminant found:	Not reported
Iron contaminant found:	Not reported
Mercury contaminant found:	Not reported
Nickel contaminant found:	Not reported
No contaminant found:	Y
Pesticides contaminant found:	Not reported
Selenium contaminant found:	Not reported
SVOCs contaminant found:	Not reported
Unknown contaminant found:	Not reported
Future Use: Multistory	Not reported
Media affected Bluiding Material:	Not reported

HILO TRANSFER STATION (Continued) **1009569567**

Media affected indoor air:	Not reported
Building material media cleaned up:	Not reported
Indoor air media cleaned up:	Not reported
Unknown media cleaned up:	Not reported
Past Use: Multistory	Not reported
Recipient name:	R9 TBA (STAG Funded)
Grant type:	TBA
Property name:	HILO TRANSFER STATION
Property #:	21013150000, 210131670000, 210131680000
Parcel size:	60.2
Property Description:	1995: Area open or wooded with a quarry just NW w/ 3 ponds assocaited with quarry; 3 quarries S/SE, Hawaii National Guard NE of site w/ 2 wells; area south shows scattered buildings assumed to be homes.
Latitude:	19.70466
Longitude:	-155.05016
HCM label:	Unknown
Map scale:	Not reported
Point of reference:	Center of a Facility or Station
Datum:	World Geodetic System of 1984
ACRES property ID:	27801
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	32500
Assessment funding source:	US EPA - TBA Funding
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	Not reported
Cleanup funding entity:	Not reported
Grant type:	H
Accomplishment type:	Phase II Environmental Assessment
Accomplishment count:	0
Cooperative agreement #:	n/a
Ownership entity:	Government
Current owner:	3150 County of Hawaii 3167-3168 State of Hawaii
Did owner change:	N
Cleanup required:	Unknown
Video available:	Not reported
Photo available:	Yes
Institutional controls required:	U
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Unknown
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported

HILO TRANSFER STATION (Continued) **1009569567**

Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Y
Soil cleaned up:	Y
Surface water cleaned:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	Not reported
Past use industrial acreage:	Not reported
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	Not reported
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported
Arsenic cleaned up:	Not reported
Cadmium cleaned up:	Not reported
Chromium cleaned up:	Not reported
Copper cleaned up:	Not reported
Iron cleaned up:	Not reported
mercury cleaned up:	Not reported
nickel cleaned up:	Not reported
No clean up:	Not reported
Pesticides cleaned up:	Not reported
Selenium cleaned up:	Not reported
SVOCs cleaned up:	Not reported
Unknown clean up:	Not reported
Arsenic contaminant found:	Not reported
Cadmium contaminant found:	Not reported
Chromium contaminant found:	Not reported
Copper contaminant found:	Not reported

HILO TRANSFER STATION (Continued) **1009569567**

Iron contaminant found:	Not reported
Mercury contaminant found:	Not reported
Nickel contaminant found:	Not reported
No contaminant found:	Y
Pesticides contaminant found:	Not reported
Selenium contaminant found:	Not reported
SVOCs contaminant found:	Not reported
Unknown contaminant found:	Not reported
Future Use: Multistory	Not reported
Media affected Bluiding Material:	Not reported
Media affected indoor air:	Not reported
Building material media cleaned up:	Not reported
Indoor air media cleaned up:	Not reported
Unknown media cleaned up:	Not reported
Past Use: Multistory	Not reported

A3 **TARGET STORE T2682** **RCRA-SQG** **1014916454**
West **391 E MAKAALA ST** **HIR000140459**
1/8-1/4 **HILO, HI 96720**
0.159 mi.
839 ft. **Site 1 of 4 in cluster A**

Relative:
Lower

Actual:
83 ft.

RCRA-SQG:

Date form received by agency:	04/23/2014
Facility name:	TARGET STORE T2682
Facility address:	391 E MAKAALA ST HILO, HI 967205146
EPA ID:	HIR000140459
Mailing address:	P.O. BOX 111 MINNEAPOLIS, HI 55440
Contact:	STEVE MUSSER
Contact address:	P.O. BOX 111 MINNEAPOLIS, MN 55440
Contact country:	Not reported
Contact telephone:	800 5872228
Contact email:	POC@TARGET.COM
EPA Region:	09
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:	TARGET CORPORATION
Owner/operator address:	P.O. BOX 111 MINNEAPOLIS, MN 55440
Owner/operator country:	Not reported
Owner/operator telephone:	(800) 587-2228
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	07/24/2011
Owner/Op end date:	Not reported
Owner/operator name:	TARGET CORPORATION
Owner/operator address:	P.O. BOX 111

TARGET STORE T2682 (Continued) **1014916454**

MINNEAPOLIS, MN 55440
Owner/operator country: Not reported
Owner/operator telephone: (800) 587-2228
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/24/2011
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: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

TARGET STORE T2682 (Continued) **1014916454**

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D026
. Waste name: CRESOL

. Waste code: D028
. Waste name: 1,2-DICHLOROETHANE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P042
. Waste name: 1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR) EPINEPHRINE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129

TARGET STORE T2682 (Continued) **1014916454**

. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U201
. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

Historical Generators:
Date form received by agency: 02/27/2012
Site name: TARGET STORE #T2682
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

TARGET STORE T2682 (Continued) **1014916454**

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D026
. Waste name: CRESOL

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P012
. Waste name: ARSENIC OXIDE AS2O3 (OR) ARSENIC TRIOXIDE

. Waste code: P022
. Waste name: CARBON DISULFIDE

. Waste code: P046
. Waste name: ALPHA,ALPHA-DIMETHYLPHENETHYLAMINE (OR) BENZENEETHANAMINE, ALPHA, ALPHA-DIMETHYL-

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

. Waste code: P108
. Waste name: STRYCHNIDIN-10-ONE, & SALTS (OR) STRYCHNINE, & SALTS

. Waste code: P188
. Waste name: BENZOIC ACID, 2-HYDROXY-, COMPD. WITH (3AS-CIS)-1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYLPYRROLO[2,3-B]INDOL--YL METHYLCARBAMATE ESTER (1:1) (OR) PHYSOSTIGMINE SALICYLATE

. Waste code: P204
. Waste name: PHYSOSTIGMINE (OR) PYRROLO[2,3-B]INDOL-5-OL, 1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYL-METHYLCARBAMATE (ESTER), (3AS-CIS)-

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035

TARGET STORE T2682 (Continued) **1014916454**

. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U201
. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

Date form received by agency: 07/07/2011
Site name: TARGET STORE NO 2682
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

TARGET STORE T2682 (Continued) **1014916454**

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P046
. Waste name: ALPHA,ALPHA-DIMETHYLPHENETHYLAMINE (OR) BENZENEETHANAMINE, ALPHA, ALPHA-DIMETHYL-

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

Biennial Reports:

Last Biennial Reporting Year: 2013

Annual Waste Handled:

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.
Amount (Lbs): 1084

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.
Amount (Lbs): 394

Waste code: D004
Waste name: ARSENIC
Amount (Lbs): 22

Waste code: D005
Waste name: BARIUM
Amount (Lbs): 233

Waste code: D007
Waste name: CHROMIUM
Amount (Lbs): 233

Waste code: D008
Waste name: LEAD

TARGET STORE T2682 (Continued) **1014916454**

Amount (Lbs): 22

Waste code: D009
Waste name: MERCURY
Amount (Lbs): 22

Waste code: D010
Waste name: SELENIUM
Amount (Lbs): 22

Waste code: D011
Waste name: SILVER
Amount (Lbs): 233

Waste code: D016
Waste name: 2,4-D
Amount (Lbs): 22

Waste code: D018
Waste name: BENZENE
Amount (Lbs): 211

Waste code: D024
Waste name: M-CRESOL
Amount (Lbs): 22

Waste code: D026
Waste name: CRESOL
Amount (Lbs): 22

Waste code: D035
Waste name: METHYL ETHYL KETONE
Amount (Lbs): 957

Waste code: P001
Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%
Amount (Lbs): 6

Waste code: P012
Waste name: ARSENIC OXIDE AS2O3
Amount (Lbs): 6

Waste code: P022
Waste name: CARBON DISULFIDE
Amount (Lbs): 6

Waste code: P046
Waste name: BENZENEETHANAMINE, ALPHA,ALPHA-DIMETHYL-
Amount (Lbs): 6

Waste code: P075
Waste name: NICOTINE, & SALTS
Amount (Lbs): 6

Waste code: P081
Waste name: NITROGLYCERINE (R)

TARGET STORE T2682 (Continued) **1014916454**

Amount (Lbs): 6

Waste code: P108
Waste name: STRYCHNIDIN-10-ONE, & SALTS
Amount (Lbs): 6

Waste code: P188
Waste name: BENZOIC ACID, 2-HYDROXY-, COMPD. WITH (3AS-CIS)-1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYLPYRROLO[2,3-
Amount (Lbs): 6

Waste code: P204
Waste name: PHYSOSTIGMINE (OR) PYRROLO[2,3-B]INDOL-5-OL, 1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYL-METHYLCARBAMAT
Amount (Lbs): 6

Waste code: U002
Waste name: ACETONE (I)
Amount (Lbs): 233

Waste code: U035
Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]-
Amount (Lbs): 22

Waste code: U044
Waste name: CHLOROFORM
Amount (Lbs): 22

Waste code: U058
Waste name: CYCLOPHOSPHAMIDE
Amount (Lbs): 22

Waste code: U072
Waste name: BENZENE, 1,4-DICHLORO-
Amount (Lbs): 22

Waste code: U122
Waste name: FORMALDEHYDE
Amount (Lbs): 22

Waste code: U129
Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA,2ALPHA,3BETA,4ALPHA,5ALPHA,6BETA)-
Amount (Lbs): 22

Waste code: U150
Waste name: MELPHALAN
Amount (Lbs): 22

Waste code: U154
Waste name: METHANOL (I)
Amount (Lbs): 233

Waste code: U188
Waste name: PHENOL
Amount (Lbs): 22

TARGET STORE T2682 (Continued) **1014916454**

Waste code: U200
Waste name: RESERPINE
Amount (Lbs): 22

Waste code: U201
Waste name: 1,3-BENZENEDIOL
Amount (Lbs): 22

Waste code: U279
Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE
Amount (Lbs): 22

Violation Status: No violations found

A4 **SAFEWAY FUEL CENTER 2893** **UST** **U004191716**
West **371 EAST MAKAALA ST** **Financial Assurance** **N/A**
1/8-1/4 **HILO, HI 96720**
0.194 mi.
1025 ft. **Site 2 of 4 in cluster A**

Relative:
Lower

Actual:
83 ft.

UST:
Facility ID: 9-603921
Owner: Safeway Fuel Center #2893
Owner Address: 5918 Stoneridge Mall Road
Owner City,St,Zip: Hilo, 96720 96720
Latitude: Not reported
Longitude: Not reported
Horizontal Reference Datum Name: Not reported
Horizontal Collection Method Name: Not reported

Tank ID: 1
Date Installed: 10/11/2013
Tank Status: **Currently in Use**
Date Closed: Not reported
Tank Capacity: 30000
Substance: Gasohol

Tank ID: 2
Date Installed: 10/11/2013
Tank Status: **Currently in Use**
Date Closed: Not reported
Tank Capacity: 15000
Substance: Gasohol

Tank ID: 3
Date Installed: 10/11/2013
Tank Status: **Currently In Use**
Date Closed: Not reported
Tank Capacity: 15000
Substance: Diesel

HI Financial Assurance:
Alt Facility ID: 9-603921
Tank Id: 2
Tank Status: Currently in Use

SAFEWAY FUEL CENTER 2893 (Continued) **U004191716**

FRTYPE: Insurance
Expiration Date: 07/01/2014

Alt Facility ID: 9-603921
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Insurance
Expiration Date: 07/01/2014

Alt Facility ID: 9-603921
Tank Id: 1
Tank Status: Currently in Use
FRTYPE: Insurance
Expiration Date: 07/01/2014

A5 **SAFEWAY STORE #2893** **RCRA-CESQG** **1017770195**
West **381 EAST MAKAALA STREET** **HIR000142901**
1/8-1/4 **HILO, HI 96720**
0.194 mi.
1025 ft. **Site 3 of 4 in cluster A**

Relative:
Lower

Actual:
83 ft.

RCRA-CESQG:
Date form received by agency: 09/08/2014
Facility name: SAFEWAY STORE #2893
Facility address: 381 EAST MAKAALA STREET
HILO, HI 96720
EPA ID: HIR000142901
Mailing address: 5918 STONERIDGE MALL ROAD
PLEASANTON, CA 94588
Contact: KEITH B POWERS
Contact address: 5918 STONERIDGE MALL ROAD
PLEASANTON, CA 94588
Contact country: US
Contact telephone: 925-226-5655
Contact email: KEITH.POWERS@SAFEWAY.COM
EPA Region: 09
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 hazardous waste

Owner/Operator Summary:
Owner/operator name: STATE OF HAWAII BY ITS
Owner/operator address: ATTN LAND MANAGEMENT 91-5420 KAPOLEI PARKWAY
KAPOLEI, 96707
Owner/operator country: US

SAFEWAY STORE #2893 (Continued) **1017770195**

Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2011
Owner/Op end date: Not reported

Owner/operator name: SAFEWAY
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: 03/24/2011
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: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

Violation Status: No violations found

A6 **HOME DEPOT USA HD 8453** **RCRA-SQG** **1008372605**
West **380 MAKAALA ST** **HIR000136465**
1/8-1/4 **HILO, HI 96720**
0.194 mi.
1026 ft. **Site 4 of 4 in cluster A**

Relative:
Lower

Actual:
83 ft.

RCRA-SQG:
Date form received by agency: 08/21/2007
Facility name: HOME DEPOT USA HD 8453
Facility address: 380 MAKAALA ST
HILO, HI 96720
EPA ID: HIR000136465
Mailing address: 1905 ASTON AVE

HOME DEPOT USA HD 8453 (Continued) **1008372605**

NO 100
CARLSBAD, CA 92008
Contact: BECKY WILBANKS
Contact address: 1905 ASTON AVE NO 100
CARLSBAD, CA 92008
Contact country: US
Contact telephone: 760-602-8743
Contact email: BWILBANKS@3ECOMPANY.COM
EPA Region: 09
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: HOME DEPOT USA INC
Owner/operator address: 2455 PACES FERRY RD D 17
ATLANTA, GA 30339
Owner/operator country: US
Owner/operator telephone: 770-433-8211
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/16/2004
Owner/Op end date: Not reported

Owner/operator name: HOME DEPOT USA INC
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: 12/16/2004
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: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

HOME DEPOT USA HD 8453 (Continued) **1008372605**

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

Historical Generators:
Date form received by agency: 01/19/2007
Site name: HOME DEPOT HD 8453
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

Date form received by agency: 07/15/2005
Site name: HOME DEPOT USA INC HD 8453
Classification: Conditionally Exempt Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

HOME DEPOT USA HD 8453 (Continued) **1008372605**

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED 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 NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED 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
. Waste name: THE FOLLOWING SPENT NONHALOGENATED 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 NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 04/13/2005
Site name: HOME DEPOT 8453
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

Violation Status: No violations found

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7 **HILO LANDFILL** **SWF/LF** **S109569373**
ESE **N/A**
1/4-1/2 **HILO, HI**
0.324 mi.
1711 ft.

Relative:
Lower

Actual:
88 ft.

SWF/LF:
Facility Status: ACTIVE LANDFILLS NEIGHBOR ISLANDS
TMK: 3rd, 2-1-013:142, 152, 156
Island Location: Hawaii
Close Date: 1984-Present*
Waste Type: Municipal solid waste and construction debris

8
West
1/4-1/2
0.334 mi.
1761 ft.

HILO WAREHOUSE
95 POHAKU ST
HILO, HI 96720

LUST **U003155177**
UST **N/A**
SPILLS
Financial Assurance

Relative:
Lower

Actual:
71 ft.

LUST:

Facility ID:	9-600564
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	07/30/1993
Release ID:	930031
Project Officer:	Not Assigned

UST:

Facility ID:	9-600564
Owner:	Hawaiian Telcom
Owner Address:	P.O. Box 2200
Owner City,St,Zip:	Hilo, 96720 96720
Latitude:	19.701417
Longitude:	-155.061423
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	GPS

Tank ID:	3
Date Installed:	02/01/1993
Tank Status:	**Currently In Use**
Date Closed:	Not reported
Tank Capacity:	4000
Substance:	Gasoline

Tank ID:	M-2
Date Installed:	07/02/1987
Tank Status:	**Currently in Use**
Date Closed:	Not reported
Tank Capacity:	550
Substance:	Diesel

Tank ID:	R-1
Date Installed:	07/02/1969
Tank Status:	**Permanently Out of Use**
Date Closed:	11/12/1992
Tank Capacity:	1000
Substance:	Gasoline

HI SPILLS:

Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20121116-1254
HID Number:	Not reported
Facility Registry Id:	Not reported
Lead and Program:	HEER EP&R
ER:	None
Units:	HELCO transformer pad-mounted #8994 release
Substances:	Transformer Oil
Less Or Greater Than:	>
Numerical Quantity:	10

HILO WAREHOUSE (Continued) **U003155177**

Units: Gallons
Activity Type: Response
Activity Lead: Curtis Martin
Assignment End Date: Not reported
Result: Not reported
File Under: Not reported

HI Financial Assurance:
Alt Facility ID: 9-600564
Tank Id: R-1
Tank Status: Permanently Out of Use
FRTYPE: Risk Retention Group
Expiration Date: Not reported

Alt Facility ID: 9-600564
Tank Id: M-2
Tank Status: Currently in Use
FRTYPE: Risk Retention Group
Expiration Date: Not reported

Alt Facility ID: 9-600564
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Risk Retention Group
Expiration Date: Not reported

Alt Facility ID: 9-600564
Tank Id: R-1
Tank Status: Permanently Out of Use
FRTYPE: Insurance
Expiration Date: 05/02/2015

Alt Facility ID: 9-600564
Tank Id: 3
Tank Status: Currently In Use
FRTYPE: Insurance
Expiration Date: 05/02/2015

Alt Facility ID: 9-600564
Tank Id: M-2
Tank Status: Currently in Use
FRTYPE: Insurance
Expiration Date: 05/02/2015

9
WNW
1/4-1/2
0.485 mi.
2562 ft.

Relative:
Lower

Actual:
50 ft.

HELCO KANOELEHUA OPERATIONS CENTER
54 HALEKAUILA ST
HILO, HI 96720

SHWS **U001236868**
UIC **N/A**
LUST
UST
SPILLS
AIRS
Financial Assurance

SHWS:
Organization: Not reported
Supplemental Location: Not reported
Island: Hawaii
Environmental Interest: HELCO Hill Generating Station Test Tank

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

HID Number:	Not reported
Facility Registry Identifier:	110000486377
Lead Agency:	HEER
Program:	State
Project Manager:	Amelia Hicks
Hazard Priority:	NFA
Potential Hazards And Controls:	No Hazard
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Not reported
SDAR Environmental Interest Name:	HELCO Hill Generating Station Test Tank
HID Number:	Not reported
Facility Registry Identifier:	110000486377
Lead Agency:	HEER
Progran Name:	State
Potential Hazard And Controls:	No Hazard
Priority:	NFA
Assessment:	Response Necessary
Response:	Response Complete
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Free product was satisfactorily recovered from the containment area prior to contactwith ground surface.
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	07/10/2012
Document Number:	2012-414-AH
Document Subject:	No Further Action Determination for HELCO Hill Generating Station Test Tank
Project Manager:	Amelia Hicks
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814
Organization:	Not reported
Supplemental Location:	Not reported
Island:	Hawaii
Environmental Interest:	HELCO Substation Transformer No. 15923 at Kanoelehua Switching Station
HID Number:	Not reported
Facility Registry Identifier:	110000486377
Lead Agency:	HEER
Program:	State
Project Manager:	Amelia Hicks
Hazard Priority:	NFA
Potential Hazards And Controls:	No Hazard
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Not reported
SDAR Environmental Interest Name:	HELCO Substation Transformer No. 15923 at Kanoelehua Switching Station
HID Number:	Not reported
Facility Registry Identifier:	110000486377
Lead Agency:	HEER
Progran Name:	State
Potential Hazard And Controls:	No Hazard
Priority:	NFA
Assessment:	Response Necessary

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Response:	Response Complete
Nature of Contamination:	Not reported
Nature of Residual Contamination:	TPH below HDOH EALs at <50 mg/kg.
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	06/13/2012
Document Number:	2012-363-AH
Document Subject:	No Further Action Determination for HELCO Pad-Mount Transformer No. 10690 (Incident ID 20080222-1408
Project Manager:	Amelia Hicks
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

UIC:

UIC Permit Number:	UH-1240
Facility Id/Lat Long Minute Coordinates:	8-4203.01.1
Central Latitude Of The Site:	19 42 28
Central Longitude Of The Site:	155 03 50
Flow In Gallons Per Day:	22,500,000
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	below
Facility Type:	IND:HI
Subclass:	AB
Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027 Hilo, HI 96721
Facility Owner:	Hawaii Electric Light Co., Inc. (HELCO)
Owner Address:	PO Box 1027, Hilo, HI 96720-1027
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	HELCO
Receipt Of Initial Application:	12/19/1984
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	9/10/1985
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	9/10/1985
Last Issuance Of Permit:	7/29/2005
Type:	Not reported
Permit Expiration Date:	6/29/2016
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1241
Facility Id/Lat Long Minute Coordinates:	8-4203.03.1
Central Latitude Of The Site:	19 42 24
Central Longitude Of The Site:	155 03 46
Flow In Gallons Per Day:	36,000,000
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	below
Facility Type:	IND:HI
Subclass:	AB
Facility Operator, Not Contract Opr:	HELCO

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Operator Address:	PO Box 1027 Hilo, HI 96721
Facility Owner:	Hawaii Electric Light Co., Inc.
Owner Address:	PO Box 1027 Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	HELCO
Receipt Of Initial Application:	12/19/1984
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	9/10/1985
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	9/10/1985
Last Issuance Of Permit:	7/29/2005
Type:	Not reported
Permit Expiration Date:	6/29/2016
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1242
Facility Id/Lat Long Minute Coordinates:	8-4203.04.1
Central Latitude Of The Site:	19 42 29
Central Longitude Of The Site:	155 03 50
Flow In Gallons Per Day:	30,000
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	below
Facility Type:	IND:HI
Subclass:	AB
Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027 Hilo, HI 96721
Facility Owner:	Hawaii Electric Light Co., Inc.
Owner Address:	PO Box 1027 Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	HELCO
Receipt Of Initial Application:	12/19/1984
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	9/13/1985
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	9/13/1985
Last Issuance Of Permit:	2/15/2012
Type:	Not reported
Permit Expiration Date:	2/14/2017
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1243
Facility Id/Lat Long Minute Coordinates:	8-4203.02.1
Central Latitude Of The Site:	19 42 29
Central Longitude Of The Site:	155 03 50
Flow In Gallons Per Day:	1,000
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	below
Facility Type:	SEW:CES
Subclass:	AB

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027 Hilo, HI 96721
Facility Owner:	Hawaii Electric Light Co., Inc.
Owner Address:	PO Box 1027 Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	HELCO
Receipt Of Initial Application:	12/19/1984
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	9/13/1985
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	9/13/1985
Last Issuance Of Permit:	7/13/2012
Type:	Not reported
Permit Expiration Date:	7/12/2017
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1244
Facility Id/Lat Long Minute Coordinates:	8-4203.05.1
Central Latitude Of The Site:	19 42 25
Central Longitude Of The Site:	155 03 55
Flow In Gallons Per Day:	2,000
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	below
Facility Type:	SEW:CES
Subclass:	AB
Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027 Hilo, HI 96721
Facility Owner:	Hawaii Electric Light Co., Inc.
Owner Address:	PO Box 1027 Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	HELCO
Receipt Of Initial Application:	12/19/1984
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	9/13/1985
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	9/13/1985
Last Issuance Of Permit:	7/13/2012
Type:	Not reported
Permit Expiration Date:	7/12/2017
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1676
Facility Id/Lat Long Minute Coordinates:	8-4203.09.1-4
Central Latitude Of The Site:	19 42 29
Central Longitude Of The Site:	155 03 50
Flow In Gallons Per Day:	Not reported
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	Not reported
Facility Type:	DW

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Subclass:	C
Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027, Hilo, HI 96720
Facility Owner:	HELCO
Owner Address:	PO Box 1027, Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	Hawaiian Electric Company, Inc
Receipt Of Initial Application:	2/28/1990
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	12/12/1991
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	12/2/1991
Last Issuance Of Permit:	6/20/2012
Type:	Not reported
Permit Expiration Date:	6/19/2017
Date When File Is Closed:	Not reported
UIC Project Geologist:	NU
Remarks:	Not reported

UIC Permit Number:	UH-1680
Facility Id/Lat Long Minute Coordinates:	8-4203.12.1
Central Latitude Of The Site:	19 42 29
Central Longitude Of The Site:	155 03 50
Flow In Gallons Per Day:	Not reported
Total Number Of Inj. Well(S) On Permit:	1
Island:	Hawaii
Location In Relation To UIC Line:	Not reported
Facility Type:	DW
Subclass:	C
Facility Operator, Not Contract Opr:	HELCO
Operator Address:	PO Box 1027 Hilo, HI 96720
Facility Owner:	HELCO
Owner Address:	PO Box 1027 Hilo, HI 96720
Tax Map Key Number:	3:2-2-58:019
Owner Of Land Property On Leasehold:	none
Consultant Serving The Application:	Hawaii Electric Co Inc.
Receipt Of Initial Application:	2/28/1990
Public Notice Date:	Not reported
Approval-To-Construct Issuance Date:	12/5/1991
Exemption Issuance Date:	Not reported
1st Issuance Of Permit:	12/2/1991
Last Issuance Of Permit:	12/2/1996
Type:	Not reported
Permit Expiration Date:	12/1/2005
Date When File Is Closed:	5/2/2002
UIC Project Geologist:	NU
Remarks:	Not reported

LUST:

Facility ID:	9-600238
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	07/14/2000
Release ID:	000013
Project Officer:	Richard Takaba

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

UST:

Facility ID:	9-600238
Owner:	HAWAII ELECTRIC LIGHT CO., INC.
Owner Address:	P.O. BOX 1027
Owner City,St,Zip:	Hilo, 96720 96720
Latitude:	19.703490
Longitude:	-155.062410
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	GPS

Tank ID:	1
Date Installed:	12/01/1999
Tank Status:	**Currently In Use**
Date Closed:	Not reported
Tank Capacity:	10000
Substance:	Gasoline

Tank ID:	2
Date Installed:	12/01/1999
Tank Status:	**Currently In Use**
Date Closed:	Not reported
Tank Capacity:	6000
Substance:	Diesel

Tank ID:	R-1
Date Installed:	04/16/1970
Tank Status:	**Permanently Out of Use**
Date Closed:	10/12/1999
Tank Capacity:	6000
Substance:	Diesel

Tank ID:	R-2
Date Installed:	04/17/1975
Tank Status:	**Permanently Out of Use**
Date Closed:	01/22/1992
Tank Capacity:	1000
Substance:	Diesel

Tank ID:	R-3
Date Installed:	04/16/1977
Tank Status:	**Permanently Out of Use**
Date Closed:	10/12/1999
Tank Capacity:	10000
Substance:	Gasoline

HI SPILLS:

Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20030530-1551
HID Number:	Not reported
Facility Registry Id:	110000486377
Lead and Program:	HEER EP&R

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

ER:	No
Units:	HELCO pad-mounted transformer 15923
Substances:	Shell Diala Oil
Less Or Greater Than:	Not reported
Numerical Quantity:	100
Units:	Gallons
Activity Type:	Response
Activity Lead:	Mike Cripps
Assignment End Date:	Not reported
Result:	SOSC NFA
File Under:	Hawaii Electric Light Co., Inc. (HELCO)
Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20070825-1240
HID Number:	Not reported
Facility Registry Id:	110000486377
Lead and Program:	HEER EP&R
ER:	No
Units:	HELCO Generating Station: Hill/Kanoelehua Test Tank Release
Substances:	Fuel Oil
Less Or Greater Than:	>
Numerical Quantity:	25
Units:	Gallons
Activity Type:	Response
Activity Lead:	Liz Galvez
Assignment End Date:	2007-10-08 00:00:00
Result:	SOSC NFA
File Under:	Hawaii Electric Light Co., Inc. (HELCO)
Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20070927-1327
HID Number:	Not reported
Facility Registry Id:	110000486377
Lead and Program:	HEER EP&R
ER:	None
Units:	Hill Test Tank
Substances:	Fuel Oil #6
Less Or Greater Than:	Not reported
Numerical Quantity:	0
Units:	Not reported
Activity Type:	Response
Activity Lead:	Liz Galvez
Assignment End Date:	Not reported
Result:	Refer to SDAR
File Under:	Hawaii Electric Light Co., Inc. (HELCO)
Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20080208-1445
HID Number:	Not reported
Facility Registry Id:	110000486377
Lead and Program:	HEER EP&R
ER:	None
Units:	HELCO Kanoelehua Switching Station
Substances:	Oil Lubricating

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Less Or Greater Than:	Not reported
Numerical Quantity:	0.5
Units:	Gallons
Activity Type:	Response
Activity Lead:	Liz Galvez
Assignment End Date:	Not reported
Result:	Refer to SDAR
File Under:	Hawaii Electric Light Co., Inc. (HELCO)

Island:	Hawaii
Supplemental Loc. Text:	Not reported
Case Number:	20041115-1423
HID Number:	Not reported
Facility Registry Id:	110000486377
Lead and Program:	HEER EP&R
ER:	No
Units:	Transformer Overflow
Substances:	Mineral Oil
Less Or Greater Than:	Not reported
Numerical Quantity:	5
Units:	Gallons
Activity Type:	Response
Activity Lead:	Mike Cripps
Assignment End Date:	2005-02-08 00:00:00
Result:	SOSC NFA
File Under:	Hawaii Electric Light Co., Inc. (HELCO)

Click this hyperlink while viewing on your computer to access
10 additional HI SPILLS: record(s) in the EDR Site Report.

AIRS:

Facility ID:	0234-01-C
Island:	Hawaii
Mailing Address:	P.O. Box 2750
Locale:	Not reported
Business Phone:	543-4522
Mailing City,St,Zip:	Honolulu, HI 96840-0001
Contact Name:	Karin Kimura
Contact Title:	Senior Environmental Scientist
Description:	Two (2) Boilers, One (1) Combustion Turbine, and Four (4) Diesel EnginesAttachment IIA:This permit encompasses the following equipment and associated appurtenances:UnitDescriptionD-11 2.0 MW Fairbanks Morse Diesel Engine Generator;D-15 2.75 MW General Motors Diesel Engine Generator, model no. EMD 20-645;D-16 2.75 MW General Motors Diesel Engine Generator, model no. EMD 20-645; andD-17 2.75 MW General Motors Diesel Engine Generator, model no. EMD 20-645.Attachment IIB:This permit encompasses the following equipment and associated appurtenances:UnitDescriptionCT-1One (1) 11.6 MW General Electric Combustion Turbine, model no. MS5001DAttachment IIC:This permit encompasses the following equipment and associated appurtenances:UnitDescriptionHill 5 One (1) 14.1 MW Combustion Engineering Boiler, model no. VU 60; andHill 6 One (1) 23 MW Combustion Engineering Boiler, model no. VU 60.

HI Financial Assurance:

Alt Facility ID:	9-600238

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Tank Id: R-3
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-600238
Tank Id: R-2
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-600238
Tank Id: R-1
Tank Status: Permanently Out of Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-600238
Tank Id: 2
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-600238
Tank Id: 1
Tank Status: Currently In Use
FRTYPE: Other
Expiration Date: Not reported

Alt Facility ID: 9-600238
Tank Id: 2
Tank Status: Currently In Use
FRTYPE: Self Insured
Expiration Date: 04/28/2013

Alt Facility ID: 9-600238
Tank Id: R-1
Tank Status: Permanently Out of Use
FRTYPE: Self Insured
Expiration Date: 04/28/2013

Alt Facility ID: 9-600238
Tank Id: R-2
Tank Status: Permanently Out of Use
FRTYPE: Self Insured
Expiration Date: 04/28/2013

Alt Facility ID: 9-600238
Tank Id: R-3
Tank Status: Permanently Out of Use
FRTYPE: Self Insured
Expiration Date: 04/28/2013

Alt Facility ID: 9-600238
Tank Id: 1
Tank Status: Currently In Use
FRTYPE: Self Insured

HELCO KANOELEHUA OPERATIONS CENTER (Continued) **U001236868**

Expiration Date: 04/28/2013

10
WSW
1/4-1/2
0.490 mi.
2585 ft.

SEARS ROEBUCK & COMPANY
111 E PUAINAKO ST
HILO, HI 96720

LUST **U003790356**
UST **N/A**
Financial Assurance

Relative:
Lower

Actual:
80 ft.

LUST:

Facility ID:	9-603106
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	10/31/2002
Release ID:	030002
Project Officer:	Richard Takaba

Facility ID:	9-601834
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	01/04/1998
Release ID:	940040
Project Officer:	Jose Ruiz

UST:

Facility ID:	9-601834
Owner:	SEARS ROEBUCK & COMPANY
Owner Address:	Not reported
Owner City,St,Zip:	Hilo, 96720 96720
Latitude:	19.695475
Longitude:	-155.063444
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	Address Matching

Tank ID:	R-1
Date Installed:	04/01/1985
Tank Status:	**Permanently Out of Use**
Date Closed:	12/13/1993
Tank Capacity:	500
Substance:	Used Oil

Tank ID:	R-M-1
Date Installed:	01/01/1984
Tank Status:	**Permanently Out of Use**
Date Closed:	12/10/1998
Tank Capacity:	300
Substance:	Diesel

HI Financial Assurance:

Alt Facility ID:	9-603106
Tank Id:	R-M-1
Tank Status:	Permanently Out of Use
FRTYPE:	Insurance
Expiration Date:	Not reported

Alt Facility ID:	9-601834
Tank Id:	R-1
Tank Status:	Permanently Out of Use
FRTYPE:	Self Insured

SEARS ROEBUCK & COMPANY (Continued) **U003790356**

Expiration Date: Not reported

11
WNW
1/2-1
0.616 mi.
3250 ft.

HAWAII PEST CONTROL **SHWS** **1006820888**
56 WIWOOLE ST **N/A**
HILO, HI 96720

Relative:
Lower

Actual:
49 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	Unit A
Island:	Hawaii
Environmental Interest:	Hawaii Pest Control
HID Number:	HI0000603266
Facility Registry Identifier:	110013789132
Lead Agency:	HEER
Program:	State
Project Manager:	Steve Mow
Hazard Priority:	High
Potential Hazards And Controls:	Hazard Present
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Unit A
SDAR Environmental Interest Name:	Hawaii Pest Control
HID Number:	HI0000603266
Facility Registry Identifier:	110013789132
Lead Agency:	HEER
Progran Name:	State
Potential Hazard And Controls:	Hazard Present
Priority:	High
Assessment:	Response Necessary
Response:	Response Ongoing
Nature of Contamination:	Found: Organochlorine pesticides
Nature of Residual Contamination:	Not reported
Use Restrictions:	Controls Required to Manage Contamination
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	Not reported
Document Date:	Not reported
Document Number:	Not reported
Document Subject:	Not reported
Project Manager:	Steve Mow
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

12
WNW
1/2-1
0.710 mi.
3750 ft.

HILO MECHANICAL, INC **SHWS** **1006820676**
50 HOLOMUA ST **N/A**
HILO, HI 96720

Relative:
Lower

Actual:
56 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	Not reported
Island:	Hawaii

HILO MECHANICAL, INC (Continued) **1006820676**

Environmental Interest:	Hilo Mechanical, Inc.
HID Number:	Not reported
Facility Registry Identifier:	110013786778
Lead Agency:	Not reported
Program:	State
Project Manager:	Unassigned
Hazard Priority:	NFA
Potential Hazards And Controls:	Hazard Undetermined
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Not reported
SDAR Environmental Interest Name:	Hilo Mechanical, Inc.
HID Number:	Not reported
Facility Registry Identifier:	110013786778
Lead Agency:	Not reported
Progran Name:	State
Potential Hazard And Controls:	Hazard Undetermined
Priority:	NFA
Assessment:	Assessment Ongoing
Response:	Not reported
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Not reported
Use Restrictions:	Undetermined
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action - Type Undetermined
Document Date:	03/23/1995
Document Number:	Not reported
Document Subject:	Not reported
Project Manager:	Unassigned
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

13
WNW
1/2-1
0.724 mi.
3824 ft.

KANOELEHUA INDUSTRIAL WAREHOUSE **SHWS S110061615**
20 POOKELA ST **BROWNFIELDS N/A**
HILO, HI 96720

Relative:
Lower

Actual:
66 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	Kanoelehua Industrial Warehouse
Island:	Hawaii
Environmental Interest:	Kanoelehua Industrial Warehouse
HID Number:	Not reported
Facility Registry Identifier:	Not reported
Lead Agency:	HEER
Program:	Brownfields
Project Manager:	Unassigned
Hazard Priority:	Low
Potential Hazards And Controls:	Hazard Undetermined
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Kanoelehua Industrial Warehouse
SDAR Environmental Interest Name:	Kanoelehua Industrial Warehouse
HID Number:	Not reported
Facility Registry Identifier:	Not reported

KANOELEHUA INDUSTRIAL WAREHOUSE (Continued) **S110061615**

Lead Agency:	HEER
Progran Name:	Brownfields
Potential Hazard And Controls:	Hazard Undetermined
Priority:	Low
Assessment:	Assessment Ongoing
Response:	Not reported
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Not reported
Use Restrictions:	Undetermined
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	Not reported
Document Date:	Not reported
Document Number:	Not reported
Document Subject:	Not reported
Project Manager:	Unassigned
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

BROWNFIELDS:

Program:	Brownfields
Supplemental Location:	Kanoelehua Industrial Warehouse
Island:	Hawaii
Zip Suffix:	Not reported

14
NW
1/2-1
0.834 mi.
4401 ft.

STATIONERS CORPORATION OF HAWAII **SHWS S108009231**
708 KANOELEHUA AVE **SPILLS N/A**
HILO, HI 96720

Relative:
Lower

Actual:
29 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	ESA Limited Phase II Investigation
Island:	Hawaii
Environmental Interest:	Stationers Corporation of Hawaii
HID Number:	Not reported
Facility Registry Identifier:	Not reported
Lead Agency:	HEER
Program:	State
Project Manager:	Unassigned
Hazard Priority:	Not reported
Potential Hazards And Controls:	No Hazard
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	ESA Limited Phase II Investigation
SDAR Environmental Interest Name:	Stationers Corporation of Hawaii
HID Number:	Not reported
Facility Registry Identifier:	Not reported
Lead Agency:	HEER
Progran Name:	State
Potential Hazard And Controls:	No Hazard
Priority:	Not reported
Assessment:	Response Necessary
Response:	Response Complete
Nature of Contamination:	Not reported

STATIONERS CORPORATION OF HAWAII (Continued) **S108009231**

Nature of Residual Contamination:	Not reported
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	12/09/2005
Document Number:	2005-637-CAC
Document Subject:	Review of the Limited Phase II ESA
Project Manager:	Unassigned
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

HI SPILLS:

Island:	Hawaii
Supplemental Loc. Text:	ESA Limited Phase II Investigation
Case Number:	20051123-0823
HID Number:	Not reported
Facility Registry Id:	Not reported
Lead and Program:	HEER EP&R
ER:	No
Units:	Building Materials Survey - Typewriter Cleaning Station
Substances:	Unknown
Less Or Greater Than:	Not reported
Numerical Quantity:	Not reported
Units:	Not reported
Activity Type:	Response
Activity Lead:	Curtis Martin
Assignment End Date:	2005-11-23 00:00:00
Result:	SOSC NFA
File Under:	Stationers Corporation of Hawaii

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15 **HILO SODA WORKS** **SHWS U003155315**
WNW **270 E KAWILI ST** **LUST N/A**
1/2-1 **HILO, HI 96720** **UST**
0.872 mi.
4605 ft.

Relative:
Lower

Actual:
45 ft.

SHWS:

Organization:	Not reported
Supplemental Location:	Not reported
Island:	Hawaii
Environmental Interest:	Hilo Soda Works Tank Closure
HID Number:	Not reported
Facility Registry Identifier:	110013786803
Lead Agency:	HEER
Program:	State
Project Manager:	Unassigned
Hazard Priority:	NFA
Potential Hazards And Controls:	No Hazard
Organization:	Not reported
Island:	Hawaii
Supplemental Location Text:	Not reported
SDAR Environmental Interest Name:	Hilo Soda Works Tank Closure
HID Number:	Not reported
Facility Registry Identifier:	110013786803
Lead Agency:	HEER

HILO SODA WORKS (Continued) **U003155315**

Progran Name:	State
Potential Hazard And Controls:	No Hazard
Priority:	NFA
Assessment:	Response Necessary
Response:	Response Complete
Nature of Contamination:	Not reported
Nature of Residual Contamination:	Diesel and Gasoline USTs
Use Restrictions:	No Hazard Present For Unrestricted Residential Use
Engineering Control:	Not reported
Description of Restrictions:	Not reported
Institutional Control:	Not reported
Within Designated Areawide Contamination:	Not reported
Site Closure Type:	No Further Action Letter - Unrestricted Residential Use
Document Date:	09/15/1997
Document Number:	1997-340-RK
Document Subject:	NFA for Hilo Soda Works site
Project Manager:	Unassigned
Contact Information:	(808) 586-4249 919 Ala Moana Blvd, Honolulu, HI 96814

LUST:

Facility ID:	9-603256
Facility Status:	Site Cleanup Completed (NFA)
Facility Status Date:	07/31/1997
Release ID:	970025
Project Officer:	Jose Ruiz

UST:

Facility ID:	9-603256
Owner:	HILO SODA WORKS
Owner Address:	145 KEOULA ST
Owner City,St,Zip:	Hilo, 96720 96720
Latitude:	19.705588
Longitude:	-155.068516
Horizontal Reference Datum Name:	NAD83
Horizontal Collection Method Name:	Address Matching
Tank ID:	R-1
Date Installed:	01/01/1970
Tank Status:	**Permanently Out of Use**
Date Closed:	12/04/1996
Tank Capacity:	550
Substance:	Diesel
Tank ID:	R-2
Date Installed:	01/01/1964
Tank Status:	**Permanently Out of Use**
Date Closed:	12/04/1996
Tank Capacity:	550
Substance:	Gasoline

Count: 3 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HILO	S108008478	ARMY AVIATION SUPPORT FACILITY #2	HILO INTERNATIONAL AIRPORT BUI	96720	SHWS
HILO	S107022566	HILO JUDICIARY CENTER PROJECT	KILAUEA AVE	96720	SHWS, ENG CONTROLS, INST CONT
HILO	S110061564	HILO SAFEWAY/TARGET	MAKAALA ST X RAILROAD AVE	96720	SHWS, ENG CONTROLS, INST CONT

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
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
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
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: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
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: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
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: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
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: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
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: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
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: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 36

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
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: 09/17/2012
Date Data Arrived at EDR: 04/03/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 37

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 06/04/2015
Date Data Arrived at EDR: 06/05/2015
Date Made Active in Reports: 07/02/2015
Number of Days to Update: 27

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
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: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/03/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 24

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
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: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

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: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
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: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
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: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
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: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

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: 06/04/2015
Date Data Arrived at EDR: 06/05/2015
Date Made Active in Reports: 07/02/2015
Number of Days to Update: 27
Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Semi-Annually

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: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

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: 05/06/2015
Date Data Arrived at EDR: 05/19/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
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: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

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: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

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: 04/30/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 27

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
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: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

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: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

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: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

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: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 36

Source: Department of Health
Telephone: 404-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 36

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

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

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: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 36
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 36
Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are 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. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/23/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 70
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/24/2015
Next Scheduled EDR Contact: 10/05/2015
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: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
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: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
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: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
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: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
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: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
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: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

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: 12/02/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/28/2015
Number of Days to Update: 37

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 03/10/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/11/2013
Number of Days to Update: 39

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

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.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
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: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
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: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
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: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
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: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
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: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

US 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: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/14/2015
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: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
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 site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
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: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
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: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
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: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
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: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
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: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
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: 03/31/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 09/21/2015
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: 04/07/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
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

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

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: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Biennially

UIC: Underground Injection Wells Listing

A listing of underground injection well locations.

Date of Government Version: 02/07/2013
Date Data Arrived at EDR: 02/12/2013
Date Made Active in Reports: 04/09/2013
Number of Days to Update: 56

Source: Department of Health
Telephone: 808-586-4258
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

DRYCLEANERS: Permitted Drycleaner Facility Listing
A listing of permitted drycleaner facilities in the state.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 01/09/2015
Date Made Active in Reports: 02/11/2015
Number of Days to Update: 33

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 04/06/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

AIRS: List of Permitted Facilities
A listing of permitted facilities in the state.

Date of Government Version: 04/08/2015
Date Data Arrived at EDR: 04/10/2015
Date Made Active in Reports: 04/30/2015
Number of Days to Update: 20

Source: Department of Health
Telephone: 808-586-4200
Last EDR Contact: 04/06/2015
Next Scheduled EDR Contact: 07/20/2015
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: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
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: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
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: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/22/2015
Data Release Frequency: Annually

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: 06/10/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/02/2015
Number of Days to Update: 16

Source: Department of Health
Telephone: 808-586-4226
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plant 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: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

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: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: N/A

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: 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

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

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: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/17/2014
Number of Days to Update: 200

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Health in Hawaii.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/08/2014
Number of Days to Update: 191

Source: Department of Health
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

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
Source: PennWell Corporation
Telephone: 281-546-1505
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

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.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 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

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

DHHL HILO PROPERTIES 3 2-1-025 6,7,47,48
AUWAE RD
HILO, HI 96720

TARGET PROPERTY COORDINATES

Latitude (North):	19.6997 - 19° 41' 58.92''
Longitude (West):	155.0527 - 155° 3' 9.72''
Universal Tranverse Mercator:	Zone 5
UTM X (Meters):	284833.5
UTM Y (Meters):	2179420.5
Elevation:	93 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	19155-F1 HILO, 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 principal 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).

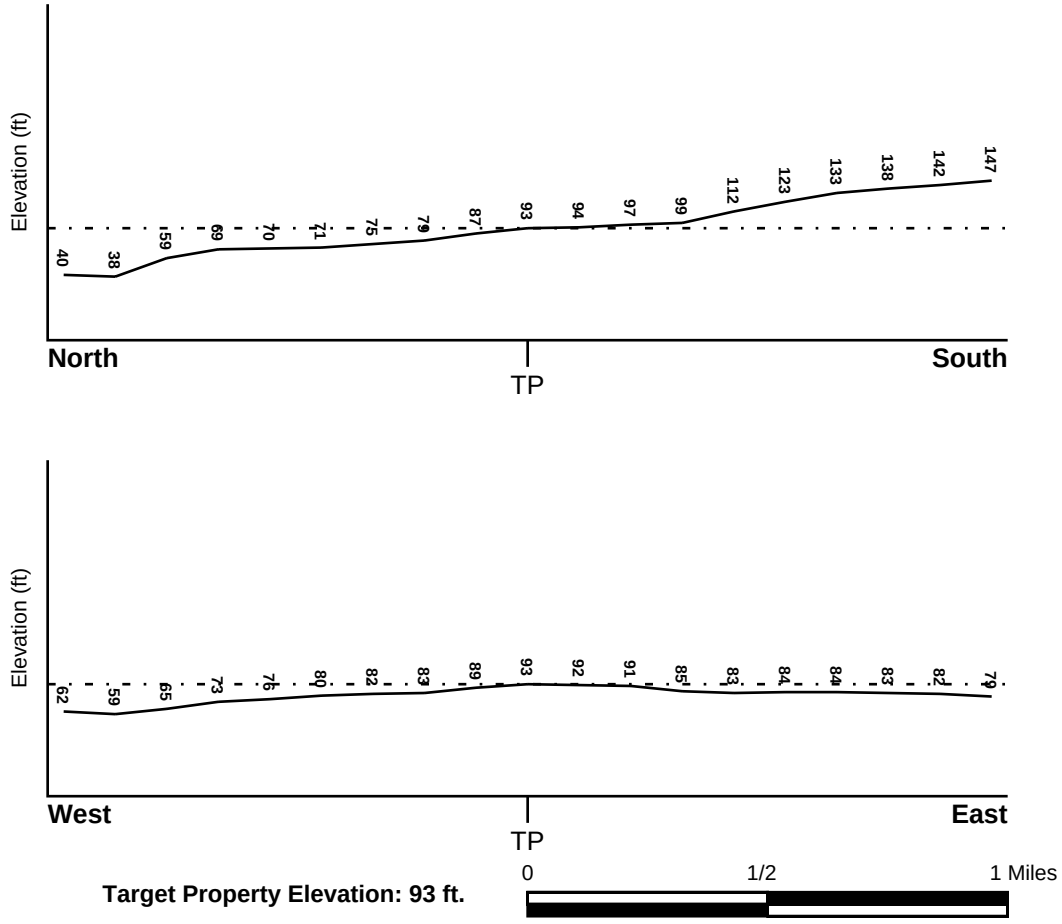
TOPOGRAPHIC INFORMATION

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 NNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 93 ft.

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

Target Property County	FEMA Flood Electronic Data
HAWAII, HI	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 1551660885C - FEMA Q3 Flood data

Additional Panels in search area: 1551660880C - FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
HILO	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	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

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

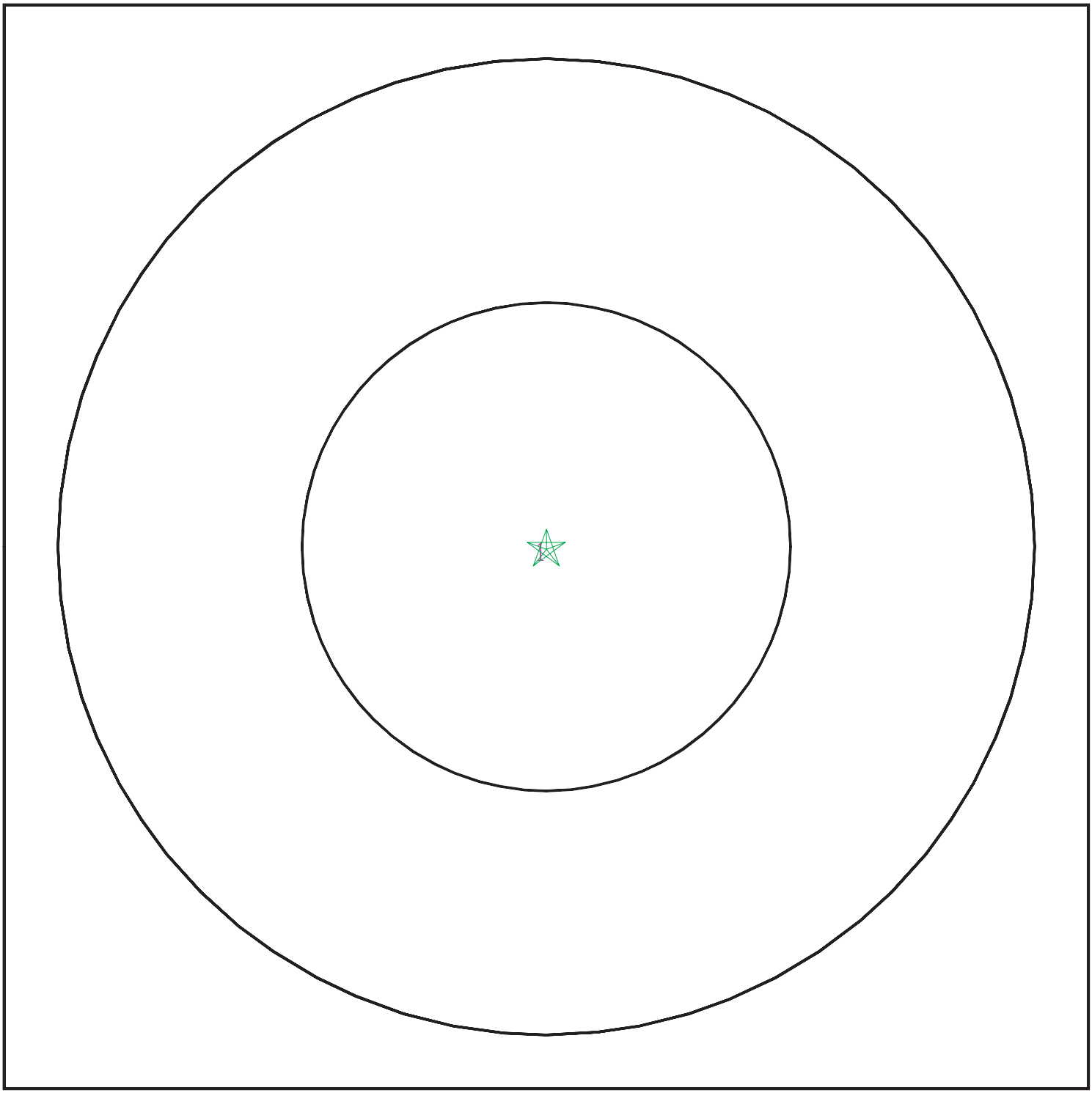
Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

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 - 4315061.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	DHHL Hilo Properties 3 2-1-025 6,7,47,48	CLIENT:	Element Environmental , LLC
ADDRESS:	AUWAE RD Hilo HI 96720	CONTACT:	Angela Peltier
LAT/LONG:	19.6997 / 155.0527	INQUIRY #:	4315061.2s
		DATE:	July 06, 2015 12:11 pm

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: Papai

Soil Surface Texture: extremely stony muck

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 152 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	extremely stony muck	A-8	Highly organic soils, Peat.	Max: 141 Min: 14	Max: 6.9 Min: 5.5
2	7 inches	59 inches	extremely cobbly material	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel.	Max: 700 Min: 141.14	Max: Min:

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.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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
A2	USGS40000268559	1/4 - 1/2 Mile WNW
B4	USGS40000268560	1/2 - 1 Mile WNW
B6	USGS40000268567	1/2 - 1 Mile WNW
B8	USGS40000268561	1/2 - 1 Mile WNW
B10	USGS40000268568	1/2 - 1 Mile WNW
B11	USGS40000268562	1/2 - 1 Mile WNW
B12	USGS40000268570	1/2 - 1 Mile WNW
B14	USGS40000268571	1/2 - 1 Mile WNW
B16	USGS40000268564	1/2 - 1 Mile WNW
C19	USGS40000268565	1/2 - 1 Mile WNW
D20	USGS40000268563	1/2 - 1 Mile WNW
C22	USGS40000268569	1/2 - 1 Mile WNW
D24	USGS40000268574	1/2 - 1 Mile NW
D26	USGS40000268572	1/2 - 1 Mile WNW
D28	USGS40000268573	1/2 - 1 Mile WNW
E30	USGS40000268575	1/2 - 1 Mile NE
H36	USGS40000268578	1/2 - 1 Mile NE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

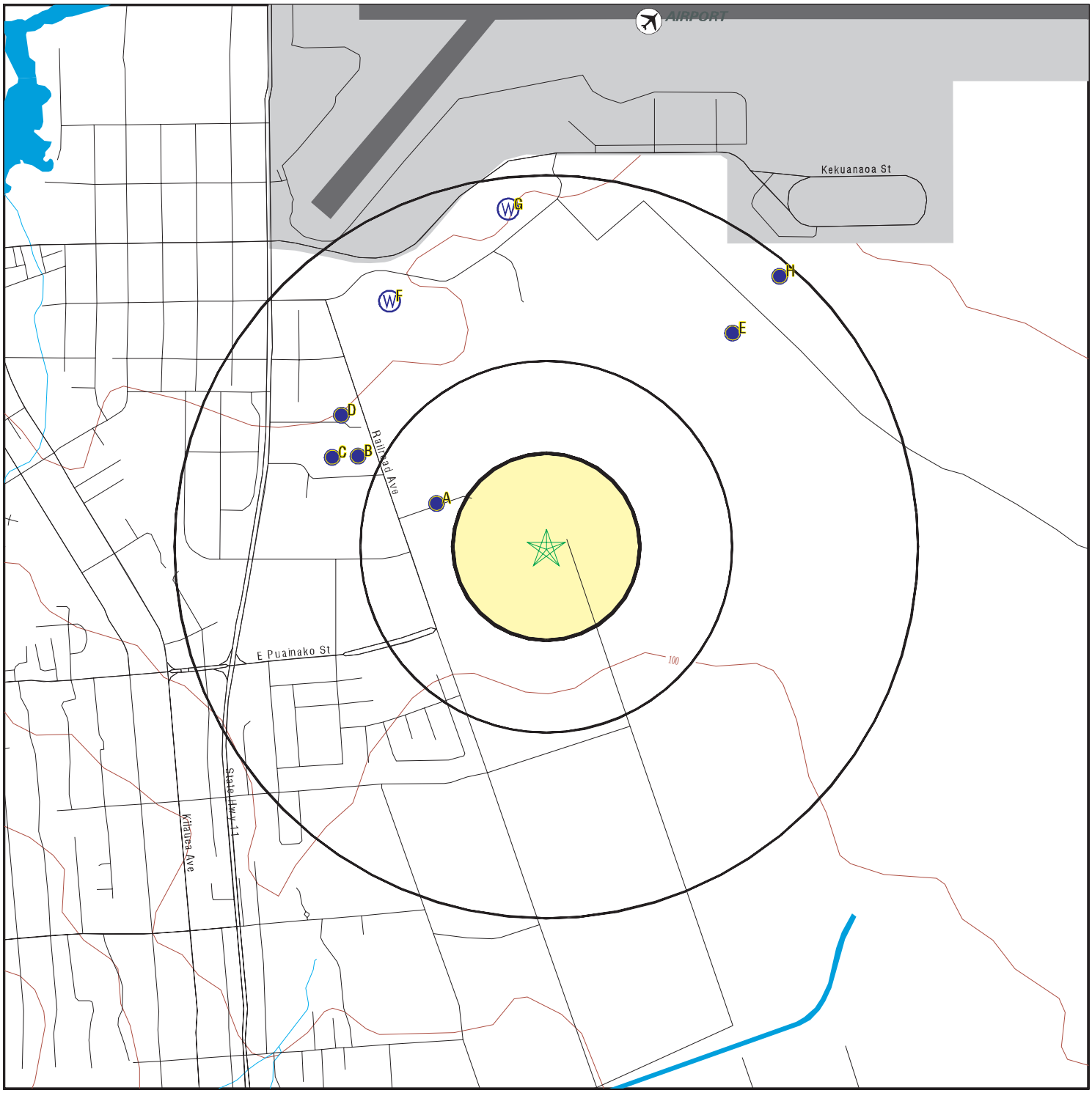
MAP ID	WELL ID	LOCATION FROM TP
A1	HI9000000004302	1/4 - 1/2 Mile WNW
B3	HI9000000004299	1/2 - 1 Mile WNW
B5	HI9000000004298	1/2 - 1 Mile WNW
B7	HI9000000004297	1/2 - 1 Mile WNW
B9	HI9000000004296	1/2 - 1 Mile WNW
B13	HI9000000004293	1/2 - 1 Mile WNW
B15	HI9000000004292	1/2 - 1 Mile WNW
B17	HI9000000004294	1/2 - 1 Mile WNW
C18	HI9000000004291	1/2 - 1 Mile WNW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
C21	HI9000000004289	1/2 - 1 Mile WNW
D23	HI9000000004290	1/2 - 1 Mile NW
D25	HI9000000004295	1/2 - 1 Mile WNW
D27	HI9000000004288	1/2 - 1 Mile WNW
E29	HI9000000004287	1/2 - 1 Mile NE
F31	HI9000000004301	1/2 - 1 Mile NNW
F32	HI9000000004300	1/2 - 1 Mile NW
G33	HI9000000004303	1/2 - 1 Mile North
G34	HI9000000004304	1/2 - 1 Mile North
H35	HI9000000004286	1/2 - 1 Mile NE

PHYSICAL SETTING SOURCE MAP - 4315061.2s



County Boundary
Major Roads
Contour Lines
Airports
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location

N

SITE NAME:	DHHL Hilo Properties 3 2-1-025 6,7,47,48	CLIENT:	Element Environmental , LLC
ADDRESS:	AUWAE RD Hilo HI 96720	CONTACT:	Angela Peltier
LAT/LONG:	19.6997 / 155.0527	INQUIRY #:	4315061.2s
		DATE:	July 06, 2015 12:11 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
WNW
1/4 - 1/2 Mile
Lower

HI WELLS **HI9000000004302**

Wid:	8-4203-015	Island:	Hawaii
Well name:	Waiakea	Old name:	Not Reported
Yr drilled:	1987		
Driller:	Roscoe Moss Hawaii Inc		
Quad map:	67		
Long83dd:	-155.057222		
Lat83dd:	19.701389		
Gps:	0	Utm:	-1
Owner user:	Hawaiian Host, Inc.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	8	Ground el:	81
Well depth:	130		
Solid case:	80	Perf case:	100
Use:	IND - Industrial		
Use year:	Not Reported		
Init head:	8.75	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	21		
Test date:	12/11/1987	Test gpm:	250
Test ddown:	0	Test chlor:	21
Test temp:	19.4	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-49
Bot solid:	1	Bot perf:	-19
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-DEC-87
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004302

A2
WNW
1/4 - 1/2 Mile
Lower

FED USGS **USGS40000268559**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194216155033601		
Monloc name:	8-4203-15 WAIAKEA		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7014066
Longitude:	-155.0572307	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	80.9
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19871208	Welldepth:	130
Welldepth units:	ft	Wellholedepth:	130
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1987-12-11	72.	

B3
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004299**

Wid:	8-4203-012	Island:	Hawaii
Well name:	HELCO Kan 6-4	Old name:	Not Reported
Yr drilled:	1974		
Driller:	Water Resources International, Inc.		
Quad map:	67		
Long83dd:	-155.06		
Lat83dd:	19.703056		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	30	Ground el:	49
Well depth:	210		
Solid case:	80	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	6	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	6000
Test ddown:	0.1	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	6250		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-161
Bot solid:	-31	Bot perf:	Not Reported
Spec capac:	60000		

Pump mgd:	9		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-74
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004299

B4
WNW **FED USGS** **USGS40000268560**
1/2 - 1 Mile
Lower

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155034601		
Monloc name:	8-4203-14 W6-D		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7030732
Longitude:	-155.0600085	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	55.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19740601	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	210
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-04	49.07	

B5
WNW **HI WELLS** **HI9000000004298**
1/2 - 1 Mile
Lower

Wid:	8-4203-011	Island:	Hawaii
Well name:	Hill Unit 6C	Old name:	Not Reported
Yr drilled:	1974		
Driller:	Water Resources International, Inc.		
Quad map:	67		
Long83dd:	-155.06		
Lat83dd:	19.703333		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		

Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	72	Ground el:	43
Well depth:	210		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	6	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	5800
Test ddown:	4.3	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-167
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	1349		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-74
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004298

B6
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268567**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194223155034601		
Monloc name:	8-4203-13 W6-C		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7033509
Longitude:	-155.0600085	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	55.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19740501	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	210
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-04	49.04	

B7
WNW **HI WELLS** **HI9000000004297**
1/2 - 1 Mile
Lower

Wid:	8-4203-010	Island:	Hawaii
Well name:	Hill Unit 6B	Old name:	Not Reported
Yr drilled:	1973		
Driller:	Water Resources International, Inc.		
Quad map:	67		
Long83dd:	-155.060278		
Lat83dd:	19.703056		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	32	Ground el:	55
Well depth:	210		
Solid case:	75	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	6	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	6100
Test ddown:	3.5	Test chlor:	Not Reported
Test temp:	20	Test unit:	C
Pump gpm:	6250		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-155
Bot solid:	-20	Bot perf:	Not Reported
Spec capac:	1743		
Pump mgd:	9		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-73
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004297

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

B8
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268561**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155034701		
Monloc name:	8-4203-10 W6-B		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7030732
Longitude:	-155.0602863	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	55.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19731001	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	210
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-04	49.05	

B9
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004296**

Wid:	8-4203-009	Island:	Hawaii
Well name:	Hill Unit 6A	Old name:	Not Reported
Yr drilled:	1974		
Driller:	Water Resources International, Inc.		
Quad map:	67		
Long83dd:	-155.060278		
Lat83dd:	19.703333		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	32	Ground el:	55
Well depth:	210		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	6	Init head2:	Not Reported
Init head3:	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	Test unit:	Not Reported
Pump gpm:	6250		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-155
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	9		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-74
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004296

B10
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268568**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194223155034701		
Monloc name:	8-4203-09 LYMAN FIELD		
Monloc type:	Well		
Monloc desc:	FILE INFO FROM STATE COMPUTER PRINTOUT		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7033509
Longitude:	-155.0602863	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	55.
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1974	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	210
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B11
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268562**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155034801		
Monloc name:	8-4203-06 W8-2B		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7030732
Longitude:	-155.060564	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	50.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Hawaii volcanic-rock aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19640429	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B12
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268570**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194224155034701		
Monloc name:	8-4203-12 W6-A		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7036287
Longitude:	-155.0602863	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	55.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19740401	Welldepth:	210
Welldepth units:	ft	Wellholedepth:	210
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1974-10-04	49.07	

B13
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004293**

Wid:	8-4203-006	Island:	Hawaii
Well name:	Hill Unit 5B	Old name:	Not Reported
Yr drilled:	1965		
Driller:	Layne International		
Quad map:	67		
Long83dd:	-155.060833		
Lat83dd:	19.703333		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	29	Ground el:	50
Well depth:	200		
Solid case:	54	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	6.5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	6500
Test ddown:	6.5	Test chlor:	Not Reported
Test temp:	19.9	Test unit:	C
Pump gpm:	4500		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-150
Bot solid:	-4	Bot perf:	Not Reported
Spec capac:	1000		
Pump mgd:	6.48		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-65
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004293

B14
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268571**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194224155035001		
Monloc name:	8-4203-07 W8-2C		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7033509
Longitude:	-155.0608419	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	50.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19650427	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B15
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004292**

Wid:	8-4203-005	Island:	Hawaii
Well name:	Hill Unit 5A	Old name:	Not Reported
Yr drilled:	1965		
Driller:	Layne International		
Quad map:	67		
Long83dd:	-155.061111		
Lat83dd:	19.703056		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	29	Ground el:	50
Well depth:	200		
Solid case:	54	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	20	Test unit:	C
Pump gpm:	4500		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-150
Bot solid:	-4	Bot perf:	Not Reported
Spec capac:	Not Reported		

Pump mgd:	6.48		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-65
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004292

B16
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268564**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155035001		
Monloc name:	8-4203-05 W8-2A		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7030732
Longitude:	-155.0611196	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	50.00
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19640429	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	200
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

B17
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004294**

Wid:	8-4203-007	Island:	Hawaii
Well name:	Hill Unit 5C	Old name:	Not Reported
Yr drilled:	1965		
Driller:	Layne International		
Quad map:	67		
Long83dd:	-155.061111		
Lat83dd:	19.703611		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		

Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	29	Ground el:	50
Well depth:	585		
Solid case:	200	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	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	Test unit:	Not Reported
Pump gpm:	4500		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-535
Bot solid:	-150	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	6.48		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-2-058:019
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-65
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004294

C18
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004291**

Wid:	8-4203-004	Island:	Hawaii
Well name:	Waiakea 4	Old name:	Not Reported
Yr drilled:	1961		
Driller:	Samson & Zerbe		
Quad map:	67		
Long83dd:	-155.061389		
Lat83dd:	19.703056		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	2-Aug	Well type:	PER
Casing dia:	16	Ground el:	47
Well depth:	201		
Solid case:	60	Perf case:	Not Reported
Use:	ABN - Sealed		
Use year:	Not Reported		
Init head:	7.06	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	22		
Test date:	11/11/1961	Test gpm:	2500

Test ddown:	0.2	Test chlor:	40
Test temp:	20	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-154
Bot solid:	-13	Bot perf:	Not Reported
Spec capac:	12500		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-NOV-61
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004291

C19
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268565**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155035101		
Monloc name:	8-4203-04 W8-2		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7030732
Longitude:	-155.0613974	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	47.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19610101	Welldepth:	201
Welldepth units:	ft	Wellholedepth:	201
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1973-07-16	40.28	

D20
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268563**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194222155034802		
Monloc name:	8-4203.01B -09/W6		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.704462
Longitude:	-155.0608419	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	41.00
Vert measure units:	feet	Vertacc measure val:	.1
Vert accmeasure units:	feet		
Vertcollection method:	Level or other surveying method		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19731001	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1973-11-05	36.24	

C21
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004289**

Wid:	8-4203-002	Island:	Hawaii
Well name:	Waiakea TH 2	Old name:	Not Reported
Yr drilled:	1960		
Driller:	Samson & Zerbe		
Quad map:	67		
Long83dd:	-155.061667		
Lat83dd:	19.703333		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	5	Ground el:	41
Well depth:	55		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	9.1	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	6		
Test date:	Not Reported	Test gpm:	50

Test ddown:	0.6	Test chlor:	6
Test temp:	21.1	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-14
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	83		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-60
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004289

C22
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268569**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194223155035201		
Monloc name:	8-4203-02 WAIAKEA TH17		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7033509
Longitude:	-155.0616752	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	41.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19600101	Welldepth:	55
Welldepth units:	ft	Wellholedepth:	55
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D23
NW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004290**

Wid:	8-4203-003	Island:	Hawaii
Well name:	Waiakea TH 3	Old name:	Not Reported
Yr drilled:	1960		
Driller:	Samson & Zerbe		
Quad map:	67		
Long83dd:	-155.060556		
Lat83dd:	19.705278		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	5	Ground el:	41
Well depth:	56		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	ABN - Lost		
Use year:	Not Reported		
Init head:	5.8	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	4		
Test date:	Not Reported	Test gpm:	50
Test ddown:	0.2	Test chlor:	8
Test temp:	21.1	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-15
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	250		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-60
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004290

D24
NW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268574**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194230155034801		
Monloc name:	8-4203-03 WAIAKEA TH18		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7052953
Longitude:	-155.060564	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	41.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19600101	Welldepth:	56
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

D25
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004295**

Wid:	8-4203-008	Island:	Hawaii
Well name:	Kanoelehua Disp	Old name:	Not Reported
Yr drilled:	1965		
Driller:	Layne International		
Quad map:	67		
Long83dd:	-155.061111		
Lat83dd:	19.704722		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	192	Ground el:	39
Well depth:	33		
Solid case:	8	Perf case:	Not Reported
Use:	IND - Geothermal, Thermoelectric Cooling, Power De		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	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	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	6
Bot solid:	31	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-65
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004295

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

D26
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268572**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194228155035001		
Monloc name:	8-4203.01A -08		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7047397
Longitude:	-155.0611197	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	39.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19650401	Welldepth:	33
Welldepth units:	ft	Wellholedepth:	33
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

D27
WNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004288**

Wid:	8-4203-001	Island:	Hawaii
Well name:	Waiakea TH 1	Old name:	Not Reported
Yr drilled:	1960		
Driller:	Samson & Zerbe		
Quad map:	67		
Long83dd:	-155.061944		
Lat83dd:	19.704722		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	5	Ground el:	40
Well depth:	54		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	6.7	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	4		
Test date:	Not Reported	Test gpm:	36

Test ddown:	1	Test chlor:	6
Test temp:	21.1	Test unit:	C
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-14
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	36		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-60
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004288

D28
WNW
1/2 - 1 Mile
Lower

FED USGS **USGS40000268573**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194228155035301		
Monloc name:	8-4203-01 WAIAKEA TH16		
Monloc type:	Well: Test hole not completed as a well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7047397
Longitude:	-155.061953	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	40.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19600101	Welldepth:	54
Welldepth units:	ft	Wellholedepth:	54
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

E29
NE
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004287**

Wid:	8-4202-002	Island:	Hawaii
Well name:	Hilo Airport 2	Old name:	Not Reported
Yr drilled:	1944		
Driller:	Curtis Wong (Naval Facilities Engineering Command Hawaii, Asset Management, NAVFAC Hawaii)		
Quad map:	67		
Long83dd:	-155.045		
Lat83dd:	19.708056		
Gps:	0	Utm:	-1
Owner user:	Hawaii Electric Light Co., Inc., HELCO		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	PER
Casing dia:	Not Reported	Ground el:	71
Well depth:	55		
Solid case:	15	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	5	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	1000
Test ddown:	1	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	QKL		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	16
Bot solid:	56	Bot perf:	Not Reported
Spec capac:	1000		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-1-012:131
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-44
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004287

E30
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40000268575**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194240155025201		
Monloc name:	8-4202-02 W8		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.708073
Longitude:	-155.0450087	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	71.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	55
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

F31
NNW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004301**

Wid:	8-4203-014	Island:	Hawaii
Well name:	Glover Quarry B	Old name:	Not Reported
Yr drilled:	1948		
Driller:	Jas. W. Glover, Ltd.		
Quad map:	67		
Long83dd:	-155.058889		
Lat83dd:	19.709444		
Gps:	0	Utm:	-1
Owner user:	Jas. W. Glover, Ltd.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	72	Ground el:	23
Well depth:	25		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IND - Mining, Dust Control		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	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	Test unit:	Not Reported
Pump gpm:	350		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	1984		
Draft yr:	Not Reported	Bot hole:	-2
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	.504		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004301

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

F32
NW
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004300**

Wid:	8-4203-013	Island:	Hawaii
Well name:	Glover Quarry A	Old name:	Not Reported
Yr drilled:	1948		
Driller:	Jas. W. Glover, Ltd.		
Quad map:	67		
Long83dd:	-155.059444		
Lat83dd:	19.709167		
Gps:	0	Utm:	-1
Owner user:	Jas. W. Glover, Ltd.		
Land owner:	Not Reported		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	DUG
Casing dia:	72	Ground el:	23
Well depth:	25		
Solid case:	Not Reported	Perf case:	Not Reported
Use:	IND - Mining, Dust Control		
Use year:	Not Reported		
Init head:	Not Reported	Init head2:	Not Reported
Init head3:	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	Test unit:	Not Reported
Pump gpm:	600		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	1984		
Draft yr:	Not Reported	Bot hole:	-2
Bot solid:	Not Reported	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	.864		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	Not Reported
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-48
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004300

G33
North
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004303**

Wid:	8-4203-016	Island:	Hawaii
Well name:	HSDP 2 Deep	Old name:	Not Reported
Yr drilled:	1999		
Driller:	Not Reported		
Quad map:	0		
Long83dd:	-155.054303		
Lat83dd:	19.712558		
Gps:	0	Utm:	0
Owner user:	University of Hawaii Hilo, UHH		
Land owner:	Land Division Oahu, DLNR-LD		

Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	Not Reported
Casing dia:	9.625	Ground el:	28
Well depth:	10201		
Solid case:	2000	Perf case:	Not Reported
Use:	OBS - Deep (through transition zone)		
Use year:	Not Reported		
Init head:	13	Init head2:	50
Init head3:	13		
Init cl:	0		
Test date:	Not Reported	Test gpm:	Not Reported
Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	F
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Not Reported		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-10173
Bot solid:	-1972	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-1-012:024
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	30-JUL-03
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004303

G34
North
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004304**

Wid:	8-4203-017	Island:	Hawaii
Well name:	HSDP 3	Old name:	Not Reported
Yr drilled:	1999		
Driller:	DeLima's Drilling, Inc.		
Quad map:	0		
Long83dd:	-155.054236		
Lat83dd:	19.713261		
Gps:	0	Utm:	0
Owner user:	University of Hawaii Manoa, UHM		
Land owner:	Land Division Oahu, DLNR-LD		
Pump insta:	Not Reported		
Old number:	Not Reported	Well type:	ROT
Casing dia:	Not Reported	Ground el:	29.03
Well depth:	38		
Solid case:	16	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	2	Init head2:	2
Init head3:	2		
Init cl:	8.6		
Test date:	Not Reported	Test gpm:	Not Reported

Test ddown:	Not Reported	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	67	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Qk3		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-8.97
Bot solid:	13.03	Bot perf:	Not Reported
Spec capac:	Not Reported		
Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-1-012:024
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	12-FEB-14
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004304

H35
NE
1/2 - 1 Mile
Lower

HI WELLS **HI9000000004286**

Wid:	8-4202-001	Island:	Hawaii
Well name:	Hilo Airport Well [NIU]	Old name:	Hilo Airport 1
Yr drilled:	1944		
Driller:	Curtis Wong (Naval Facilities Engineering Command Hawaii, Asset Management, NAVFAC Hawaii)		
Quad map:	67		
Long83dd:	-155.043056		
Lat83dd:	19.710278		
Gps:	0	Utm:	-1
Owner user:	Department of Water Supply Hawaii - Hilo, HDWS		
Land owner:	National Guard & Civil Defense		
Pump insta:	Not Reported		
Old number:	7-	Well type:	PER
Casing dia:	16	Ground el:	59
Well depth:	76		
Solid case:	15	Perf case:	Not Reported
Use:	UNU - Unused		
Use year:	Not Reported		
Init head:	4	Init head2:	Not Reported
Init head3:	Not Reported		
Init cl:	0		
Test date:	Not Reported	Test gpm:	900
Test ddown:	14	Test chlor:	Not Reported
Test temp:	Not Reported	Test unit:	Not Reported
Pump gpm:	0		
Draft mgy:	Not Reported	Head feet:	Not Reported
Max chlor:	Not Reported	Min chlor:	Not Reported
Geology:	Qk3		
Pump yr:	0		
Draft yr:	Not Reported	Bot hole:	-17
Bot solid:	44	Bot perf:	Not Reported
Spec capac:	64		

Pump mgd:	0		
Draft mgd:	Not Reported	Pump elev:	Not Reported
Pump depth:	Not Reported	Tmk:	(3) 2-1-012:003
Aqui code:	80401		
Latest hd:	Not Reported	Wcr:	01-JAN-44
Pir:	Not Reported		
Surveyor:	Not Reported		
T:	Not Reported	Site id:	HI9000000004286

H36
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40000268578**

Org. Identifier:	USGS-HI		
Formal name:	USGS Hawaii Water Science Center		
Monloc Identifier:	USGS-194248155024501		
Monloc name:	8-4202-01 W7		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	20010000	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	19.7102952
Longitude:	-155.0430643	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	59.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	HILOCAL	Countrycode:	US
Aquifername:	Not Reported		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19440101	Welldepth:	76
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for HAWAII 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: 96720

Number of sites tested: 43

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.112 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	-0.106 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, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} 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

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

The EDR Aerial Photo Decade Package

DHHL Hilo Properties 3 2-1-025 6,7,47,48
AUWAE RD
Hilo, HI 96720

Inquiry Number: 4315061.9
June 04, 2015

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

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.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography June 04, 2015

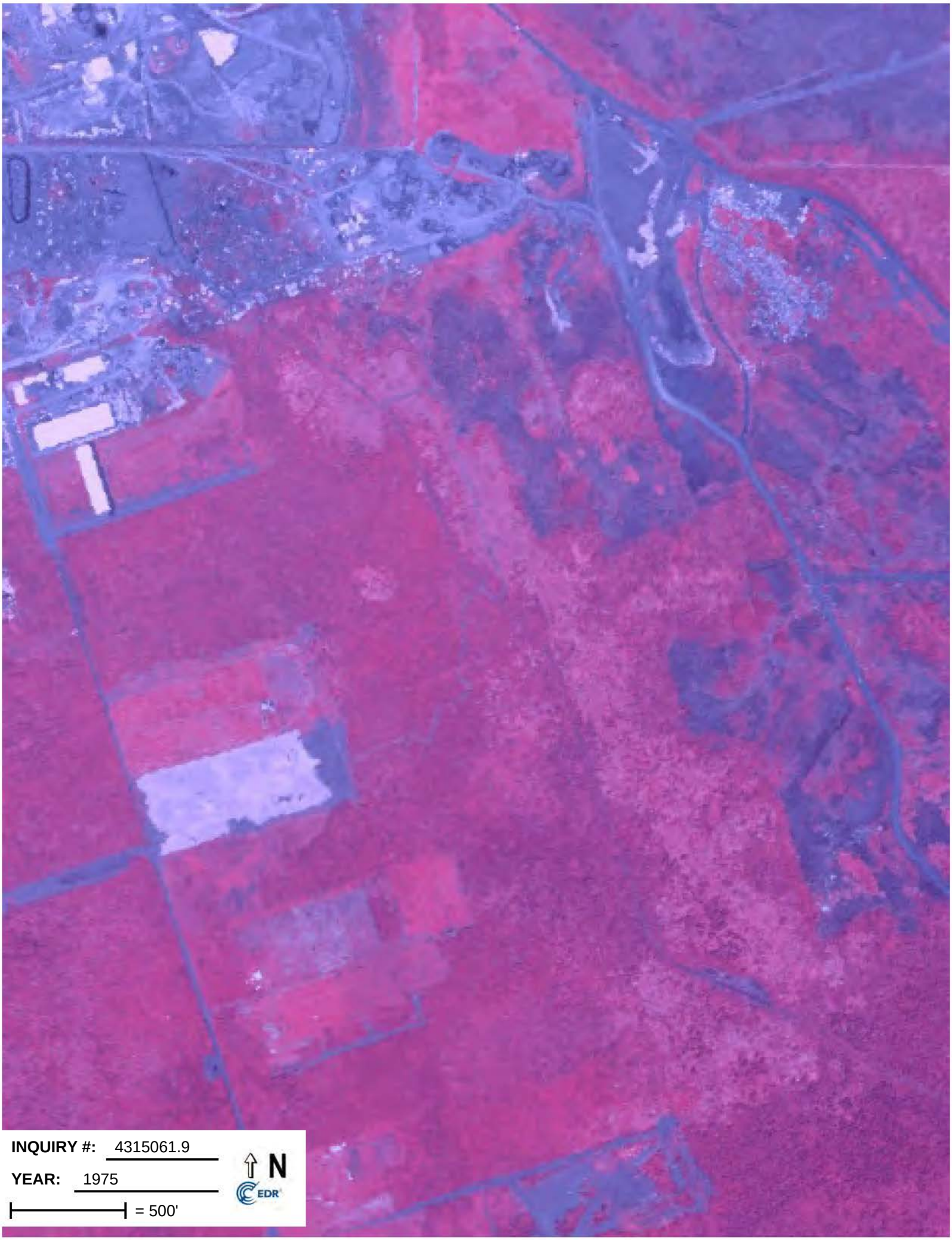
Target Property:

AUWAE RD

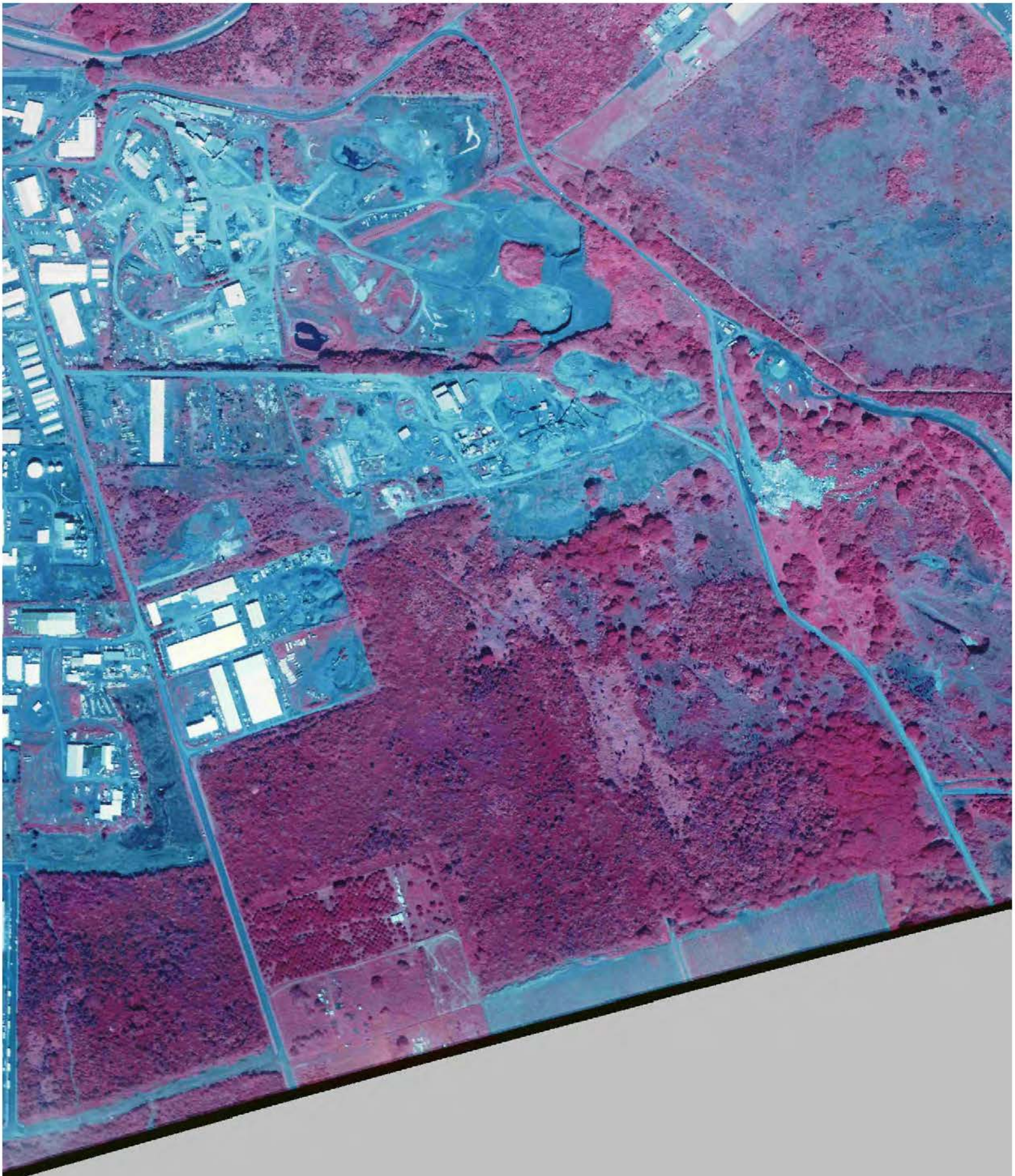
Hilo, HI 96720

Year	***Scale***	***Details***	***Source***
1954	Aerial Photograph. Scale: 1"=750'	Flight Date: April 10, 1954	EDR
1975	Aerial Photograph. Scale: 1"=500'	Flight Date: July 17, 1975	USGS
1977	Aerial Photograph. Scale: 1"=500'	Flight Date: January 03, 1977	USGS
1988	Aerial Photograph. Scale: 1"=500'	Flight Date: October 01, 1988	EDR
1992	Aerial Photograph. Scale: 1"=500'	Flight Date: September 23, 1992	USGS


INQUIRY #: 4315061.9
YEAR: 1954
= 750'
N
EDR


INQUIRY #: 4315061.9
YEAR: 1975
= 500'
N
EDR


INQUIRY #: 4315061.9
YEAR: 1977
= 500'
N
EDR



INQUIRY #: 4315061.9

YEAR: 1988

= 500'

N

EDR


INQUIRY #: 4315061.9
YEAR: 1992
= 500'
N
EDR

Certified Sanborn® Map Report

DHHL Hilo Properties 3 2-1-025 6,7,47,48
AUWAE RD
Hilo, HI 96720

Inquiry Number: 4315061.3
June 03, 2015

Certified Sanborn® Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

6/03/15

Site Name:
DHHL Hilo Properties 3 2-1-
AUWAE RD
Hilo, HI 96720

Client Name:
Element Environmental , LLC
98-030 Hekaha Street
Aiea, HI 96701-0000

EDR Inquiry # 4315061.3

Contact: Angela Peltier

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Element Environmental , LLC were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Site Name: DHHL Hilo Properties 3 2-1-025 6,7,47,48
Address: AUWAE RD
City, State, Zip: Hilo, HI 96720
Cross Street:
P.O. # 150024
Project: 150024 DHHL Phase I ESA
Certification # 59B0-49F3-B032

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results
Certification # 59B0-49F3-B032

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others 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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Element Environmental , LLC (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

EDR Historical Topographic Map Report

DHHL Hilo Properties 3 2-1-025 6,7,47,48
AUWAE RD
Hilo, HI 96720

Inquiry Number: 4315061.4
June 04, 2015

EDR Historical Topographic Map Report

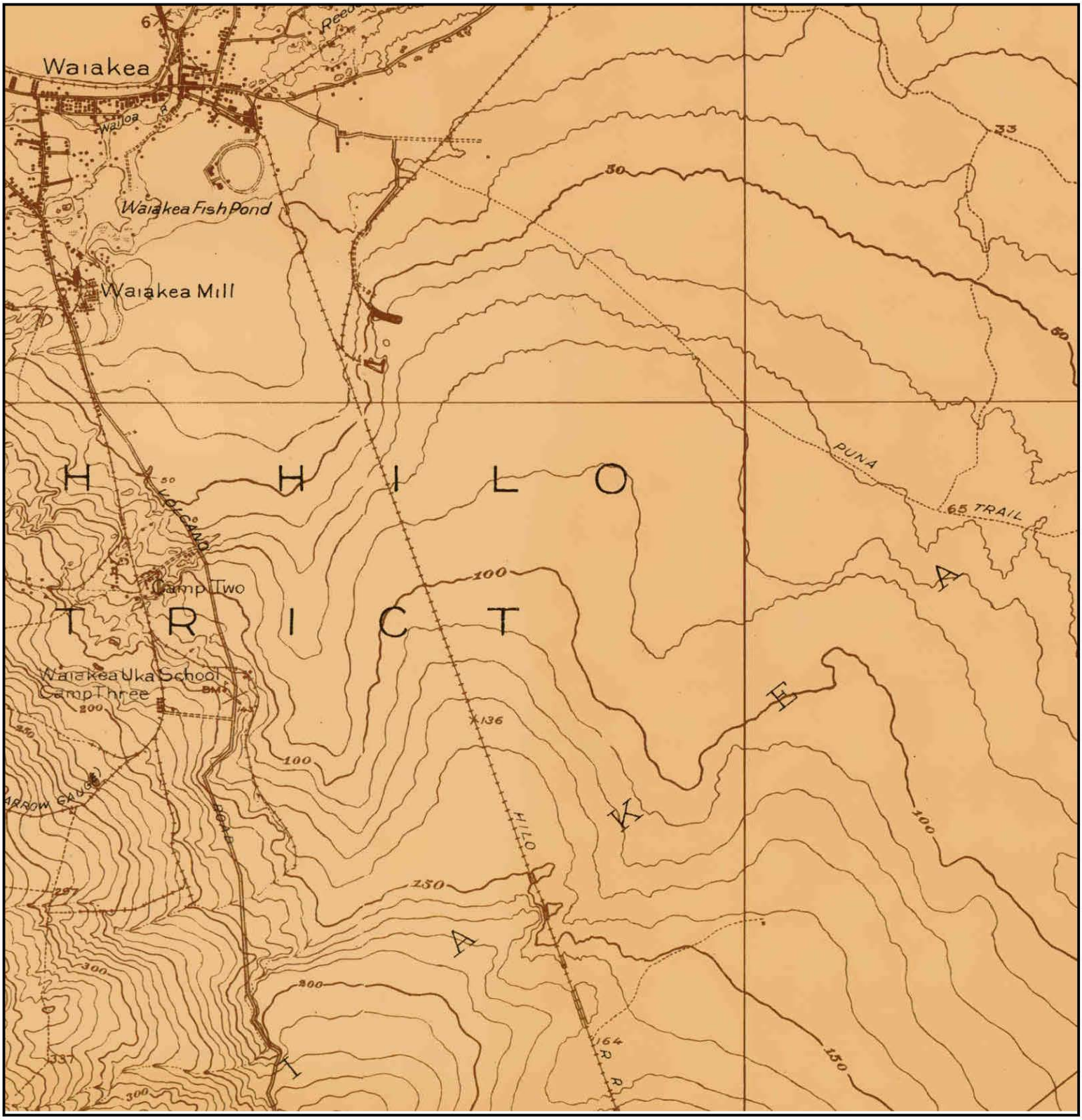
6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

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.

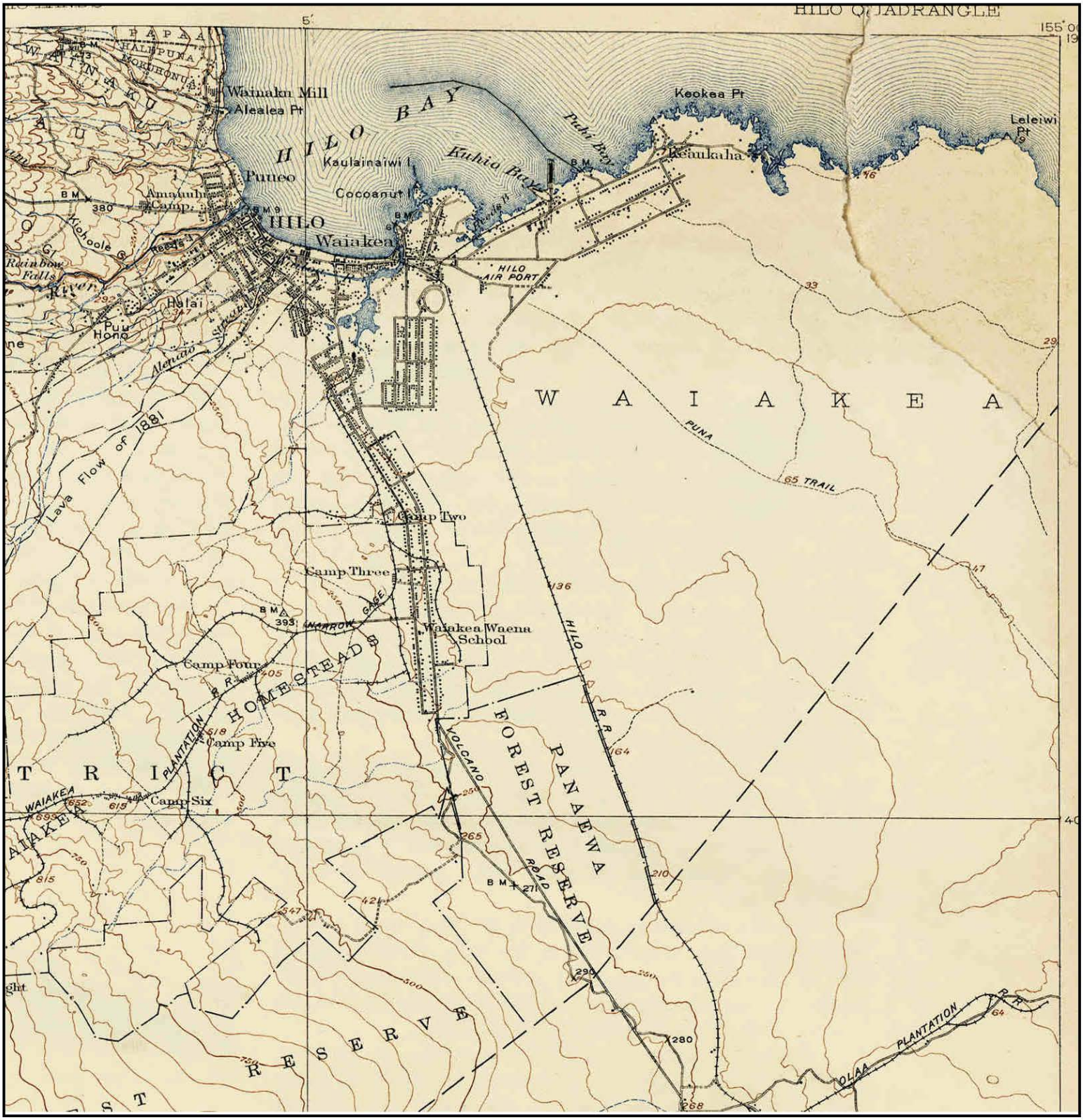
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



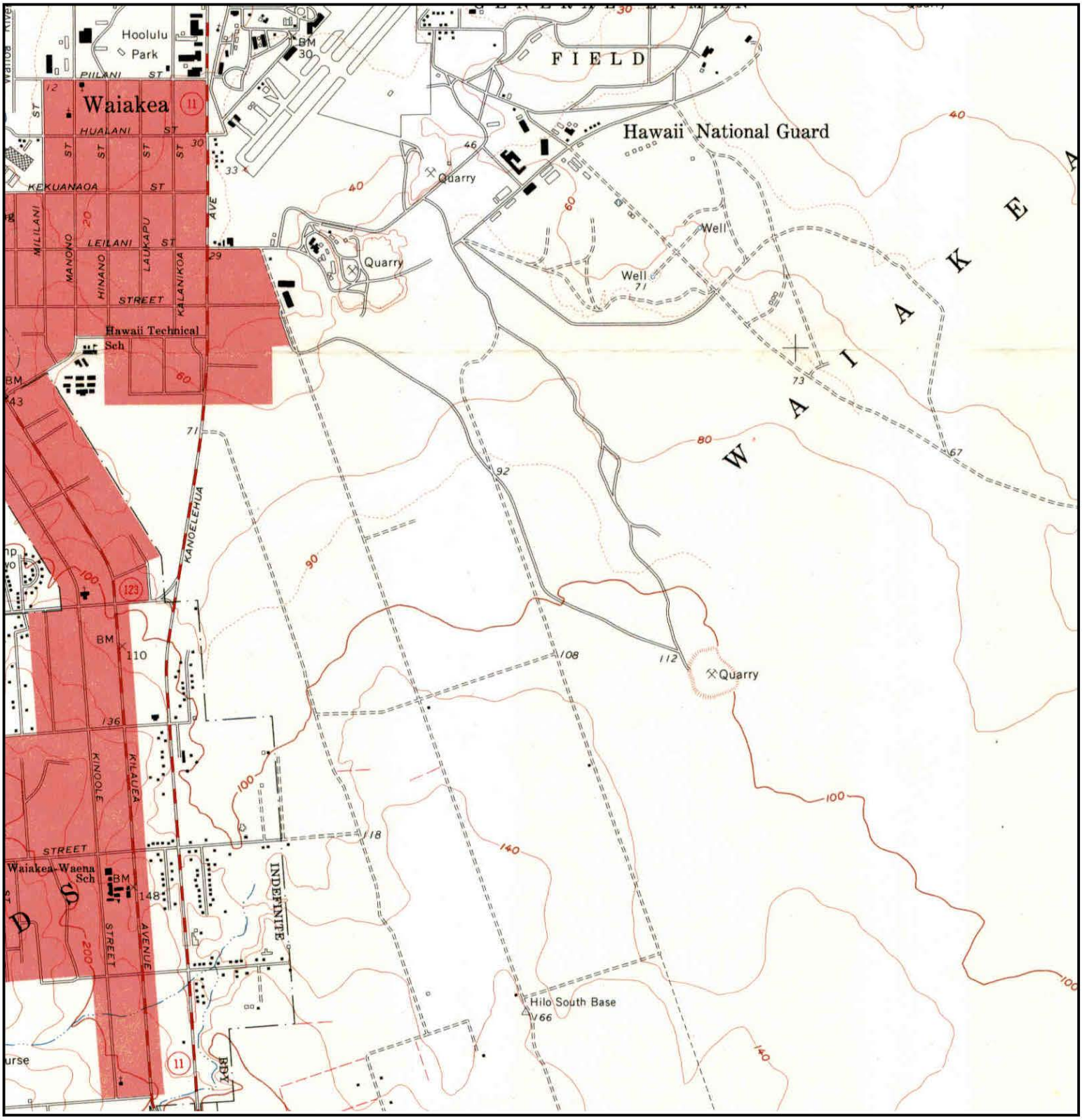
N	TARGET QUAD		SITE NAME:	DHHL Hilo Properties 3 2-1-	CLIENT:	Element Environmental , LLC
	NAME:	WAIAKEA			CONTACT:	Angela Peltier
	MAP YEAR:	1914	ADDRESS:	AUWAE RD	INQUIRY#:	4315061.4
				Hilo, HI 96720	RESEARCH DATE:	06/04/2015
	SERIES:	7.5	LAT/LONG:	19.6997 / -155.0527		
	SCALE:	1:31680				

Historical Topographic Map



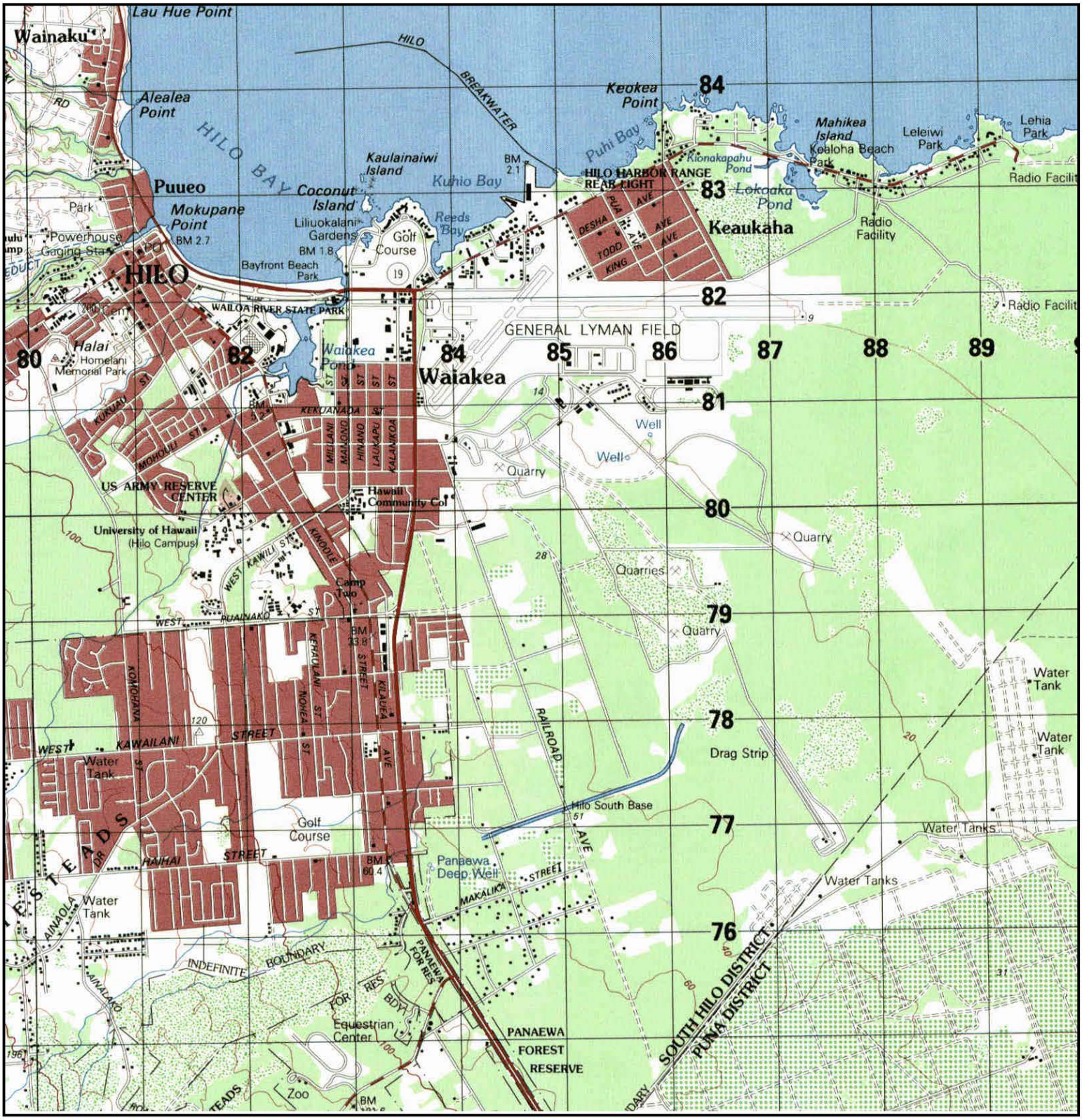
N	TARGET QUAD		SITE NAME:	DHHL Hilo Properties 3 2-1-	CLIENT: Element Environmental , LLC
	NAME:	HILO			CONTACT: Angela Peltier
	MAP YEAR:	1932	ADDRESS:	AUWAE RD	INQUIRY#: 4315061.4
				Hilo, HI 96720	RESEARCH DATE: 06/04/2015
	SERIES:	15	LAT/LONG:	19.6997 / -155.0527	
	SCALE:	1:62500			

Historical Topographic Map



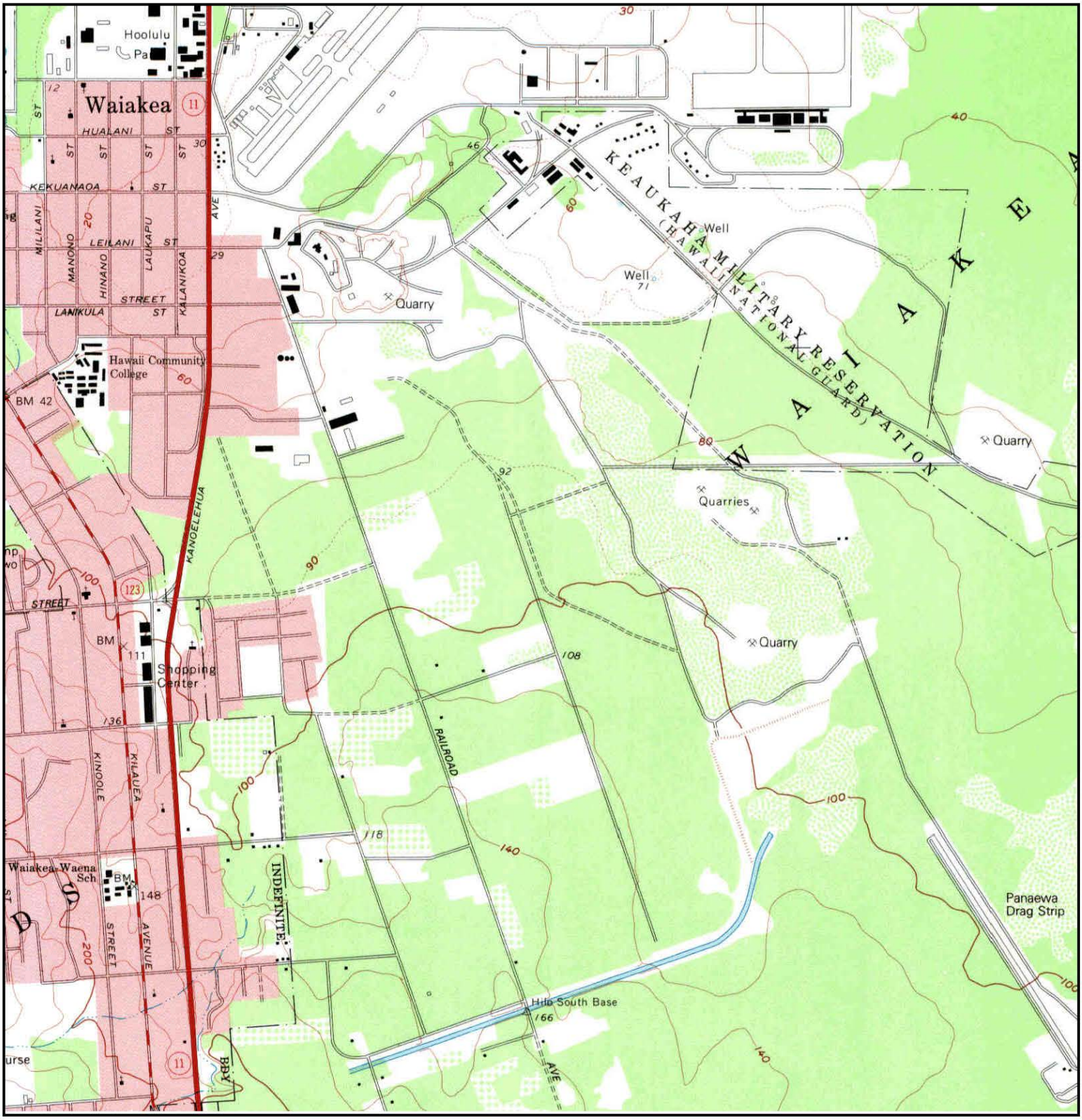
N	TARGET QUAD		SITE NAME:	DHHL Hilo Properties 3 2-1-	CLIENT:	Element Environmental , LLC
	NAME:	HILO			CONTACT:	Angela Peltier
	MAP YEAR:	1963	ADDRESS:	AUWAE RD	INQUIRY#:	4315061.4
				Hilo, HI 96720	RESEARCH DATE:	06/04/2015
	SERIES:	7.5	LAT/LONG:	19.6997 / -155.0527		
	SCALE:	1:24000				

Historical Topographic Map



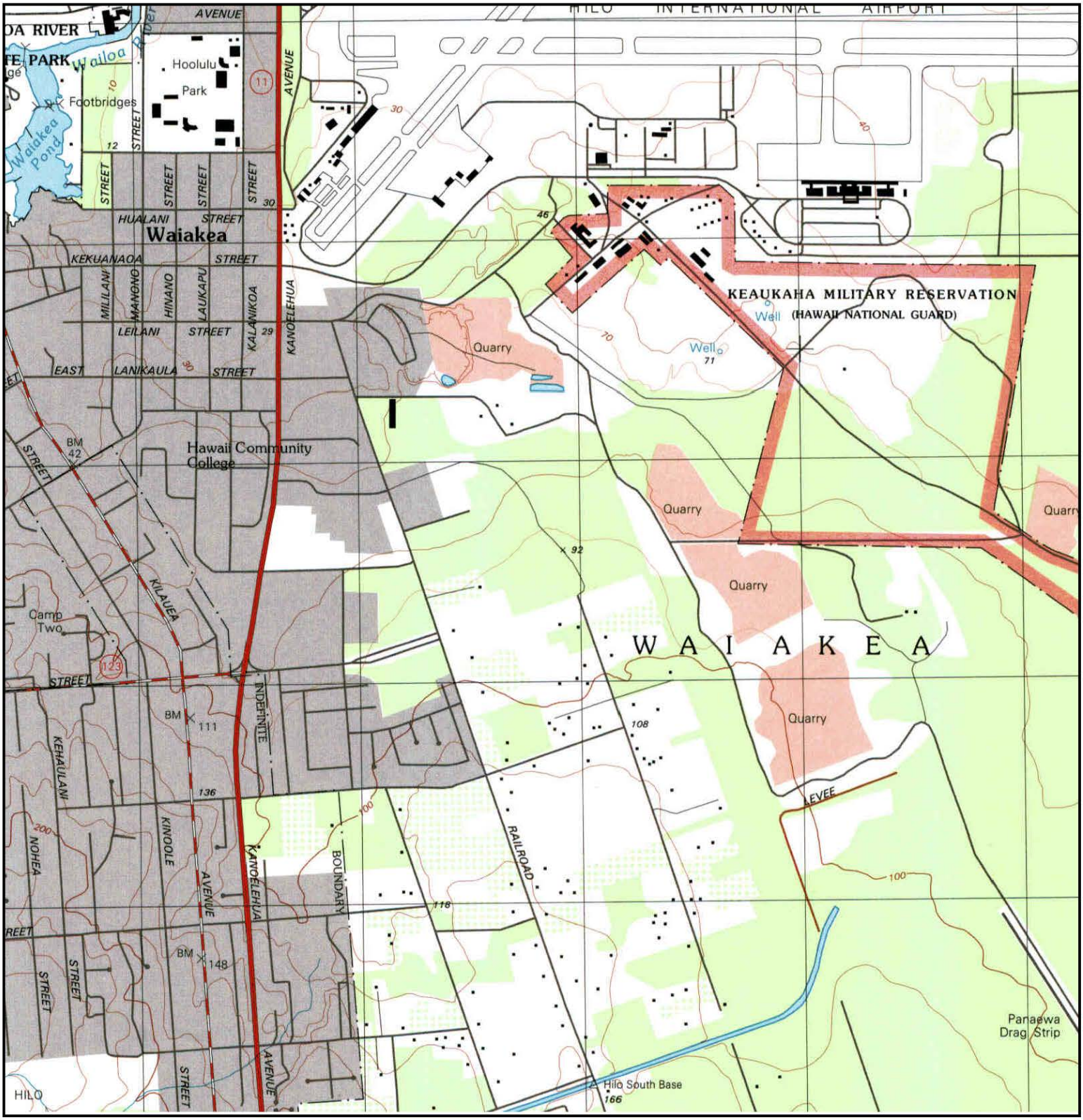
N	TARGET QUAD		SITE NAME:	DHHL Hilo Properties 3 2-1-	CLIENT:	Element Environmental , LLC
	NAME:	HILO			CONTACT:	Angela Peltier
	MAP YEAR:	1980	ADDRESS:	AUWAE RD	INQUIRY#:	4315061.4
				Hilo, HI 96720	RESEARCH DATE:	06/04/2015
	SERIES:	15	LAT/LONG:	19.6997 / -155.0527		
	SCALE:	1:50000				

Historical Topographic Map



N	TARGET QUAD NAME: HILO MAP YEAR: 1981 SERIES: 7.5 SCALE: 1:24000	SITE NAME: DHHL Hilo Properties 3 2-1- ADDRESS: AUWAE RD Hilo, HI 96720 LAT/LONG: 19.6997 / -155.0527	CLIENT: Element Environmental , LLC CONTACT: Angela Peltier INQUIRY#: 4315061.4 RESEARCH DATE: 06/04/2015

Historical Topographic Map



N	TARGET QUAD NAME: HILO MAP YEAR: 1995 SERIES: 7.5 SCALE: 1:24000	SITE NAME: DHHL Hilo Properties 3 2-1- ADDRESS: AUWAE RD Hilo, HI 96720 LAT/LONG: 19.6997 / -155.0527	CLIENT: Element Environmental , LLC CONTACT: Angela Peltier INQUIRY#: 4315061.4 RESEARCH DATE: 06/04/2015

The EDR-City Directory Image Report

DHHL Hilo Properties 3 2-1-025 6,7,47,48
AUWAE RD
Hilo, HI 96720

Inquiry Number: 4315061.5
June 05, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report 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 Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

AUWAE RD
Hilo, HI 96720

Year	*CD Image*	*Source*	
AUWAE RD			
2013	pg A2	Cole Information Services	
2008	pg A6	Cole Information Services	
2003	pg A9	Cole Information Services	
1999	pg A11	Cole Information Services	
1995	pg A13	Cole Information Services	
1992	-	Cole Information Services	Target and Adjoining not listed in Source
AUWAE ST			
1992	pg A15	Cole Information Services	

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*

RAILROAD AVE

2013	pg. A4	Cole Information Services
2008	pg. A8	Cole Information Services
2003	pg. A10	Cole Information Services
1999	pg. A12	Cole Information Services
1995	pg. A14	Cole Information Services
1992	pg. A16	Cole Information Services

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 2013

394	COLETTE PAGLINAWAN
428	PATRICIA LEE
432	OCCUPANT UNKNOWN
449	OCCUPANT UNKNOWN
465	ROANNE HA
498	IAN LOY
501	MARK GOMES
510	IAN LOY
516	HEDWIG WARRINGTON
549	KIHA KINNEY
631	MAX ROLDAN
	SAMUEL KAMOKU
682	LEEROM VENTURA
697	HERBERT LARANANG
710	OCCUPANT UNKNOWN
741	BILLIE KEAWEKANE
781	LIZA NAMAUU
809	STARLENE NGATA
889	LISA KURIHARA
940	GORDON VALENTINE
961	JOSEPH SPENCER
962	BUSINESS SERVICES HAWAII
983	DALE BURTON
	RURAL COMMUNITY ASSISTANCE
998	OCCUPANT UNKNOWN
1039	BILLY DEMELLO
1040	L HUTCHINSON
1110	KALA MOSSMAN
	OCCUPANT UNKNOWN
	PUALANI KANAHELE
1111	PAULINE WEDDLE
1114	KEKUHI KEALIIKANAKAOLEOHAIL
1130	AHIENA KANAHELE
1140	OCCUPANT UNKNOWN
1155	MAXFIELD NAMAHOE
1194	KAREN KANE
1197	CYNTHIA MAKAIWI
1267	NAOMI NAIPO
1279	OCCUPANT UNKNOWN
1297	CLEMENT MALANI
1310	DAVID KAHALEWAI
1323	MILTON MASAOKA
1345	OCCUPANT UNKNOWN
1379	BRONSON KELEPOLO
1384	OCCUPANT UNKNOWN
1414	AIUAHUN DESHA
1420	MENEHUNE MAINTENANCE INC
	SOLOMON HOCSON
1423	NIRALYN HOCSON
1480	CATHERINE HAMILTON

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 2013 (Cont'd)

1481	OCCUPANT UNKNOWN
1518	JOHN LUUWAI
1537	LOUISA REFF
1550	ANGELA LEE
1551	LAWRENCE NAHAKUELUA
1570	OCCUPANT UNKNOWN
1593	WENDEL ICARI
1598	ROBERT YAMADA
1604	MICHITAKA NAKAMOTO
1611	OCCUPANT UNKNOWN
1695	OCCUPANT UNKNOWN
1700	OCCUPANT UNKNOWN
1721	SIONE MOALA
1743	OCCUPANT UNKNOWN
1750	OCCUPANT UNKNOWN
1763	CHRISTINE PAKANI
1827	ALAN MEYERS
1847	OCCUPANT UNKNOWN
1867	DARLENE HOOPAI
1910	BEN CACHOLA
1924	LUCINDA KEAMO

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 2013

1	CLAYTON HORN
	YAMADA DIVERSIFIED CORPORATION
	YS ROCKQUARRY
11	MEADOW GOLD DAIRIES INC
15	CHARLES KEKAHU
	FRANKILITO BABAS
	JOHN BOBADILLA
	JOSE GARCIA
	KERRY PETERSEN
	KINNE ITO
	SCOTT TRACY
16	CONAGG OF HAWAIICONCRETE
	DANICOLE INVESTMENTS LTD
	HAWAII PETROLEUM INC
	HR WORKS LLC
	JOHN UMPHREY
	TEXACO DISTRIBUTORS INC
	UMPHREY JOHN PHOTOGRAPHY
	WORKFORCE MANAGEMENT INC
24	DMS DIESEL REPAIR LLC
69	BIG ISLAND ENTERTAINMENT INC
	BIG ISLE MOVING & DRAYING INC
	C A R S S LLC
	CARE RESOURCE HAWAII
	CARERESOURCE HAWAII
	CYCLELOGIC
	GOLDEN NEOLIFE DIAMITE DISTRIBUTOR
	HILOS DIAMOND DETAILLING
	HOT LAVA TAXI & TOURS
	HUI MALAMA OLA NA OIWI
	PROVISION SOLAR INC
	SUGAR T EXPRESS INC
	UHAUL NEIGHBORHOOD DEALER
108	COUNTY OF HAWAII
164	NICOLE DOLAN
169	LAUPAHOEHOE TRANSPORTATION COMPANY I
171	CATERPILLAR DILLAR
	HAWTHORNE PACIFIC CORP
215	ALOHA FITNESS CLUB
	APPROVED FREIGHT FORWARDERS
	BACONUNIVERSAL COMPANY INC
	FLORAL CONNECTION THE
	PACIFIC GYMNASTICS
	ROYAL HAWAIIAN MOVERS
385	OCCUPANT UNKNOWN
411	KEALANI PELEIHOLANI
497	OCCUPANT UNKNOWN
600	HOWARD PEA
661	MILTON IOPA
696	MAKAALA RAWLINS

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 2013 (Cont'd)

801	OLIVA SING
839	MARIE BUMATAG
899	JOHNSON KAHILI
940	ALEXANDER BUMATAY
959	DAVID SATO
960	LEOLANI LEE
967	DOUGLAS AWAI

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 2008

428	WILLIAM CABIGON
449	MARY AIONA
498	PATRICIA KEOHOKAPU
501	MARK GOMES
510	MARY BECK
516	OCCUPANT UNKNOWN
549	EVERETT KINNEY
631	SAMUEL KAMOKU
682	LEEROM VENTURA
697	OCCUPANT UNKNOWN
809	OCCUPANT UNKNOWN
940	GORDON VALENTINE
961	JOSEPH SPENCER
962	RECYCLING SYSTEMS HAWAII INC
983	OCCUPANT UNKNOWN
998	OCCUPANT UNKNOWN
1040	OCCUPANT UNKNOWN
1110	AHIENA KANAHELE
	BENJAMIN ENOS
	KALA MOSSMAN
	TRACY HIGASHI
1111	PAULINE WEDDLE
1114	KEKUHI KANAHELE
1155	MAXFIELD NAMAHOE
1194	DENNIS KANE
1197	OCCUPANT UNKNOWN
1297	CLEMENT MALANI
	LAUPAHOEHOE CONGREGATIONAL CHURCH
1310	DAVID KAHALEWAI
1323	MILTON MASAOKA
1379	ALEX KELEPOLO
1384	AMMON BORGES
1414	AIUAHUN DESHA
1420	APRIL HOCSON
	MENEHUNE MAINTENANCE INC
1423	OCCUPANT UNKNOWN
1464	FRANCIS NAOPE
1518	M LUUWAI
1550	ANGELA LEE
1570	DONNA GOLDSWORTHY
1593	WENDEL ICARI
1598	ROBERT YAMADA
1604	OCCUPANT UNKNOWN
1611	VICTORIA WHITWORTH
1700	L FIGUEIRA
1721	OCCUPANT UNKNOWN
1743	ALAN PASA
1750	OCCUPANT UNKNOWN
1763	CHRISTINE PAKANI
1809	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 2008 (Cont'd)

1827 ALAN MEYERS
1840 LEINANI AINA
1867 DARLENE HOOPAI
1924 OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 2008

1	CLAYTON HORN
11	MEADOW GOLD DAIRY
15	GARET NAKAMAEJO
16	COURTNEY DEAGUIAR
	DANICOLE INVESTMENT INC
	DOLAN SILVA & ASSOCIATES INC
	HAWAII PETROLEUM INC
	HCBA INC
	HR WORKS LLC
	UMPHREY JOHN PHOTOGRAPHY
	WORKFORCE MANAGEMENT INC
24	DMS DIESEL REPAIR LLC
69	ANVIL INC
	BIG ISLAND ENTERTAINMENT
	BIG ISLE MOVING & DRAYING INC
	CYCLE LOGIC TECHNICAL SERVICES
	DK AUTO REPAIR INC
	HAWAIIAN HOUSEWARES LTD
	HUI MALAMA OLA NA OIWI
	HULALIMAU JEWELRY INC
	JE MERK & ASSOCIATES INC
	KAMAAINA DISTRIBUTION CO
	MALAMA HUI
	PROVISION TECHNOLOGIES INC
	PUNA PIZZA INC
	STUFF IT MINI STORAGE OF HILO
	STUFF IT MINI STORAGE OF HILO INC
	U HAUL CO
	WORK RITE SYSTEMS INC
108	COUNTY OF HAWAII
	DEPARTMENT PUB WORKS HIGHWS
	TRAFFIC SIGNS & MARKING SHOP
215	ALOHA FITNESS CLUB
	BACON UNIVERSAL CO INC
	PACIFIC GYMNASTICS
485	HILO COMMUNITY RECYCLING CENTER LLC
	ORCHID ISLAND RUBBISH & RECYCLE
600	HOWARD PEA
661	PHIL SOLYWADA
690	TIM MAULDIN
696	MAKAALA RAWLINS
699	JENNIE ITO
830	OCCUPANT UNKNOWN
839	DEBBIE COLLINS
899	JOHNSON KAHILI
940	RAYMOND BUMATAY
959	AWAIS MASONRY
	DOUGLAS AWAI
967	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 2003

394	COLETTE PAGLINAWAN
428	WILLIAM CABIGON
449	OCCUPANT UNKNOWN
498	OCCUPANT UNKNOWN
501	MARK GOMES
516	CHARLES WARRINGTON
549	OCCUPANT UNKNOWN
631	MAX ROLDAN
	SAMUEL KAMOKU
682	JEANAH VENTURA
697	MAMO LARANANG
809	SAMUEL NAMAUU
889	LOHEKAMAKAULA KAALOA
940	OCCUPANT UNKNOWN
961	JOSEPH SPENCER
962	RECYCLING SYSTEMS HAWAII INC
	SCOTT MALUO
983	DALE BURTON
	RURAL COMMUNITY ASSISTANCE CORP
998	MICHAEL EVANS
1040	OCCUPANT UNKNOWN
1055	OCCUPANT UNKNOWN
1110	KALA MOSSMAN
	KANAKAOLE EDITH FOUNDATION
	OCCUPANT UNKNOWN
	TRACY HIGASHI
1111	LOWELL HICKS
1155	MAXFIELD NAMAHOE
1194	DENNIS KANE
1197	CYNTHIA MAKAIWI
1297	CLEMENT MALANI
1310	DAVID KAHALEWAI
1323	ONAN MASAOKA
1379	ALEXANDRA KELEPOLO
1414	GEORGE DESHA
1420	MENEHUNE MAINTENANCE INC
	OCCUPANT UNKNOWN
1464	ANNETTE NAOPE
1518	OCCUPANT UNKNOWN
1570	LOUIS STRADA
1593	HULALI ICARI
1598	ROBERT YAMADA
1604	OCCUPANT UNKNOWN
1611	BARNARD WHITWORTH
1763	CHRISTINE PAKANI
1827	MICHELE MEYERS
1867	DARLENE HOOPAI

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 2003

11	OCCUPANT UNKNOWN
16	DOLAN SILVA & ASSOCS CPAS INC
	DOLAN WILLIAM RONALD CPA INC
	HAWAII PETROLEUM INC
	JOHN UMPHREY
24	OCCUPANT UNKNOWN
69	ANVIL INC
	BIG ISLE MOVING & DRAYING INC
	CHARLES ROBERTS
	CYCLE LOGIC
	GOLDEN NEO LIFE DMT DSTRBTR
	HILO KWIK LUBE
	JE MERK & ASSOCS INC
	KAMAAINA DISTRIBUTION CO
	PROVISION TECHNOLOGIES INC
	STUFF IT MINI STORAGE OF HILO
211	CHAUNS EXPRESSIONS
215	BACON UNIVERSAL CO
	FLEET REFINISHING HAWAII
	PACIFIC GYMNASTICS
	PAK RANDY FARMS
	QUALITY AUTO PNTNG & BODY RPR
497	OCCUPANT UNKNOWN
600	OCCUPANT UNKNOWN
661	PHIL SOLYWADA
696	JAMES KIERKIEWICZ
	MOKE RAWLINS
697	DOUGLAS AWAI
699	REBECCA ITO
830	OCCUPANT UNKNOWN
839	DEBBIE COLLINS
899	JOHNSON KAHILI
940	RAYMOND BUMATAY
959	AWAIS MASONRY

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 1999

501	GINA GOMES
510	GENESIS LOY
516	CHARLES WARRINGTON
631	GLADYS LEE
940	OCCUPANT UNKNOWN
961	JOSEPH SPENCER
962	BUSINESS SERVICES HAWAII
	SCOTT MALUO
983	OCCUPANT UNKNOWN
998	KEVIN NEKOBA
1040	SHEILA EVANS
1110	KALA MOSSMAN
1155	MAXFIEL NAMAHOE
1297	CLEMENT MALANI
1310	DAVID KAHALEWAI
1379	UILANI ARCANGEL
1414	GEORGE DESHA
1420	JERRYL MAUHILI
1518	VIVIAN KOBAYASHI
1604	DAISY NAKAMOTO
1611	BARNARD WHITWORTH
1840	KUKUI BOY PRODUCTS
	MAMO ULU CREATIONS
1867	J PERREIRA

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 1999

11	MEADOW GOLD DAIRIES INCORPORATED
16	DANICOLE INVESTMENTS LIMITED
	DOLAN SILVA & ASSNS CPAS INCORPORATED AN ACCNTANCY CORPORATI
	H P S LIMITED
	HAWAII PETROLEUM LUBRICANTS DIVISION
	JOHN UMPHREY
	UMPHREY JOHN PHOTOGRAPHY
	WEST HAWAII PETROLEUM INCORPORATED
24	HARADA H CONTRACTOR INCORPORATED
69	ANVIL INCORPORATED
	BIG ISLAND PRODUCTION SERVICES
	BIG ISLE MOVING & DRAYING
	KAMAAINA DISTRIBUTION COMPANY
	KAMANAWA SCHOOL OF PERSONAL DEVELOPMENT
	KANIU KINIMAKA MODEL & TALENT AGENCY
	MERK J E & ASSOCIATES
	NEO LIFE DISTRIBUTOR JANE ELLEN GIBSON
	STOCKSDALES MASONRY
	STUFF IT MINI STORAGE OF HILO INCORPORATED
	U HAUL COMPANY INDEPENDENT DEALERS
	WORK RITE SYSTEMS INCORPORATED
108	COUNTY OF HAWAII PUBLIC WORKS DEPARTMENT
215	BACON UNIVERSAL COMPANY INCORPORATED HILO BRANCH
	BELL ATLANTIC PROFESSIONAL SERVICES
	HAWAIIAN HOST PAPAYAS
	PACIFIC GYMNASTICS & ACRO SPORTS
	WAIPIO VALLEY OHANA CORPORATION
485	HAWAIIAN CRACKED GLASS PRODUCTS
	RECYCLING SYSTEMS HAWAII INCORPORATED
696	JAMES KIERKIEWICZ
	MOKE RAWLINS
	ROBERT NELSON
697	DOUGLAS AWAI
699	OCCUPANT UNKNOWN
759	SUZS TOWING & USED AUTO PARTS
839	HARPER VANPETTEN
899	OCCUPANT UNKNOWN
940	RAYMOND BUMATAY
959	DOUGLAS AWAI

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE RD 1995

428	LEE, TUCK W
498	LEE, LOY I
500	PAKELE, D K
631	KAMOKU, S
961	SPENCER, JOSEPH A
983	MAHOE, SOLOMON K JR
1110	GARMON, PEARL U
	KANAHELE, EDWARD
	MOSSMAN, KALA
1650	MOALA, DIANA
1840	EVANGELISTA, EMMA

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 1995

0	BELL, BILL
	DUARTE, LOVLYN
	PEA, HOWARD
	PELEIHOLANI, AS A
11	MEADOW GOLD DAIRY
16	DANICOLE INVESTMENTS LTD
	JEN GLYN LTD
	JOHN UMPHREY PHOTOGRAPHY
	UMPHREY, JOHN
	WILLIAM R DOLAN INC
24	H HARADA CONTRACTOR INC
69	ANVIL INC
	BIG ISLAND PRODUCTION SVC
	BIG ISLE MOVING & DRAYING INC
	J E MERK & ASSOCIATES
	KAMAAINA DISTRIBUTION CO
	KAMANAWA SCHOOL OF PERSONAL
	KANIU K ENTERPRISES
	KINIMAKA KANIU MODEL & TALENT
	NEO LIFE DISTRIBUTOR
	STOCKSDALES MASONRY
	STUFF IT
	TRUS RITE SYSTEMS
	U HAUL CO
	WEC INC
	WORK RITE SYSTEMS INC
108	HAWAII COUNTY WASTEWATER DIV
143	BORGES, AMMON
215	BACON UNIVERSAL CO
	HAWAIIAN HOST PAPAYAS
	WILSONS TROPHIES
600	OCCUPANT UNKNOWNN
696	AWAI, DOUGLAS K
	KIERKIEWICZ, JAMES
	LOY, E L
	RAWLINS, MOKE JR
698	IOPA, I
699	ITO, R
940	BUMATAY, RAYMOND K

Target Street	Cross Street	Source
✓	-	Cole Information Services

AUWAE ST 1992

1110 KANAHELE, EDWARD

Target Street	Cross Street	Source
-	✓	Cole Information Services

RAILROAD AVE 1992

0	DUARTE, LOVLYN
	HALL, HAROLD
	PEA, HOWARD
	YOGI, G
143	BORGES, AMMON
600	WAGNER, G
696	DARLEY, AJCKIE
	KAILIAWA, EARL P
	RAWLINS, MOKE JR
698	IOPA, I
839	COLLINS, MARK
940	BUMATAY, RAYMOND K

APPENDIX D

QUALIFICATIONS OF THE ENVIRONMENTAL PROFESSIONALS

Arlene Campbell, Licensed Geologist

element environmental llc
environmental · engineering · water resources

Arlene H. Campbell, L.G.
Associate
Senior Geologist

EDUCATION:

Graduate Work in Geology - Vanderbilt University, 1988 - 1989
B.A., Geology (minor in Hydrology) - Austin Peay State University, 1988

PROFESSIONAL REGISTRATIONS:

Licensed Geologist, Washington State, No. 1664, 2002

SPECIALIZED TRAINING:

OSHA 40-hour Initial HAZWOPER Training and Current 8-hour Refresher
Hazardous Waste Site Supervisor Training

SUMMARY OF EXPERIENCE:

Ms. Campbell is an Associate and Senior Geologist at Element Environmental, LLC (E2). Ms. Campbell joined E2 on July 1, 2006, when E2 merged with Mountain Edge Environmental, Inc. She has 16 years of experience in Hawaii in the environmental consulting field. Her specific expertise includes site assessment, characterization, and remediation. Ms. Campbell has assisted with several state level task forces to assess environmental risk and address petroleum contaminated soils.

Ms. Campbell has managed many environmental projects involving Phase I Environmental Site Assessments (ESAs), preliminary assessments, emergency spill response, subsurface investigation, groundwater monitoring, assessment of fate and transport of surface and groundwater contaminants, soil and groundwater remediation, and risk assessment. She has also managed numerous underground storage tank (UST) removal projects which included preparation of plans and specifications for UST removal, UST removal monitoring, release response activities such as over-excavation, installation of soil borings and groundwater monitoring wells, long term remediation design and implementation, and report preparation.

Ms. Campbell has also managed a number of complex hazardous and biological waste removal and site closure projects which involved geophysical surveys, preparation of plans and specifications, waste characterization, and removal and disposal activities. She has performed Phase I ESAs and has assisted with the preparation and review of environmental impact statements. She has also performed environmental and hydrogeological investigations and has conducted remediation activities for several illegal landfill sites. Noteworthy projects Ms. Campbell has managed included several large emergency response site investigations and remediation projects involving the release of petroleum and PCBs. One of these projects included an emergency response to a major gasoline spill on Kauai that impacted air, soil, surface water, and groundwater. For this project, Ms. Campbell coordinated with the U.S. Coast Guard, county fire and police departments, EPA Region 9, Hawaii DOH, responsible parties, property owners, tenants, and the community. She monitored explosivity and contaminant migration in the subsurface, underground structures/utilities, buildings, a private sewage pumping station, an adjacent stream and the Pacific Ocean; coordinated emergency medical treatment and medical monitoring of affected spill response personnel and civilians; monitored installation of soil vapor points, soil borings, and groundwater monitoring wells; collected soil vapor, soil, groundwater, and stream water samples; prepared release response report; and provided technical support to legal team.

Ms. Campbell has been the principal investigator for several water quality related projects, including preparation of National Pollutant Discharge Elimination System (NPDES) permit applications for an auto recycling facility, an aquarium, a well drilling operation, a cemetery, and a museum; preparation of Storm Water Pollution Control Plans for an auto recycling facility and a solid waste transfer station; storm water and industrial discharge monitoring at various sites; and assisting clients in addressing NPDES compliance issues.

Angela Peltier, Geologist

element environmental llc
environmental · engineering · water resources

Angela K. Peltier
Geologist

EDUCATION:

B.S., Geology and Geophysics – University of Hawaii, 2004

SPECIALIZED TRAINING:

OSHA 40-hour Initial HAZWOPER Training

SUMMARY OF EXPERIENCE:

Ms. Peltier is a Geologist at Element Environmental, LLC (E2). Ms. Peltier joined E2 on July 1, 2006, when E2 merged with Mountain Edge Environmental, Inc. She has 8 years of experience in Hawaii in the environmental consulting field. Her specific expertise includes site assessment, characterization, and remediation.

Ms. Peltier has assisted in many environmental projects involving Phase I Environmental Site Assessments (ESAs), preliminary assessments, emergency spill response, subsurface investigation, groundwater monitoring, assessment of fate and transport of surface and groundwater contaminants, soil and groundwater remediation, risk assessment, groundwater monitoring, and explosive gas monitoring. She has also assisted in underground storage tank (UST) removal projects which included preparation of plans and specifications for UST removal, UST removal monitoring, release response activities such as over-excavation, installation of soil borings and groundwater monitoring wells, long term remediation design and implementation, and report preparation.

Ms. Peltier has also performed Phase I ESAs and has assisted with the preparation of environmental impact statements. She has also performed environmental and hydrogeological investigations and has conducted remediation activities for several illegal landfill sites.

Ms. Peltier has been involved in several water quality related projects, including preparation of National Pollutant Discharge Elimination System (NPDES) permit applications for an auto recycling facility, an aquarium, and a well drilling operation, preparation of Storm Water Pollution Control Plans for an auto recycling facility and a solid waste transfer station; storm water and industrial discharge monitoring at various sites.