

ALAN M. ARAKAWA  
Mayor

WILLIAM R. SPENCE  
Director

MICHELE CHOUTEAU McLEAN  
Deputy Director



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COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

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FEB 8 2013

November 28, 2012

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

Mr. Gary Hooser, Director  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Mr. Hooser:

**SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT (EA) FOR THE COMMUNITY PLAN AMENDMENT (CPA), DISTRICT BOUNDARY AMENDMENT (DBA), AND CHANGE IN ZONING (CIZ) FOR THE PU'UNENE HEAVY INDUSTRIAL SUBDIVISION, LOCATED APPROXIMATELY ONE (1) MILE SOUTHEAST OF THE INTERSECTION OF MOKULELE HIGHWAY, MEHAMEHA LOOP, AND KAMA'AINA ROAD, ISLAND OF MAUI, HAWAII; TMK: (2) 3-8-008:019 (CPA 2012/0002) (CIZ 2012/0005) (EA 2012/0001)**

The Maui Planning Commission has reviewed the Final EA prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Chapter 11-200, Hawaii Administrative Rules (HAR), for the subject project at its November 27, 2012, regular meeting, and has accepted the Final EA and has issued a Finding of No Significant Impact (FONSI). Please publish the Final EA in the next available Office of Environmental Quality Control (OEQC) Environmental Notice.

We have attached a completed OEQC Publication Form, one (1) hard copy of the Final EA, and one (1) CD copy of the Final EA in PDF format for your review.

Should you need further clarification, please contact Staff Planner Kurt Wollenhaupt at [kurt.wollenhaupt@mauicounty.gov](mailto:kurt.wollenhaupt@mauicounty.gov) or at (808) 270-1789.

Sincerely,

Handwritten signature of Clayton I. Yoshida in black ink.

CLAYTON I. YOSHIDA, AICP  
Planning Program Administrator

for WILLIAM SPENCE  
Planning Director

Mr. Gary Hooser, Director  
November 28, 2012  
Page 2

Attachments

xc: Kurt F. Wollenhaupt, Staff Planner (PDF)  
Glenn Tadaki, Chris Hart & Partners, Inc.  
EA Project File  
Project File  
General File

WRS:CIY:KFW:rm

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**APPLICANT ACTIONS  
SECTION 343-5(C), HRS  
PUBLICATION FORM (JULY 2012 REVISION)**

**Project Name** Pu`unene Heavy Industrial Subdivision  
**Island:** Maui  
**District:** Wailuku  
**TMK:** (2) 3-8-008: 019  
**Permits:** Chapter 343 Environmental Review; District Boundary Amendment; Community Plan Amendment; Change in Zoning; Work to Perform in the State Highway Right-of-Way; Well Drilling and Pump Installation Permits; Public Water System Approval; Wastewater System Approval; NPDES; Grubbing and Grading Permits, Construction Plans Approval; Final Subdivision Approval

**Approving Agency:** Maui Planning Commission  
c/o: Maui Planning Department  
250 S. High Street  
Wailuku, HI 96793  
Contact: Kurt Wollenhaupt (808) 270-8205

**Applicant:** CMBY 2011 Investment, LLC  
P.O. Box 220  
Kihei, HI 96753  
Contact: Blanca Lafolette (808) 874-5263

**Consultant:** Chris Hart & Partners  
115 N. Market Street  
Wailuku, HI 96793  
Contact: Glenn Tadaki (808) 242-195

**Status:** FEA-FONSI

**Summary:**

The proposed action will involve the subdivision of the subject parcel's 86 acres to create a heavy industrial subdivision. Preliminarily, 66 acres would be set aside for up to 28 developable lots, while nine acres have been designated for drainage retention basins and 11 acres for internal roadways. The proposed subdivision is pending "*M-3, Restricted Industrial District*" zoning which encompasses industrial uses that are generally considered obnoxious or offensive because of odor, dust, smoke, gas, noise, vibration, and the like, and are not allowed in any other zoning district. The subdivision's water, wastewater, drainage, and roadway systems will be privately owned and maintained, as well as all common area landscaping and irrigation. Subdivision lot owners will be responsible for all improvements on and to their lots. Access from Mokulele Highway to the subject parcel will be furnished by existing and proposed access easements.

# **FINAL ENVIRONMENTAL ASSESSMENT**

Prepared in Support of Requests for a  
State Land Use District Boundary Amendment, Community Plan Amendment,  
and Change in Zoning

## **PU'UNENE HEAVY INDUSTRIAL SUBDIVISION**

**TMK: (2) 3-8-008: 019**

**Pu'unene, Maui, Hawai'i**



November 2012

# **FINAL ENVIRONMENTAL ASSESSMENT**

Prepared in Support of Requests for a  
State Land Use District Boundary Amendment, Community Plan Amendment,  
and Change in Zoning

## **PU'UNENE HEAVY INDUSTRIAL SUBDIVISION**

**TMK: (2) 3-8-008: 019**

**Pu`unene, Maui, Hawai`i**



Prepared for:  
CMBY 2011 INVESTMENT LLC  
1300 N. Holopono Street, Suite 201  
Kihei, Hawai`i 96753

November 2012



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## **LIST OF ACRONYMS**

A&B	Alexander & Baldwin
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai`i
AMP	Archaeological Monitoring Plan
AMSL	Above mean sea level
AQS	Air Quality Study
BMPs	Best Management Practices
BSM	Blackburn's Sphinx Moth
CATV	Cable Television
CC&Rs	Covenants, Conditions & Restrictions
CF	Cubic feet
CFS	Cubic feet per second
CIA	Cultural Impact Assessment
CIZ	Change in Zoning
COPC	Contaminants of potential concern
CPA	Community Plan Amendment
CWRM	Commission on Water Resource Management
CZMP	Coastal zone management program
DA	Department of the Army
DBA	District Boundary Amendment
dBA	Sound pressure level (A weighting filter)
DHHL	Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DNL	Day-Night Average Sound Level
DOH	Department of Health
DOT	Department of Transportation
DPR	Department of Parks and Recreation
DPS	Department of Public Safety
DPW	Department of Public Works
DU	Decision units
DWS	Department of Water Supply
EA	Environmental Assessment
EAL	Environmental Action Level
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ETC	EnviroServices & Training Center
FONSI	Finding of No Significant Impact
GPD	Gallons per day
GPM	Gallons per minute
HARNG	Hawai`i Army National Guard
HAR	Hawai`i Administrative Rules
HC&S	Hawaiian Commercial & Sugar
HRS	Hawai`i Revised Statutes
IARII	International Archaeological Research Institute, Inc.
ITE	Institute of Transportation Engineers
IWS	Individual wastewater system
KMCP	Kihei-Makena Community Plan
LOS	Level-of-Service



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LSB	Land Study Bureau
MCC	Maui County Code
MECO	Maui Electric Company
MEV	Malama Environmental
□g/m <sup>3</sup>	Micrograms per cubic meter
uM	Micro-molar
MGD	Million gallons per day
MIP	Maui Island Plan
NAS	Naval Air Station
NRCS	Natural Resources Conservation Services
PAMP	Pu`unene Airport Master Plan
PD 10	Project District 10
PER	Preliminary Engineering Report
PM	Particulate matter
PPT	Parts per thousand
RCRA	Resource Conservation and Recovery Act
REC	Recognized environmental condition
RO	Reverse osmosis
SCS	Scientific Consultant Services
SHPD	State Historic Preservation Division
SLUC	State Land Use Commission
SMA	Special Management Area
TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
TNWRE	Tom Nance Water Resource Engineering
TPH-O	Total petroleum hydrocarbons as oil
UGB	Urban Growth Boundaries
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
V/C	Volume-to-capacity
VPH	Vehicles per hour

# I. PROJECT OVERVIEW

## A. OVERVIEW OF THE REQUEST

CMBY 2011 Investment, LLC (aka, CMBY), the owner of property identified by Tax Map Key (2) 3-8-008: 019, is requesting the necessary land use entitlements which would allow the property to be used for long-term heavy industrial purposes.

Assuming the entitlements are granted, CMBY plans to subdivide the 86-acre parcel and create a heavy industrial subdivision. Given the unstable and unpredictable behavior of the global economy and economic effects, the actual number and size of the subdivision lots, and the timeframe for filing an application for subdivision approval will be heavily influenced by prevailing market conditions at the time CMBY is ready to proceed with development.

The subject parcel is located on the Central Maui plain in the vicinity of the Old Pu`unene Airport. The site lies approximately 1.0 mile southeast of the intersection of Mokulele Highway, Mehameha Loop, and Kama`aina Road. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. Access from the highway to the site is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. [See Figure 1, Regional Location Map](#), [Figure 2, Aerial Location Map](#), and [Figure 3, Parcel Location Map](#).

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use](#)



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[of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

The subject property is currently vacant and undeveloped. The parcel is located in the *State Agricultural District* and is designated for *Agricultural* uses by the Kihei-Makena Community Plan and Maui County zoning. [See Appendix A, Zoning and Flood Confirmation, Figure 12, State Land Use Districts, Figure 14, Kihei-Makena Community Plan, and Figure 15, Maui County Zoning](#). In addition, the project site lies within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#). The subject parcel does not fall within the limits of the Special Management Area (SMA) for the island of Maui. [See Figure 16, Special Management Area](#).

In order to establish the appropriate underlying land use designations for the proposed heavy industrial subdivision, the land owner is seeking a Land Use Commission District Boundary Amendment (DBA) from the *State Agricultural District* to the *State Urban District*, a Community Plan Amendment (CPA) from *Agriculture* to *Heavy Industrial*, and a Change in Zoning (CIZ) from *Agricultural* to *M-3, Restricted Industrial*. The granting of CMBY's request will also increase the limited inventory of lands that are currently available for purely heavy industrial use, as well as create new business and employment opportunities for island residents.

Since the proposed action will involve an amendment to a community plan and the use of State lands (proposed easements across State property), an environmental assessment (EA) has been prepared in accordance with Chapter 343, Hawai'i Revised Statutes (HRS) entitled [Environmental Impact Statements](#) and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) entitled [Environmental Impact Statement Rules](#). Based on consultation with the Maui Planning Department and the State Land Use Commission, the Maui Planning Commission will serve as the approving agency for the environmental review process.

## **B. PROJECT PROFILE**

District: Pu`unene District, Island of Maui

Tax Map Key (TMK): (2) 3-8-008: 019



Project Name: Pu`unene Heavy Industrial Subdivision

Location: Approximately 1.0 mile southeast of the intersection of Mokulele Highway, Mehameha Loop, and Kama`aina Road

Site Area: 86.03 acres

Land Owner/Applicant: CMBY 2011 Investment, LLC  
P.O. Box 220  
Kihei, HI 96753

Contact: Blanca Lajolette  
Phone: (808) 874-5263  
Fax: (808) 879-2557

Planning Consultant: Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, Maui, HI 96793

Contact: Glenn Tadaki  
Phone: (808) 242-1955  
Fax: (808) 242-1956

Current Land Use Designations: State Land Use Classification – *Agricultural*  
Kihei-Makena Community Plan – *Agriculture*  
County Zoning – *Agricultural*

Flood Insurance Rate Map: Zone “X”, area of minimal flooding

Existing Land Uses: Vacant and undeveloped

Proposed Land Use: Heavy industrial subdivision

Site Access: Mokulele Highway, Kama`aina Road, South Firebreak Road, Lower Kihei Road

### **C. APPROVING AGENCY**

Agency: Maui Planning Commission  
c/o: Maui Planning Department  
County of Maui  
250 S. High Street  
Wailuku, HI 96793



## **D. REQUIRED APPROVALS**

The following permits and approvals will be needed prior to the implementation of the proposed action.

1. Environmental Review by the Maui Planning Commission
2. District Boundary Amendment from the State Land Use Commission
3. Community Plan Amendment from the Maui County Council
4. Change in Zoning from the Maui County Council
5. Work to Perform in the State Highway Right-of-Way from the State Dept. of Transportation
6. Well Drilling and Pump Installation Permits from the State Commission on Water Resource Management
7. Public Water System Approval from the State Dept. of Health, Safe Drinking Water Branch
8. Individual Wastewater System Approval from the State Dept. of Health, Wastewater Branch
9. National Pollutant Discharge Elimination System Permit from the State Dept. of Health, Clean Water Branch
10. Grubbing and Grading Permits, Construction Plans Approval, and Final Subdivision Approval from the Maui Department of Public Works, Development Services Administration

## **E. EARLY CONSULTATION**

As part of the early consultation process for the preparation of the Draft EA, letters requesting comments on the proposed action were sent to following parties.

### CONSULTED PARTIES

#### Federal Agencies

1. Dept. of the Army, Corps of Engineers
2. Dept. of Agriculture, Natural Resources Conservation Service
3. Dept. of the Interior, Fish & Wildlife Service

#### State Agencies

1. Dept. of Agriculture
2. Dept. of Business, Economic Development & Tourism, Office of Planning
3. Dept. of Hawaiian Home Lands
4. Dept. of Health, Clean Air Branch
5. Dept. of Health, Clean Water Branch
6. Dept. of Health, Indoor Noise & Radiological Health Branch



7. Dept. of Health, Safe Drinking Water Branch
8. Dept. of Health, Solid & Hazardous Waste Branch
9. Dept. of Health, Wastewater Branch
10. Dept. of Health, Maui District Health Office
11. Dept. of Land & Natural Resources, Land Division
12. Dept. of Land & Natural Resources, Maui Land Division
13. Dept. of Land & Natural Resources, Historic Preservation Division
14. Dept. of Transportation
15. Dept. of Transportation, Maui Highways Division
16. Office of Hawaiian Affairs

#### County Agencies

1. Dept. of Environmental Management
2. Dept. of Fire & Public Safety
3. Dept. of Parks & Recreation
4. Dept. of Planning
5. Dept. of Police
6. Dept. of Public Works
7. Dept. of Transportation
8. Dept. of Water Supply

#### Others

1. A&B Properties, Inc.
2. Hawaiian Cement
3. Hawaiian Commercial & Sugar Company
4. Hawaiian Telcom
5. Maui Electric Company, Ltd.
6. Kihei Community Association
7. LeSea Broadcasting Corp.

A typical early consultation letter, as well as comment and response letters associated with this process is included in [Appendix R, Early Consultation Letters](#). As indicated in the early consultation letter, a Request for Use of State Lands was filed with the State Department of Land and Natural Resources (DLNR) to request access easements for the subject property. [See Appendix D-1, Request for Use of State Lands \(Original\)](#). The Request for Use of State Lands has since been amended based on consultation with the DLNR. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The Maui Planning Commission is serving as the approving agency for the environmental review process based on consultation with the State Land Use Commission and the Maui Planning Department.





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## II. DESCRIPTION OF THE PROPERTY AND PROPOSED ACTION

### A. PROPERTY LOCATION

The subject parcel is approximately 86 acres and is identified by TMK (2) 3-8-008: 019.

The property is located about 1.0 mile southeast of the intersection of Kama`aina Road, Mehameha Loop, and Mokulele Highway, a divided, four-lane facility linking South and Central Maui. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. Access from the highway to the site is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. [See Figure 1, Regional Location Map](#), [Figure 2, Aerial Location Map](#), [Figure 3, Parcel Location Map](#), and [Figure 4, Site Photographs and Reference Map](#).

### B. EXISTING SITE CONDITIONS AND LAND USE

The subject parcel is owned by CMBY 2011 Investment, LLC and is vacant and undeveloped.. [See Appendix B, Topographic Survey Map](#) and [Figure 4, Site Photographs and Reference Map](#)

During World War II, the site was part of the Pu`unene Naval Air Station and was used for military purposes. In more recent times, the property was used for hog farming and scrap metal storage. No productive use or activity has occurred on the site since these activities were discontinued in 2007.

The subject parcel is in the *State Agricultural District* and is designated *Agriculture* by the Kihei-Makena Community Plan. The property is also zoned for *Agricultural District* use by the County of Maui. [See Appendix A, Zoning and Flood Confirmation](#), [Figure 12, State Land Use Districts](#), [Figure 14, Kihei-Makena Community Plan](#), and [Figure 15, Maui County Zoning](#).



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The project site also lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#). The subject parcel does not fall within the limits of the Special Management Area for the island of Maui. [See Figure 16, Special Management Area](#).

### **C. REASONS JUSTIFYING THE REQUEST**

On the island of Maui, about 489 acres of land has been zoned for heavy industrial use. In Central Maui, approximately 442 acres have been zoned for this purpose. Much of this heavy industrial zoned land has already been built upon or is being used as work or storage yards. The minimal amount of land that is available is located in areas that are considered unsuitable for heavy industrial use due to proximity impacts to adjacent residential and commercial development. In this case, the highest and best use of this land is for business use, which is currently allowed by heavy industrial zoning.

There has not been any purely heavy industrial development in Central Maui for over a decade. During this period, the focus has been on the light industrial market with an emphasis on commercial retail/office use.

With the exception of the proposed project, no heavy industrial projects are proposed on Maui at this time. With the limited supply of heavy industrial land that is currently available, the proposed heavy industrial subdivision is expected to attract a significant amount of interest. Since there is no residential or commercial development in the vicinity of the site, the proposed project is ideally situated for heavy industrial use and its centralized location provides convenient access to Kahului Harbor and the Kahului Airport.

The subject property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is located in proximity to existing heavy industrial uses at the Central Maui Baseyard and the Hawaiian Cement Quarry. The project site is also located in the vicinity of Project District 10 (Old Pu'unene Airport), a 561-acre recreational and industrial expansion area included in the Kihei-Makena Community Plan which is intended to meet future recreational needs and provide areas for industrial activities whose locations are better suited away from developed urban areas. Within the Project District 10 lies the 222-acre Pu'unene Airport Master Plan



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area which is currently in the process of being updated by the County of Maui to provide space for future public and recreational uses. [See Figure 7, Pu`unene Airport Master Plan - Concept Land Uses.](#)

The proposed project is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase lots and build new facilities or expand their current operations.

#### **D. DESCRIPTION OF THE PROPOSED ACTION**

##### **1. Request for Land Use Entitlements**

The subject property encompasses 86 acres and is identified by TMK (2) 3-8-008: 019. The property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map.](#) The subject parcel does not fall within the limits of the Special Management Area for the island of Maui. [See Figure 16, Special Management Area.](#)

The land owner, CMBY 2011 Investment, LLC (aka, CMBY), is requesting the following land use entitlements which would allow the site to be utilized for heavy industrial purposes: 1) a Land Use Commission District Boundary Amendment (DBA) from the *State Agricultural District* to the *State Urban District*; 2) a Community Plan Amendment (CPA) from *Agriculture* to *Heavy Industrial*; and 3) a Change in Zoning (CIZ) from *Agricultural* to *M-3, Restricted Industrial*. The State Land Use Commission (SLUC) is the decision-making body for the DBA, while the Maui County Council will serve as the decision-making authority for the CPA and CIZ.

On September 21, 2012, the Maui County Council approved a bill for *M-3, Restricted Industrial District* zoning. The bill was signed by the Mayor on September 24, 2012 and was designated Ordinance No. 3977. It should be noted that CMBY's application for the CIZ was initially prepared on the basis of seeking a zoning change from *Agricultural* to *M-2, Heavy Industrial*. However, with the recent adoption of *M-3, Restricted Industrial* zoning, the CIZ application has been amended to request a change to *M-3* zoning.



Generally, *M-3, Restricted Industrial* zoning encompasses those uses that involve the manufacture, processing, storage, or treatment of goods from raw materials. The intent of *M-3* zoning is to provide for manufacturing and nuisance industries and exclude retail and office uses. Some of the uses permitted under *M-3* zoning include: canneries; factories; manufacturing facilities; major utility facilities; landfills, lumber yards; machine shops; rock quarries; and material recycling/processing facilities. The minimum lot size under *M-3* zoning is 10,000 square feet, while the minimum lot width is 75 feet and the maximum building height is 90 feet. Side and rear setbacks are zero feet or the same as the adjoining zoning category whichever is greater. [See Appendix C, \*M-3 Restricted Industrial Zoning Regulations\*.](#)

A Petition for the DBA will be filed with the SLUC after the publication of the Final EA and Finding of No Significant Impact (FONSI). A consolidated application for the CPA and CIZ was filed with the County of Maui on April 16, 2012 and is being held in abeyance until the processing of the DBA has been completed. Assuming the DBA is granted; the Maui Planning Commission will review the CPA and CIZ and provide their recommendations to the Maui County Council which will then proceed to take action on the land use requests. The approval of the DBA, CPA, and CIZ will provide the land owner with the necessary entitlements to develop and utilize the subject property for heavy industrial purposes.

## 2. *Proposed Action*

In light of the uncertain volatile nature of the global economy, the actual number and size of the subdivision lots, and the timeframe for filing an application for subdivision approval, will be heavily influenced by prevailing market conditions at the time CMBY is ready to proceed with development.

The proposed land development plan for the proposed heavy industrial subdivision currently calls for subdividing the 86-acre subject parcel to provide 28 developable lots on 66 acres of land including 10 lots ranging in size from 0.5-acre to 1-acre, five lots ranging from over 1-acre to 2-acres in size, and the remaining 13 lots ranging from over 2-acres to 20-acres in size. Preliminarily, about 9 acres will be set aside for a series of drainage retention basins along the western edge of the parcel, while approximately 11 acres have been designated for the subdivision's internal roadway system. [See Figure 5, \*Proposed Land Development Plan\* and Figure 5A, \*Conceptual\*](#)



[Site Plan](#). In addition, subdivision street trees will be planted in accordance with Chapter 12.24 of the Maui County Code (*Landscape Planting and Beautification*).

[See Figure 5B, Conceptual Landscape Site Plan](#). Due to the unpredictable nature of the global economy, the preceding plans are subject to change based on market conditions at the time of actual development.

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

Subdivision improvements to be provided by the land owner and improvements that will be the responsibility of individual lot owners are noted below.

1. The subdivision's water system will be privately owned and maintained by an association of lot owners. The private water system will include drinking and non-drinking water wells, booster pumps, and a reverse osmosis purification system, as well as water transmission lines, manholes, and laterals to each lot. The drinking water well will provide water for domestic use, while the non-drinking water well will provide water for irrigation and fire protection.

As lots within the subdivision are developed, each lot owner will be responsible for tying in to the subdivision's water system by connecting to the lateral on their lot. No additional wells will be permitted.

2. As noted in the Draft EA, the subdivision's master wastewater system originally included sewer transmission lines, manholes, and laterals which would convey wastewater flows to a central leach field. Lot owners would be responsible for installing an individual wastewater system (IWS) on their lots and connecting to the master system which would be privately owned and maintained by the Lot Owner's Association.



However, in commenting on the Draft EA, the State Department of Health (DOH) indicated that it will not allow multiple IWS to discharge into a central leach field and that a separate leach field must be provided for each IWS. [See June 19, 2012 letter – Appendix S, Draft EA Comment Period.](#)

As a result, the wastewater treatment plan for the project has been modified to call for the installation of an IWS consisting of an aerobic treatment unit and leach field for each lot. As indicated by the DOH, this type of IWS can be used within 1,000 feet of drinking water sources and wells. The cost and installation of the IWS will be borne by individual lot owners as they develop their lots in the future.

3. The subdivision's drainage system will be privately owned and maintained by the Lot Owner's Association. The private drainage system will include storm water retention basins and storm water transmission lines, manholes, and laterals to each lot. The retention basins will be located along the western edge of the project site.

As lots within the subdivision are developed, each lot owner will be responsible for tying in to the subdivision's drainage system by connecting to the lateral on their lot. Depending on the type of industrial activity on each lot, the lot owner may be required to install appropriate filtering devices to ensure that groundwater is not impacted by pollutants contained in runoff.

4. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. The subdivision's internal roadways will be privately owned and maintained by the Lot Owner's Association.

As lots within the subdivision are developed, each lot owner will be responsible for installing a driveway to connect to the subdivision road fronting their parcel.

5. Electrical, telephone, and CATV lines will be extended to the subdivision from the nearest available service connection. Underground utility lines will be installed within the subdivision's streets and extended to each lot via utility boxes.

As lots within the subdivision are developed, each lot owner will be responsible for their own power, phone, and CATV service by hooking up to the utility boxes on their lot.

6. Landscaping and irrigation for subdivision common areas will be privately owned and maintained by an association of lot owners. Underground irrigation lines will be installed within the subdivision's streets and service laterals will be provided for each lot.

As lots within the subdivision are developed, each lot owner will be responsible for their own landscaping and for tying into the subdivision's irrigation system by connecting to the lateral on their lot.



In addition to its common area landscaping and irrigation system, the subdivision's water, wastewater, drainage, and internal roadway systems will be privately owned and maintained by the Lot Owner's Association. The proposed subdivision improvements shall conform to, or be consistent with, all applicable Federal, State, and County regulations. Provisions for compliance shall be set forth in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision.

All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the CC&Rs and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

The land owner and the Maui Department of Environmental Management (DEM) have had meetings to discuss the possibility of establishing a construction and demolition (C&D) landfill within the proposed subdivision since an existing privately-owned C&D facility at Ma`alaea is nearing capacity and has approximately two years of remaining space. Due diligence work to assess the feasibility of proceeding with the C&D landfill (a permitted use under *M-3* zoning) is currently underway. Should plans for the C&D landfill move forward for implementation, the design, construction, operation, and maintenance of the facility will comply with all applicable regulatory and environmental rules and regulations for its development.

It is important to note that final lot sizes in the proposed heavy industrial subdivision shall be determined by the types of land uses that are proposed in the subdivision and the forecasted demand for the lots based on prevailing market projections approximately six months prior to filing an application for preliminary subdivision approval with the County's Development Services Administration

The preliminary sales price for subdivision lots is projected to be \$20 per square foot in 2011 dollars. Final sales prices will be based upon market conditions at the time final subdivision approval is granted, and would reflect any conditions which may be imposed by the SLUC or the County of Maui as a result of the entitlement process.

In 2011, it was estimated that the land use and subdivision approval process could take approximately four to five years. As such, subdivision construction could begin in 2016 or commence as early 2015. Preliminary subdivision construction costs are



projected to be \$20 million in 2011 dollars, while the forecasted construction period is about 30 months.

The subsequent lot build-out period for the subdivision is expected to last approximately 10 years. An annual average of 65 direct and indirect Maui jobs is projected during the subdivision's construction period, while an annual average of 142 direct and indirect Maui jobs is forecasted for the subdivision's lot build-out phase.

## **E. ALTERNATIVES**

### **1. No Action Alternative**

*Analysis:* Under the "No Action" alternative, the current agricultural land use classification and physical condition of the subject parcel would be maintained and the property would continue to be under utilized in terms of its potential highest and best use. Since no development would occur under this alternative, the present physical and man-made environment would not be affected and no new or additional demands for public services and infrastructure would be required. Because the "No Action" alternative would preclude the development of the site for heavy industrial use, the availability of land for purely heavy industrial purposes would continue to be in very short supply. As such, the "No Action" alternative is not a viable option and was dropped from consideration.

### **2. Deferred Action Alternative**

*Analysis:* Deferring development until some point in the future is a variation of the "No Action" alternative as existing conditions would be temporarily maintained. However, future market conditions (poor economy, high interest rates, increased labor and material costs) could affect the feasibility and timing of proceeding with the project and is therefore not practicable. Accordingly, the "Deferred Action" alternative was deemed unfeasible as it does not address the current shortage of heavy industrial-zoned land on Maui.





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3. Alternative Locations

*Analysis:* In Central Maui, approximately 442 acres has been zoned for heavy industrial use. Aside from the HC&S sugar mill in Pu`unene and the future power generation plant site for Maui Electric Company, the remaining 337 acres, is situated around Kahului Harbor and the Kahului Airport. These lands are used for harbor and airport facilities and operations and are not considered to be available to the market. Other heavy industrial areas in Central Maui include the Wakea Industrial Subdivision, Airport Industrial Subdivision, as well as portions of The Millyard and Maui (Kahului) Industrial Subdivision. In addition to the area around Hobron Avenue and near the corner of Kahului Beach Road and Ka`ahumanu Avenue, the land underlying the Queen Ka`ahumanu Center, Maui Mall, and the former Maui Land and Pineapple Company cannery is zoned for heavy industrial use. Most of these areas have been improved with commercial and light industrial uses or are reserved for future development.

The market availability of lands suitable for heavy industrial development is very limited. The existing inventory of heavy industrial-zoned land that is available for sale consists of 16 acres at five sites in Kahului and two locations in Wailuku. The seven sites are located in areas with existing public water, sewer, drainage, and roadway systems. However, these sites are all located in areas deemed unsuitable for heavy industrial uses as adjacent residential and commercial development would likely object to the operational effects (e.g., noise, odor, dust) associated with heavy industrial activities.

With the exception of the subject parcel, there are no other suitable sites that are currently available for the development of a purely heavy industrial subdivision.

4. Alternative Land Uses

*Analysis:* Although it may be possible to reclassify the subject property for a different type of land use (e.g., residential, commercial) or combination of land uses, such a change would be inconsistent with existing and planned future land uses in the area and would also alter the rural and agricultural-industrial



character of the project site and surrounding area. Depending on the type and intensity of the land use, it could have beneficial effects, affect the environment, and place greater demands on public services and infrastructure. For example, the use of the site for commercial purposes could produce economic benefits in terms of job creation and commercial growth but could also generate short and long-term impacts attributable to increased traffic, water use, and storm water runoff.

In addition to addressing the need for heavy industrial space on Maui, the proposed project is consistent with existing and planned heavy industrial land uses in the vicinity such as the Central Maui Baseyard, Hawaiian Cement Quarry, Project District 10 (Old Pu`unene Airport area) and the *draft* Maui Island Plan.

In light of the foregoing, reclassifying the subject property for a different land use or a combination of different land uses was not deemed feasible.

5. Design Alternative

Analysis: During the preliminary planning and design phase of the project, the applicant considered various criteria to create and evaluate different layouts for the proposed subdivision. For example, the locations of some of the smaller subdivision lots and the alignment of the subdivision's internal roadways have evolved from that of an earlier site plan. [See Figure 6, Earlier Concept Land Plan.](#)

The site planning and design process examined existing topography, soils, drainage patterns, and infrastructure. Spatial relationships, land use, engineering, and infrastructure requirements, lot density, sizes and configurations, traffic and access considerations, and development costs and marketability were examined during this process as well. While there are other plans that could be examined, the proposed subdivision layout is considered the most viable in terms of meeting the applicant's plans for the heavy industrial use of the site while addressing regulatory and infrastructure requirements for the project.



Under current County zoning, the minimum size requirement for an *M-3, Restricted Industrial* lot is 10,000 square feet. For example, if 66 acres of the subject parcel's 86 acres were subdivided into 10,000 square foot lots, a total of 287 lots would be created. If the 66 acres were subdivided into 0.5-acre lots, a total of 132 lots would result. Smaller lot sizes would result in greater site density as the number of lots within the subdivision would increase. A higher density development could increase traffic and trigger the need for additional public services and infrastructure improvements. A potential benefit of having smaller albeit a greater number of lots is that there would be more opportunities to purchase fee simple, heavy industrial land due to the corresponding increase in inventory.

Conversely, increasing lot sizes would produce fewer but larger lots. A potential benefit of having larger lots is that site density would be reduced and demands upon infrastructure and public services would be minimized. However, a lower density development would also require that certain fixed development costs (e.g., design, planning, and engineering studies; off-site infrastructure costs), be amortized over fewer lots which would increase the cost of a lot and its selling price.

#### 6. Agricultural Use

Analysis: The 86 acres comprising the subject parcel represents only 0.0002 percent of all lands in the State Agricultural District on the island of Maui. The soils underlying the property are poorly textured and extremely rocky or stony. This land has an overall productivity rating of "E" (the lowest) and the site is Unclassified (residual land) by the Agricultural Lands of Importance to the State of Hawai'i. The poor soil quality and low productivity rating of the property preclude any feasible agricultural development on the site. Agricultural activities that have occurred on the site in the past include sugar cane cultivation by former land owner HC&S and hog farming by former lessee Maui Factors. No agricultural use has occurred on the site since 2007.

If sugar cane cultivation or a similar agricultural activity were to continue on the site, potential impacts typically associated with this type of use include noise, dust, and smoke from planting and harvesting operations. Given its



seasonal nature, and the property's remote location and distance from the closest residential development, the potential effects of this kind of farming activity on the surrounding area are temporary in nature and are not considered to be adverse.

Since the subject parcel is not being used for agriculture, no agricultural jobs or revenues will be affected by the development of the proposed project. In addition, although the proposed project would reclassify agricultural lands for heavy industrial use, the businesses in the proposed subdivision are expected to generate a significant, ongoing revenue stream which would benefit the State and County through job creation; additional direct and indirect sales expenditures; and increased tax revenues and fees.

In light of the foregoing, the proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for agricultural activities. In addition, when considering the highest and best use of the property in context of the limited supply and latent demand for land that is available for purely heavy industrial purposes, the "Agricultural Use" alternative is not a viable option and was dropped from consideration.

7. Preferred Alternative

*Analysis:* The proposed project addresses the need for heavy industrial space in Central Maui and is also consistent with existing and planned heavy industrial land uses in the area. For example, the Kihei-Makena Community Plan description of Project District 10 (Old Pu`unene Airport area) states that "*approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use.*" The subject parcel is also included within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan (MIP). The MIP notes that the proposed heavy industrial use of the property is "*compatible with surrounding agricultural operations*" and "*represents a logical expansion of industrial land use in the area*" and that the "*area's location, midway between Kihei and Kahului, makes it an ideal site to serve the island's long term heavy industrial needs.*"



Currently, the proposed project is the only heavy industrial development planned on Maui. In addition to being well received, it is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase fee simple lots and build new facilities or expand their current operations. Furthermore, the development of the proposed subdivision is expected to generate significant expenditures by the land owner, as well as by secondary owners and those involved in the separate development of the heavy industrial lots. These investments are expected to have a beneficial impact upon both State and County economies on a broad scale and in a multitude of ways.

Since future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. However, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices and emergency response plans that are specific to the heavy industrial use on their lots. In addition, project-specific mitigation measures, and mandatory compliance with all applicable regulatory requirements will help minimize potential short and long-term environmental impacts.



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### III. DESCRIPTION OF THE EXISTING ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATION MEASURES

#### A. PHYSICAL ENVIRONMENT

##### 1. Surrounding Land Uses

**Existing Conditions.** The subject parcel is bounded by Project District 10 (PD 10) and the Pu`unene Airport Master Plan (PAMP) area on the west, and lands which are designated for *Agricultural* uses (by the State and County) to the north, east, and south. HC&S sugar cane fields border the parcel on the north, east, and south, while the Hawaiian Cement facility lies approximately 0.2 mile to the east of the site. Existing uses within PD 10 include the Maui Raceway Park (drag strip) and other recreational motor sport facilities, a facility for radio-controlled model airplanes, and the Hawaii Army National Guard (HANG) armory.

The subject parcel is located in an area characterized by sugar cane cultivation, as well as industrial, recreational, and public/quasi-public uses. Industrial uses in the area include the Hawaiian Cement Quarry, 0.2 mile to east, and the Central Maui Baseyard, 1.3 miles to the north. Recreational uses include the Maui Raceway Park, 0.4 mile to the west, while public/quasi-public uses include the HANG Armory, 0.7 mile to the west, and the Maui Humane Society, 1.1 miles to the northwest.

There is no residential development in the immediate vicinity of the proposed project. The closest residential areas are in Kihei, 2.3 miles to the south; Ma`alaea, 3.6 miles to the southwest; Kahului, 4.0 miles to the north; and Pukalani, 6.4 miles to the east.

**Potential Impacts and Mitigation Measures.** The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development.

In 1995, the County of Maui prepared a Pu`unene Airport Master Plan (PAMP) for 222 acres of land in the vicinity of the Old Pu`unene Airport. The land for this area was provided by the State of Hawaii for public and recreational purposes and was



transferred to the County of Maui via Executive Order 4024 in November 2003. The PAMP area lies within PD 10 and is currently in the process of being updated to provide space for future public and recreational purposes. [See Figure 7, Pu`unene Airport Master Plan – Concept Land Uses.](#)

As noted in the Kihei-Makena Community Plan (1998), PD 10 encompasses 561 acres and was established with the purpose of creating a master-planned, expansion area which would meet future recreational (motor sports) needs and provide space for industrial activities (including government facilities) whose locations are better suited away from urban areas. [See Figure 14, Kihei-Makena Community Plan.](#)

The subject property is located within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan (MIP). The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* MIP and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan.](#)

Approximately 939 acres of land surrounding the subject parcel have been included in the Pulehunui Master Plan (August 2012), a cooperative land use and infrastructure development planning document that has been prepared for the DHHL and DLNR for the future development of their lands in the adjacent area. [See Figure 7A, Areas of Potential Future Development.](#) The master plan envisions land uses that support commercial and industrial uses alongside quasi-public and open space areas.

Within this area, the State Department of Hawaiian Home Lands (DHHL) owns approximately 184 acres of land bordered by Mehamaha Loop which is designated for future commercial development. The DHHL also owns 646 acres to the south of the subject parcel – TMK (2) 3-8-008: 034 – of which 100 acres has been included in the Pulehunui Master Plan. Although Parcel 34 is zoned for agricultural homestead lots by the DHHL, the site is neither conducive for residential use or farm dwellings because of prevailing dust and wind conditions. As part of the Pulehunui Master Plan, the DHHL is planning to develop a wastewater treatment plant on the 100-acre portion of Parcel 34 (personal communication with Julie Ann Cachola - DHHL, July 26, 2012).



The State Department of Public Safety's (PSD) plans for the future development of the Maui Prison (aka, Maui Regional Public Safety Complex), which is proposed within PD 10, have been delayed due to the lack of government funding and the absence of infrastructure (*i.e.*, water, sewer) to support this project. In May 2012, the County of Maui recommended that the future Prison be moved from its proposed location near Mokulele Highway to a new site (on DLNR lands) approximately one mile east of the highway (personal communication with Julie Ann Cachola - DHHL, July 26, 2012).

The implementation of the Pulehunui Master Plan will be a long-term process that will involve three phases and take at least 20 years.

The closest residential projects that are planned or approved for future development are in North Kihei, approximately 2.3 miles south of the project site. A&B Properties is proposing to develop a 600-unit residential subdivision on approximately 94 acres of land in North Kihei. Maui County Council action on the land use entitlements for this project is currently pending. In March 2011, the Maui County Council approved Kaiwahine Village, a 120-unit multi-family housing project abutting the Hale Pi'ilani Subdivision. Construction of this project has yet to commence. [See Figure 7A, Areas of Potential Future Development.](#)

As previously noted, existing heavy industrial uses in the project area include the Hawaiian Cement Quarry and the Central Maui Baseyard while future industrial uses include those uses established for PD 10. As indicated by the Kihei-Makena Community Plan (1998), "*The objective of this project district is to establish a master planned recreational and industrial (emphasis added) expansion area to meet future recreational needs and to provide areas for industrial (emphasis added) activities, including government facilities, whose locations are better suited away from urban areas.* In its description of PD 10, the Community Plan also states that "*Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use.*"

The subject parcel is located within the proposed UGB for the *draft* MIP which indicates that the subject parcel is "*compatible with surrounding agricultural operations*" and "*represents a logical expansion of industrial land use in the area*" and





that the “*area’s location, midway between Kihei and Kahului, makes it an ideal site to serve the island’s long term heavy industrial land use needs.*”

The subject parcel is ideally situated for heavy industrial activities given existing and future land uses in the area, its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport. In addition, the use of the subject parcel for heavy industrial purposes is consistent with existing heavy industrial uses in the area and is compatible with land uses for the site that are set forth by the *draft* MIP and the Community Plan.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon surrounding land uses.

## **2. Climate, Topography and Soils**

**Existing Conditions.** In Hawaii, the annual and daily variation of temperature depends to a large degree on elevation above sea level, location and distance inland, and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. Historical data from the project area indicates that the average daily minimum and maximum temperatures for this area of Maui are 63°F and 86°F, respectively.

Maui lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Because the project area is located in the valley between Haleakala and the West Maui Mountains and the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. The monthly mean wind speed and prevailing wind direction statistics for Kahului Airport indicate that ventilation is good throughout the year with monthly mean speeds ranging from about 11 to 15 miles per hour. Wind speeds in summer tend to be strongest. The monthly prevailing wind direction year round is from the northeast.



Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The climate of the project area is relatively dry. Historical records from the project area show that this area of Maui averages about only 13 inches of precipitation per year, with the summer months being the driest.

The subject parcel slopes in an easterly to westerly direction with on site elevations ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent. [See Appendix B, Topographic Survey Map.](#)

The Waiakoa-Keahua-Moloka'i soils are associated with the subject parcel. These soils are found on low uplands and are characterized by moderately deep and deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured subsoil

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (1972)*, prepared by the United States Department of Agriculture, the following soil series are primarily associated with the subject parcel. [See Figure 8, Soil Classifications.](#)

- Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). This series is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes which is found on smooth, low uplands that are gently sloping to moderately steep except that WID2 is eroded and stones cover 3 to 15 percent of the surface. Runoff is medium and the erosion hazard is severe. This soil is used for pasture and wildlife habitat.
- Alae cobbly sandy loam, 0 to 3 percent slopes (AcB). This series consists of excessively drained soils on alluvial fans on the island of Maui. They are nearly level to gently sloping. Most areas have cobblestones on the surface. On this soil, runoff is slow and the erosion hazard is slight. This soil is used for sugar cane and pasture.

**Potential Impacts and Mitigation Measures.** Site work for the subdivision's basic infrastructure (e.g. water, drainage, roadways) is expected to be minimal and will be the responsibility of the land owner. As lots within the subdivision are developed, each lot owner will be responsible for the grubbing and grading on their lots. Modifications to the existing landform will unavoidably occur as a result of this work and is not expected to result in any adverse impacts. To the extent possible, earthwork will be kept to a minimum and cut and fill quantities will be balanced to reduce site work costs and maintain existing drainage patterns. In addition, erosion



control measures and Best Management Practices will be implemented in accordance with the Maui County grading ordinance to minimize soil loss and sedimentation during construction.

Provisions for the development of subdivision lots, including conformance with all applicable government requirements, shall be set forth in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision and maintained by the association of subdivision lot owners.

The proposed project is not expected to result in any adverse long-term impacts which would affect the landform.

### **3. Water Bodies**

**Existing Conditions.** An HC&S irrigation reservoir (Reservoir 90) lies along Lower Kihei Road, just north of, and across the street from, the subject parcel. An earthen embankment dam (State Dam ID MA-0089) regulated by the State Department of Land and Natural Resources (DLNR) holds the irrigation water within the reservoir. The dam is approximately 19 feet tall and 1,250 feet long and is considered small based on dam size criteria – less than 1,000 acre/feet of storage and less than 40 feet in height. A Limited Visual Dam Safety Inspection Summary Report for the dam was prepared by the U.S. Army Corps of Engineers (USACE) and the DLNR in May 2006 based on an inspection the previous month. The report indicated that “There is no immediate threat to the safety of the dam”.

Aside from the reservoir, the closest water bodies in the vicinity are the Pacific Ocean and the Kealia Pond National Wildlife Refuge which are located to the southwest of the subject property. The wildlife refuge encompasses 691 acres and is one of the few natural wetlands in Hawai`i. Kealia Pond serves as a settling basin for a 56 square mile watershed that experiences seasonal intermittent flooding during winter months and drier conditions during the summer. During certain times of the year, the refuge supports a large number of the endangered A`eo or Hawaiian Stilt (*Himantopus mexicanus knudseni*) population (U.S. Fish & Wildlife Service, March 2010). At its closest point, the subject parcel is approximately 1.75 miles from Kealia Pond and about 2.25 miles from the ocean.



During the early consultation phase for the preparation of the Draft EA, the Corps of Engineers indicated that a Department of the Army (DA) Permit must be obtained prior to undertaking any construction, dredging or other activity that affects or occurs in, over, or under navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of 1899. USACE also indicated that a DA Permit must be obtained (prior to construction) for the placement or discharge of dredged and/or fill material into waters of the U.S.(including wetlands) pursuant to Section 404 of the Clean Water Act of 1972. For non-tidal waters, the lateral limits of the Corps jurisdiction extend to the Ordinary High Water Mark or the approved delineated boundary of any adjacent wetlands. [See Appendix R, Early Consultation Letters](#).

**Potential Impacts and Mitigation Measures.** There are no wetlands, streams, ponds, or other water bodies on the subject parcel. The HC&S irrigation reservoir to the north of the site will not be affected by the proposed project. Runoff within the subdivision will be conveyed to a series of retention basins along the western edge of the site. The drainage system for the subdivision will be designed to accommodate the incremental increase in runoff generated by the development of the entire site and is designed to have no adverse effect on adjacent and downstream properties.

In a letter dated June 19, 2012, USACE indicated that the proposed project will not require a Department of the Army permit since it does not involve any navigable waters of the U.S. subject to the Corp's jurisdiction pursuant to Section 10 nor would it involve the placement and/or discharge of dredged and/or fill material into waters of the U.S. (including wetlands) pursuant to Section 404. [See Appendix S, Draft EA Comment Period](#).

#### **4. Natural Hazards**

**Existing Conditions.** The Federal Emergency Management Agency's flood insurance rate map for this part of the island (Panel Number 1500030580E dated September 25, 2009), indicates that the subject property is situated in Flood Zone "X" which represents areas of minimal flooding. [See Figure 9, Flood Insurance Rate Map](#). In addition, the evacuation maps prepared by the Maui County Civil Defense Agency reveal that the project site does not lie in an area which is subject to tsunami evacuation. The closest Civil Defense warning siren in the area is located about two miles to the southwest near the intersection of North Kihei Road and South Kihei



Road.

Seismic hazards are events related to ground shaking events such as landslides, ground cracks, rock falls, and tsunamis. A system of classifying these hazards has been developed by engineers, seismologists, and architects on the basis of the expected strength of ground shaking and the probability of the shaking occurring within a specified time. The results were included in the Uniform Building Code seismic provisions which contains six seismic zones ranging from 0 (no chance of severe shaking in a 50-year interval) to 4 (10 percent chance of severe shaking within a 50-year interval). The shaking is quantified in terms of g-force, the gravitational acceleration of the earth.

Based on a re-evaluation of seismic hazards by the United States Geological Service in 1992, the seismic hazard for Maui County falls within Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded.

**Potential Impacts and Mitigation Measures.** Pursuant to recommendations made by the State Civil Defense agency in their review of the Draft EA ([See August 2, 2012 letter – Appendix S, Draft EA Comment Period](#)), the applicant will work with the agency to install one omni-directional 121 db(c) siren to provide coverage for the project area.

The subject parcel lies in a low risk flood hazard area and is located well beyond the boundaries of the tsunami evacuation zones for this part of the island. The proposed project will not alter any parameters for defining flood hazard areas or tsunami evacuation zones nor will it contribute toward inland or coastal flooding or impact downstream and adjacent properties. The potential for seismic damage is minimal because of the 10 percent probability that 1/5 of the ground acceleration rate will be exceeded during an earthquake.

## **5. Flora**

**Existing Conditions.** LeGrande Biological Surveys, Inc. carried out a botanical field survey of the project area in August 2011. The primary objectives of the field survey



were to:

1. Inventory the flora;
2. Provide a general description of the vegetation on the project site;
3. Search for threatened and endangered species as well as species of concern; and
4. Provide recommendations regarding potential impacts to the biological resources of the area in regard to the proposed development of the survey area.

In addition to the subject parcel, two proposed access easements were surveyed during field work. The findings of the field survey were presented in a Botanical Resource Assessment. [See Appendix E, Flora Survey.](#)

The subject parcel is characterized by Dry Kiawe/Buffelgrass vegetation. A total of 50 plant species were observed within the survey area of which 44 species, or 88 percent, are alien (introduced) and 6 species, or 12 percent, are indigenous (native to the Hawaiian Islands and elsewhere).

The following summary describes the plants that were observed in these areas.

Subject Parcel. The dominant onsite vegetation is a kiawe (*Prosopis pallida*)/buffelgrass (*Cenchrus ciliaris*) grassland with a koa haole (*Leucaena leucocephala*) scrub transition between the southern boundary of the property. The northern section appears to have been recently graded with large boulder piles near the gate entrance. Several other weedy native species were scattered throughout the property including: Jimson weed (*Datura stramonium*), cheese weed (*Malva parviflora*), Lion's ear (*Leonotis nepetifolia*), hairy spurge (*Chamaesyce hirta*), *Amaranthus* sp., and golden crownbeard (*Verbesina encelioides*). The few native species that were observed within the survey area include three indigenous species: ilima (*Sida fallax*), popolo (*Solanum americanum*), and uhaloa (*Waltheria indica*).

State Easements. This area encompasses proposed access easements along Kama`aina Road (State owned), South Firebreak Road (State & privately owned), and Lower Kihei Road (privately owned), as well as adjacent sugar cane fields and an HC&S irrigation reservoir. Dominant roadside weeds are buffel grass and koa haole



shrubs. Others species scattered along the roadside and reservoir embankment include partridge pea (*Chamaecrista nictitans* subsp. *patellaria* var. *glabrata*), swollen finger grass (*Chloris barbata*), castor bean (*Ricinus communis*), manienie (*Cynodon dactylon*), kaliko (*Euphorbia heterophylla*), graceful spurge (*Chamaesyce hypericifolia*), obscure morning glory (*Ipomoea obscura*), and smooth rattlepod (*Crotalaria pallida*).

**Reservoir Easement.** This area encompasses a proposed alternate access easement along the north and east sides of the irrigation reservoir. Monkeypod (*Samanea saman*) and Siris (*Albizia lebbek*) are the dominant tree species around the east boundary of the easement mixed with a Koa haole scrub. At the north end of the reservoir a portion of the easement crosses over a drainage canal. Large Java plum (*Syzygium cumini*) trees dominate the area around the canal. During the survey, `auku`u (Black-crowned night heron) were observed in the Java plum trees. Several other plant species were noted in the area including two indigenous species: milo (*Thespesia populnea*) and hala (*Pandanus tectorius*), as well as Guinea grass (*Panicum maximum*), and banana (*Musa* sp).

As the easement heads north from the subject parcel it crosses a road leading to the Hawaiian Cement Plant and then heads west into sugar cane fields. A drainage ditch near the area where the easement turns west (past the reservoir) contains some plant species that are usually found near standing or running water. They included one native species `ae`ae (*Bacopa monnieri*) and several non-native species such as water morning glory (*Ipomoea aquatic*), kalo (*Colocasia esculenta*), false daisy (*Eclipta prostrata*), and vasey grass (*Paspalum urvillei*).

**Potential Impacts and Mitigation Measures.** Federal and State listed species status follows the *Federal Register* (2002) and the U.S. Fish and Wildlife Service's (USFWS), *Listed and Candidate Species* (2008). None of the plants observed during the field survey is a threatened or endangered species or a species of concern. The survey area has been impacted over time by agricultural and vehicular use and its biological resources have been altered from its native state. The three essential criteria for defining a Federally recognized wetland are: hydrophytic vegetation, hydric soils, and wetland hydrology. No wetlands were encountered during the botanical field survey and none of the criteria for defining a wetland were present



within the project site.

During the early consultation process for the preparation of the Draft EA, the USFWS commented that host plants for the endangered Blackburn's Sphinx Moth (BSM) may breed and feed within the project area. Their recommendation to carry out the plant survey during or after the rainy season was noted. Host plants such as the introduced tree tobacco were observed very infrequently during the survey. Only a few small plants were seen over the entire subject property. Surrounding areas in Kihei and along the highway in Pu`unene had an abundance of tree tobacco during the same dates as the survey was carried out. The area encompassed by our survey does not appear to be an optimum area for BSM host plants. As such, the botanical resource assessment opines that a follow up survey in the spring is not warranted under the circumstances.

A survey of arthropods in the project area was conducted by Robert W. Hobdy on July 16, 2012. [See Appendix F-1, Arthropod Study](#). The report documenting the findings of the survey indicates that no rare or endangered insects were observed including the endangered Blackburn's sphinx moth (*Manduca blackburni*). In addition, none of the moth's preferred host plants, the tree tobacco (*Nicotiana glauca*) were found, and no adult moths, eggs or larvae were seen.

The proposed alternate access easement on the north and east sides of the irrigation reservoir borders the reservoir for much of its length. If this alternate alignment is selected, a buffer between the reservoir and roadway easement during construction would protect the emergent native vegetation and any native waterfowl present at the reservoir.

The proposed project is not expected to have a significant negative impact upon the botanical resources of the site or the general region.

## **6. Fauna**

**Existing Conditions.** Phillip Bruner conducted a faunal field survey of the project area in July 2011. The goals of the field survey were to:

1. Document the species of birds and mammals observed on or near the property.





2. Devote special attention to documenting the presence and/or possible use this area by native and migratory species particularly those that are listed as threatened or endangered.

The findings of the field survey were set forth in an Avifaunal and Feral Mammal Survey. [See Appendix F, Faunal Survey.](#)

Native (Indigenous) Land Birds. No native land birds were observed during the field survey. The only species that might occur in this area on rare occasions is the *Pueo* or Hawaiian Short-eared Owl (*Asio flammeus sandwichensis*). The State of Hawai'i lists the *Pueo* as endangered on Oahu but not on Maui. The *Pueo* nests on the ground in high, dense grass and forages over an array of habitats including forest, grasslands, and agricultural fields.

Native (Indigenous) Water Birds. During the field survey, an average of 16 *Auku`u* or Black-crowned Night Heron were observed around the HC&S irrigation reservoir although none were seen on the subject parcel. The *Auku`u*, which is neither threatened nor endangered, forages on a wide variety of prey and frequents wetland habitats.

Migratory Shore Birds. Migratory shore birds winter in Hawai'i between August and April and spend the rest of the year at their breeding grounds in the arctic and subarctic. The only species that could potentially occur in the area would be the *Kolea* or Pacific Golden Plover (*Pluvialis fulva*), which is neither threatened nor endangered. *Kolea* forage for insects on lawns and other habitats in Hawai'i and can be seen on cane haul roads and agricultural fields. A few *Kolea* are likely to occur in the area during August to April. No other migratory shore birds are likely to occur in the area.

Alien (Introduced) Birds. The survey area contains the usual array of alien species seen on similar property in Central Maui. These species, which are neither threatened or endangered, include the following: Cattle Egret (*Bubulcus ibis*), Gray Francolin (*Francolinus pondicerianus*), Black Francolin (*Francolinus francolinus*), Ring-necked Pheasant (*Phasianus colchicus*), Spotted Dove (*Streptopelis chinensis*), Zebra Dove (*Geopelia striata*), Barn Owl (*Tyto alba*), Japanese White-eye (*Zosterops japonicus*), Common Myna (*Acridotheres tristis*), Northern Cardinal (*Cardinalis*)



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*cardinales*), House Finch (*Carpodacus mexicanus*), and Nutmeg Mannikin (*Lonchura punctulata*).

**Mammals.** The only feral mammal observed during the field survey was the Small Indian Mongoose (*Herpestes javanicus*). Rats (*Rattus spp.*) and Mice (*Mus musculus*) are likely to occur on the site along with feral cats (*Felis catus*). Using an ultrasound detection device, an evening search of the property did not detect the presence of the endangered Hawaiian Hoary Bat, which roosts solitarily in trees. The bats forage for flying insects in a wide range of habitats including forests, agricultural lands, and urban areas, as well as over bays and ponds.

**Arthropods:** In response to comments from the State Land Use Commission ([See July 2, 1012 letter – Appendix S, Draft EA Comment Period](#)), Robert W. Hobdy conducted a survey to inventory all arthropod species in the project area. [See Appendix F-1, Arthropod Study](#). A total of 15 arthropods were recorded, representing seven Orders of spiders and insects. No rare or endangered insects were observed including the endangered Blackburn's sphinx moth (*Manduca blackburni*). None of the moth's preferred host plants, the tree tobacco (*Nicotiana glauca*) were found, and no adult moths, eggs or larvae were seen.

**Potential Impacts and Mitigation Measures.** The typical assemblage of non-native birds and mammals were observed during the field survey. No threatened or endangered avian species were observed or expected given the existing resources on the site.

At least two endangered water birds (*Koioa*, *Alaekē`ōke`ō*) utilize the nearby HC&S irrigation reservoir. These water birds did not respond to any traffic noise from South Firebreak Road and Lower Kihei Road which borders the reservoir to the west and south. An embankment and the vegetation around reservoir visually shields and buffers the birds from human disturbance. It should also be noted that water birds might fly over the subject parcel or utilize the proposed drainage basins along the west side of the site as they travel between various water bodies within the region including the adjacent irrigation reservoir and the Kealia Pond National Wildlife Refuge.



The *Kolea* or Pacific Golden Plover, which is neither threatened nor endangered, is the only potential migratory shorebird that might forage along roads and clearings in the Pu`unene area.

There are no known published sightings of the Hawaiian Hoary Bat in the project area. However, since the bat forages over a wide variety of habitats, it is possible that a sighting in the area could occur on rare occasion. The Faunal Survey notes that F. J. Bonaccorso, who has conducted extensive research on the bat, has recommended that trees in a project area not be cut or disturbed between the months of April and August if there is any evidence that bats occur in the area. During this period, the young flightless bats are left in the tree while their mother forages for food. In accordance with recommendations provided by the U.S. Fish & Wildlife Service in their review of the Draft EA ([See August 21, 2012 e-mail – Appendix S, Draft EA Comment Period](#)), the cutting or trimming of trees and woody shrubs over 15 feet in height shall be avoided from June 1 through September 15 to mitigate potential impacts to the Hawaiian Hoary Bat.

As a follow-up to the land owner's response to their early consultation comments ([See August 3, 2011 letter – Appendix R, Early Consultation Letters](#)), the USFWS provided supplemental comments via telephone (personal communication with Ian Bordenave, September 27, 2011). Mr. Bordenave indicated that the endangered *Nene* or Hawaiian goose has been observed in the area around Mokulele Highway and that the *Nene* is drawn to grass seedlings in hydro-mulched areas that are being developed. He recommended holding a pre-construction meeting to inform workers about how to detect the presence of *Nene* and how to avoid them and/or their nesting sites. He also indicated that John Medeiros from the Forestry Division of the State Department of Land and Natural Resources can be called upon for assistance and that the USFWS will identify the exact number of days for a survey to determine if the *Nene* is using the project site for foraging, loafing, or nesting.

In following up on comments from the State Office of Planning, ([See July 9, 2012 letter – Appendix S, Draft EA Comment Period](#)), Robert W. Hobdy conducted a survey of the project area on July 16, 2012 to assess its potential for providing habitat for *Nene* even if only incidental or temporary in nature. [See Appendix F-2, Nene \(Hawaiian Goose\) Survey](#). The report documenting the findings of the survey notes



that the subject parcel is not irrigated and is located in one of the driest regions on Maui. This area experiences long, hot and dry summers during which the grasses and herbaceous plants become seared and withered. Even in a substantial wet season, the vegetation is tough and the greenery is fleeting. The report finds that nothing in this environment would equate to preferred habitat for *Nene* or attract them to feed or breed here. The fact that no *Nene* was observed during the survey was an expected outcome, consistent with the existing environmental resources.

Exterior lighting will be appropriately shielded or directed downward to minimize impacts to any migratory seabirds which may become disoriented when traversing the project area.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon fauna in the project area.

## 7. Noise

**Existing Conditions.** The level of ambient noise is an important indicator of environmental quality. In an urban setting, industrial and construction activities, as well as aircraft and automotive traffic can result in adverse noise impacts. In a rural environment, traffic noise, surrounding land uses, and construction activities can impact noise levels based on their proximity to noise-sensitive development. Chronically high noise levels can impact personal health and the ambience and aesthetic appeal of an area.

Noise in the project area is attributable to aircraft traversing the area, vehicles along Mokulele Highway, truck traffic between the highway and the Hawaiian Cement Quarry, and sugar cane planting and harvesting operations in the vicinity.

An Acoustic Study for the proposed project was prepared by Y. Ebisu & Associates in November 2011. [See Appendix H, Noise Study.](#) The primary purpose of the study was to ascertain and assess present and future traffic noise conditions in the project area. Potential noise impacts from onsite activities and short-term construction noise were also examined and recommendations for minimizing noise impacts were provided.



The subject parcel is located in an area characterized by sugar cane cultivation, as well as industrial, recreational, and public/quasi-public uses. Industrial uses in the area include the Hawaiian Cement Quarry, 0.2 mile to east, and the Central Maui Baseyard, 1.3 miles to the north. Recreational uses include the Maui Raceway Park, 0.4 mile to the west, while public/quasi-public uses include the Hawai`i National Guard Armory, 0.7 mile to the west, and the Maui Humane Society, 1.1 miles to the northwest.

There is no residential development in the immediate vicinity of the proposed project. The closest residential areas are in Kihei, 2.3 miles to the south; Ma`alaea, 3.6 miles to the southwest; Kahului, 4.0 miles to the north; and Pukalani, 6.4 miles to the east.

Federal noise standards were used to calculate traffic noise levels along the roads serving the subject parcel. The noise descriptor used to assess environmental noise is the Day-Night Average Sound Level (DNL).

In the project area, traffic noise levels along Mokulele Highway are expected to increase by approximately 1.3 to 1.4 DNL by 2015 as a result of project and non-project traffic. Project traffic will result in an increase of 0.3 to 0.4 DNL, while non-project traffic is expected to contribute 1.0 DNL.

During the same timeframe, traffic noise levels along the roads serving the subject property (Kama`aina Road, South Firebreak Road) are expected to increase to 6.4 DNL due to project-generated traffic.

**Potential Impacts and Mitigation Measures.** While no significant increase in traffic noise levels along Mokulele Highway is expected as a result of project and non-project traffic by 2015, an increase of 6.4 DNL in project-generated traffic is expected to occur along the roads serving the subject parcel. However, due to the absence of noise-sensitive development along these roads, the 6.4 DNL increase is not expected to result in any adverse noise impacts.

As previously noted, the nearest residential noise receptors are in Kihei (2.3 miles), Ma`alaea (3.6 miles), Kahului (4.0 miles), and Pukalani (6.4 miles). In order to predict worst case subdivision noise emissions at the closest residential receptors, it was assumed that each lot within the subdivision would continuously emit 70 dBA. The



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results of the noise modeling indicated that worst case noise levels could fall between 3 and 29 dBA which is well below the 45 dBA at the closest residential receptors. Based on these noise modeling efforts, adverse noise impacts from onsite noise sources are not anticipated.

Predicted worst-case emissions from operating equipment within the proposed subdivision are not expected to exceed noise impact thresholds at the nearest noise-sensitive areas. During construction, no adverse noise impacts are anticipated due to the absence of noise-sensitive development in the neighborhood, as well as the physical separation and distance between the subject parcel and

Because construction activities may be audible within the project site and nearby properties, the quality of the acoustic environment may be temporarily affected if sound level thresholds are exceeded during construction. Construction vehicles, machinery, and equipment, such as tractor-trailers, front-end loaders, excavators, bulldozers, dump trucks, graders, generators, jackhammers, and power tools are the dominant noise sources during the construction phase.

Measures to reduce construction noise to inaudible levels will not be practical in all cases. However, proper equipment maintenance, the use of sound-dampening equipment, and limiting construction activities to daylight working hours will help minimize noise impacts.

Under existing State noise regulations, the maximum sound level for agricultural and industrial-zoned land is 70 dBA. The abbreviation dBA represents a sound pressure level with an A-weighting filter. In measuring sound, an A-weighting filter is commonly used to emphasize frequencies where the human ear is most sensitive. The A-weighting curve has been widely adopted for environmental noise measurement and is standard in many sound level meters.

The development of the proposed project will comply with all applicable regulations pertaining to noise including Chapter 11-46, HAR (*Community Noise Control*). Should noise from construction activities or industrial activities exceed the 70 dBA threshold set by the State Department of Health (DOH), a Community Noise Permit will be obtained from the Department's Indoor & Radiological Health Branch in accordance with Chapter 11-46, HAR.



Because future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including Chapter 11-46, HAR. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In the State of Hawai`i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit is granted, specific terms of compliance are set forth to ensure that the permitted use will not adversely affect the environment. Failure to comply with the terms of the permit could result in enforcement action including penalties or revocation of the permit.

In light of the foregoing, the proposed project is not expected to result in any adverse noise impacts.

## **8. Air Quality**

**Existing Conditions.** Maui lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Because the project area is located in the valley between Haleakala and the West Maui Mountains and the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. Local winds such as land/sea breezes and/or upslope/down slope winds also influence the wind pattern for the area when the trade winds are weak or absent. At night, winds are often drainage winds that move down slope and out to sea. During winter, occasional strong winds from the south or southwest occur in association with the passage of winter storm systems. The monthly



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mean wind speed and prevailing wind direction statistics for Kahului Airport indicate that ventilation is good throughout the year with monthly mean speeds ranging from about 11 to 15 miles per hour. Wind data from Kahului are at least semi-representative of winds at the project site. Wind speeds in summer tend to be strongest. The monthly prevailing wind direction year round is from the northeast.

Air quality refers to the presence or absence of pollutants in the atmosphere. It is the combined result of natural conditions (e.g. dust from wind erosion) and emissions from a variety of pollution sources (e.g. automobiles, power-generating plants).

The air quality in the Central Maui region is relatively good. Non-point source vehicle emissions do not generate a significant or high concentration of pollutants, as prevailing winds help to disperse emissions quickly. The Central Maui region is currently in attainment of all Federal and State air quality standards.

An Air Quality Study (AQS) for the proposed project was prepared by B.D. Neal & Associates in November 2011. [See Appendix H, Air Quality Study](#). The AQS examined potential short- and long-term air quality impacts that could occur as a result of construction activities and the proposed heavy industrial use of the site. Measures to minimize potential air quality impacts were proffered where possible and appropriate.

Air quality in the immediate project area is primarily affected by pollutants from vehicular, industrial, natural, and/or agricultural sources. Most of the man-made particulate and sulfur oxides emissions on Maui originate from point sources, such as power plants and other fuel-burning industries. Nitrogen oxides emissions are roughly equally divided between point sources and area sources (mostly motor vehicle traffic). The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic, sugar cane burning), while hydrocarbons are emitted mainly from point sources.

The major source of air pollution in the project area is associated with agricultural operations. There are also a small number of industrial sources within a few miles of the site, and air pollution emissions occur from automobile traffic using Mokulele Highway to the west of the project site. Emissions from these sources consist primarily of particulate, carbon monoxide and nitrogen oxides. Volcanic emissions from distant





natural sources on the Big Island also affect the air quality at times during *kona* wind conditions. By the time the volcanic emissions reach the project area, they consist mostly of fine particulate sulfate.

Two size fractions of particulate matter (PM) were measured at the Department of Health's (DOH) monitoring station in Kihei. Particulate matter less than 10 microns diameter (PM-10) and particulate matter less than 2.5 microns diameter (PM-2.5). Annual second-highest 24-hour PM-10 concentrations (which are most relevant to the air quality standards) ranged from 60 to 119 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) between 2005 and 2008. Average annual concentrations ranged from 20 to 26  $\mu\text{g}/\text{m}^3$ .

The annual 24-hour 98<sup>th</sup> percentile PM-2.5 particulate concentrations (which are most relevant to the air quality standards) ranged from 8 to 16  $\mu\text{g}/\text{m}^3$  between 2005 and 2009. Average annual concentrations ranged from 4 to 6  $\mu\text{g}/\text{m}^3$ .

Given the limited air pollution sources in the area, it is likely that air pollution concentrations are near natural background levels most of the time, except possibly for locations adjacent to agricultural operations or near traffic-congested intersections.

**Potential Impacts and Mitigation Measures.** The existing air quality in the project area is predominantly good. Brush fires and agricultural tilling operations have occasionally resulted in the recording of relatively high particulate concentrations at the DOH air quality monitoring station in Kihei.

In the short term, air quality will be temporarily affected by fugitive dust from construction activities. If uncontrolled, estimated fugitive dust emissions could amount to 1.2 tons per acre per month depending on rainfall.

In accordance with Chapter 11-60.1, HAR entitled Pollution Control and Section 11-60.1-33, HAR pertaining to Fugitive Dust, appropriate dust control measures will be implemented during construction to minimize the effects of fugitive dust. Examples of such measures include but are not limited to the following:

1. To control dust, active work areas and any temporary unpaved work roads will be watered at least twice daily on days without rainfall.



2. The use of wind screens and/or limiting the area that is disturbed at any given time will help contain fugitive dust emissions.
3. Mulching or chemical soil stabilizers will be used on disturbed, inactive areas of the site to help control wind-generated erosion.
4. Dirt-hauling trucks will be covered when traveling on roadways to prevent windborne particulates.
5. A routine road cleaning and/or tire washing program will help reduce fugitive dust emissions from trucks tracking dirt onto paved roadways in the project area.
6. Establishing landscape plantings early on during the construction phase will help dust control.
7. Monitoring dust at the project boundary during construction will be considered as a means to evaluate the effectiveness of the project's dust control program. Adjustments will then be made if necessary.
8. During construction, onsite construction equipment, vehicles used by construction workers, and trucks traveling to and from the project will be the primary source of vehicle emissions (carbon monoxide, nitrogen oxides). Increased emissions resulting from traffic disruptions attributable to construction equipment and/or commuting construction workers can be alleviated by moving equipment and personnel onto the site during off-peak traffic hours.

To the extent possible, non-drinking water will be used for dust control during construction activities.

From a long-term perspective, project-related motor vehicle emissions should have a negligible effect on air quality in the project area and worst-case concentrations of carbon monoxide should remain within State and Federal ambient air quality standards. As noted in the AQS, implementing any mitigation measures for long-term, traffic-related air quality impacts is probably unnecessary and unwarranted.

As previously noted, the project area is located in the valley formed by Haleakala and the West Maui Mountains. Since the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. Adverse air quality impacts to existing land uses in the area (Maui Humane Society, Maui Raceway Park, Hawai'i National Guard Armory) are not anticipated as these facilities do not lie directly downwind of the project site and the prevailing trade winds would help to quickly disperse any airborne particulates.



The development of the proposed project will comply with all applicable regulations for the control of air pollution, including Chapter 11-60, HAR (*Air Pollution Control*).

Since heavy industrial uses will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. Nonetheless, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including Chapter 11-60, HAR. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse air quality impacts.

## **9. Archaeological/Historic Resources**

**Existing Conditions.** Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey (AIS) of the subject parcel and the alignment for the alternate access road. Field work for the inventory survey was undertaken in June 2011. [See Appendix I, Archaeological Inventory Survey](#). A large portion of the project area had been previously surveyed by International Archaeological Research Institute, Inc. (IARII) in 1999 as part of an AIS for the area. The 1999 IARII inventory survey identified two archaeological sites within the project area including a section associated with the former Naval Air Station (NAS) Pu`unene – State Site 50-50-09-4164 – and a post-World War II cattle ranching site – State Site 50-50-09-4801. In addition to leading to the relocation of these two sites, the SCS survey assessed the



presence/absence of features within both sites and identified previously undocumented features within each site.

A majority of the historic features within the project area have been heavily impacted by modern mechanical clearing and ensuing debris removal. In general, most of the features that comprise State Site 50-50-09-4164 were mechanically impacted, abandoned, and neglected. The historic features associated with State Site 50-50-09-4801 were abandoned and neglected, but not mechanically impacted. Archival research has indicated the northern half of the subject parcel had been utilized for hog farming and scrap metal storage site, while the southern half of the property remained fallow.

A total of 15 previously unrecorded features, interpreted as either NAS Pu`unene-related or post-war cattle ranching-related features, were recorded by the SCS survey. Of the 15 newly recorded features, three features were located in the post-war cattle ranching area around State Site 50-50-09-4801, while the remaining 12 features were located in the former NAS Pu`unene area (Housing Area A) around State Site 50-50-09-4164.

To supplement their surface pedestrian survey, a total of 20 stratigraphic trenches were mechanically excavated by SCS. Only one stratigraphic trench (ST-6) revealed the presence of subsurface architecture at Facility 177 (SCS Site T-25). The feature was initially utilized as a military storehouse and converted for animal husbandry purposes.

**Potential Impacts and Mitigation Measures.** The 2011 SCS inventory survey recorded 15 new features associated with State Site 50-50-09-4164 and State Site 50-50-09-4801 which are significant under Criterion D for their information content. State Site 50-50-09-4164 has also been assessed as significant under Criterion A, as it has yielded information important to the history of Maui. These 15 features have been recorded and subsumed under the existing State site numbers.

Since two inventory surveys of the project area have already been conducted (IARII-1999, SCS-2011), it seems unlikely that any new information would be gleaned from further archaeological investigation. As such, the SCS inventory survey recommends no further archaeological work for the larger portion of the project area. Because the



alignment for the alternate access road was only subject to a pedestrian survey, archaeological monitoring is recommended since the archaeological features that were documented on the east and west sides of the alternate access road could be impacted by ground-altering construction activities.

The SCS inventory survey of the project area was approved by the State Historic Preservation Division (SHPD) on June 18, 2012. [See Appendix I-1, SHPD Approval of Inventory Survey.](#)

SCS prepared an Archaeological Monitoring Plan (AMP) for the proposed project in October 2011. [See Appendix J, Archaeological Monitoring Plan.](#)

The AMP is varied in that full-time archaeological monitoring will be conducted if the alternate access road is constructed. For the remainder of the project area, intermittent monitoring is recommended since two inventory surveys of the area have already been conducted (IARII-1999, SCS-2011) and the area has been subject to intensive ground-altering activities in the past with minimal probability that subsurface deposits would be located.

The AMP has been prepared in accordance with Chapter 13-279, Hawai'i Administrative Rules (*Rules Governing Standards for Archaeological Monitoring Studies and Reports*).

Key provisions set forth in the AMP for the proposed project include the following:

1. A qualified archaeologist intimately familiar with the project area and the results of previous archaeological work conducted in the Pu'unene area will intermittently monitor subsurface construction activities in the proposed project area. Full-time Monitoring is only recommended should the alternate road access be created. During Monitoring, one archaeologist will be required per each piece of ground altering machinery in use. No land altering activities will occur on the parcel until this AMP has been accepted by the SHPD. If significant deposits or features are identified and additional field personnel are required, the archaeological consultants conducting the Monitoring will notify the contractor or representatives thereof before additional personnel are brought to the site.
2. If features or cultural deposits are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is



conducted. SHPD will be contacted to establish feature significance and potential mitigation procedures.

3. Control stratigraphy in association with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and the contracting archaeologist, these deposits will be sampled, as determined by the same.
4. In the unlikely event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD island archaeologist and SHPD Cultural Historian will both be immediately identified as to the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Island Burial Council by the SHPD Maui staff or the contracting archaeologist.
5. To ensure that contractors and the construction crew are aware of this AMP and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.
6. The archaeologist will provide all coordination with the contractor, SHPD, and any other groups involved in the project. The archaeologist will coordinate all Monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.

In a letter dated August 24, 2012, the SHPD approved the monitoring plan for the proposed project. [See Appendix J-1, SHPD Approval of Monitoring Plan.](#)

An archaeological monitoring report will be prepared and submitted to the SHPD within 180 days after the completion of fieldwork. If any cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal significance criteria.

In light of the foregoing, the proposed project is not expected to have an adverse effect on archaeological or historic resources.

## **10. Cultural Resources**

**Existing Conditions.** In September 2011, Scientific Consultant Services, Inc. (SCS)



prepared a Cultural Impact Assessment (CIA) for the proposed project. [See Appendix K, Cultural Impact Assessment](#). Enacted by the State Legislature in 2000, Act 50 requires that an assessment of cultural practices be included in environmental assessments and environmental impact statements, and that the potential impacts a proposed action may have in an area where cultural activities are currently, or were previously practiced, be considered during project planning. The purpose of the CIA was to identify any extant areas where cultural activities are currently, or were previously conducted within a project site or area, and evaluate the effect a project may have on cultural resources, practices or beliefs; the potential to isolate cultural resources, practices or beliefs from their setting; and the potential for introducing elements which may alter the setting in which cultural practices take place. The CIA was prepared in accordance with the suggested methodology and content protocol set forth in Office of Environmental Quality Control's *Guidelines for Assessing Cultural Impacts* (1997).

As noted in the CIA, the project area is located in the lands of Pulehu Nui which translated literally means “large pūlehu” but since *pulehu* means “broiled” it might refer to the degree of broiling one could receive from the sun in this area (Pukui *et al*, 1974).

The *ahupua`a* of Pulehu Nui extended across the Kula plain up through Makawao, to the edge of Haleakala and would have included fruitful sections and not just arid plains. The word “*kula*” meant “open country or plain” according to Handy and Handy (1972), and was often used to differentiate between dry or *kula* land and wet-taro land. The height and size of Haleakala to the east prevents moisture from reaching its southern and western flanks, causing desert-like conditions throughout the region. As noted by Handy and Handy, “This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams. Kula was always an arid region, throughout its long, low seashore, vast stony *kula* lands, and broad uplands.”

As the sugar industry developed in the mid-1800s, more and more land was leased or purchased for this profitable endeavor. Since the availability of water was an issue, the Hamakua Ditch Company was formed 1876, and within two years, was bringing water from the streams of Haleakala to four plantations in East Maui (Dorrance and Morgan, 2000).



With the success of the Hamakua Ditch, Claus Spreckles formed the Hawaiian Commercial & Sugar (HC&S) Company and decided to construct a ditch system in East Maui (above the Hamakua Ditch) for his newly acquired land (Wilcox 1996). Spreckles' Haiku Ditch extended 30 miles, from Honomanu Stream to the Kihei boundary and the water was used to irrigate his cane lands in the Central Maui plains. Presently, the Haiku Ditch ends at the HC&S reservoir abutting the project area to the north.

After the annexation of Hawai'i in 1898, some of the sugar planters on Maui, including Alexander and Baldwin (A&B), combined their operations to form the Maui Agricultural Company, a co-partnership that initially encompassed seven plantations and two mills. In 1904, five new plantations became part of the Maui Agricultural Company, one of which included the Makawao Plantation Company, which encompassed the section of Pulehu Nui containing the project area. In 1948, Maui Agricultural Company merged with HC&S (Dorrance and Morgan, 2000).

In 1937, a portion of the cane fields to the west of the project area was turned into a civil airfield for the Territory of Hawai'i, as the airfield at Ma`alaea had become too small. Two years later, Inter-Island Airways began service to Maui, landing at the Pu`unene Airport.

In 1940, with the threat of a world war looming on the horizon, the U.S. Navy began using the Pu`unene Airport, along with a small Army Air Corps support base, at the airfield. At this time, the air station was being used to support Squadron VU-3, which towed targets and operated drones for the Pacific Fleet. In 1942, shortly after the United States entered World War II, the project area and other land in the vicinity of the airport was condemned pursuant to a Declaration of Taking that was filed with the U.S. District Court for the Territory of Hawaii. As a result, the Pu`unene Airport was expanded and commissioned as Naval Air Station (NAS) Maui. In addition to lengthening and widening the runways, the Navy added flight simulators (Link trainers) and changed its name to NAS Pu`unene. By 1945, the base supported over 3,300 personnel and 271 aircraft, and encompassed 2,202 acres, two paved runways, taxiways, ramps, hangars, and auxiliary buildings. A total of 106 squadrons and carrier groups passed through NAS Pu`unene during WW II.





In 1947, the U.S. Navy returned the Pu`unene Airport to the Territory of Hawai`i. The airfield was apparently used as the official inter-island Airport for Maui until at least 1952 when the Kahului Airport became available for civil use. However, the Maui/Pu`unēnē airstrip, as it was known, serviced crop-dusters and other smaller aircraft and was not abandoned as a landing strip until sometime between 1961 and 1977. Some former military facilities such as bunkers, revetments, and other remnants still exist today. The land comprising NAS Pu`unene was sold back to HC&S by the State of Hawai`i except for 222 acres which were transferred to the County of Maui for public and recreational purposes under Executive Order 4024.

Existing recreational uses within this 222-acre area include facilities for drag racing, dirt bike racing, go-kart racing, autocross racing, oval (dirt) track racing, and an area for flying radio-controlled model aircraft.

In recent times, the northern half of the subject parcel had been used for hog farming and as a scrap metal storage site, while the southern half of the property remained fallow.

**Potential Impacts and Mitigation Measures.** The preparation of the CIA involved archival and documentary research, as well as consultation with agencies, organizations, and individuals having knowledge of the project area and its cultural resources, practices. As part of the CIA process, SCS consulted with the State Historic Preservation Division – History and Culture Branch and Maui Cultural Branch; the Office of Hawaiian Affairs (OHA) – Oahu and Maui Branches; the Maui Planning Department; the Maui County Cultural Resources Commission; the Central Maui Hawaiian Civic Club; Hale Mahaolu and Kimokeo Kapahuleua. A Cultural Impact Assessment Notice was also published in *The Honolulu Star-Advertiser* and *The Maui News*, on July 20, 21, and 24, 2011, and the August issue of the OHA newspaper (*Ka Wai Ola*).

Long time Maui resident Hugh Starr was also consulted and provided copies of reference documents and a map pertaining to the World War II use of the area. In addition, OHA did not have any CIA referrals but provided some project-related comments which were provided to the land owner. [See Appendix K, Cultural Impact Assessment.](#) None of the other consulted parties provided any referrals or



information about potential cultural resources or cultural activities occurring in the project area.

The project area has not been used for traditional or historic cultural purposes within recent times and in light of the historical and cultural research that has been conducted for the CIA, it is reasonable to conclude that the exercise of native Hawaiian rights (or any ethnic group) related to gathering, access or other customary activities will not be affected by the development of the proposed project. In addition, since no cultural activities were identified within the project area, no adverse effects are anticipated.

In light of the foregoing, the proposed project is not expected to have an adverse effect upon cultural resources.

## **11. Scenic and Open Space Resources**

**Existing Conditions.** The subject parcel slopes in an east to west direction with elevations on the site ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent. Sugar cane fields border the site on its east and south, while the undeveloped lands of Project District 10 and the Pu`unene Airport Master Plan area lie to the west. To the north of the property are Lower Kihei Road, an HC&S irrigation reservoir, and sugar cane fields.

As viewed from the subject parcel, Haleakala lies to the east of the site, while the West Maui Mountains can be seen to the west. The Pacific Ocean and the island of Kaho`olawe are visible to the southwest.

The subject property does not contain any natural or man-made scenic features. The site is not located within any important *mauka* or *makai* view corridors along Mokulele Highway. Due to its distance from the highway the project site cannot be seen from surrounding areas.

**Potential Impacts and Mitigation Measures.** While the visual character of the project area will be modified by the proposed project, it will not have an adverse effect upon scenic resources or view corridors due to its distance from Mokulele Highway and other public roadways in the area.



The maximum building height under *M-3, Restricted Industrial* zoning is 90 feet. Landscaping around the perimeter of the proposed subdivision will help integrate the project with its surroundings. All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

Due to its distance from Mokulele Highway and residential areas in Kahului, Kihei, and Upcountry, the proposed project will not have an adverse visual impact.

While the proposed drainage swale along the west side of the subject parcel constitutes an area of open space, there are no parks, utility easements, shoreline areas, and wetlands on the property which would contribute to the establishment of an open space framework for the area.

## **12. Hazardous Materials**

**Existing Conditions.** A Phase I Environmental Site Assessment (ESA) of the subject property was conducted by EnviroServices & Training Center (ETC) in March 2011. [See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#)

The Phase I ESA notes that the subject parcel was previously used as a piggery and an unpermitted solid waste management facility. Until its sale in March 2011, the subject property had been owned by A&B Properties, Inc. (A&B) who formerly leased the property to Maui Factors, Inc., who in turn subleased the site to Larry Poffenroth.

The subject property was formerly used as a piggery for over 25 years. As part of an agreement with Maui Factors, Mr. Poffenroth took over piggery operations around 1995 and is believed to have begun solid waste management activities on the property shortly thereafter. The solid waste management activities occurred without the knowledge or consent of A&B. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing, however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In November 1998, the State



Department of Health (DOH), Solid Waste and Hazardous Materials Branch instructed Mr. Poffenroth to halt all salvage operations on the property. Large amounts of food waste were brought in as hog feed, which resulted in discarded empty food packaging materials being spread throughout much of the north part of the property. In late 2007, A&B was finally able to evict Mr. Poffenroth and all the remaining pigs were subsequently removed in 2008. Immediately following the eviction, A&B began solid waste cleanup activities and completed the clean up in February 2011. Based on the former usage of the subject parcel, several specific potential sources of contamination were identified during previous site inspections.

Historic maps and documents provided by A&B indicated that the subject property was part of the former Pu`unene Naval Air Station (NAS) and that a machine gun range used to be located in or around the southernmost part of the property. Earth revetments, presumably in the impact zone of the range, were located near the southern boundary of the property. Residual heavy metals are common contaminants associated with former military firing ranges and are considered a historical recognized environmental condition (REC). While the earth revetments no longer exist there is evidence that the soil in the impact zone has been excavated in the past. Based on information provided by A&B and the DOH, the potential presence of residual contamination from this historical REC cannot be dismissed and is therefore considered a current REC on the property.

ETC conducted a site reconnaissance survey of the subject property in early 2011 to identify the use and/or storage of hazardous materials. With the exception of an existing radio tower and appurtenant structures, no visible structures were observed although several building remnants (concrete slabs) and a non-drinking water well were located on the site. Limited quantities of cathode ray tubes, batteries, and other waste were found inside a metal storage bin located in the northwestern sector of the property. According to A&B, the materials were being prepared for shipment and proper disposal. The storage bin was placed on a concrete slab and no releases were observed in the vicinity of the bin.

The Phase I ESA found no evidence of RECs associated with the subject property except for:



- The potential presence of residual contaminants associated with former solid waste management activities on the subject property.
- The potential presence of residual contamination associated with the historic use of the southernmost part of the property as a machine gun range.

**Potential Impacts and Mitigation Measures.** As part of the planned cleanup of the subject parcel, A&B contracted with ETC to prepare a Site Investigation Report to determine whether surface soils were impacted by past solid waste management activities. [See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#) The data obtained during this investigation was used to determine whether additional investigation and/or corrective actions are warranted, based on the decision rules developed in the Phase I ESA.

The contaminants of potential concern (COPC) that were identified by the site investigation were eight Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), total petroleum hydrocarbons as diesel, total petroleum hydrocarbons as oil (TPH-O), polynuclear aromatic hydrocarbons, and polychlorinated biphenyls. The media targeted by this site investigation was surface soil.

In order to assess the impacts associated with the former solid waste operations, decision units (DU) were established based on source locations. These source locations include: the shop area (DU1); vehicle and drum storage area (DU2); scrap metal processing area (DU3); miscellaneous scrap metal and debris (DU4); scrap metal stockpiles and transformer storage area (DU5); vehicle/tanker/television/monitors storage area (DU6); miscellaneous hazardous materials storage area (DU7); miscellaneous scrap metal with open areas (DU8); battery storage area (DU9); miscellaneous scrap metal pile (DU10); and the scrap metal and CRT storage area (DU11).

In March 2011, a total of 13 multi-increment soil samples (11 primary samples, two field replicate samples) were collected from the potential contaminant source locations. The samples were submitted to Torrent Laboratory, Inc. in Milpitas, California for select COPC. Analytical results from the initial site investigation activities for the Phase I ESA indicated that elevated concentrations of total petroleum hydrocarbons as oil (TPH-O) were reported for DU6 and DU12 (replicate of



DU3). Specifically, reported average concentration for DU6 (730 mg/kg) and the adjusted value (reported average concentration plus RSD) for DU12 (589 mg/kg) exceeded the State Department of Health (DOH) Environmental Action Level (EAL) of 500 mg/kg pertaining to gross contamination concerns associated with unrestricted land use. The adjusted value for DU6 (1,228 mg/kg) also exceeded the DOH EAL pertaining to leaching (1,000 mg/kg) concerns. Although the initial EAL was exceeded, the DOH EAL pertaining to direct exposure (2,300 mg/kg) concerns associated with unrestricted land use was not exceeded.

During discussions for the sale of the subject parcel property, A&B and CMBY agreed to a commercial/industrial land use limitation for the property. Therefore, gross contamination concerns associated with unrestricted land use would not be considered a significant environmental hazard for the site and was removed from consideration. An adjusted TPH-O value (1,228 mg/kg) was reported at a concentration exceeding the EAL pertaining to soil leaching EALs in DU6 only.

A previous groundwater investigation indicated that none of the regulated drinking water contaminants were identified at levels of concern. In addition, the DOH generally considers soil leaching EALs associated with petroleum-related constituents excessively conservative. For example, as noted in the DOH's *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater* document (EHE Document), TPH-O is considered to be biodegradable and "can be expected to naturally degrade over time," however, it is not accounted for in the model.

The model used is also based on a much higher rainfall than is received in Pu`unene, Maui. In addition, the leaching EAL does not consider drinking water utility status (i.e. drinking water vs. non-drinking water) and as noted in the EHE Document, the leaching EAL is based on the California EPA Los Angeles Regional Water Board proposed action level of 1,000 mg/kg which in fact applies to drinking water aquifers in which the distance above groundwater is less than 20 feet (CRWQCB, 1996).

Note that groundwater status of the subject property is considered to be non-drinking water and is anticipated at a depth greater than 100 feet. Based this information, soil leaching concerns associated with petroleum-related constituents do not appear to be a significant concern. Therefore, soil leaching would not be considered a significant



environmental hazard for the site and was removed from consideration.

In addition to the DU6 findings, analytical results indicated that soil collected from DU11 contained an average total lead concentration of 830 mg/kg, which exceeds the initial AL of 200 mg/kg. The detected total lead concentration also exceeded the DOH EAL of 800 mg/kg pertaining to direct exposure concerns associated with commercial/industrial land use. Based on these findings, ETC proposed additional surface soil sampling within DU11. As a result, ETC returned to the subject parcel in August 2011 to collect a total of 10 multi-increment soil samples (eight primary samples, two field replicate samples) from DU11. The samples were submitted to TestAmerica – Honolulu in Aiea for analysis of total lead content.

Analytical results for the additional investigation of DU11 indicated that average total lead concentrations for all eight DUs were well below the project defined AL of 200 mg/kg. Based on these findings, ETC suspects that the deviation of these results from initial DU11 findings may have been caused by nuggets or discrete pieces of lead within the soil. Therefore, based on the analytical results of the additional sampling activities, ETC suspects that the initial results for DU11 may not necessarily reflect the average lead concentrations that are likely to be encountered throughout DU11. In addition, given the future commercial/industrial land use of the subject property coupled with the results of the additional sampling activities, potential plant uptake is not considered a concern. Therefore, based on the data, lead was removed from consideration as a contaminant of concern for the subject parcel.

Based on review of the data obtained from the site investigation and comparison of COPC concentrations to applicable DOH EALs pertaining to commercial/industrial land use, there appear to be no retained environmental hazards for the site. As such, no further action appears necessary to address concerns associated with the former solid waste operations on the subject property.

In December 2011, the current land owner commissioned Malama Environmental (MEV) to conduct project monitoring and review the environmental documentation prepared by ETC. The scope of MEV's work consisted of the following tasks.

- Review of environmental documents compiled by ETC, including field work plans, sampling plans, Site Investigation Report and limited Phase II Report



by ETC.

- Review of field sample procedures by ETC.
- Conduct field sampling monitoring of ETC personnel.
- Review of sample preparations and chain of custody for the chosen laboratory.
- Review of the laboratory qualifications, analytical methods chosen, and quality assurance/quality controls.
- Review ETC's conclusions.

The Site Investigation Report prepared by ETC in October 2011 will be submitted to the DOH requesting a "no further action" statement and final closure letter. Based on MEV's site reconnaissance and review of ETC's documentation, the former unpermitted solid waste requires no further sampling or environmental investigation for industrial/commercial land use. MEV concurs with this conclusion.

The *Draft Phase II Limited Environmental Site Assessment* (dated 11/16/11) at the former machine gun range will not be submitted to the DOH as it was meant to satisfy the former land owner (A & B) that there is no contamination along the southern boundary of the subject parcel. The work was conducted as a Phase II Environmental Site investigation for the property transaction in order to assess whether the subject property had been impacted by the former range and was considered a recognized environmental condition. It should be noted that if the surface and subsurface soil samples in the location of the former range were determined to be lead contaminated, ETC would have been instructed to notify and consult with the DOH.

In conclusion, the MEV review notes that it is evident that the former machine gun range has not caused any adverse environmental impacts to the subject parcel within the recommended soil fraction size of less than 2 millimeters and requires no further action or submission to the DOH.

In a letter dated January 9, 2012, the DOH indicated that no further action regarding the former solid waste activities that occurred on the site is required since the solid





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waste has been removed from the subject property and that impacts associated with the previous solid waste activities have been adequately addressed. [. See Appendix L, Phase I Environmental Site Assessment and Supplemental Data.](#)

Since heavy industrial uses within the proposed subdivision will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. For example, spilled fluids or accidental releases could accumulate over time if work areas are not properly cleaned and regularly maintained. In outdoor areas, these fluids could be transported offsite during heavy rainfall if there are no mitigation measures in place.

Because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) that are specific to the heavy industrial use on their lots.

For example, to minimize impacts to groundwater resources and adjacent and downstream properties, provisions outlining the responsibility of lot owners for the proper delivery, removal, storage, use, and handling of hazardous materials will be included in the CC&Rs for the subdivision. Examples of such provisions include, but are not limited to, the following.

- Lot owners must utilize appropriate measures to contain spills and prevent hazardous materials from leaching or draining into surface or subsurface drainage areas.
- Lot owners must utilize BMPs to minimize non-point source pollutants.
- Lot owners must implement BMPs to minimize surface and ground water contamination from onsite activities, including the delivery, removal, storage, use, and handling of industrial agents on their property and in common areas.
- The on site storage and/or disposal of hazardous materials (by lot owners) must be approved by the appropriate Federal, State, and/or County agencies prior to commencement.

Should a potentially hazardous material be accidentally released, all work in the vicinity of the spill will halt immediately and the area will be vacated. First responders and all appropriate government agencies will be promptly notified and the affected area will be cordoned off. The release will then be contained and dealt with in



accordance with applicable Federal, State, and County regulations. Lot owners will be required to prepare Emergency Response Plans to address such occurrences if their activities involve the use of any hazardous materials.

In light of the foregoing, the proposed project is not expected to have an adverse effect on soils, groundwater resources, and surrounding properties.

## **B. SOCIO-ECONOMIC ENVIRONMENT**

### **1. Population**

**Existing Conditions.** The resident population in the State of Hawai'i increased 9.3 percent from 1,108,229 in April 1990 to 1,211,537 in April 2000. During this same period, the resident population in Maui County increased 27.6 percent from 100,504 in April 1990 to 128,241 ten years later. The resident population on the island of Maui experienced similar gains as it grew from 91,361 in April 1990 to 117,644 the following year, an increase of 28.8 percent (State of Hawai'i Data Book 2010).

The resident population in the Kihei-Makena Community Plan region is expected to grow from 22,870 in 2000 to 36,767 in 2030, an increase of nearly 61 percent. Similar growth is expected in the Wailuku-Kahului region as its population increases almost 63 percent from 41,503 in 2000 to 67,565 in 2030 (*Draft Maui Island Plan*, December 2009).

**Potential Impacts and Mitigation Measures.** The proposed project will not alter population and demographic characteristics neither is it expected to result in inconsistent population growth or will it have any disproportionate impacts upon housing and employment markets. Since the project does not include a housing component, it will not generate a new or secondary demand for housing and the associated increase in population.

### **2. Economy**

**Existing Conditions.** With the possible exception of Kauai, Maui County is more dependent on tourism than any of Hawai'i's four counties. Hotel occupancy rates for Maui typically exceed other areas in the State with the exception of Waikiki. When



compared to other counties, Maui has a larger visitor industry relative to the size of its economy. Local government and businesses have worked very **hard** at cultivating Maui's worldwide image as a premier vacation destination. In fact, Maui County is the only county that spends money to promote and support tourism.

The September 11, 2001 terrorist attacks on the United States had a drastic impact on Hawai'i's visitor industry. In 2001, Maui's visitor count was 2,104,480. In 2002, the visitor count rebounded slightly to 2,139,427 as visitors slowly returned during the second half of the year. Although visitor totals from 2003 to 2007 showed positive gains, dismal economic conditions contributed to a 15.58 percent decline in visitor arrivals for 2008 and a 9.24 percent decline in 2009. Visitor arrivals in Hawaii and other destinations were severely impacted by the economic recession in the United States and abroad. In 2010, the visitor traffic increased 10.38 percent to 2,132,860 as signs of economic stability emerged. As U.S. and foreign markets recover from the current economic crisis, Maui is once again expected to be **a** favorite travel destination for mainland visitors.

Agriculture on Maui has been dominated by large operations like Maui Land & Pineapple Company (ML&P) and Alexander & Baldwin's Hawaiian Commercial & Sugar Company (HC&S).

In 2007, ML&P shut down the canning portion of its pineapple operations to rely solely on the more profitable fresh fruit segment. Further downsizing occurred in 2008, which resulted in a work force reduction of over 200 employees. In December 2009, ML&P announced the shut down of its agricultural arm, citing continued annual losses. However, a new company, Hali`imaile Pineapple Company, was formed shortly thereafter and immediately took over ML&P's pineapple operations. HC&S survives as Hawaii's only remaining sugar operation due in part to its economies of scale, its land configuration (a relatively compact and contiguous area in the isthmus of the Valley Isle), and its commitment and ability over the years to reinvest and upgrade plant and equipment.

The unemployment rate (not seasonally adjusted) for the State of Hawai'i was 6.6 percent in November 2011 compared to 6.5 percent in November 2010. The unemployment rate for Maui County dropped to 7.7 percent in November 2011 from



8.2 percent in November 2010. During this same period, the unemployment rate for the island of Maui was 7.4 percent compared to 8.1 percent a year earlier. (State Department of Labor and Industrial Relations, December 2011).

A Market Study has been prepared for the proposed project by ACM Consultants, Inc. [See Appendix M, Market Study](#). The objectives of the study were: (1) to define and delineate the market area; (2) to identify and analyze the current supply and demand conditions specific to the subject's market; (3) identify, measure and forecast the effect of anticipated developments or other factors on future supply; and (4) forecast the effect of anticipated economic or other factors on future demand.

On the island of Maui, about 489 acres of land has been zoned for pre-existing *M-2, Heavy Industrial* uses, while in Central Maui, approximately 442 acres has been zoned for this purpose. The HC&S sugar mill in Pu`unene occupies approximately 40 acres, while the future power generation plant site for Maui Electric Company encompasses about 65 acres. Of the remaining 337 acres, much of the heavy industrial land is situated around Kahului Harbor and the Kahului Airport. These lands are used for harbor and airport facilities and operations and were not considered available to the market.

Other heavy industrial areas in the Central Maui area include the Wakea Industrial Subdivision, Airport Industrial Subdivision, as well as portions of The Millyard and Maui (Kahului) Industrial Subdivision. The lands underlying Queen Ka`ahumanu Center, Maui Mall, and the former ML&P cannery are zoned for heavy industrial use, as well as the area around Hobron Avenue and two adjacent properties at the corner of Ka`ahumanu Avenue and Kahului Beach Road. Most of the land in Central Maui that is zoned for heavy industrial use has already been built upon or is being used as work or storage yards. The existing inventory of heavy industrial-zoned land for sale consists of 16 acres at five sites in Kahului and two locations in Wailuku. This land is located in areas that are considered unsuitable for heavy industrial use due to proximity impacts to adjacent residential and commercial development. In this case, the highest and best use of this land would be for commercial retail/office use, which is currently allowed by heavy industrial zoning.



There has not been any purely heavy industrial development in Central Maui for over a decade. During this period, the focus has been on the light industrial market as evidenced by the construction of Maui Business Park, Waiko Baseyard, Consolidated Baseyards, and the Maui Lani Village Center. The most recent development of heavy industrial land was for the Airport Triangle Subdivision, a project containing commercial retail/office centers and car dealerships. At present, the proposed project is the only heavy industrial development planned on Maui. As such, it is expected to alleviate the pent-up demand for purely heavy industrial land and provide individuals and businesses with the opportunity to purchase lots and build new facilities or expand their current operations.

Recently built subdivisions in Central Maui have focused on the light-industrial market and reflect significantly fast absorption rates. The 11 lots released by the developer of Waiko Baseyard in October 2005 totaled just over five acres and were absorbed within five months. This would indicate an absorption rate of 11.90 acres per year. The Consolidated Baseyards was completed in 2006, with 35 marketable lots totaling approximately 22 acres. There were 27 lots, totaling almost 16 acres, immediately sold between October and December 2006. The remaining eight lots, of approximately 6 acres, were sold in 2007. Overall monthly absorption averaged 1.6 acres, which would translate into about 19 acres per year.

The development of Waiko Baseyard and the Consolidated Baseyards occurred during the most recent peak in the real estate market as evidenced by their high absorption rates. Other projects which were brought to market during less robust times have experienced longer marketing periods. To account for the cyclical nature of the real estate market, all commercial/industrial subdivisions which were developed in Central Maui over the last 20 years were analyzed. A total of seven subdivisions were developed during this time. With the exception of the Maui Lani Village Center, which only began closing lots within the last two years, all other subdivisions have been successfully absorbed by the market. Over the last 20 years, approximately 174.74 acres of industrial land has been absorbed, which reflects a straight-line absorption rate of 8.74 acres per year.

**Potential Impacts and Mitigation Measures.** As previously noted, a Market Study has been prepared for the proposed project. [See Appendix M, Market Study.](#)



The following points summarize the *supply* for heavy industrial real estate in the Central Maui region at this time.

- When compared to the light industrial market segment, there is very little developable heavy industrial land in Central Maui;
- Available vacant land is located in areas that are not conducive to heavy industrial use, due to the proximity of residential and commercial developments;
- Supply has diminished because of continued conversion to higher-order commercial retail/office uses allowed by the pre-existing *M-2, Heavy Industrial District's* "stacked" (or pyramid) zoning;
- Other than the Proposed Project, there are no other heavy industrial projects planned for Central Maui

The following points summarize the *demand* for heavy industrial real estate in the Central Maui region at this time:

- The growth of Maui's population has led to a greater need for light industrial goods and services providers; however, there has not been a coinciding creation of heavy industrial facilities to support light industrial users.
- Mortgage interest rates continue to be at all-time lows, which typically make real estate more affordable; however, there are few choices currently available within the heavy industrial market.
- The pent-up demand from heavy industrial users is expected to generate good interest for the proposed product.
- Potential businesses within the proposed subdivision are expected to be businesses that fabricate, process and manufacture materials needed by light industrial users and the general populace.

As noted in the Market Study, the proposed project is expected to be well received when considering current supply and demand considerations and other factors that are presently influencing the heavy industrial real estate market in Central Maui. The study also anticipates that the heavy industrial lots in the proposed subdivision can be sold within a 10-year period, which would translate into an absorption rate of approximately 6.6 acres per annum.

Economic impacts associated with development activities for the proposed project include the following.



1. Construction of the Subdivision and Complete Build-Out. It is assumed that the entitlement process will take approximately 4 to 5 years, with *subdivision construction* to begin in 2016. According to the land owner, *subdivision construction* costs are projected to be \$20,000,000, while the forecasted construction time is approximately 30 months, with an average construction cost of \$8,000,000 per year.

Based on an average lot size of 102,491 square feet, and an assumed building-to-land ratio of 30 percent, the average building size in the subdivision is projected to be about 31,000 square feet. Assuming the site work cost for each lot is approximately \$307,000 and the building construction cost is \$125 per square foot, the average development cost per building is forecasted to be \$6,232,000 or \$174,504,000 for 28 buildings. It is also assumed that complete *build out of the subdivision* would take about 10 years, resulting in an average cost of \$17,504,000 per year. It is also assumed that the preceding costs are inclusive of all site work, roads, utilities, and landscaping and includes the cost of hiring various engineers (e.g. civil, mechanical, electrical, traffic) and consultants (soils, land use planning, archaeology, real estate appraiser).

2. Indirect Sales. Development and construction activities will also generate indirect sales, through the supply of goods and services to various construction companies and as a result of the “trickle down effect” to families of the employees. By the same token, the suppliers and their families will purchase goods and services from other companies thereby extending the cycle. This cause and effect scenario will continue repeating itself with some revenues eventually leaking out of Hawaii’s economy with each cycle.

Based on State economic multipliers, off-island indirect sales are projected to be about \$5,920,000 per year during the *subdivision construction*, while Maui indirect sales are forecasted to be approximately \$4,144,000 per year.

For the subsequent complete *build out of the subdivision*, off-island indirect sales are projected to be about \$14,348,000 per year. Meanwhile, Maui indirect sales during this period are forecasted to be approximately \$10,044,000 per year.

3. Sales of the Heavy Industrial Lots. The 28 lots will have a total net land area of about 65.88 acres or approximately 2,869,733 square feet of heavy industrial zoned land. With a preliminary assumption of \$20.00 per square foot, lot sales are projected to generate gross sales revenue of about \$57,395,000.
4. Taxable Expenditures and Sales. Sales generated by *subdivision construction* are projected to total \$2,129,000 per year and are assumed to result from the personal spending by construction workers and indirect employees during this period. These sales are subject to the State’s General Excise Tax (GET) of 4.166 percent.



Intermediate sales, taxed at 0.5 percent, would result from construction expenditures and indirect sales related to *subdivision construction*, less personal spending by construction workers and indirect employees. As such, intermediate sales during *subdivision construction* are forecasted to be \$15,935,000 per year. When added to final sales, taxable expenditures and sales would amount to \$18,064,000 annually.

Final sales generated by the subsequent *build out of the subdivision* are projected to total \$10,411,000 per year and are assumed to result from the sales of subdivision lots plus the personal spending by construction workers and indirect employees during this period. These sales are subject to the State's GET of 4.166 percent.

Intermediate sales, taxed at 0.5 percent, would result from construction expenditures and indirect sales related to the *build out of the subdivision* less any personal spending by construction workers and indirect employees. As such, intermediate sales during the *build out of the subdivision* are forecasted to be \$34,731,000 per year. When added to the final sales, taxable expenditures and sales would amount to \$45,142,000 annually.

5. Profits Realized. Projected profit and risk premiums from *subdivision construction* are projected to be \$2,206,000 per year, over the 30 month construction period. Meanwhile, forecasted profit and risk premiums from the complete *build out of the subdivision* are expected to total \$5,387,000 per year over the 10-year period and factor in direct and indirect sales at all levels of business. For example, the land owner, general contractor, subcontractors, and goods and service providers all expect to make a profit for their efforts.
6. Direct and Indirect Employment. The design and entitlement process for the project creates new job opportunities for architects, engineers, surveyors, and land use planners. Site work and infrastructure development typically utilize heavy equipment operators, tractor-trailer drivers and utility personnel. Building construction and onsite improvements will require masons, painters, plumbers, roofers, carpenters, electricians, sheet metal workers, and drywall installers. Finish work will require landscapers, cabinet makers, carpet and tile installers, and interior decorators.

Construction employment will also provide hardware stores, building supply companies, equipment rental companies, and shipping, delivery, and warehousing companies with an opportunity to supplement their labor force. Construction laborers and their families will help support local goods and service providers and create or expand employment opportunities for other businesses in the community.

Based on State economic multipliers, direct jobs on Maui are projected to average 32 jobs annually, while indirect jobs are forecasted to average 33 jobs annually, resulting in an estimated annual average of 65 Maui jobs directly and indirectly tied to the *subdivision construction*. Meanwhile, indirect employment on Oahu could possibly add an average 17 jobs per year.





For the complete *build out of the subdivision*, 70 direct and 72 indirect Maui jobs are projected annually, resulting in an estimated annual average of 142 Maui jobs directly and indirectly tied to *build out of the subdivision*. Meanwhile, indirect employment on Oahu could possibly add an average of 38 jobs per year.

7. Direct and Indirect Payroll. Payroll directly related to *subdivision construction* is estimated to be \$1,962,000 per annum based on statistics from the State Department of Labor and Industrial Relations (DLIR) and previously referenced job counts. It is assumed that most construction positions will be filled by Maui laborers. Indirect Maui payroll is projected to be \$1,206,000 per year, while indirect Oahu payroll is forecasted to be \$703,000 annually. Total direct and indirect payroll attributed to the *subdivision construction* is estimated to be \$3,871,000 per year.

Payroll directly related to the complete *build out of the subdivision* is projected to be \$4,292,000 per annum. Construction positions are expected to be filled by Maui laborers. Indirect Maui payroll is forecasted to be \$2,632,000 per year, while indirect Oahu payroll is estimated to be \$1,570,000 annually. Total direct and indirect payroll attributed to the *build out of the subdivision* is projected to be \$8,494,000 per year.

8. Supported Population. Statistical information obtained from the DLIR indicates that 70 residents per year on Maui are expected to be supported by construction jobs related to *subdivision construction*, while 73 residents per year are expected to be supported through indirect jobs. About 36 Oahu residents are expected to be supported by indirect jobs created by the project. A total of 179 residents per year on Maui and Oahu are expected to be supported by *subdivision construction*.

About 154 residents per year on Maui are expected to be supported by construction jobs associated with the complete *build out of the subdivision*, while as many as 158 residents per year are expected to be supported through indirect jobs. Approximately 80 Oahu residents per year are expected to be supported by indirect jobs created by the project. A total of 392 residents per year on Maui and Oahu are expected to be supported by the *build out of the subdivision*.

9. Supported Households. Statistical information obtained from the DLIR indicates that as many as 24 households per year on Maui may be supported by construction jobs related to *subdivision construction*, while as many as 25 households per year may be supported through indirect jobs. As many as 12 Oahu households per year may be supported by indirect jobs created by *subdivision construction*. A total of 61 households per year on Maui and Oahu may be supported by *subdivision construction*.

About 52 households per year on Maui are expected to be supported by construction jobs associated with the complete *build out of the subdivision*,



while as many as 54 households are expected to be supported through indirect jobs. Approximately 26 Oahu households per year are expected to be supported by indirect jobs created by the *build out of the subdivision*. A total of 132 households on Maui and Oahu are expected to be supported by the *build out of the subdivision*.

Economic impacts at stabilization of the project include the following.

1. Employment and Wages. As previously noted, the average lot size in the proposed subdivision is expected to be 2.353 acres. With a floor area to lot area ratio of 30 percent, the average building in the subdivision is projected to be about 31,000 square feet. Assuming a ratio of 500 square feet per employee, the proposed subdivision is forecasted to have approximately 1,736 employees upon stabilization. Assuming an average annual wage of \$38,025 per employee, the combined annual wages of the subdivision workforce is estimated to be \$66,011,000.
2. Gross Sales Revenue and Profit. Given its proposed heavy industrial use, \$250 gross sales revenue per square foot was assumed and applied to the total building area of the proposed subdivision. This resulted in estimated annual gross sales revenue of \$217,000,000 for the subdivision. Assuming an average profit margin of 10 percent, the annual profit generated within the subdivision from the gross sales revenue was calculated to be \$21,700,000 per year
3. Property Values. Upon stabilization of the proposed subdivision, average property value is assumed to be \$6,232,000, or \$174,504,000 for the entire subdivision.

Public costs and benefits which would accrue to the County and State due to development activities for the proposed project include the following.

1. County of Maui.

The County typically accumulates revenue from development projects in the form of permit and impact fees. Permit fees cover the County's cost of providing services such as plans review, inspections, and public hearings, etc. Impact fees are more commonly associated with residential development; although as with commercial and industrial development, the amount of the fees is usually based on offsetting the anticipated additional cost and burden on County services and facilities. In either case, no net cost or benefit was considered at the County level.

Cumulative expenditures typically include the County's share of infrastructure costs for expanding or improving water, sewer, drainage, and roadway systems or providing parks and playgrounds if applicable. It is assumed that the land owner will bear the vast majority of these development costs.



## 2. State of Hawaii

The majority of the revenues that will accrue to the State will be in the form of various taxes, such as Conveyance Tax, Excise Tax, Corporate Income Tax, and Personal Income Tax. For purposes of the Market Study, a conveyance tax based on \$0.20 per \$100 of value has been utilized for lot sales. With an average lot value of approximately \$2,357,000, the conveyance tax that would be due is about \$132,000.

Excise tax is based on two rates, 4.166 percent for final sales and 0.5 percent for intermediate sales. Over the course of subdivision construction and the subsequent build out of the subdivision, the cumulative tax expectancy for final sales would amount to \$4,559,000, while intermediate sales should equal \$6,495,000.

Corporate Income Tax is realized on profits gained through subdivision construction and the subsequent build out of the subdivision which is projected to be \$3,801,000. Meanwhile, personal income tax is forecasted to be \$3,974,000. As such, cumulative revenues related to subdivision construction and the subsequent build out of the subdivision would amount to \$14,401,000.

Cumulative expenses to the State are not expected. The primary access point to the proposed subdivision is at Mokulele Highway, a State roadway with a signalized intersection. Since heavy commercial truck traffic already exists in the area, it is assumed that there would not be a need to expand traffic control measures on Mokulele Highway. Notwithstanding this, it is assumed that the land owner will bear the vast majority of any required roadway improvement costs.

Public costs and benefits which would accrue to the County and State at stabilization of the project include the following.

### 1. County of Maui

Upon stabilization, benefits that would accrue to the County will be in the form of real property taxes. As previously noted, the net taxable value of 28 improved heavy industrial lots is determined to be about \$165,895,000. The 2011 tax rate for industrial land (PITT Code 400) is \$7.00 per \$1,000 of assessed value. As such, the tax obligation for the 28 improved lots is calculated to be \$1,161,000 per year.

The proposed project will be built on TMK (2) 3-8-008-019. According to the County's Real Property Tax Division, the land owner currently pays approximately \$3,000 per year in property taxes. This amount was deducted from its annual revenues at stabilization since the County will no longer receive this income. The resulting net real property tax revenue at stabilization is estimated to be about \$1,158,000 annually.



The County's annual costs at stabilization are for general services, public safety, and infrastructure maintenance. These expenditures are more commonly attributed to residential development; however, for purposes of the Market Study, proportionate per-capita annual expenditures were utilized and were based on the assumption that each employee is also a resident of Maui County. The Market Study notes that by using this methodology the results represent what is likely the high end of the annual cost expectancy to the County.

On a per-capita basis, the annual cost for services is projected to be about \$2,779 per year, plus debt service of \$226 per year. Assuming each employee spends about 20 percent of their time at the job site, the proportionate annual cost for County services is forecasted to be \$556, with proportionate annual debt service of \$45. The resulting net cost is estimated to be \$1,043,000.

## 2. State of Hawaii

Upon stabilization, benefits that would accrue to the State would be through the receipt of Personal Income Tax, Excise Tax, and Corporate Income Tax as a result of the ongoing businesses. On an annual basis, personal income tax from (subdivision) employee wages would amount to \$2,772,000, while excise tax on the gross sales revenue of the businesses is projected to be \$9,040,000 per year. Corporate income tax as a result of the gross sales revenue of the businesses is forecasted to be \$1,389,000 per year. Total annual revenues at stabilization are estimated to be \$13,201,000.

Annual expenditures to the State were said to be from services to residents, and debt service attributed to general improvements. Proportionate per-capita annual expenditures were utilized, similar to the County cost analysis. The Market Study notes that by using this methodology, the results represent what is likely the high end of the annual cost expectancy to the State.

On a per-capita basis, the annual cost for services is projected to be about \$7,442 per year, plus debt service of \$359 per year. Assuming each employee spends approximately 20 percent of their time at the job site, the proportionate annual cost for County services is forecasted to be \$1,488, with proportionate annual debt service of \$72. The resulting net cost is estimated to be \$2,708,000.

The development of the proposed subdivision is expected to generate significant expenditures by the land owner, as well as by secondary owners and those involved in the separate development of the heavy industrial lots. These investments are expected to have a beneficial impact upon both State and County economies on a broad scale and in a multitude of ways.



1. Site work and infrastructure construction for the proposed subdivision will immediately infuse capital into the County and State economies. Numerous consultants will be involved in the initial planning stages and the construction trades will benefit from the jobs created by the project.
2. Advertising for the proposed project and the marketing of the lots will benefit graphic artists, advertising companies, newspapers, real estate sales agents, escrow companies, etc.
3. Site work and the development of each individual lot (by secondary owners) will result in additional work for engineers, architects, material suppliers, equipment rentals and sales, landscaping companies, and other related industries.
4. The new buildings (by individual lot owners) will not only attract existing businesses but should also stimulate the generation of new businesses and employment growth. This will have an indirect affect on retail businesses, restaurants and service establishments as the expanded workforce purchases goods and services. This cause and effect scenario should pass through the entire community, causing a ripple effect and increase the amount of capital flowing through Maui.
5. Upkeep of the proposed subdivision and buildings will also translate into work for maintenance companies, painting companies, real estate management and leasing groups, etc.
6. During the development of the proposed subdivision, fiscal benefits to the State of Hawaii will be realized through the receipt of additional income tax, general excise tax, and conveyance tax associated with construction activities. Based on the assumptions contained in the Market Study, the cumulative benefits over the course of the development, which includes subdivision construction and subsequent build out of the subdivision, are anticipated to outweigh the public cost to the State.
7. Upon stabilization, fiscal benefits from the ongoing operation of the proposed subdivision will include increases in real estate taxes collected by the County of Maui, as well as additional income tax and general excise tax inflow for the State of Hawaii. Based on the assumptions contain in the Market Study, the resulting annual public benefits are expected to consistently outweigh annual public costs, at both the County and State levels.

In light of the foregoing, the proposed project will have a positive effect on the State and local economy and is not expected to have an adverse impact on market conditions in the State of Hawai`i and the County of Maui.

### **3. Agriculture**

**Existing Conditions.** An assessment of agriculture on the island of Maui was prepared for the proposed project by ACM Consultants, Inc. [See Appendix N,](#)



[Agricultural Impact Assessment](#). The purpose of the report was to analyze the local agricultural real estate market in an effort to determine general and specific effects arising from the development of the proposed project.

According to the State Land Use Commission, about 1,930,224 acres of the approximately 4,112,388 acres of land in Hawai'i lies within the State Agricultural District. In the County of Maui, lands within the State Agricultural District encompass 402,354 acres.

The majority of agricultural land in Hawai'i is owned by the State and private land owners. Corporations with historical ties to commercial sugar and pineapple cultivation, cattle ranching, and land trusts hold much of the privately-owned land. In its prime, commercial agriculture in Hawai'i was dominated by field crops, such as sugar cane, pineapple and coffee. Rising global competition, higher operational and shipping costs, and increased fuel costs contributed to the loss of profitability and the decline of these industries.

Research of vacant, agricultural-zoned land has revealed that over 70 percent of this land in each County is owned by large landowners – those who control over 1,000 acres. In the County of Maui, there are 5,653 vacant, agricultural-zoned parcels encompassing 198,864 acres, with large landowners controlling 151,147 acres. The ratio of the acreage owned by large landowners to total acreage is 76 percent. Based on this research, it appears that of 1,218,005 acres of vacant, agricultural-zoned land, at least 875,352 acres are owned by 91 government entities and private land owners. Many of these large landowners choose to hold or lease their land rather than make it available for sale on market. While there are currently more than 71,000 vacant, agricultural-zoned parcels across the State, the available supply in each market is significantly less. Notwithstanding this, the present supply seems to be enough to satisfy demand as evidenced by the annual contraction of farm land.

Over the past 30 years, there has been a significant shift in the farming industry. The current trend for farms has shifted from large-scale commercial operations to smaller, more diverse crop production.

During the 20<sup>th</sup> century, agriculture on Maui had been dominated by Maui Land and



Pineapple Company (ML&P) and Hawaii Commercial and Sugar Company (HC&S). In 2007, ML&P shut down its canning factory to rely solely on the more profitable fresh fruit market. Downsizing of the plantation occurred in 2008, which resulted in the termination of over 200 employees. In December 2009, ML&P announced that it would be terminating pineapple cultivation citing continuing annual losses. Shortly thereafter, Hali`imaile Pineapple Company resumed cultivation after acquiring ML&P's pineapple operations.

HC&S survives as Hawai`i's only remaining sugar operation due to several contributing factors: (1) its economy of scale, (2) its compact and contiguous location in the Central Maui isthmus, and (3) its commitment and ability to reinvest and upgrade its factory and equipment.

Land Capability Grouping (non-irrigated) data from the Natural Resources Conservation Services of the U.S. Department of Agriculture (USDA) indicates that the subject parcel has soil that basically consists of Subclass VIIs with some parts designated Subclass VI. Subclass VII soils have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. Also included in this group are land types that are steep, rocky, or stony. Subclass VI soils have severe limitations because of stoniness or unfavorable texture. These soils are very stony, very rocky, extremely stony, or extremely rocky and have slopes of 0 to 35 percent.

The *Detailed Land Classification – Island of Maui (1967)* contains productivity ratings for land, which were prepared by the University of Hawaii's Land Study Bureau (LSB). According to this document, about 66 percent of the land underlying the project site has an overall productivity rating of "E73", while the remaining portion of the site has a rating of "E71". On the LSB ratings scale, the letter "A" represents the highest class of productivity, while "E" reflects the lowest. [See Figure 10, Soil Productivity Ratings.](#) The State has established three classes of agriculturally important lands to the State of Hawai`i: (1) Prime agricultural land, (2) Unique agricultural land, and (3) Other important agricultural land.

Prime agricultural land is land best suited for the production of food, feed, forage, and fiber crops. Unique agricultural land is land other than prime agricultural land and is



used for the production of specific high-value food crops. Other important agricultural land is land other than Prime or Unique agricultural land that is of Statewide or local importance for the production of food, feed, fiber, and forage crops. Agricultural land that does not fall into any of these categories is designated as Unclassified or Residual. The map identifying the Agricultural Lands of Importance to the State of Hawaii (ALISH) indicates that the land underlying the project site is Unclassified (i.e., residual land). [See Figure 11, Important Agricultural Lands.](#)

Herbicides and pesticides that HC&S has historically used for their agricultural operations include the following (PBR Hawaii, December 2004).

- Aatrex 90 (*active component* - atrazine; *use* - weed control)
- Amine 4 (*active component* - 2, 4-D; *use* - weed control)
- Aqua Master (*active component* - glyphosate; *use* - weed control)
- Banvel (*active component* - dimethylamine salt of dicamba; *use* - weed control)
- Ethrel (*active component* - ethephon; *use* - tassel control)
- Evkik 80 W (*active component* - ametryn; *use* - weed control)
- GB-1111 (*active component* - petroleum oil; *use* - mosquito control)
- Karmex (*active component* - diuron; *use* - weed control)
- Pentagon 60 WDG (*active component* - pendimethalin; *use* - weed control).
- Polado L (*active component* - glyphosate; *use* - plant growth regulator)
- Roundup Ultra (*active component* - glyphosate; *use* - weed control)
- Vecto Bac (*type* - nonchemical biological agent; *use* - mosquito control)
- Velpar (*active component* - hexazinone; *use* - weed control)

Fertilizers used by HC&S for its sugar cane cultivation activities include the following (PBR Hawaii, December 2004).

- Urea (*use* - source of nitrogen)
- Potash solution (*use* - source of potassium)

**Potential Impacts and Mitigation Measures.** As of 2009, the USDA's National Agricultural Statistics Service reported that there were approximately 230,000 acres of farm land in the County of Maui. When compared to the 355,786 acres reported in 1992, the 2009 figure represents a drop of over 125,000 acres or about 35 percent of





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the farm land in Maui County. This loss amounts to a straight line decrease of almost 7,000 acres per year or 2 percent per annum.

With a land area of 86 acres, the subject parcel represents only 0.0002 percent of State Agricultural District lands on the island of Maui, and just 0.0004 percent of farm land in Maui County. In addition, the 86 acres amounts to only 1.2 percent of the average annual contraction for Maui County. As previously noted, if the easement for the primary access route to the site is not granted, an alternate access route will be provided in large part by Alexander & Baldwin, Inc. via an easement along the east side of an existing HC&S irrigation reservoir. The reclassification of the subject parcel for heavy industrial use and the use of agricultural land for the alternate access road will have a very minimal effect on the inventory of land that is currently available for agricultural use.

After completion, operational activities in the subdivision could produce noise, dust, or other effects that are commonly associated with heavy industrial uses. However, these effects are not expected to have an adverse impact on surrounding properties since existing land uses at Maui Raceway Park and the Hawaiian Cement Quarry mutually accommodate the effects of their activities.

Agricultural activities that have occurred on the project site include hog farming and sugar cane cultivation. Since the subject parcel is not being used for agriculture, no agricultural jobs or revenues will be affected by the development of the proposed project.

As previously noted, the soils underlying the project site have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. In addition to an overall productivity rating of "E" (the lowest rating), the site is categorized as Unclassified (or residual) land by the map identifying Agricultural Lands of Importance to the State of Hawai'i. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, the long-term agricultural/economic impact resulting from the development of the proposed project is expected to be very minimal.



While the proposed project would reclassify agricultural lands for heavy industrial use, the project is expected to generate significant expenditures by the land owner and lot owners. The businesses in the proposed subdivision are expected to generate a significant, ongoing revenue stream which would benefit the State and County through job creation; additional direct and indirect sales expenditures; and increased tax revenues and fees.

The subject property lies within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan. The site is also adjacent to Project District 10 (Old Pu'unene Airport area), a recreational and expansion area which is currently being master planned to meet future recreational needs and provide areas for industrial activities (including government facilities) whose locations are better suited away from urban areas.

In consideration of the foregoing factors, which include sufficient agricultural supply and demand; current agricultural trends; poor subject soil quality; and complementary surrounding uses, any agricultural impacts attributable to the proposed project are expected to be negligible. The development of the proposed project also comports with the County's long-range plans for the area.

The use of chemicals and fertilizers will be limited to the establishment and maintenance of landscape plantings for the subdivision's common areas. Lot owners will be responsible for planting and maintaining their onsite landscaping. Pesticides will be used minimally for treatment purposes and not as a preventative measure. In addition to aesthetics, the selection of landscape materials will be based upon hardiness, drought tolerance, and resistance to pests. Fertilizers with a mixture of nitrogen, phosphorus, and potash would be applied to grassed areas, ground cover, and flowering shrubbery. By employing appropriate irrigation techniques, any leaching of fertilizers would be negligible.

The land owner will inform prospective lot owners of occasional noise and air quality impacts associated with sugar cane cultivation. Prospective buyers will also be informed that Chapter 165, HRS entitled *Hawaii Right to Farm Act* limits the circumstances under which pre-existing farming operations may be deemed a nuisance. In addition, the subdivision's Lot Owner's Association and HC&S will work



together to ensure that agricultural activities are not adversely affected by heavy industrial activities in the subdivision..

The proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for large-scale or diversified agricultural activities.

## **C. PUBLIC SERVICES AND FACILITIES**

### **1. Recreation**

**Existing Conditions.** The subject property is located in the Kihei-Makena Community Plan region. The Maui Department of Parks and Recreation (DPR) operates and maintains a total of 16 parks in the South Maui region, including community and recreational facilities such as the Kihei Community Center and the Kihei Aquatic Center. In addition to the Elleair Maui Golf Club in Kihei, privately owned golf courses and tennis courts at the Makena and Wailea Resorts are open to the public.

**Potential Impacts and Mitigation Measures.** The proposed project does not trigger any of the following County requirements for park dedication: (1) a building or group of buildings containing or divided into three or more dwelling or lodging units, (2) a conversion of buildings from hotel to residential use, (3) the addition of dwelling or lodging units to a building or group of buildings in which the total unit count is three or more, (4) a subdivision within a project district, and (5) dwelling units and apartments associated with condominium property regimes.

In commenting on the Draft EA, the DPR stated that it was seeking a water source to address the Maui Raceway Park's (MRP) needs. [See July 10, 2012 letter in Appendix S, Draft EA Comment Period.](#) In response to these comments, the applicant met with the DPR on August 6, 2012. Although a ¾-inch meter currently serves the MRP, the DPR would like a larger 1-1/2 inch meter but were informed by the Maui Water Department that a larger meter is unavailable. As a result, the DPR has been pursuing other potential water sources for the MRP. The private water system for the proposed project was also discussed. The land owner offered to hold follow-up discussions with the DPR to help develop a water system for the MRP on a



pro-rata basis. However, because no County funds are available, the DPR indicated that it will likely refocus its efforts to obtain the larger water meter.

The proposed project will not have a significant impact upon recreational facilities.

## **2. Police and Fire Protection**

**Existing Conditions.** The Maui Department of Police is responsible for the preservation of the public peace, prevention of crime, and protection of life and property. The department's Kihei Patrol District is one of six such districts in Maui County. In addition to regular patrol duties, the Kihei Patrol District has a substation at 1881 S. Kihei Road, across from the Kihei Town Center, as well as programs for visitor and community oriented policing, and citizen patrols.

The mandate of the Maui Department of Fire and Public Safety is to protect life, property, and the environment from fires, hazardous material releases and other life-threatening emergencies. The department has 14 stations throughout the County including 10 stations on the island of Maui. In South Maui, the department has two stations, one in Kihei at 11 Waimahaihai Street and another in Wailea at 300 Kilohana Drive.

**Potential Impacts and Mitigation Measures.** Existing security measures for the subject parcel include perimeter fencing around the property and locked entry gates at roads providing access to the site. Appropriate lighting and security measures will be utilized during and after construction of the proposed project for crime prevention and deterrence and to ensure safe vehicular movement. In addition, the project shall be developed in accordance with County fire protection requirements for fire flow and hydrant spacing, as well as the grade and clear widths of service roads.

The proposed project will not have an adverse effect upon the service capabilities of police, fire, and emergency medical operations nor will it extend the existing service area limits for emergency service.

The private water system for the proposed subdivision will provide water for drinking water and non-drinking water (irrigation, fire flow) purposes. As subdivision lots are developed in the future, lot owners will be required to submit fire flow calculations to



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the Department of Fire and Public Safety in conjunction with the building permit review and approval process.

### **3. Schools**

**Existing Conditions.** The State Department of Education operates several public schools in the Kihei area: Kamali'i Elementary School, Kihei Elementary School, and Lokelani Intermediate School. Area students from Grades 9 to 12 attend Maui High School in Kahului. Other schools in the area include the Montessori School (ages 3 to 14) and Kihei Charter School (Grades K to 12).

**Potential Impacts and Mitigation Measures.** The proposed project does not include a residential housing component. As such, no significant impacts to existing educational facilities are anticipated.

### **4. Health Care**

**Existing Conditions.** Located in Wailuku, the approximately 200-bed Maui Memorial Medical Center provides acute and emergency health care services for the County of Maui. Various private care physicians and clinics in the West Maui region also provide medical care and out patient services. In addition, American Medical Response (AMR) provides 24-hour emergency medical service through ten ambulance facilities stationed throughout the County, including eight facilities on the island of Maui and two facilities in Kihei.

**Potential Impacts and Mitigation Measures.** The proposed project is not expected to generate a demand for new or additional health care facilities nor will it have an adverse impact upon existing medical services. In addition, the proposed action will not adversely impact the ability of ambulances to respond to medical emergencies.

### **5. Solid Waste Disposal**

**Existing Conditions.** The Solid Waste Division of the Maui Department of Environmental Management is responsible for the collection and disposal of single-family residential waste on the island of Maui. Private waste disposal contractors provide refuse collection for commercial and non-residential properties.



County landfills located in Hana, Central Maui, Lanai, and Molokai accepts residential and commercial solid waste for disposal. In addition to the disposal of solid waste, the Central Maui Landfill, which is located near Pu`unene, contains recycling, and composting facilities and also accepts green waste and used motor oil. The Maui Demolition and Construction Landfill, a commercial facility near Maalaea, accepts construction and demolition waste for disposal.

**Potential Impacts and Mitigation Measures.** During site work for the proposed subdivision, cleared and grubbed material may be used as mulch or transported to the County's green waste recycling facility at the Central Maui Landfill for disposal. Construction waste material would be hauled to the Maui Demolition and Construction Landfill for disposal.

After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to an association of subdivision lot owners. The refuse generated by the proposed subdivision is not expected to have an adverse effect upon solid waste collection and disposal services and facilities.

## **D. INFRASTRUCTURE**

### **1. Water**

**Existing Conditions.** Domestic water service for the island of Maui is provided by a public water system which is operated and maintained by the Maui Department of Water Supply (DWS). In addition to Wailuku-Kahului and Kihei-Makena, the department's Central Maui System serves, Waihe`e, Waiehu, Waikapu, Maalaea, Spreckelsville, and Paia.

The main supply sources for the Central Maui System include the Waihe`e Aquifer, the Iao Tunnel, the Iao-Waikapu Ditch, and the Iao Aquifer, which was designated as a protected water source in 2003 by the State Commission on Water Resource Management,

The Central Maui System does not extend to or serve the project site, although an 8-inch County water line along Kama`aina Road serves some of the surrounding



properties. From this point, the water is conveyed to Kihei via a 36-inch transmission line along Mokulele Highway.

The Central Maui System is currently at or near capacity and may not be able to provide sufficient source or storage for the proposed project. In light of the foregoing, Tom Nance Water Resource Engineering (TNWRE) prepared a report in September 2011 which examined the development of onsite groundwater to provide drinking water and non-drinking water for the proposed project. [See Appendix O. Groundwater Resource and Water System Assessment.](#) The report examines groundwater resources in the area, provides estimates of the drinking water and non-drinking water needs for the project, identifies the water system infrastructure required to meet this need, and analyzes the probable effect the project may have on groundwater resources.

Groundwater Resources. Data on groundwater occurrence in the Central Maui isthmus comes primarily from wells, a number of which HC&S have used for sugar cane irrigation for more than 70 years. Groundwater in the isthmus occurs as relatively thin basal lens floating on saline groundwater at depth and in hydraulic contact with seawater along the Kahului and Ma`alaea coastlines. The Kahului Aquifer has drinking water quality in some locations and brackish water in most of its remaining area. The proposed project plans to use the underlying brackish groundwater and will not be utilizing a drinking water supply. In addition, there are no existing or proposed *other* higher priority water uses of groundwater in this part of the Kahului Aquifer.

As designated by the State Commission on Water Resource Management (CWRM), the Kahului Aquifer has a sustainable yield of 1.0 million gallons per day (MGD), an amount which is based exclusively on rainfall recharge on less than half of the aquifer's total area and does not account for other sources of recharge. Other sources of recharge (natural and man-made) are substantially larger: underflow from Haleakala, surface runoff from Haleakala, underflow from the West Maui Mountains, surface runoff from the West Maui Mountains, leakage from the East Maui and Waihe`e Ditch systems, and irrigation return from HC&S sugar cane fields. Historically, the sources of recharge have supported pumpage from the aquifer of 45 MGD for many decades.



The rainfall runoff as underflow from outside the aquifer, particularly from Haleakala, would sustain an order of magnitude yield greater than the 1.0 MGD sustainable yield specified by CWRM even if HC&S were to cease operations including its importation of ditch water. Present pumpage is in excess of 25 MGD, most of it by HC&S. The total estimated groundwater use for the proposed project is roughly 0.5 MGD. The location of this draft is miles from the nearest wells and will have no impact on these wells. If HC&S no longer cultivates sugar cane, a substantial amount of that aquifer's recharge would be reduced or eliminated altogether. However, it would also mean that about 25 MGD of pumpage from the aquifer would also cease. The wells for the proposed project are well positioned, with respect to the aquifer's natural sources of recharge, to continue to be viable.

Drinking Water and Non-drinking Water Requirements. To estimate the projected drinking water and non-drinking water demand for the proposed project, the DWS design standard for industrial development of 6,000 gallons per day per acre was used. The landscape irrigation demand for the subdivision's internal roadway system and drainage retentions basins were also factored in. The 30/70 ratio that the City and County of Honolulu uses for drinking water and non-drinking water uses on industrial lands was utilized in determining the project's estimated drinking water demand. Based on the foregoing, the projected drinking water demand is estimated to be an average of 118,800 gallons per day (gpd), while the non-drinking water requirement is projected to be an average of 305,200 gpd.

Proposed Water System Infrastructure. To provide an onsite groundwater supply for drinking water and non-drinking water uses, the TNWRE report recommends the installation of three wells with a capacity of 300 gallons per minute (gpm) each, including standby capacity. To treat the well water for drinking water use, the report proposes three reverse osmosis (RO) treatment trains with a capacity of 75 gpm each, with one train providing standby capacity. For water storage, the report recommends a 0.25 million gallon (MG) reservoir for drinking water storage and a 0.40 MG reservoir for non-drinking water storage.

Since both reservoirs would be at grade and therefore would not provide sufficient pressure for drinking water and non-drinking water uses, two automated, multiple pump stations would be installed to maintain pressure throughout each of the





distribution systems. To ensure fire protection is not impacted by a power outage, backup generator power will be provided for the non-drinking water booster pump.

The source wells, RO treatment trains, storage reservoirs, and pump stations would be located near the north end of the proposed subdivision.

**Potential Impacts and Mitigation Measures**. The TNWRE report also analyzed the probable effect the proposed project may have on groundwater resources. [See Appendix O, Groundwater Resource and Water System Assessment](#). Further discussion of these probable effects follows below.

**Impacts on Groundwater Resources**. Since the ground surface across the subject parcel is very permeable and because there are no natural drainageways across the property, storm water runoff flowing onto the project site from up gradient areas or from the site onto down gradient areas is not known to occur. The conceptual development plan for the subdivision calls for transporting the runoff into retention basins along the western edge of the site where it will evaporate and/or percolate into the ground. As such, the proposed project will not impact surface water sources. Its impacts will be limited to the underlying groundwater. These effects, which are quantified in detail in the TNWRE report, will consist of the following.

- Withdrawal of groundwater for non-drinking water use and as feed water for the RO treatment process to produce drinking water.
- Disposal of the RO concentrate in onsite disposal wells.
- Disposal of treated domestic wastewater in leach fields.
- Percolation of excess landscape irrigation and industrial wash water.
- Change in the quality of onsite rainfall percolating to groundwater.

**Groundwater Flow Rate**. Since the aquifer's sources of recharge come from various directions and because there is significant pumping at all active HC&S well batteries, the direction and rate of groundwater flow is not precisely known. As such, the following approximations were made for assessment purposes.

- Beneath the project site, the direction of flow is from northeast to southwest; perpendicular to this direction, the width of the project site is 0.63 mile.



- The groundwater level is 3.6 feet above mean sea level.
- The groundwater gradient is on the order of 0.6 feet per mile, equivalent to 0.00112 ft/ft.
- The permeability coefficient is 10,000 feet per day.

For the preceding approximations, the groundwater flow rate beneath the project's 0.63-mile width is approximately 4.0 MGD.

Groundwater Quality. A short-term pump test and water quality sampling of an existing onsite well (State No. 4927-01) was conducted in July 2010. A relatively high level of nitrate-nitrogen, a result of ongoing agricultural activities was found. However, none of the detected constituents exceed the levels allowed by the U.S. Environmental Protection Agency (EPA) and the State Department of Health for drinking water use. During the pump test, the salinity of the pumped water was stable and only slightly brackish. It should be noted that Well 4927-01 is not in use nor is it suitable for use because it was improperly constructed and allows contaminants to enter groundwater via its open annular space. Also, the well casing is too small to be of any use and has come apart in numerous places.

For the aquifer as a whole, salinities are consistently low except near shore at the north end of Ma`alaea Bay where caprock is present. High nutrient levels, particularly nitrate-nitrogen, are present throughout the aquifer. For purposes of assessing potential project-related impacts to groundwater resources, the present quality of the groundwater underlying the project site was taken to be: salinity of 0.80 parts per thousand (PPT), nitrogen concentration of 330 micro-molar ( $\mu\text{M}$ ), and phosphorus concentration of 3.4  $\mu\text{M}$ .

Estimated Post-Development Changes to the Groundwater Flow Rate. The project's onsite wells will draw water from the underlying groundwater, but some of this water will be returned in the form of RO concentrate, wastewater from septic systems, excess landscape irrigation, and percolating wash water from the non-drinking water system. With the uses and returns to groundwater as estimated in the TNWRE report, the net consumptive use of groundwater would be 0.23 MGD. This would be a 5.8 percent reduction of the estimated 4.0 MGD flow of groundwater directly beneath the site.



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### Estimated Post-Development Changes to Groundwater Salinity and Nutrient Levels.

Based on data from onsite Well 4927-01 and others nearby, it was assumed that the underlying groundwater has a salinity of 0.8 PPT, a nitrogen content of 330 micro-molar (uM), and a phosphorus content of 3.4 uM. This would also be the quality of water extracted by the supply wells. Except for the RO concentrate which will be delivered directly to groundwater, all of the other returns to groundwater described in the report will travel vertically through the sandy soil layer, alluvium, and unweathered lava to the groundwater below. These various strata will function as a trickling filter to naturally remove nitrogen and phosphorus. Expected removal rates are greater than 80 percent for nitrogen and more than 95 percent of phosphorus. The net effect to the 4.0 MGD of groundwater flowing directly beneath the project site is shown below.

- 5.7 percent reduction in flow rate.
- 3.8 percent increase in salinity.
- 1.3 percent increase in nitrogen.
- 7.1 percent increase in phosphorus.

All of these changes are modest and are considered to be insignificant from an aquifer-wide perspective. Currently, the only uses of groundwater down gradient of the project site are three wells in the Kealia National Wildlife Refuge. These wells are pumped seasonally when surface water is insufficient to maintain the pond and wetland areas. The estimated changes due to the development of the proposed project should have no impact on this ongoing use.

It should be noted that the proposed project plans to use the underlying brackish groundwater and will not be utilizing a drinking water supply. In addition, there are no existing or proposed *other* higher priority water uses of groundwater in this part of the Kahului Aquifer. For these reasons, the proposed water use is in conformance with the County's Water Use and Development Plan. This use is further supported by the approval of well construction and pump installation permits for the project by the State Commission of Water Resource Management (CWRM). [See Appendix O-1, CWRM Letter of Assurance for Well Nos. 4927-02 and 4927-03.](#)

A Preliminary Engineering Report (PER) for the proposed project was prepared by



Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report](#). The purpose of the PER was to examine the existing infrastructure in the project area, evaluate the adequacy of the infrastructure, and recommend infrastructure improvements for the proposed project.

The conceptual land development plan for the proposed project currently calls for subdividing the subject parcel to create 28 developable lots. The water development plan for the proposed project will involve the construction of a dual water system which will provide water for drinking water and non-drinking water (irrigation, fire flow) uses.

Groundwater drawn from three onsite wells will serve as the source for non-drinking water use and will also serve as the source for the reverse osmosis (RO) process which will treat the groundwater for drinking water use.

The drinking water system for the proposed subdivision is defined as a Public Water System by Chapter 11-20, HAR for the State Department of Health (DOH), since it will provide water for human consumption and has at least 15 service connections or regularly serves a minimum of 25 persons daily for at least 60 days annually. Public water systems are regulated by the department's Safe Drinking Water Branch.

Utilizing the Domestic Consumption Guidelines set forth by the Department of Water Supply (DWS), as well as dual water system guidelines that recommend using a 30/70 ratio (drinking water/non-drinking water) for industrial lands, the drinking water demand for the subdivision's developable lots was determined to be about 118,620 gallons per day (gpd).

The non-drinking water requirement for the subdivision's developable lots, internal roadway, and landscaped and irrigated common areas was calculated to be approximately 305,030 gpd. As set forth by DWS standards, the fire flow requirement for heavy industrial uses is 2,500 gallons per minute for a two-hour period, while the maximum spacing between fire hydrants is 250 feet. The fire flow requirements for the proposed project will be addressed by the project's non-drinking water system.

As set forth in the Groundwater Resource and Water System Assessment ([See Appendix O](#)), the following water system improvements are proposed for the



subdivision.

- A total of three wells with a capacity of 300 gallon per minute (gpm) each, with one well providing standby capacity.
- A total of three reverse osmosis treatment trains with a capacity of 75 gpm each, with one train providing standby capacity.
- A 0.25 million gallon (MG) storage reservoir for drinking water use.
- A 0.30 million gallon (MG) storage reservoir for non-drinking water use.
- The drinking water and non-drinking water systems will each require a booster pump with a backup generator power for the non-drinking water pump station to ensure fire protection during a power outage.

In order for the dual water system to function as designed, provisions for the maintenance of the system will be included in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision. An association of subdivision lot owners will be formed to assume the responsibility of operating and maintaining the system in accordance with the CC&Rs.

In their letter dated July 2, 2012, the State Commission on Water Resource Management (CWRM) approved the issuance of well construction and pump installation permits for the groundwater wells for the project. [See Appendix O-1, CWRM Letter of Assurance for Well Nos. 4927-02 and 4927-03.](#) The wells will be developed and operated in accordance with the *Hawai`i Well Construction and Pump Installation Standards* established by CWRM. These standards were created to protect and prevent the pollution, contamination, and wasting of groundwater, and minimize salt water intrusion into wells and groundwater.

In accordance with the Hawai`i Administrative Rules (HAR) for the DOH, the water system for the proposed subdivision will comply with all applicable provisions of Title 11, Chapter 20, HAR (*Rules Relating to Drinking water Systems*); Title 11, Chapter 21, HAR (*Cross-connection and Backflow Control*) and Title 11, Chapter 25, HAR (*Rules Pertaining to Certification of Public Water System Operators*).

It should also be noted that Section 11-20-29.5, HAR (*Capacity Demonstration and Evaluation*), requires all new private water systems to demonstrate appropriate technical, managerial, and financial capacity in order to receive DOH approval for



construction and operation. These requirements ensure that the water system is constructed to current County and DOH standards and has access to an adequate water source(s) both as to quality and quantity. Professional operation of the system by a private water system operations company using DOH certified operators, and ownership by an association that is solely responsible for all legal, and financial aspects of the system are among the requirements. Fiscal management by a professional financial management company and maintenance of adequate reserve funds to address emergencies and replacements ensure that financial requirements can be met. A developer funded cash reserve is required and can be returned to the developer only after the water association has successfully developed its own financial reserves. Recorded covenants on each parcel serviced by the system provide the water association with the ability to levy assessments to meet operational needs so that the system remains within regulatory requirements. Ultimately, the water association has the ability to lien properties serviced by the system to provide the resources to maintain the system in compliance with all applicable regulatory requirements.

Prior to the start of construction, an application for the subdivision's water system will be prepared and submitted to the DOH, Safe Drinking Water Branch for their review and approval.

The proposed water system improvements will also be consistent with the Rules and Regulations of the Department of Water Supply. As subdivision lots are developed in the future, lot owners will be required to submit fire flow calculations to the Maui Department of Fire and Public Safety in conjunction with the building permit review and approval process. Lot owners will be encouraged to utilize water conservation measures when developing their parcels in the future. Examples of such measures include, but are not limited to the following: automatic drip and sprinkler irrigation systems with time controllers and rain sensors, drought-tolerant landscape plantings, and low-flow plumbing fixtures.

Since heavy industrial uses will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. Nonetheless, because heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will



require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including regulations governing water use and water quality. An association of subdivision lot owners shall be formed and will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse long-term impacts to surface and groundwater resources nor will it affect the County's water system infrastructure.

## **2. Wastewater**

**Existing Conditions.** The Maui Department of Environmental Management is responsible for a public wastewater system that handles the collection, transmission, treatment, and disposal of sewage in most areas of Central, South, and West Maui. In the Central Maui region, the department operates and maintains a network of sewer lines and pump stations that conveys sewage to the Wailuku-Kahului Wastewater Treatment Plant for treatment and disposal. There are no County wastewater facilities within or adjacent to the project site. The nearest County sewer system is located in Kihei, about 2.3 miles to the south of the site.

**Potential Impacts and Mitigation Measures.** A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) As previously noted, the closest County sewer system is in Kihei, approximately 10,000 feet south of the project site.

The Draft EA indicated that wastewater collection and treatment for the proposed subdivision originally would be handled by a private wastewater system consisting of



sewer transmission lines and manholes within internal subdivision roads. As lots within the subdivision are developed, lot owners would be required to install an individual wastewater system (IWS) on their lots and connect to a sewer lateral linked to the subdivision wastewater system. Wastewater from each lot would then be conveyed to a central leach field within the subdivision.

In their June 19, 2012 letter commenting on the Draft EA, the State Department of Health's (DOH), Wastewater Branch indicated that it will not allow multiple IWS to discharge into a central leach field and that a separate leach field must be provided for each IWS. [See Appendix S, Draft EA Comment Period](#). In response to these comments, the wastewater treatment plan for the proposed subdivision has been modified to call for the installation of an IWS consisting of an aerobic treatment unit and leach field for each lot. As indicated by the DOH, this type of IWS can be used within 1,000 feet of drinking water sources and wells. The cost and installation of the IWS will be borne by individual lot owners when their lots are developed in the future.

All lot owners must comply with Chapter 11-62, HAR (*Wastewater Systems*), which ensures that the disposal of wastewater (including gray water) does not contaminate or pollute water resources, create a public nuisance, and does not pose a hazard or potential hazard to public health, safety, and welfare. As lots within the subdivision are being developed, lot owners must submit their IWS plans to the DOH for review and approval.

Because future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all applicable Federal, State, and County laws including regulations governing wastewater treatment. Provisions for the installation and maintenance of the IWS on each lot will also be included in the CC&Rs. The subdivision Lot Owner's Association will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.





In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

In light of the foregoing, the proposed project is not expected to result in any adverse impacts to surface and groundwater resources nor will it affect the County's wastewater collection and treatment facilities.

### **3. Drainage**

**Existing Conditions.** The subject parcel slopes in an easterly to westerly direction with on site elevations ranging from 140 feet above mean sea level (amsl) to 120 feet amsl with an average slope of 1.8 percent.

Storm water runoff on the subject property was calculated by using the rational method and the 50-year, one-hour storm event for drainage areas less than 100 acres. The criteria used for the hydrologic calculations are from the *Rules for the Design of Storm Drainage Facilities in the County of Maui (1995)*.

Existing runoff at the project site was estimated to be 75.2 cubic feet per second (CFS), while the pre-development runoff volume is 135,400 cubic feet (CF). Runoff from the project site presently sheet flows across the site in a westerly direction onto downstream parcels and towards Mokulele Highway. The proposed project will not involve discharges into Class 1 (inland) waters or Class AA (marine) waters of the State of Hawai'i.

**Potential Impacts and Mitigation Measures.** A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) The drainage system for the proposed subdivision will be designed to accommodate the incremental increase in runoff generated by the development of the entire project site.

The master drainage system for the subdivision will provide a drain stubout to each developable lot, as well as curb-inlet catch basins, manholes, and drain lines within



the subdivision's internal roadway system. As individual lots are developed in the future, lot owners will be required to install their own onsite drainage system and provide a drain line connection to the drain stubouts on each lot. The post-development runoff from each lot will then be conveyed to a series of retention basins along the western edge of the subdivision. The retention basins will be designed and built to accommodate the increase in runoff from the fully-developed subdivision.

Based on the 50-year, one-hour storm event, post-development runoff is projected to be 328.5 CFS, while runoff volume is projected to be 413,900 CF. The incremental increase between the pre- and post-development conditions is 253.3 CFS in runoff and 278,500 CF in runoff volume.

Regardless of the magnitude of a storm event, no surface water (runoff), is expected to reach Ma`alaea Beach. Studies have indicated that the mud cap rock along the southern two-thirds of Ma`alaea Bay prevents groundwater discharge along the shoreline, forcing it further offshore where it is thoroughly mixed to background ocean water levels. As a result, any impact to groundwater flowing beneath the project site and flowing south toward Ma`alaea Bay will not adversely impact the beach's water quality, including its turbidity and chlorophyll *a* levels.

In order for the master drainage system to function as designed, provisions for the maintenance of the system will be included in the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision. The association of subdivision lot owners will assume the responsibility of operating and maintaining the system pursuant to the CC&Rs. Examples of measures to facilitate the operation and maintenance of this system include, but are not limited to, the following.

- Inspect the drainage system on an annual basis and after major storms. Repair any damage and remove debris from grated drain inlets to allow unimpeded flow.
- Periodically inspect the drainage system. Remove debris and sediment build up as necessary especially inside grated drain inlets upstream of the subsurface retention basins.
- Prevent grass and landscape cuttings from entering the drainage system as they could cause blockages.



- Clean all parking areas as often as possible in order to keep debris and sediments from entering the drainage system.
- Keep lawns and landscaping in healthy condition to prevent soil erosion and reduce the possibility of sediments entering the drainage system.

The drainage system for the proposed subdivision will be designed in accordance with the *Rules for the Design of Storm Drainage Facilities in the County of Maui (1995)*.

An erosion control plan, including Best Management Practices (BMPs), and a drainage plan and report shall be submitted to the Maui Department of Public Works for review and approval prior to the issuance of grubbing and grading permits for the proposed project. The BMPs shall comply with Chapter 20.08 of the Maui County Code entitled *Soil Erosion and Sedimentation Control*. In addition, since site work for the project will exceed one acre, a National Pollutant Discharge Elimination System (NPDES) Permit for general coverage will be obtained from the Clean Water Branch of the State Department of Health for the discharge of storm water associated with construction activities such as clearing, grading, and excavation.

Since future lot owners will determine the heavy industrial use on their lots, specific activities that would occur within the subdivision are presently unknown.

Nevertheless, because heavy industrial uses have the potential to affect the environment, the CC&Rs will require that all lot owners prepare and implement BMPs and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also require that lot owners comply with all applicable Federal, State, and County laws including regulations governing storm water runoff and erosion control. The association of subdivision lot owners will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.



In light of the foregoing, the proposed project is not expected to result in any significant impacts to surface and groundwater resources nor will it adversely affect adjacent and downstream properties.

#### **4. Roadways**

**Existing Conditions.** Linking Kahului and Kihei, Mokulele Highway is a four-lane, divided roadway with a north-south alignment. The highway has a posted speed limit of 45 miles per hour and a separate bike path along its east side.

In the project area, Mokulele Highway forms a four-legged, signalized intersection with Kama`aina Road to the east and Mehameha Loop to the west. The north and southbound approaches of the highway have separate left- and right-turn deceleration and turn/storage lanes. The north and southbound left-turn lanes allow protected turning movements. The eastbound (Mehameha Loop) and westbound (Kama`aina Road) approaches have one travel lane in each direction.

Access from Mokulele Highway to the subject parcel is provided by Kama`aina Road, South Firebreak Road, and Lower Kihei Road. Mokulele Highway and Kama`aina Road both fall under the jurisdiction of the State Department of Transportation (DOT).

Near its intersection with Mokulele Highway, Kama`aina Road has a 24-foot wide concrete-paved section that extends about 1,500 feet eastward before changing to a 24-foot wide asphalt-paved section to match up with South Firebreak Road.

From its nexus with Kama`aina Road, South Firebreak Road heads south to provide access to adjacent sugar cane fields and the Hawaiian Cement Quarry. South Firebreak Road transitions to Lower Kihei Road approximately 500 feet southwest of the Quarry Access Road.

Lower Kihei Road varies in surface width with asphalt pavement ranging from 20 to 22 feet. Lower Kihei Road proceeds in a southerly direction to provide access to the project site, an HC&S irrigation reservoir, and sugar cane fields along its alignment.

Access from Mokulele Highway to the subject property will be largely furnished by Easement 7, an existing 30-ft. wide access easement within the Kama`aina Road and South Firebreak Road rights-of-way. [See Appendix D, Quitclaim Assignment of](#)



[Partial Interest in Easement \(Easement 7\)](#). However, since the southern terminus of Easement 7 lies near an irrigation reservoir by the north end of the subject parcel, the land owner has filed a Request for Use of State Lands with the State Department of Land and Natural Resources for a 56-ft. wide access easement (0.573 acre) at the south end of Easement 7 which would allow access to the subject parcel. The land owner is also requesting a 50-ft wide access easement (0.722 acre) along the Hawaiian Cement Access Road which would be part of an alternate access route along the north and east sides of the reservoir. [See Appendix D-1, Request for Use of State Lands \(Amended\)](#). The primary and alternate access routes are shown in [Figure 5, Proposed Land Development Plan](#).

The external roadways providing access to the proposed subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code pertaining to *General Criteria for Flexible Design Standards*. The subdivision's internal roadways will be owned and maintained by the Lot Owner's Association. In conjunction with the processing of the subdivision application for the proposed project, the flexible design standards will be submitted to the Maui Department of Public Works (DPW) for review and approval.

The County of Maui provides public bus transportation between Kihei and Kahului. The Kihei Islander (bus) route takes passengers along Mokulele Highway at one-hour intervals from 5:30 AM to 9:30 PM.

**Potential Impacts and Mitigation Measures**. A Traffic Impact Analysis Report (TIAR) for the proposed project was prepared by Phillip Rowell and Associates in September 2011. [See Appendix Q, Traffic Impact Analysis Report](#).

Since the land owner's current plan is to subdivide the property, there is no estimate as to when the actual development of the lots will be completed. Therefore, 2015 was used as an estimated project completion date. This time frame is compatible with traffic studies for other major projects within and adjacent to the study area. The year 2015 was also used as the horizon or design year for which background traffic conditions (future traffic conditions without the proposed project) are estimated.



These future traffic projections were calculated by evaluating existing traffic volumes, annual growth rates, and traffic generated by other proposed projects in the vicinity. The levels-of-service at the following intersections were evaluated for the TIAR.

- Mokulele Highway, Kama`aina Road, and Mehameha Loop (signalized).
- South Firebreak Road and Quarry Access Road (unsignalized). This intersection is associated with the Primary Access Road.
- South Firebreak Road and Project Access Road (unsignalized). This intersection is associated with the Alternate Access Road.
- Quarry Access Road and Project Access Road (unsignalized). This intersection is also associated with the Alternate Access Road.

The study intersections were analyzed using methodology for signalized and unsignalized intersections set forth in the *2000 Highway Capacity Manual*.

Existing Traffic. Traffic counts were taken at the study intersections to determine existing peak hour traffic volumes. Since Kama`aina Road provides access to the Hawaiian Cement Quarry and experiences a lot of heavy truck traffic, heavy vehicles were also counted.

The morning peak hour along Mokulele Highway is from 7:15 to 8:15 AM and is consistent with 2010 traffic counts taken at the highway's intersection with North Kihei Road, the next signalized intersection to the south. The total AM peak hour volume along the highway is approximately 2,200 vehicles per hour (VPH). The direction of travel is evenly split (50/50) and left and right turns are minimal.

Heavy vehicles make up most of the traffic turning into and out of Kama`aina Road. For outbound vehicle traffic during the morning peak hour, 80 percent of the left turning vehicles and 67 percent of the right turning vehicles are heavy vehicles. For traffic turning into Kama`aina Road from Mokulele Highway, 48 percent of the left turning vehicles and 17 percent of the right turning vehicles are heavy vehicles.

The afternoon peak hour along Mokulele Highway is from 3:30 to 4:30 PM. The total PM peak hour traffic volume along the highway is 2,380 VPH. The directional traffic distribution is 50/50. During the afternoon peak hour, all of the southbound left turns from Mokulele Highway to eastbound Kama`aina Road are heavy vehicles and 83 percent of the right turns from northbound Mokulele Highway to eastbound



Kama`aina Road are heavy vehicles. Of the outbound traffic during the afternoon peak hour, 73 percent of the left turns from westbound Kama`aina Road to southbound Mokulele Highway are heavy vehicles.

The peak hour volumes along Mehamaha Loop are approximately 35 VPH during the morning peak hour and 40 VPH per hour during the afternoon peak hour. There were no heavy vehicles along Mehamaha Loop during both peak hours.

The peak hour volumes along Kama`aina Road are 57 VPH during the morning peak hour and 36 VPH during the afternoon peak hour. Heavy vehicles make up 25 percent of the traffic along Kama`aina Road during the AM peak hour and 22 percent during the PM peak hour.

Level-of-Service. This term is used to describe any of an infinite number of traffic operating conditions that may occur on a given travel lane or roadway when it is subjected to various traffic volumes. Level-of-Service (LOS) also measures the effect various factors have on traffic including factors such as space, speed, travel time, traffic interruptions, safety, driving comfort, convenience, and freedom to maneuver. LOS is expressed in a qualitative manner through the use of six levels ranging from "A" through "F" with LOS "A" representing free-flowing traffic and no congestion and LOS "F" reflecting severe traffic congestion with stop-and-go conditions.

The Institute of Transportation Engineers' (ITE) publication, *Transportation Impact Analyses for Site Development (2006)*, notes that LOS D is typically deemed acceptable for peak hour conditions in urban areas. Using this standard and applying this criterion to the overall intersection instead of each controlled lane group, no deficiencies were identified at the intersection of Mokulele Highway, Kama`aina Road, and Mehamaha Loop. The overall intersection operates at LOS A during both morning and afternoon peak hours. The east- and westbound approaches, as well as the northbound left-turn lane and southbound left-turn lane operate at LOS D, which is considered an acceptable level-of-service.

Volume-to-Capacity Ratio. Corresponding to each level-of-service is a volume-to-capacity (V/C) ratio. This ratio expresses existing or projected traffic volumes in relation to the capacity of an intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by a roadway during a specified



period of time. The capacity of a particular roadway is influenced by the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.), and turning movements. A signalized intersection with a volume-to-capacity (V/C) ratio greater than 1.000 corresponds to LOS F, while an intersection with a V/C ratio of 0.801 – 1.000 corresponds to LOS D, which is an acceptable level-of-service.

Trip Generation. The trip generation analysis is not based on zoning but is predicated on the anticipated land uses for the proposed project. The peak number of trips generated by the proposed project was estimated by using trip-generation rates for industrial parks. Based on the total area of the developable lots (65.92 acres), the project will generate 392 inbound and 80 outbound trips during the morning peak hour and 99 inbound and 372 outbound trips during the afternoon peak hour.

Trip Distribution. Using population distribution data from the *The Maui Long Range Land Transportation Plan* (1996), project-related trips were distributed among anticipated approach and departure routes. Based on population distribution estimates for 2015, 62 percent of project-related trips are projected to approach from and depart to the north, while the remaining 38 percent are expected to approach from and depart to the south.

The project will have no right of access to roadways in the Maui Raceway Park. In addition, retention basins along the western boundary of the project site will prevent any traffic connection between the subdivision and the Park. Therefore, all traffic was assigned to the intersection of Mokulele Highway, Kama'aina Road, and Mehameha Loop.

Based on observations at the Central Maui Baseyard, which lies 1.3 miles to the north of the project site, and the Consolidated Baseyard, which is located about 3.0 miles to the northwest of the site, it is anticipated that 25 percent of the trips generated by the project will be made by heavy vehicles.

Background Traffic Conditions. From 1990 to 2020, traffic on Maui is expected to increase at an average annual rate of 1.6 percent according to *The Maui Long Range Land Transportation Plan* (1996). This growth rate was used to estimate the ambient





background growth between 2011 and 2015, which is the design year for the proposed project. This growth factor was applied to the north- and southbound through traffic movements along Mokulele Highway. The other component used to estimate background traffic volumes is traffic resulting from other proposed projects in the vicinity that are either under construction or approved for construction. These “related projects” may be development projects or roadway improvements which could have a significant effect on traffic in the study area.

The background traffic projections were then calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects.

Background Plus Project Conditions. This is defined as 2015 background traffic conditions plus project-related traffic and was estimated by superimposing the peak hourly traffic generated by the proposed project on peak hour 2015 background traffic volumes.

Level-of-Service Analysis. A level-of-service analysis (LOS) of background and background plus project conditions was conducted by analyzing the changes in traffic volumes and levels-of-service at the study intersections and project driveways. The incremental difference between these conditions quantifies the (traffic) impact of the project and was also used to help formulate appropriate mitigation measures.

The LOS analysis for 2015 background plus project conditions at the study intersections revealed the following:

1. *Mokulele Highway, Kama`aina Road, and Mehemeha Loop (signalized).*

- The northbound left will operate at LOS E during the morning peak hour. However, the volume-to-capacity (V/C) ratio is 0.53, which means that the long delay is the result of the signal timing. No mitigation is required.
- During the afternoon peak hour, the westbound approach will operate at LOS E, the southbound left will operate at LOS F, and the overall intersection will operate at LOS C. Since the V/C ratios for these movements are greater than 1.00, mitigation is required.
- Modifying the westbound approach to provide a separate right-turn lane will allow all controlled movements to operate at LOS D, or better. In



addition, the overall intersection will operate at LOS B and all V/C ratios will be below 1.00.

- Because of the large number of heavy trucks entering and exiting Kama'aina Road, the need for an acceleration lane for traffic turning from westbound Kama'aina Road to northbound Mokulele Highway was assessed. A review of *A Policy on Geometric Design of Highways and Streets* (1994), published by the American Association of State Highway and Transportation Officials, concluded that there are general guidelines regarding the need for an acceleration lane, but no traffic warrants. It should be noted that an acceleration lane was not provided at this intersection, or the intersection for the Central Maui Baseyard (1.3 miles to the north), when Mokulele Highway was widened from two to four lanes in 2008.
- The projected number of heavy vehicles that would use an acceleration lane at this location is significantly higher than estimated for background without project conditions. The number of heavy vehicles is expected to increase from 10 to 22 vehicles per hour during the morning peak hour and from zero to 58 vehicles during the afternoon peak hour. Given this increase, and the potential impacts of heavy vehicle traffic on the capacity of intersections and roadways, it is recommended that an acceleration lane be provided for vehicles turning right from westbound Kama'aina Road to northbound Mokulele Highway.

2. *South Firebreak Road and Quarry Access Road (unsignalized).*

- This intersection has controlled lane groups and is associated with the Primary Access Road. No mitigation is required.
- All project-related traffic at this intersection will head south to the proposed subdivision, while all Quarry-bound traffic will continue to use the Quarry Access Road. It was assumed that the Quarry Access Road approach will be STOP sign-controlled.
- All controlled lane group movements at this intersection will operate at LOS A or B which indicates good operating conditions and minimal delays.

3. *South Firebreak Road and Project Access Road (unsignalized)*

- This intersection has controlled lane groups and is associated with the Alternate Access Road. No mitigation is required.
- All project-related traffic will turn onto the Project Access Road and all Quarry-related traffic will continue to use the Quarry Access Road. It was presumed that the Project Access Road approach will be STOP sign controlled.
- All controlled lane group movements at this intersection will operate at



LOS A or B which implies good operating conditions and minimal delays.

4. *Quarry Access Road and Project Access Road (unsignalized)*

- This intersection has controlled lane groups and is associated with the Alternate Access Road. No mitigation is required.
- All north- and southbound traffic at this intersection will be project related, while all east- and westbound traffic is Quarry related. It was assumed that all approaches will be STOP sign controlled and that no turns will be allowed at this intersection.
- All controlled lane group movements at this intersection will operate at LOS A or B which reflects good operating conditions and minimal delays.

Findings. Recommended mitigation measures for the intersection of Mokulele Highway, Kama`aina Road, and Mehamaha Loop are reflected in the following table.

**Table 1. Recommendations for 2015 Background Traffic Conditions**

<i>Intersection</i>	<i>Recommended Measures to Mitigate Existing (2011) Deficiencies</i>	<i>Recommended Measures to Mitigate Background Deficiencies</i>	<i>Recommended Measures to Mitigate Background Plus Project Deficiencies</i>
Mokulele Highway, Kama`aina Road, and Mehamaha Loop	No mitigation required.	No mitigation required.	(1) Modify westbound approach to provide a separate right-turn lane. (2) Provide acceleration lane for west- to northbound right turns. (3) Lengthen southbound left-turn deceleration lane from 60 feet to 350 feet.

In addition to the foregoing, the traffic study also recommends the following.

1. The areas adjacent to Kama`aina Road, South Firebreak Road, and Lower Kihei Road should be monitored to insure that sugar cane growth does not impede sight distances and that the visibility of traffic control devices is maintained.
2. Because of the increased traffic volumes along Kama`aina Road, South Firebreak Road, and Lower Kihei Road as a result of the project, these roadways should be striped and signed in accordance with County of Maui standards. The high proportion of heavy vehicle traffic should be considered in the design and installation of traffic control devices, especially the longer stopping distances that are required for these vehicles.



Construction of the proposed project will primarily involve site work and the installation of subdivision infrastructure. After mobilization, construction equipment, materials and vehicles will be stored and secured onsite. As such, short term, construction-related traffic impacts are expected to be minimal. A Traffic Management Plan will be utilized to minimize impacts during peak hour traffic by controlling the delivery of construction materials and the arrival and departure of construction workers. All required traffic control plans and devices shall conform to the applicable provisions of the Manual on Uniform Traffic Control Devices (2009).

The sugar cane fields adjacent to the intersections in the project area are owned by Hawaiian Commercial & Sugar Company (HC&S) and are not under the control of the applicant. To ensure that sugar growth does not impede sight distance and that the visibility of traffic control devices is maintained, the applicant will work with HC&S to help minimize impacts. As part of the subdivision application process, a driveway sight distance analysis and worksheet (for the subdivision driveway) will be submitted to the Maui Department of Public Works for review and approval to ensure that adequate sight distance and visibility are provided.

As subdivision lots are developed in the future, lot owners will be required to provide onsite parking and loading space in accordance with Chapter 19.36A of the Maui County Code pertaining to Off-Street Parking and Loading.

The land owner will provide his fair-share contribution toward regional roadway improvements if legislation adopting regional traffic impact fees for the island of Maui is in place prior to final subdivision approval.

In light of the foregoing, the proposed project is not expected to have an adverse impact upon traffic.

## **5. Electrical and Communication Systems**

**Existing Conditions.** Electrical power for the island of Maui is provided by Maui Electric Company (MECO), while communication systems are operated by Hawaiian Telcom and Oceanic Time Warner Cable (OTWC). Hawaiian Telcom provides local and long-distance telephone service, as well as high-speed internet and online cable



television (CATV) service, while OTWC provides CATV service for the State of Hawai'i, including Maui.

Existing overhead utility lines run along the right side of Kama`aina Road, South Firebreak Road, and Lower Kihei Road. The overhead lines provide service to the surrounding area and are located within an easement granted to MECO and Hawaiian Telcom. Although OTWC has an existing fiber optic line along Mokulele Highway, the closest service connection point is at the Central Maui Baseyard approximately 1.3 miles to the north of the subject parcel. Depending on feasibility and future market potential, OTWC has worked with land owners and developers to help defray installation costs (personal communication with Bill Hanke - OTWC, July 26, 2012).

**Potential Impacts and Mitigation Measures.** A Preliminary Engineering Report for the proposed project was prepared by Otomo Engineering in November 2011. [See Appendix P, Preliminary Engineering Report.](#) To provide service to the proposed subdivision, new MECO and Hawaiian Telcom lines will be extended to the subject parcel from the existing overhead lines in the project area.

The new power and communication systems for the proposed subdivision will be installed underground in accordance with MECO and Hawaiian Telcom requirements. Street lights will be installed along the subdivision's internal roadway system at intervals to be determined by the project's electrical engineer.

The design and construction of the electrical and communication systems will be coordinated with MECO and Hawaiian Telcom to ensure that all applicable design and operational criteria are addressed. Construction drawings will be prepared and submitted to MECO and Hawaiian Telcom for review and approval at such time in the future that an application for subdivision approval is filed with the County of Maui.

Exterior lighting will be appropriately shielded or downward directed to provide safety, security, and facilitate parking, and to minimize impacts to any migratory seabirds which may become disoriented when traversing the project area.

Lot owners will be encouraged to utilize energy generation and energy conservation measures when developing their parcels in the future. Examples of such measures



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include, but are not limited to: the use of windmills or photovoltaic panels to generate electricity, and the use of solar water heating systems, energy-efficient lighting and appliances, fiberglass insulation, double-glazed windows, skylights, and extended (roof) eaves to minimize heat gain through windows.

## **E. CUMULATIVE IMPACTS**

A cumulative impact is the combined effect of a proposed action and other past, present, and reasonably foreseeable (future) actions regardless of who initiates the action.

Past, present, and reasonably foreseeable projects that are of similar nature or scale as the proposed project and have the potential to contribute to cumulative impacts were identified and examined for this cumulative impacts analysis. The analysis uses the best available data at the time to assess these projects and their potential impacts.

There are several projects in the area around the subject parcel that are proposed for future development. These projects are discussed below and include: Project District 10 (Old Pu`unene Airport area) by the County of Maui, the Maui Prison (aka, Maui Regional Public Safety Complex) by the State Department of Public Safety, and agricultural homesteads by the State Department of Hawaiian Homelands (DHHL).

As part of a comprehensive master-planning process, the State of Hawai`i is evaluating infrastructure needs for the future development of State and County lands in the vicinity of the Old Pu`unene Airport. The DHHL owns a 646-acre parcel to the south of the subject property which it has zoned for agricultural homesteads (*i.e.*, farm lots) because dust and wind conditions make it unsuitable for residential or commercial use. The DHHL also has plans to develop a private wastewater treatment plant on a portion of their site. The State's plans for the Maui Prison have been delayed due to the lack of government funding and the absence of infrastructure (*i.e.*, water, sewer) to support this project. The County of Maui recently recommended that the Prison be moved from its proposed location in Project District 10 to State-owned land approximately one mile east of Mokulele Highway. The County's plans for PD 10, a master-planned recreational and industrial expansion



area, is contingent upon several factors including the completion of an updated master plan, obtaining all necessary land use approvals, and the availability of funds for infrastructure development and construction. It is estimated that it could take at least 10 years or more before any ground-breaking construction commences on the State and County lands. The time frame for the development of these lands is highly indeterminate and is dependent on several key factors such as the availability of funding, the construction of infrastructure, and obtaining the necessary land use entitlements and permit approvals. As such, these State and County projects were not included in the cumulative impacts analysis since they are not considered reasonably foreseeable projects.

The following criteria were used to identify projects for the cumulative impacts analysis.

- Projects in geographic proximity to the proposed project or with similar location characteristics.
- Projects of comparable nature or scale to the proposed project.
- Projects that could affect similar resources, have the potential to generate environmental impacts and when grouped collectively with the proposed project, could result in cumulative impacts to the environment.
- Projects that are either pending approval or have already been approved.

For the analysis of cumulative impacts, the proposed project was grouped and evaluated with several other projects in the area of similar scope or character. These other projects include: the Central Maui Baseyard, Consolidated Baseyard, Waiko Baseyard Light Industrial Subdivision, and Kihei Residential Subdivision. With the exception of the proposed project and the Waiko Baseyard Subdivision and Kihei Residential Subdivision, the other projects have been completed and are occupied.

Central Maui Baseyard: This existing 52-acre industrial subdivision lies 1.3 miles to the north of the subject property and contains about 90 leasehold lots. Most of the lots are 1 acre or less while the largest lot is nearly 10 acres. About 40 acres of land is zoned for light industrial use while the remaining 12 acres (Lots 1C, 59 and 221) are zoned heavy industrial.



Consolidated Baseyard: This existing light-industrial subdivision was built on a 23.2-acre site about 2.0 miles to the northwest of the subject parcel. The project contains 35 fee simple lots ranging from approximately 10,000 square feet to 2 acres in size.

Waiko Baseyard Subdivision: This future light-industrial subdivision is proposed on 31.2 acres of land about 1.8 miles to the northwest of the subject parcel. A total of 41 lots fee simple lots ranging from 9,500 square feet to 8.5 acres are proposed.

Kihei Residential Subdivision: This future residential subdivision is proposed on nearly 94 acres located 2.3 miles to the south of the subject property. The project will include 400 single-family units, 200 multi-family units, 2,000 square feet of commercial space, and 7,000 square feet of office space.

## **2. Assessment of Cumulative Impacts**

A qualitative approach was used to assess the potential cumulative impacts of the proposed project and the projects listed above. Key components of the existing environment were examined as part of this process and included: (1) topography, (2) plant and animal life, (3) noise and air quality, (4) cultural resources, (5) visual character, (6) water quality, (7) public services, and (8) infrastructure. Cumulative impacts could change over time as new projects are introduced or projects are modified, delayed, or abandoned in response to economic conditions. The following discussion identifies potential concerns and mitigation measures from a cumulative impacts standpoint.

### **a. Topography**

Modifications to existing terrain invariably occur as a result of site work. During grading, cut and fill quantities should be balanced to reduce site work costs and maintain existing drainage patterns. The implementation of erosion control measures and Best Management Practices (BMPs) help minimize soil loss and sedimentation during construction. Changes to the existing landform need to ensure that visual impacts are minimized and that grading plans and civil drawings comply with applicable design and construction criteria. No cumulative adverse impacts to the overall topography of the region are expected.

### **b. Plant and Animal Life**

During the environmental and/or regulatory review process for these projects, flora and fauna on the project sites were examined. Potential impacts and measures to minimize harm to plant and animal life were also identified as part of this process.





For the most part, the project sites were formerly used for various agricultural purposes such as raising livestock, cultivating sugar cane, seed corn, and truck crops. From a cumulative viewpoint, no negative impacts to plant and animal life in the region are anticipated.

**c. *Noise and Air Quality***

Although measures to reduce construction-related noise to inaudible levels will not be practical in all cases, proper equipment maintenance, the use of sound-dampening equipment, and limiting construction activities to daylight working hours help minimize short-term noise impacts. All projects must comply with State Department of Health (DOH) noise regulations. If noise from construction or land use activities exceeds their standards, a Community Noise Permit must be obtained from the DOH. From a long-term perspective, the development of lands that have been previously used for agricultural purposes will result in changes to the ambient noise levels at the project sites. Where sugar cane trucks and machinery were the primary sources of noise in the past, noise from industrial activities and traffic from nearby roadways would be the principal noise-generating sources once all the projects are completed and occupied. With the exception of the Kihei Residential Subdivision, the other projects are located away from areas of existing residential and commercial development. There are no significant noise-generating sources at any of the project sites which would result in adverse impacts to surrounding areas.

As with noise, air quality is temporarily affected during construction activities. Watering active work areas, using wind screens, limiting exposed areas, and establishing landscaping as soon as possible helps minimize the effects of fugitive dust during construction. The use of BMPs and compliance with DOH and County erosion control requirements helps manage airborne particulates. All of the projects must comply with DOH noise regulations. As such, a use or activity including a potential pollution source is subject to regulatory review during which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts. There were no point sources of air pollution at any of the project sites.



Cumulatively, no significant impacts to the ambient noise and air quality of the region are anticipated.

**d. Visual Character**

The visual character of the lands underlying the project sites is gradually being transformed as unused or unproductive agricultural lands are utilized for more productive purposes. After full build out, the projects will have a visual character that is more urban (industrial, residential) in nature. The use of perimeter fencing, landscape plantings, and design guidelines will help integrate the projects with their surroundings. On a cumulative basis, no adverse effects to the visual character of the lands surrounding the project sites are expected.

**e. Cultural Resources**

Archaeological surveys and cultural impact assessments were prepared and examined as part of the environmental and/or regulatory review process for these projects. Potential issues and mitigation measures were identified to address any areas of concern. From a cumulative standpoint, the projects will not adversely affect archaeological or cultural resources in their respective areas nor will they have a negative impact on traditional native Hawaiian practices or beliefs.

**f. Water Quality**

Surface runoff and other non-point source pollutants can affect water quality if left unchecked. Project-related construction is subject to State and County requirements for managing runoff and controlling erosion and sedimentation. For example, construction activities are subject to DOH requirements for NPDES permit coverage and Maui County standards for grubbing, grading, and drainage to minimize potential water quality impacts to groundwater resources and adjacent and downstream properties. From a regional water quality perspective, the use of BMPs and compliance with all applicable regulatory requirements will help mitigate potential adverse effects to water quality.

**g. Public Services**

The Kihei Residential Subdivision will create an increased demand for park and school space due to the residential nature of this project. The need for these



additional services will be addressed during the developer's land use entitlement process. Due to their industrial nature, the cumulative effect that the other projects would have on public services is minimal. Other public services such as fire, police, and emergency medical responders already serve the project areas and would not need to expand their current sphere of operations.

***h. Infrastructure***

In conjunction with the permitting process for each of the projects, infrastructure requirements for the projects must be met by their developers.

Although the water system within the Central Maui Baseyard is privately owned and maintained, water for this project is provided by the County water system which benefited from major offsite improvements undertaken by the developer. Similar to the proposed project, the Consolidated Baseyard has a State-approved water system which is privately owned and maintained. Water for the proposed Waiko Baseyard Subdivision will be provided by the Consolidated Baseyard's adjacent system. While water for the proposed Kihei Residential Subdivision will be provided by the County water system, the developer will be required to develop water source and storage facilities to serve the project.

With the exception of the Kihei Residential Subdivision, wastewater for the other projects will be handled by individual wastewater systems on each lot that have been approved by the DOH. Although sewer service for the proposed Kihei Residential Subdivision will be provided by the County wastewater system, the developer will be required to fund any necessary off-site collection system and pump station improvements.

All of the projects must comply with State and County drainage regulations for managing runoff and controlling erosion and sedimentation. Storm water management measures including BMPs and drainage control features such as retention basins or subsurface storage systems help control runoff and minimize impacts to adjacent or downstream properties. From a cumulative viewpoint, storm water runoff is not expected to have an adverse cumulative effect on existing drainage conditions.



Existing and future traffic conditions and potential traffic impacts and traffic mitigation measures for each of the projects are examined during the environmental and/or regulatory review process for each of the projects. Traffic impacts attributable to each project must be addressed by their developers to ensure that project-related impacts are mitigated and do not adversely affect short- and long-term traffic in the project areas. Mitigation measures can take various forms and include, but are not limited to, pavement striping or widening, traffic-control devices (e.g., stop signs, traffic signals), acceleration and deceleration lanes, storage and turn lanes, and additional travel lanes. The developers of each of the projects are required to comply with the recommendations or conditions for project-related traffic mitigation that are set forth by the approving (government) authorities. As a result of this review process, no adverse cumulative traffic impacts are anticipated.

### **3. Secondary Impacts**

Secondary impacts are impacts that are indirectly caused by an action and occur later in time or are farther away in distance and still reasonably foreseeable. They can be viewed as the actions of others that are taken because of the presence of the project. For example, a secondary impact of a highway project is that it induces development by removing a key barrier to growth – transportation access.

Overall, the proposed project is not expected to induce a significant change in development or land use patterns since it is consistent with existing heavy industrial land uses in the immediate area such as the Central Maui Baseyard and Hawaiian Cement Quarry, as well as the planned and future areas set forth by Project District 10 (Old Pu`unene Airport area) and the *draft* Maui Island Plan.

The proposed project will address the pent-up demand for purely heavy industrial lands and create new or additional business opportunities for local residents. At full build-out, the project would generate profits and expenditures which would have a beneficial effect on the local economy and the coffers of the State and County.

The proposed project is not anticipated to have any adverse secondary effects upon the physical or man-made environment nor is it expected to generate new or additional demands for public services and infrastructure.



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## IV. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES AND CONTROLS

### A. STATE ENVIRONMENTAL LAW

Chapter 343, HRS (*Environmental Impact Statements*) and Title 11, Chapter 200, HAR (*Environmental Impact Statement Rules*) set forth provisions for the preparation and review of environmental review documents for the State of Hawai'i. Section 345-5, HRS (*Applicability and Requirements*) identifies nine proposed actions for which an environmental assessment (EA) shall be required. As related to the proposed action, there are two actions that trigger the preparation of an EA: 1) the use of State or County lands, and 2) an amendment to an existing County general plan or community plan when it is not associated with a new plan or update initiated by the County.

Since the proposed action will involve the use of State lands (proposed easements across State property) and an amendment to a community plan, an EA has been prepared in accordance with Chapter 343, HRS and Title 11, Chapter 200, HAR. Based on consultation with the Maui Planning Department and the State Land Use Commission, the Maui Planning Commission will serve as the approving agency for the environmental review process.

### B STATE LAND USE DISTRICTS

Pursuant to Chapter 205, HRS, all lands in the State of Hawai'i have been placed into one of four land use districts by the State Land Use Commission (SLUC): "Urban", "Rural", "Agricultural", and "Conservation". The subject parcel is located in the *State Agricultural District*. [See Figure 12, State Land Use Districts.](#)

The proposed action involves a request to reclassify the property from the *State Agricultural District* to the *State Urban District*.

### C. LAND USE COMMISSION RULES

Title 15, Chapter 15, HAR (*Land Use Commission Rules*) governs the practice and procedure of the State Land Use Commission. Subchapter 2 of 15-15, HAR sets



forth various criteria for the establishment of each of the State's four land use districts. The request for reclassification is in conformance with the following standards for determining *State Urban District* boundaries as set forth in Section 15-15-18, HAR:

- (1) It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses;

*Comment:* Although the subject property is not characterized by "city-like" concentrations or conditions, it is located in an area that is designated for future urban development. The Central Maui Baseyard, an existing industrial development on 52 acres of land in the *State Urban District*, is located 1.3 miles to the north of the subject property. During World War II, the subject parcel and surrounding lands were developed for use as the Pu`unene Naval Air Station. Lands planned for future development include the Pu`unene Airport Master Plan (PAMP) area which encompasses 222 acres of land west of and adjacent to the subject parcel and is a component of Project District 10 (PD 10) – Old Pu`unene Airport area – which encompasses 561 acres and is designated as "a master-planned recreational and expansion area to meet future recreational needs and to provide areas for industrial activities, including government facilities, whose locations are better suited away from urban areas". The State Department of Hawaiian Home Lands (DHHL) owns approximately 184 acres of land to the west of PD 10 (across Mokulele Highway) which it plans to lease for future commercial development. The DHHL also owns a 646-acre parcel to the south of the subject parcel – TMK (2) 3-8-008: 034 – which is zoned for agricultural homestead lots by the DHHL. Parcel 34 and other State-owned parcels in the PAMP area are the subject of a cooperative master planning effort by various State agencies to address future land use and infrastructure development for the State-owned lands in the vicinity of the Old Pu`unene Airport.

- (2) It shall take into consideration the following specific factors:
  - (A). Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;



Comment: The subject property is located about 1.0 mile southeast of the intersection of Kama`aina Road, Mehamaha Loop, and Mokulele Highway, a divided, four-lane facility linking South and Central Maui. From this intersection, Kahului lies approximately 3.25 miles to the north, while North Kihei is about 3.75 miles to the south. The subject parcel is ideally situated for heavy industrial activities given its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport.

- (B) Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection; and

Comment: The subject parcel is undeveloped and is not currently served by basic public services. Infrastructure systems for the proposed subdivision will include private drainage, water, and wastewater systems. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. In addition to the subdivision's internal roads, its drainage, water, and wastewater systems will be privately owned and maintained an association of subdivision lot owners. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks project since it will not place any new or additional demands for parks, schools, and health care services nor will it extend the service area limits for police and fire protection. After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to the Lot Owner's Association. In light of the foregoing, no impacts to existing public services and infrastructure systems are anticipated.

- (C) Sufficient reserve areas for foreseeable urban growth;

Comment: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan (PAMP) area, and Project District 10 (PD 10) all fall within the proposed Urban Growth Boundaries (UGB) for the



*draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). The reclassification of the subject parcel would allow 86 acres of poor, unproductive agricultural land to be used for a higher and better use as provided for by the Plan.

- (3) It shall include lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects;

*Comment:* The subject parcel has an average slope of 1.8 percent. The property is located in Zone “X”, an area of minimal flooding ([See: Figure 9, Flood Insurance Rate Map](#) and does not lie in an area which is subject to tsunami evacuation as indicated by the tsunami evacuation maps prepared by the Maui County Civil Defense Agency. Based on a re-evaluation of seismic hazards by the United States Geological Service in 1992, the seismic hazard for Maui County falls within Zone 2B, indicating that in any given year within a 50-year period (average building life span), there is a 10 percent chance that 1/5 the force of gravity (ground acceleration) during an earthquake will be exceeded. In addition, there are no known unstable soil conditions nor are there any other adverse physical or environmental conditions that would render it unsuitable or inappropriate for the proposed action.

- (4) Land contiguous with existing urban areas shall be given more consideration than non-contiguous land and particularly when indicated for future urban use on state or county general plans;

*Comment:* As previously indicated, the subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). In addition, the DHHL owns approximately 184 acres of land bordered by Mehamaha Loop which is designated for future commercial development. The nearby Hawaiian Cement Quarry and Hawai`i Army National Guard Armory are both operating under a Land Use Commission Special Use Permit (the Quarry also has a County





Conditional Permit). The Central Maui Baseyard lies in the *State Urban District* and is located 1.3 miles to the north of the subject parcel. In addition to the foregoing, the subject parcel is ideally situated for heavy industrial activities given its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport.

- (5) It shall include lands in appropriate locations for new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans;

Comment: As previously noted, the subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan.](#) The subject property also lies in proximity to the 184 acres of DHHL land bordered by Mehamaha Loop which is designated for future commercial development.

- (6) It may include lands which do not conform to the standards in paragraphs (1) to (5):
- (A) When surrounded by or adjacent to existing urban development; and
- (B) Only when those lands represent a minor portion of this district;

Comment: Although the subject property and lands in the surrounding vicinity are in the *State Agricultural District*, the subject parcel, the PAMP area, and PD 10 all lie within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan.](#) As such, these lands lie within an appropriate area for future urban expansion and development. The granting of the proposed request would provide the land owner with the appropriate land use entitlements for the long-term, heavy industrial use of the subject property.



- (7) It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services;

Comment: The reclassification of the subject property will not contribute to scattered spot urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map and Figure 14, Kihei-Makena Community Plan](#). In addition, the subject parcel lies in the vicinity of existing industrial uses such as the Hawaiian Cement Quarry and the Central Maui Baseyard and in proximity to the 184 acres of DHHL land which is designated for future commercial development. The proposed project will not necessitate unreasonable public investment for infrastructure or public services.

- (8) It may include lands with a general slope of twenty percent or more if the commission finds that those lands are desirable and suitable for urban purposes and that the design and construction controls, is adopted by any federal, state or county agency, are adequate to protect the public health, welfare and safety, and the public's interest in the aesthetic quality of the landscape.

Comment: The subject property has an average slope of 1.8 percent and does not possess any slopes of 20 percent or more.

#### **D. DECISION-MAKING CRITERIA**

Chapter 205-17, HRS (Land Use Commission Decision-making Criteria) sets forth criteria that the Land Use Commission must specifically consider in its review of a Petition for district boundary reclassification. The decision-making criteria include the following:

- (1) The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawai`i State Plan and relates to the applicable priority guidelines of the Hawai`i State Plan and the adopted functional plans;

Comment: The proposed action conforms to the applicable goals, objectives, and policies of the Hawai`i State Plan and relates to the applicable priority guidelines of the Hawai`i State Plan and the adopted functional plans (See



Chapter IV.D and Chapter IV.E of this document).

- (2) The extent to which the proposed reclassification conforms to the applicable district standards;

Comment: The proposed action conforms to State “Urban” District standards as identified in Chapter 205-2, HRS (*Districting and Classification of Lands*) and is in keeping with the Maui County General Plan (See Chapter V.A of this document).

- (3) The impact of the proposed reclassification on the following areas of State concern:

(A) Preservation and maintenance of important natural systems or habitats;

Comment: There are no important natural systems or critical wildlife habitats within the subject parcel.

(B) Maintenance of valued cultural, historical, or natural resources;

Comment: An Archaeological Inventory Survey (AIS), Archaeological Monitoring Plan (AMP), and Cultural Impact Assessment were prepared for the proposed project to identify any significant archaeological and cultural resources, provide mitigation recommendations if necessary, and establish monitoring protocols for ground-altering construction activities. Archaeological monitoring will be conducted during all ground-altering construction activities in accordance with the approved AMP. If any archaeological features, cultural artifacts, or human burials are located during construction, the SHPD and the Maui/Lana`i Islands Burial Council will be notified and immediately consulted to assess the significance of the find and establish appropriate mitigation measures as necessary. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)

(C) Maintenance of other natural resources relevant to Hawai`i’s economy, including agricultural resources;



Comment: The soils underlying the project site have very severe limitations due to their undesirable texture or because they are extremely rocky or stony. In addition to an overall productivity rating of “E” (the lowest rating), the land underlying the site is Unclassified (i.e., residual land) by the map identifying the Agricultural Lands of Importance to the State of Hawai`i. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, the long-term agricultural/economic impact resulting from the development of the proposed project is expected to be very minimal. It should also be noted that the 86 acres encompassed by the subject parcel represents only 0.0002 percent of *State Agricultural District* lands on the island of Maui, and just 0.0004 percent of farm land in Maui County. In light of the foregoing, the proposed project will not have an adverse impact on agriculture nor will it have a negative effect on the inventory of agricultural lands that are available for large-scale or diversified agricultural activities.

(D) Commitment of State funds and resources;

Comment: The reclassification of the subject parcel is not expected to result in a significant commitment of State funds and resources. Infrastructure systems for the proposed subdivision will include private drainage, water, and wastewater systems. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. In addition to the subdivision’s internal roads, its drainage, water, and wastewater systems will be privately owned and maintained by an association of subdivision lot owners. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks project since it will not place any new or additional demands for parks, schools, and health care services nor will it extend the service area limits for police and fire protection. After completion, refuse collection and disposal for the subdivision will be handled by a private waste disposal service under contract to the Lot Owner’s Association.



(E) Provision for employment opportunities and economic development;  
and

Comment: As indicated in Chapter III.B.2 of this document, the proposed project will provide construction-related employment during the development of the subdivision. Upon completion, lot owners will contribute to the support of the local economy through the payment of taxes and the purchase of goods and services.

(F) Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups;

Comment: Not Applicable.

(4) The standards and criteria for the reclassification or rezoning of important agricultural lands in Section 205-50; and

Comment: The proposed project does not involve the reclassification or rezoning of important agricultural lands. The land underlying the subject property is Unclassified (or residual) land by the map identifying the Agricultural Lands of Importance to the State of Hawai`i. The soils of the subject parcel have an overall land productivity rating of "E" (the lowest rating) because of very severe limitations due to their undesirable texture or because they are extremely rocky or stony. The unsuitable soil conditions and poor productivity ratings of the subject property preclude any feasible agricultural development on the site. As such, any long-term agricultural impact resulting from the development of the proposed project is expected to be very minimal.

(5) The representations and commitments made by the Petitioner in securing a boundary change.

Comment: The proposed project will be implemented in accordance with the representations and commitments that have been made in obtaining the district boundary amendment.

## **E. HAWAI`I STATE PLAN**

Chapter 226, HRS, also known as the Hawai`i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-range development



of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms.

The proposed action is in keeping with the following goals of the Hawai'i State Plan.

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

1. Objectives and Policies of the Hawaii State Plan

The request for reclassification is in conformance with the following objectives and policies of the Hawai'i State Plan:

Chapter 226-5. HRS. Objectives and Policies for Population

226-5(a), HRS: 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.

226-5(b)(2), HRS: Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.

226-5(b)(3), HRS: Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

Chapter 226-6, HRS, Objectives and Policies for the Economy in General

226-6(a)(1), HRS: Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

226-6(a)(2), HRS: A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.

Comment: The proposed project conforms to the Objectives and Policies for Population (HRS 226-5) by increasing economic opportunities and



employment opportunities on the Neighbor Islands. The proposed heavy industrial subdivision will allow for the expansion of existing enterprises and the possible creation of new businesses which would employ Maui residents. This further supports the Objectives and Policies for the Economy-in General (HRS 226-6) by offering potential industrial businesses with the opportunity to expand their activities through newly available industrial-zoned lands.

## 2. Priority Guidelines of the Hawai'i State Plan

The proposed action is in keeping with the following priority guidelines of the Hawai'i State Plan:

### Chapter 226-103. HRS, Economic Priority Guidelines

226-103(1), HRS: Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

a. *Encourage investments which:*

- (i) Reflect long term commitments to the State;
- (ii) Rely on economic linkages within the local economy;
- (iii) Diversify the economy;
- (iv) Re-invest in the local economy;
- (v) Are sensitive to community needs and priorities; and
- (vi) Demonstrate a commitment to management opportunities to Hawai'i residents.

### Chapter 226-104. HRS, Population Growth and Land Resources Priority Guidelines

226-104(a)(1), HRS: Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.

226-104(b)(1), HRS: Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.



226-104(b)(2), HRS: Make available marginal or non-essential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.

226-104(b)(12), HRS: Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline conservation lands, and other limited resources for future generations.

Comment. The proposed project is in keeping with the priority guidelines of the Hawaii State Plan's Economic Priority Guidelines (HRS 226103) because the project will rely on economic linkages within the local economy, through potential lessees and lot purchasers, who in turn, will serve other businesses; will diversify the economy by providing expansion for heavy industrial businesses; and provide a reinvestment in the local economy through the expansion or development of local businesses. Further, the project will meet the Population, Growth and Land Resources Priority Guidelines (HRS, 226-104) by encouraging urban growth in an area which is designated for urban expansion. As previously noted, there are other light and heavy industrial uses currently operating in close proximity to the proposed project. Further, the reclassification of the property from the State "Agricultural" District to the State "Urban" District will make available marginal lands for heavy industrial uses while maintaining neighboring lands for agricultural purposes.

## **F. STATE FUNCTIONAL PLANS**

The State Functional Plans implement the Hawai'i State Plan by identifying needs, problems and issues, and by recommending policies and priority actions which address the identified areas of concern. The request for reclassification comports with the following State Functional Plans:

### **1. State Agriculture Functional Plan**

The proposed action will reclassify 86.03 acres of land from the State "Agricultural" District to the State "Urban" District. The subject parcel has a Land Study Bureau rating of "E" (the lowest rating) which indicates that it is poorly suited for agriculture. The site is not classified under the State's agricultural lands rating system (Agricultural Lands of Importance to the State





of Hawai'i) which indicates that it is not considered "prime", "unique" or "other" agricultural land. While the subject parcel was formerly utilized for hog farming, it has not been used for agriculture cultivation due to its poor soil. The proximity of the property to existing and planned urban land uses coupled with its location within the proposed Urban Growth Boundary for the *draft* Maui Island Plan provides a reasonable nexus and an appropriate foundation for the request for reclassification.

## 2. State Transportation Functional Plan

Comments were sought and received from the State Department of Transportation (DOT) as part of the early consultation process for the preparation of the Draft EA. The DOT noted that a traffic assessment must be prepared and submitted for their review and approval and that project-related traffic may use Maui Raceway Park as a shortcut to Mokulele Highway. A traffic impact assessment report (TIAR) will be included in the Draft EA and a copy will be provided to the DOT. The TIAR will note that the proposed project will have no right of access to Maui Raceway Park roads and that proposed drainage retention basins along the western edge of the subject project site will preclude any traffic connection between the site and Maui Raceway Park. The external roadways providing access to the subdivision and the internal roads within the subdivision shall utilize flexible design standards as provided by Section 18.32.030 of the Maui County Code. The subdivision's internal roadways will be privately owned and maintained by the Lot Owner's Association.

## 3. State Employment Functional Plan

It is estimated that the land use and subdivision approval process for the proposed project will take approximately four to five years (from 2011). As such, subdivision construction could begin in 2016 (or commence as early 2015), while the forecasted construction period is projected to be about 30 months. The subsequent lot build-out period for the subdivision is expected to last approximately 10 years. An annual average of 65 direct and indirect Maui jobs is projected during the subdivision's construction period, while an annual average of 142 direct and indirect Maui jobs is forecasted for the subdivision's



lot build-out phase. It is likely that they will require some training for equipment or computer skills. To the extent possible, employment opportunities generated by the proposed project will seek to utilize State training programs for potential employees.

## **G. HAWAII COASTAL ZONE MANAGEMENT PROGRAM**

The Federal Coastal Zone Management Act of 1972 was adopted in response to competing development and preservation interests in U.S. coastal areas. Population growth and development in coastal areas were impacting marine resources, open space, view sheds, wildlife, and other important ecological, cultural, and historic resources. In response to this concern, Congress created a framework for managing and regulating the coastal zone and appropriated funds for State-run coastal zone management programs (CZMP). The State's acceptance of the Federal funds necessitated compliance with federal CZMP standards.

The boundaries of Hawaii's coastal zone management program are defined by coastal waters and adjacent, coastlands that are strongly influenced by each other. Coastal areas which require special consideration due to their unique values or characteristics are called Special Management Areas (SMA) and must be designated by a management plan. Any development within these areas is subject to a special assessment process. This protocol provides a means to preserve, protect, and when possible, restore the natural resources of the coastal zone by controlling development with shoreline areas in order to avoid the permanent loss of valuable resources. As required by State law, maps showing the limits of the SMA have been prepared by each County. In the Kihei-Makena Community Plan region, Pi'ilani Highway serves as the SMA boundary for this part of the island.

The project area does not lie within the limits of the SMA for the island of Maui. [See Figure 16, Special Management Area](#). At its closest point, the subject parcel is approximately 2.25 miles from the ocean.

The following section discusses the relationship of the proposed project to the objectives and policies of the Hawaii Coastal Zone Management Program pursuant to Chapter 205A, HRS.



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## 1. Recreational Resources

Objective: Provide coastal recreational resources accessible to the public.

Policies:

- (A) Improve coordination and funding of coastal recreation 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 placement 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 require 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 use of county, state, and federally owned or controlled shoreline lands and waters having standards and conservation of natural resources;
  - (vi) Adopting water quality standards and regulating point and non-point 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;
  - (viii) Encourage 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, county planning commissions; and crediting such



dedication against the requirements of Section 46-6, HRS.

Analysis: The subject property does not abut the shoreline and is approximately 2.25 miles from the ocean at its closest point. The proposed project will not impact coastal recreational resources nor will it affect public shoreline access and activities.

## 2. Historical/Cultural Resources

Objective: Protect, preserve and, where desirable, restore those natural and man-made 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 archeological 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 structures.

Analysis: An Archaeological Inventory Survey (AIS) was prepared for the proposed project. The AIS did not yield any significant findings and no further archaeological work was warranted. An Archaeological Monitoring Plan (AMP) was also prepared for the proposed project. In conjunction with any ground-altering work, a qualified archaeologist will be present to monitor all subsurface, construction activities. The archaeologist will have the authority to halt excavation in the event archaeological features or cultural deposits are identified during monitoring. Should this occur, the SHPD will be immediately consulted to determine an acceptable course of action. If human remains are located, work will cease in the vicinity of the find and the find protected from further disturbance. The SHPD and the Maui/Lana'i Islands Burial Council will be promptly notified and procedures for the treatment of the remains will be implemented in accordance with Chapter 6E-43, HRS. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)



### 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.

Analysis: While the visual character of the project area will be modified by the proposed project, it will not have an adverse effect upon scenic resources or view corridors due to its distance from Mokulele Highway and other public roadways in the area. In addition, because of its distance from Mokulele Highway and residential areas in Kahului, Kihei, and Upcountry, the proposed project will not have an adverse visual impact. The maximum building height under *M-3, Restricted Industrial* zoning is 90 feet. Landscaping around the perimeter of the proposed subdivision will help integrate the project with its surroundings. All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

### 4. Coastal Ecosystems

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

Policies:

- (a) Improve the technical basis for natural resource management;
- (b) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;



- (c) 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
- (d) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

Analysis: As described in Section III of this report, the proposed project is not expected to have an adverse effect upon the region's coastal ecosystem.

With the use of Best Management Practices and appropriate mitigation measures during construction, no adverse impacts to near shore waters from non-point sources of pollution are expected.

## 5. Economic Uses

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

Policies:

- (a) Concentrate coastal dependent development in appropriate areas;
- (b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area;
- (c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development 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 impacts are minimized; and
  - (iii) The development is important to the State's economy.

Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan



and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

## 6. Coastal Hazards

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

Policies:

- (a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;
- (b) Control development in areas subject to storm wave, tsunami, flood, erosion, subsidence, and point and non-point pollution hazards;
- (c) Ensure that developments comply with requirements of the Federal Flood Insurance Program;
- (d) Prevent coastal flooding from inland projects; and
- (e) Develop a coastal point and non-point source pollution control program.

*Analysis:* The property is located in Zone “X”, an area of minimal flooding ([See: Figure 9, Flood Insurance Rate Map](#)) and does not lie in an area which is subject to tsunami evacuation as indicated by the tsunami evacuation maps prepared by the Maui County Civil Defense Agency. In light of the foregoing, the proposed project is not expected to be impacted by flood or tsunami hazards.

## 7. Managing Development

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

Policies:

- (a) Use, implement, and enforce existing laws effectively to the maximum extent possible in managing present and future coastal zone development;
- (b) Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and



- (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 process and review process.

*Analysis:* The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). In conjunction with providing opportunities for development review, communication, and public participation, letters requesting comments on the proposed project were sent to various government agencies and owners/lessees of parcels in the vicinity of the subject property as part of the early consultation process for the preparation of the Draft Environmental Assessment (EA). Similarly copies of the Draft EA were provided to various agencies, organizations, and owners/lessees for their review during the public comment period for the Draft EA. The Maui Planning Commission is serving as the approving agency for the environmental review process.

## 8. Public Participation

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

Policies:

- (a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program.
- (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-related issues, developments, and government activities; and
- (c) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

*Analysis:* As part of the early consultation process for the preparation of the Draft EA, letters describing the proposed project and requesting comments on the project were sent to various government agencies and owners/lessees of





property located within proximity to the subject parcel. A typical early consultation letter, as well as written comments and responses to substantive comments are included in [Appendix R, Early Consultation Letters](#). Similarly copies of the Draft EA were provided to various agencies, organizations, and owners/lessees for their review during the public comment period for the Draft EA. Letters received during the Draft EA public comment period and letters responding to those comments are included in [Appendix S, Draft EA Comment Period](#).

## 9. Beach Protection

Objective: Protect beaches for public use and recreation.

Policies:

- (a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- (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
- (c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

*Analysis:* At its closest point, the subject property lies approximately 2.25 miles from the ocean. As such, no adverse impacts to public beach use and recreation are expected to occur.

## 10. Marine Resources

Objective: Implement the State's ocean resources management plan.

Policies:

- (a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- (b) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;



- (c) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- (d) Assert and articulate the interest of the state as a partner with federal agencies in the sound management of the ocean resources within the United States exclusive economic zone;
- (e) Promote research, study, and understanding of ocean processes, marine life, and other ocean development activities relate to and impact upon the ocean and coastal resources; and
- (f) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

*Analysis:* The proposed project does not involve the direct use or development of marine resources. By incorporating site-specific erosion and sedimentation control measures during and after construction, adverse impacts to near shore waters from runoff and pollution are not expected. From this perspective, the proposed project is not expected to have a significant impact on coastal or marine resources.

## **H. A NEW DAY IN HAWAI`I PLAN**

During his gubernatorial campaign in 2010, Governor Neil Abercrombie developed A New Day in Hawai`i Plan the objective of which is “to move away from the economic and social policies of the status quo that consistently postpone solving problems, leaving them for future generations.”

The Plan covers the 13 themes listed below and is not intended to cover every aspect of governance.

1. Economy and Jobs
2. Education
3. Education - Early Childhood
4. Education - University of Hawai`i System
5. Energy
6. Environment and Natural Resources



7. Food and Agriculture
8. Health
9. Health - Older Adults and Aging
10. Housing, Families, and Human Services
11. Small Business and Entrepreneurship
12. Technology and Innovation
13. Additional Issues (civil and human rights, culture and arts, Native Hawaiians, public safety, taxes and government, and transportation).

Comment: The proposed project will support small business and entrepreneurship during construction and after build-out of the subdivision by creating new jobs and planting the seeds for new jobs in the future.

## **I. STATE PRIORITY GUIDELINES FOR SUSTAINABILITY**

On July 5, 2011, the Legislature of the State of Hawai`i adopted Act 181. This Act established sustainability as a State priority by incorporating the following Hawai`i 2050 sustainability plan definitions, guiding principles, and goals into Chapter 226, Hawai`i Revised Statutes (Hawai`i State Planning Act).

1. Encouraging balanced economic, social, community, and environmental priorities.
2. Encouraging planning that respects and promotes living within the natural resources and limits of the State.
3. Promoting a diversified and dynamic economy.
4. Encouraging respect for the host culture.
5. Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.
6. Considering the principles of the *ahupua`a* system.
7. Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai`i.

Comment: Lot owners will be encouraged to implement and utilize sustainability measures and practices during lot development and onsite operations.



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## V. CONFORMANCE WITH COUNTY PLANS AND PROGRAMS

### A. MAUI COUNTY GENERAL PLAN

The 1990 update of the General Plan for the County of Maui provided long-term goals, objectives, and policies directed toward improving living conditions in the County. As stated in the Maui County Charter:

*“The purpose of the General Plan is to recognize and state major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development.”*

The proposed action is consistent with the following General Plan objectives and policies.

### B. Land Use

#### Objective

2. To use the land within the County for the social and economic benefit of all the County’s residents.

#### Policy

- 1b. Provide and maintain a range of land use districts sufficient to meet the social, physical, environmental, and economic needs of the community.
- 1d. Formulate a directed growth strategy, which will encourage the redevelopment and infill of existing communities allowing for mixed land uses, where appropriate.

As part of the decennial update of the General Plan, the Countywide Policy Plan for the 2030 General Plan was adopted by the County of Maui on March 19, 2010. The Countywide Policy Plan is the keystone for the General Plan update and establishes an over-arching statement of values while providing policy support for the Maui Island Plan and the regional community plans.

Key components of the Countywide Policy Plan include:

1. A vision statement and core values for the County to the year 2030.



2. An explanation of the plan-making process.
3. A description and background information of Maui County today.
4. Identification of guiding principles.
5. A list of Countywide goals, objectives, policies, and implementing actions relating to various core themes.

In addition, the following core principles are contained in the Countywide Policy Plan:

1. Excellence in the stewardship of the natural environment and cultural resources.
2. Compassion for and understanding of others.
3. Respect for diversity.
4. Engagement and empowerment of Maui County residents.
5. Honor for all cultural traditions and histories.
6. Consideration of the contributions of past generations as well as the needs of future generations.
7. Commitment to self-sufficiency.
8. Wisdom and balance in decision making.
9. Thoughtful, island-appropriate innovation.
10. Nurturance of the health and well-being of our families and our communities.

The Maui County Council is in the process of reviewing the *draft* Maui Island Plan. Once approved, the Maui Island Plan will be used by the County Council, Maui Planning Commission, County staff, and the community as policy support for day-to-day decision making. As it relates to the *draft* Maui Island Plan, the subject parcel lies within the proposed Urban Growth Boundaries for by the Plan. [See Figure 13, Directed Growth Map.](#)

The Countywide Policy Plan sets forth broad goals, objectives, policies, and actions that reflect the desired direction of future growth in the County. In terms of context, those that relate to the proposed action are listed below:



**Goal: A. Protect the Natural Environment**

Objective: 3. Improve the stewardship of the natural environment.

Policy: 3c. Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.

*Analysis:* Potential short and long-term impacts to the natural environment have been evaluated in Chapter III of this document.

**Goal: F. Strengthen the Local Economy**

Objective: 1. Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of growth.

Policies: 1a. Support economic decisions that create long-term benefits.  
1d. Support and promote locally-produced products and locally-owned operations and businesses that benefit local communities and meet local demand.

*Analysis:* As indicated in Chapter III.B.2 of this document, the proposed project will have a positive effect on the State and local economy and is not expected to have an adverse impact on economic conditions in the State of Hawai'i and the County of Maui.

Objective: 3. Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.

Policy: 3i. Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.

*Analysis:* All lot owners will be encouraged to utilize water and energy conservation measures when developing their parcels in the future.

Objective: 4. Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.

Policies: 4a. Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.

4d. Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.



Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan (PAMP) area, and Project District 10 (PD 10) all fall within the proposed Urban Growth Boundaries (UGB) for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

**Goal: J. Promote Sustainable Land Use and Growth Management**

Objective: 1. Improve land use management and implement a directed-growth strategy.

Policies: 1b. Direct urban and rural growth to designated areas.

Analysis: The subject property is situated in an appropriate area for urban expansion and development. The subject parcel and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the PAMP area, and PD 10 all fall within the proposed UGB for the *draft* Maui Island Plan and are designated for urban expansion by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#).

Objective: 3. Design all developments to be in harmony with the environment and to protect each community's sense of place.

Analysis: All lot owners and all buildings and accessory structures that are built within the subdivision will be required to comply with the Covenants, Conditions, and Restrictions and the Design Guidelines for the subdivision, a coordinated set of documents that will enforce the design, development, and land use standards for the Pu`unene Heavy Industrial Subdivision.

Objective: 4. Improve and increase efficiency in land use planning and management.

Policy: 4b. Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.



Analysis: The subject parcel is located in an appropriate area for urban expansion and development. The community need and justification for the proposed project and an assessment of potential impacts are included in Chapter III of this document.

In light of the foregoing, the proposed project is deemed to be consistent with the Countywide Policy Plan for the 2030 General Plan.

## **B. KIHEI-MAKENA COMMUNITY PLAN**

Maui County has adopted nine community plans. Each community plan examines the conditions and needs of the planning region and outlines objectives, policies, planning standards and implementing actions to guide future growth and development in accordance with the Maui County General Plan. Each community plan serves as a relatively detailed agenda for implementing the broad General Plan themes, objectives and policies.

The locations and land use categories shown on the community plan map serve to guide growth and future development in the South Maui region. The Kihei-Makena Community Plan (KMCP), which was first adopted by Ordinance No. 1490 in 1985, was updated in 1997 as part of the County's decennial review of the various community plans. The updated KMCP was adopted by Ordinance No. 2641 and went into effect on March 6, 1998. The subject parcel is designated *Agriculture* by the community plan's land use map. [See Figure 14, Kihei-Makena Community Plan](#).

Project District 10 (Old Pu`unene Airport area) lies to the west of the subject parcel and is the only land use in the area that has been included in the KMCP. Although the subject parcel and PD 10 were included in the KMCP region, it can be argued that this area should have been included in the Wailuku-Kahului Community Plan region given its geographic location and proximity to Kahului, and its association with historic land use and development in Central Maui.

The granting of the Community Plan Amendment (from *Agriculture* to *Heavy Industrial*) will provide an appropriate area for purely heavy industrial uses in Central Maui. The proposed action is in consonance with the following community plan objectives, policies, and standards:





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## **LAND USE**

### Goal

A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructural and community needs while preserving and enhancing the unique character of Maalaea, Kihei, Wailea, and Makena, as well as the region's natural environment, marine resources, and traditional shoreline areas.

### Objectives and Policies

- k. Provide for moderate expansion of services in the Central Maui Baseyard. These areas should not be used for retail businesses or commercial activities. These actions will place industrial use near existing and proposed transportation arteries for the efficient movement of goods.
- r. Allow special permits in the State Agricultural Districts to accommodate unusual yet reasonable uses.

## **ECONOMIC ACTIVITY**

### Goal

A diversified and stable economic base, which serves resident and visitor needs while providing long-term resident employment.

### Objectives and Policies

- a. Establish a sustainable rate of economic development consistent with concurrent provision of needed transportation, utilities, and public facilities improvements.

## **PHYSICAL AND SOCIAL INFRASTRUCTURE**

### Goal

Provision of facility systems, public services, and capital improvement projects in an efficient, reliable, cost effective, and environmentally sensitive manner which accommodates the needs of the Kihei-Makena community, and fully support present and planned land uses, especially in the case of project district implementation.

### **Liquid and Solid Waste**

### Objectives and Policies

- b. Provide efficient, safe, and environmentally sound systems for the reuse, recycling, and disposal of liquid and solid wastes.



## Energy and Public Utilities

### Objectives and Policies

- g. Encourage the provision of public utilities, which will meet community needs in a timely manner.

## GOVERNMENT

### Goal

Efficient, effective, and responsive government services in the Kihei-Makena region.

### Objectives and Policies

- b. Continue to streamline the permit process, where appropriate, through means such as consolidated public hearings and concurrent processing of applications.
- c. Continue to expedite the review and approval process for projects, which will result in public benefit by “*fast tracking*” and the assignment of permit expeditors.

## C. MAUI COUNTY ZONING

The subject property is zoned for *Agricultural District* uses by the County of Maui.

[See Appendix A, Zoning and Flood Confirmation and Figure 15, Maui County Zoning.](#)

Zoning standards for this district are promulgated by Chapter 19.30A of the Maui County Code (MCC). Principal permitted uses within the County’s Agricultural Zoning District include: (1) agriculture, (2) agricultural land conservation, (3) agricultural parks, (4) animal and livestock raising, (5) private agricultural parks, and (6) minor utility facilities. Permitted accessory uses include two farm dwellings per lot and one farm labor dwelling (per five acres of lot area).

On September 21, 2012, the Maui County Council approved a bill for *M-3, Restricted Industrial District* zoning. The bill was signed by the Mayor on September 24, 2012 and was designated Ordinance No. 3977. It should be noted that CMBY’s application for the Change in Zoning (CIZ) was initially prepared on the basis of seeking a zoning change from *Agricultural* to *M-2, Heavy Industrial*. However, with the recent adoption of *M-3, Restricted Industrial* zoning, the CIZ application has been amended to request a change to *M-3* zoning.



Generally, *M-3, Restricted Industrial* zoning encompasses those uses that involve the manufacture, processing, storage, or treatment of goods from raw materials. The intent of *M-3* zoning is to provide for manufacturing and nuisance industries and exclude retail and office uses. Some of the uses permitted under *M-3* zoning include: canneries; factories; manufacturing facilities; major utility facilities; landfills, lumber yards; machine shops; rock quarries; and material recycling/processing facilities. The minimum lot size under *M-3* zoning is 10,000 square feet, while the minimum lot width is 75 feet and the maximum building height is 90 feet. Side and rear setbacks are zero feet or the same as the adjoining zoning category whichever is greater. See [Appendix C, \*M-3 Restricted Industrial Zoning Regulations\*](#).

In order to develop the proposed subdivision, land use consistency must be established among the current State land use, community plan, and zoning designations for the subject property. Section 18.04.030 of the Maui County Code regarding subdivisions states in pertinent part that “*the director shall not approve any subdivision that does not conform to or is consistent with the county general plan, community plans, land use ordinances, the provisions of the Maui County Code, and other laws relating to the use of land . . .*”. As final subdivision approval would be subject to this provision, the land owner is seeking the change in zoning to establish State land use, community plan, and zoning consistency for the subject property.

In accordance with this request, the land owner submits that the proposed action meets the following criteria for a zoning change as set forth in Section 19.510.040 of the Maui County Code.

1. *The proposed request meets the intent of the general plan and objectives and policies of the community plans of the County.*

*Analysis:* As discussed in Chapter V.A and Chapter V.B of this document, the proposed request meets the intent of the Maui County General Plan and the objectives and policies of the Kihei-Makena Community Plan which guides growth and development in the region through the year 2010.

2. *The proposed request is consistent with the applicable community plan land use map of the County.*



Analysis: The subject property and the lands in the vicinity of the project site are either planned or designated for future urban development. The subject parcel, the Pu`unene Airport Master Plan area, and Project District 10 all fall within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and are designated for urban expansion for by the Plan. [See Figure 13, Directed Growth Map](#) and [Figure 14, Kihei-Makena Community Plan](#). As such, the subject property is located in an appropriate area for future urban expansion and development and is consistent with the *draft* Maui Island Plan which will guide future growth on the island of Maui through 2030 and also serve as guidance for the community plan update process which will commence in the near term.

3. *The proposed request meets the intent and purpose of the district being requested.*

Analysis: The change in zoning request meets the purpose and intent of the existing and proposed heavy industrial zoning regulations. The granting of the proposed request would provide the land owner with the appropriate land use entitlements for the long-term use of the subject property for heavy industrial purposes.

4. *The application, if granted, would not adversely affect or interfere with public or private schools, parks, playgrounds, water systems, sewage and solid waste disposal, drainage, roadway and transportation systems, or other public requirements, conveniences and improvements.*

Analysis: As discussed in Chapter III.C and Chapter III.D of this document, the proposed subdivision will not have a significant impact on public or private services, facilities, and infrastructure systems nor is it expected to adversely affect or interfere with public requirements, conveniences, and improvements.

5. *The application, if granted would not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.*

Analysis: As discussed in Chapter III of this document, the proposed action will not adversely impact the social, cultural, economic, environmental, and ecological character and quality of the surrounding area.



6. *If the application for change in zoning involves the establishment of an agricultural district with a minimum lot size of two acres, an agricultural feasibility study shall be required and reviewed by the Department of Agriculture and the U.S. Soil Conservation Service.*

Analysis: Not applicable.

The reclassification of the subject parcel will not adversely affect neighboring land uses, as the existing character of the agricultural-zoned properties in the surrounding area will be maintained. From a long-term perspective, the reclassification of the subject property will provide land use consistency for the subject property and establish an appropriate area for heavy industrial activities. It will also increase the limited inventory of lands that are currently available for purely heavy industrial use, and create new business and employment opportunities for island residents.



## **VI. SUMMARY OF ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED**

Potential construction-related impacts include noise-generated impacts occurring from site preparation and construction activities. In addition, there may be temporary air quality impacts associated with dust generated from construction activities, and exhaust emissions discharged by construction equipment. These effects are temporary, and appropriate Best Management Practices will be implemented to ensure that these construction-related impacts are mitigated.



## **VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The proposed action will involve the commitment of fuel, labor, and material resources, as well as private funds. The proposed action will also involve the commitment of land which is typical of development projects and is consistent with existing development in the project area. In terms of resource commitments, the use of the subject property for heavy industrial purposes will not have a negative effect upon the inventory of lands that are available for development purposes.



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## VIII. CHAPTER 343, HRS SIGNIFICANCE CRITERIA

As summarized below, the proposed action was evaluated pursuant to Section 11-200-12, HAR (*Environmental Impact Statement Rules*) which sets forth criteria for determining whether a proposed action may have a significant effect upon the environment.

1. ***No irrevocable commitment to loss or destruction of any natural or cultural resources would occur as a result of the proposed action***

*Comment:* As documented in this report, the proposed action will not result in the loss or destruction of any natural or cultural resources.

In terms of natural resources, no known, rare, threatened, or endangered species of flora and fauna have been observed on the subject property.

An Archaeological Inventory Survey (AIS) and an Archaeological Monitoring Plan (AMP) were prepared for the proposed project. From an archaeological standpoint, the ground surface of the subject parcel has been disturbed by previous military, hog farm, and scrap yard use, as well as by more recent land clearing activities. These ground disturbances make it very unlikely that any intact cultural deposits may remain in the subject area. The AIS provides further evidence to support this conclusion as no cultural remains were encountered on the surface or through sub-surface testing. The AMP establishes a protocol for archaeological monitoring during ground-altering construction activities. Should any cultural artifacts or human remains be located during construction, work will be halted in the immediate vicinity and the find shall be protected from further disturbance. The SHPD and/or the Maui/Lana`i Island Burial Council will be promptly notified to establish an appropriate mitigation strategy. The State Historic Preservation Division (SHPD) approved the AIS and the AMP for the proposed project on June 18, 2012 and August 24, 2012, respectively. [See Appendix I-1, SHPD Approval of Inventory Survey and Appendix J-1, SHPD Approval of Monitoring Plan.](#)





**2. *The proposed action would not curtail the range of beneficial uses of the environment***

Comment: The range of beneficial uses of the environment will not be curtailed by this action. As documented in this report, the subject parcel is located in an appropriate area for heavy industrial development and will increase the limited inventory of heavy industrial lands that are available for such use.

**3. *The proposed action does not conflict 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.***

Comment: The proposed action is not contrary to the State's long-term environmental policies or goals. As documented in this report, appropriate mitigation measures will be implemented to minimize potentially adverse impacts to the environment.

**4. *The economic or social welfare of the community or State would not be substantially affected by the proposed action***

Comment: Beneficial economic effects will accrue to the community from the proposed action. Lot owners will contribute to the economic well being of the community through the purchase of goods and services and the payment of sales and real property taxes. As documented in this report, the proposed action is not expected to result in any significant adverse impacts to the existing socio-economic environment.

**5. *The proposed action does not substantially affect public health***

Comment: The proposed action is not expected to have an adverse effect upon the public's health and welfare. The development of the proposed project will comply with applicable regulatory requirements, permits, and approvals. Best Management Practices will be implemented during construction to mitigate any air, noise, and water quality impacts.

**6. *No substantial secondary impacts such as population changes or effects on public facilities are anticipated***



Comment: Based on an assessment of the proposed action and existing socio-economic conditions, the proposed project is not expected to result in any significant secondary impacts to population, housing, and employment. Beneficial secondary effects associated with the proposed action include increasing the limited inventory of heavy industrial lands and creating new business and employment opportunities for the community. Infrastructure systems to be provided for the proposed subdivision include private internal roadways, and private drainage, water, and individual wastewater systems. As such, no impacts to existing public infrastructure systems are anticipated. The proposed project will not have an adverse effect on public services such as health care and police and fire protection, nor will impact public facilities such as schools and parks. Impacts upon solid waste disposal and nearby motor sports recreational activities at Maui Raceway Park are considered minimal.

**7. *No substantial degradation of environmental quality is anticipated***

Comment: Short-term, construction-related noise and air quality impacts will be addressed through the use of Best Management Practices. From a long term perspective, the proposed project is not expected to have an adverse impact on air quality and ambient noise levels nor is it anticipated to have a significant effect on open space and scenic resources, flora, fauna, streams, and wetlands. The storm water retention basins for the proposed subdivision will be designed in accordance with County drainage standards to ensure that runoff will not have an adverse impact upon adjacent and downstream properties. The proposed action is not expected to result in a substantial degradation of environmental quality.

**8. *The proposed action does not involve a commitment to larger actions nor would it cumulatively have a considerable effect upon the environment***

Comment: The proposed action is not expected to result in long-term adverse impacts which are not capable of being mitigated. The proposed subdivision improvements will be completed in a single construction phase. In addition, the proposed action is not part of a larger action nor is it expected to result in cumulative impacts which result in considerable effects on the environment.



9. ***No rare, threatened or endangered species or their habitats would be adversely affected by the proposed action***

Comment: There are no known rare, threatened or endangered species of flora, fauna, or their habitats on the subject property. The proposed project is not expected to result in any short- or long-term adverse impacts to important wildlife habitats or plant and animal life.

10. ***Air quality, water quality or ambient noise levels would not be detrimentally affected by the proposed action***

Comment: Construction activities are expected to result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling, will be implemented during construction to minimize wind-blown emissions. Noise impacts will primarily result from construction-related activities. To minimize these impacts, construction will be limited to daylight working hours. Water quality is not expected to be affected.

In the long term, the proposed project is not expected to have an adverse effect on air quality in the area. In addition, the project is not anticipated to have a significant impact on ambient noise levels. As applicable, future lot owners will be responsible for obtaining the necessary Department of Health permits for activities associated with certain types of industrial uses (e.g., air quality permits, noise permits).

11. ***The proposed action would not affect environmentally sensitive areas such as flood plains, tsunami zones, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters***

Comment: The subject property lies within Zone "X", an area of minimal flooding. The project site is not located within any environmentally sensitive areas nor will it have any adverse effects on any such areas. The project site is not subject to flooding or tsunami inundation and the soils underlying the project site are not subject to severe erosion. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project site.

12. ***The proposed action would not substantially affect scenic views and view planes identified in County or State plans or studies***



Comment: The subject parcel does not contain any scenic features nor is it located in a scenic view plane. The proposed project will not affect public view corridors nor will it impact scenic coastal views.

**13. *The proposed action would not require substantial energy consumption***

Comment: The proposed project will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources. In the long term, the project may create an additional demand for electricity. However, this demand is not deemed substantial or excessive within the context of the region's overall energy consumption.



## **IX. FINDINGS AND CONCLUSIONS**

The proposed action involves a request to amend the current “Agricultural” land use classifications for the subject parcel to allow the property to be used for long-term heavy industrial purposes.

As discussed in Chapter III of this document, the proposed action will not adversely affect the existing physical and socio-economic environment as the proposed project will comply with all applicable Federal, State, and County rules and regulations. The proposed action will not burden government agencies with the responsibility of providing or improving additional public services and infrastructure as public services are adequate and infrastructure will be developed by the land owner.

In light of the foregoing, a Finding of No Significant Impact (FONSI) is warranted as the proposed action is not expected to result in any significant environmental impacts.



## X. REFERENCES

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## FIGURES



## **FIGURES**

<b>Figure 1</b>	Regional Location Map
<b>Figure 2</b>	Aerial Location Map
<b>Figure 3</b>	Parcel Location Map
<b>Figure 4</b>	Site Photographs and Reference Map
<b>Figure 5</b>	Proposed Land Development Plan
<b>Figure 5A</b>	Conceptual Subdivision Plan
<b>Figure 5B</b>	Conceptual Landscape Site Plan
<b>Figure 6</b>	Earlier Concept Site Plan
<b>Figure 7</b>	Pu`unene Airport Master Plan - Concept Land Uses
<b>Figure 7A</b>	Areas of Potential Future Development
<b>Figure 8</b>	Soil Classifications
<b>Figure 9</b>	Flood Insurance Rate Map
<b>Figure 10</b>	Soil Productivity Ratings
<b>Figure 11</b>	Important Agricultural Lands
<b>Figure 12</b>	State Land Use Districts

- Figure 13** Directed Growth Map
- Figure 14** Kihei-Makena Community Plan
- Figure 15** Maui County Zoning
- Figure 16** Special Management Area



Not to Scale

# FIGURE 1

**Regional Location Map**  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

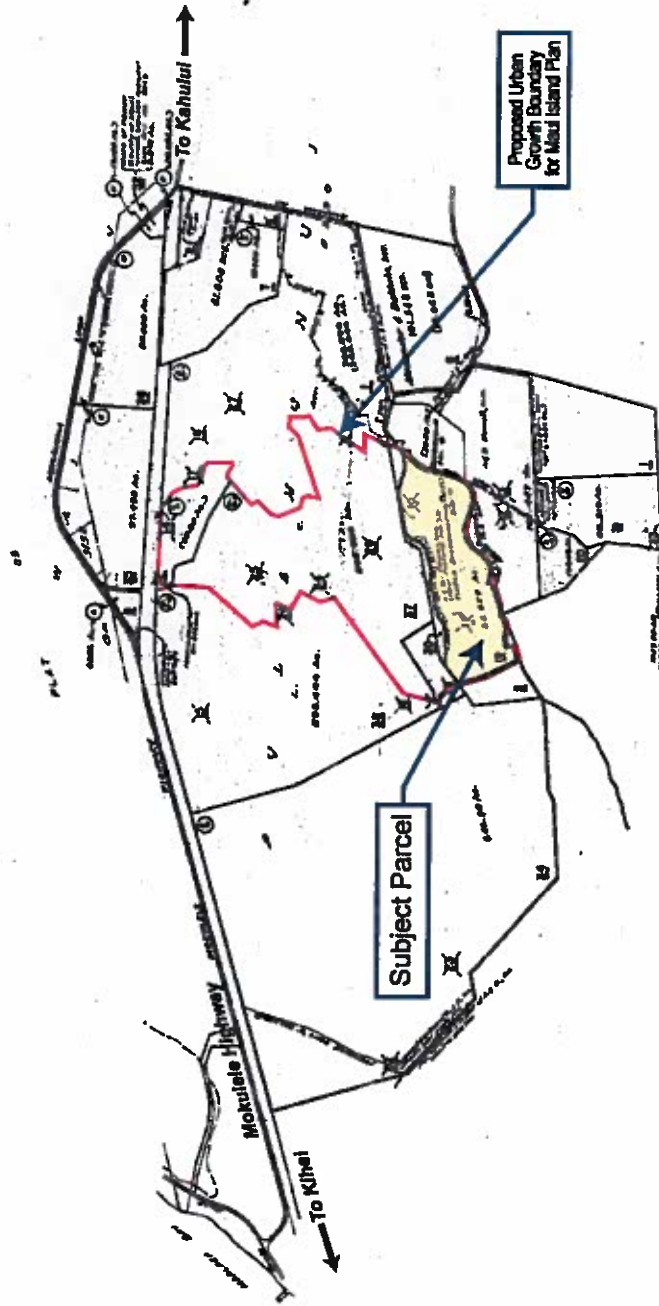


Not to Scale

## FIGURE 2

**Aerial Location Map**  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019





Original/Revised/As Shown

PLANNING MAPS BUREAU
TERRITORY OF HAWAII
TAX MAP
DISTRICT DIVISION
BASE REG. PLAT
<b>3 8 08</b>
CONTAINING PARCELS
SCALE: 1" = 1000 FT.

Map Accuracy: Not to Scale

SUBJECT TO CHANGE

As of December 1, 2008, Kula, Maui, Hawaii



Not to Scale

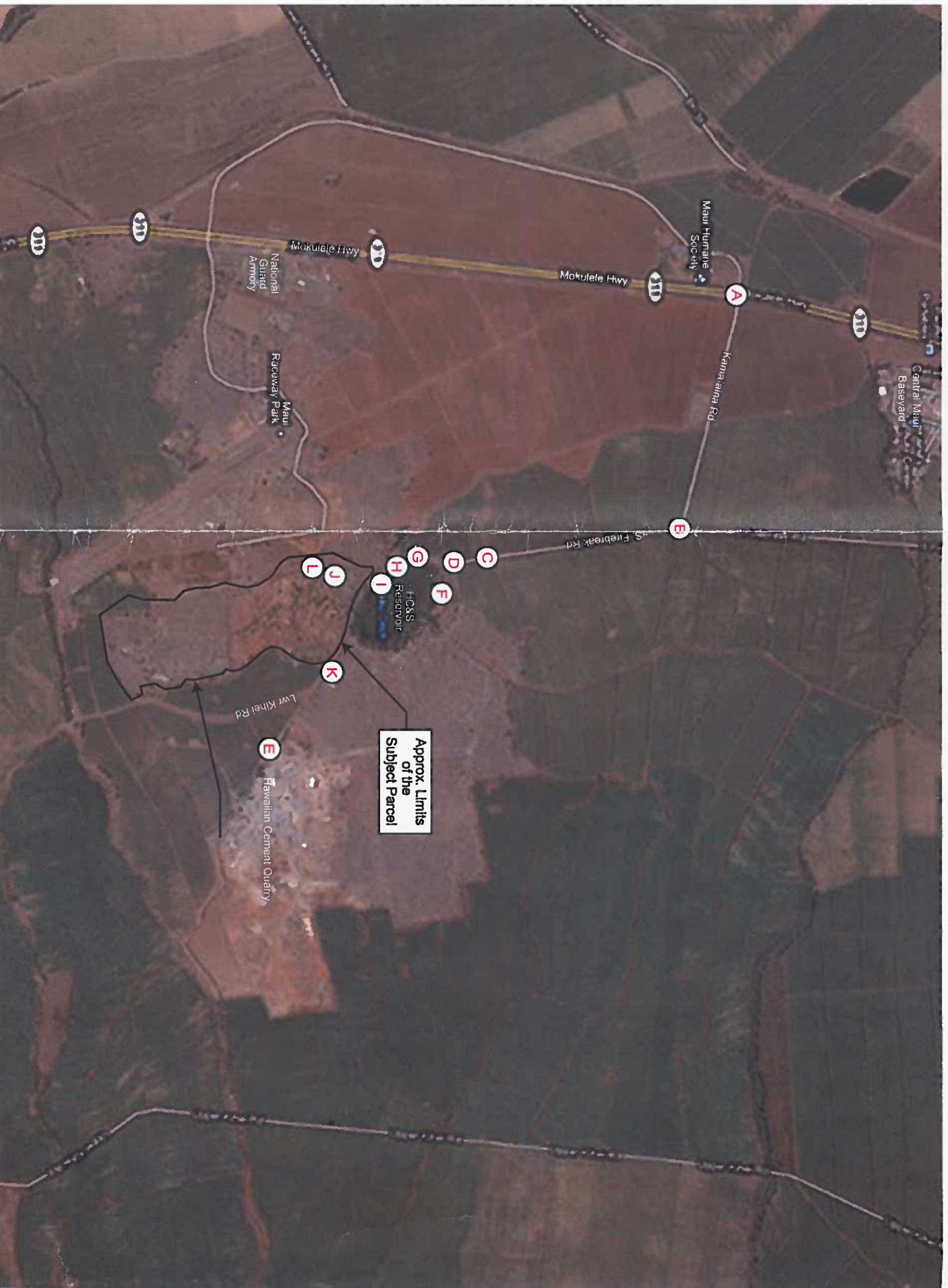
# FIGURE 3

**Parcel Location Map**  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019



**Key to Photo Locations**

- A. Photos 1 through 5
- B. Photos 6 and 7
- C. Photos 8 and 9
- D. Photos 10 and 11
- E. Photo 12
- F. Photo 13
- G. Photo 14
- H. Photo 15
- I. Photos 16 and 17
- J. Photos 18 and 19
- K. Photos 20 through 22
- L. Photo 23



**FIGURE 4**

Photo Reference Map  
 Pu'unane Heavy Industrial Subdivision  
 TMK (2) 3-9-008: 019





1. Camera facing North: Mokulele Highway at its intersection with Kama'aina Road (right) and Mehamaha Loop. The Central Maui Baseyard lies in the background (right).



2. Camera facing West: The Mehamaha Loop intersection with Mokulele Highway. The town of Wailuku lies in the background (right).



3. Camera facing South: Mokulele Highway at its intersection with Kama'aina Road and Mehamaha Loop. The Maui Humane Society lies in the background (center/right).



4. Camera facing East: View of Kama'aina Road from its intersection with Mokulele Highway.

**FIGURE 4**

Site Photographs  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019





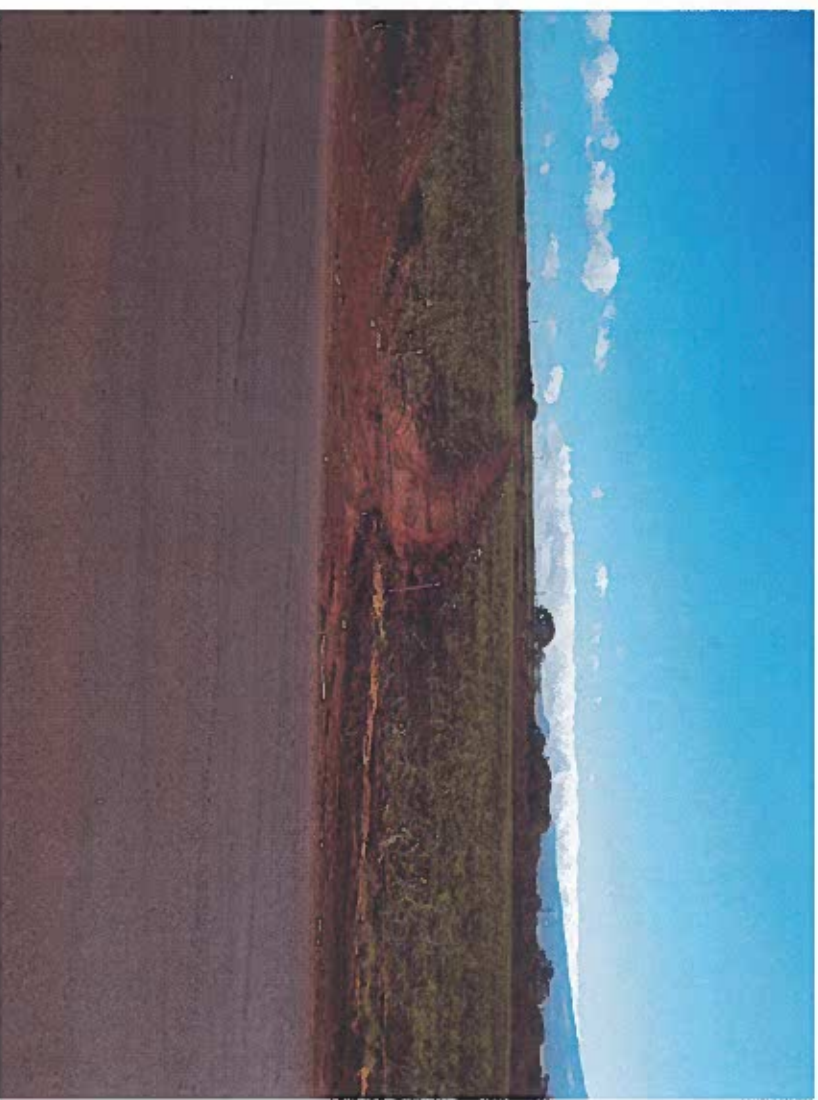
5. Camera facing Southeast: View toward the Subject Parcel (center/rear) from the intersection of Mokuulele Highway, Kama aina Road, and Mehamaha Loop.



7. Camera facing South: South Firebreak Road looking toward the Subject Parcel (left/rear).



6. Camera facing West: Kama aina Road looking toward Mokuulele Highway. The town of Waialuku lies in the background (right).



8. Camera facing East: Location of the proposed Subdivision Access Road connection along South Firebreak Road.

**FIGURE 4**

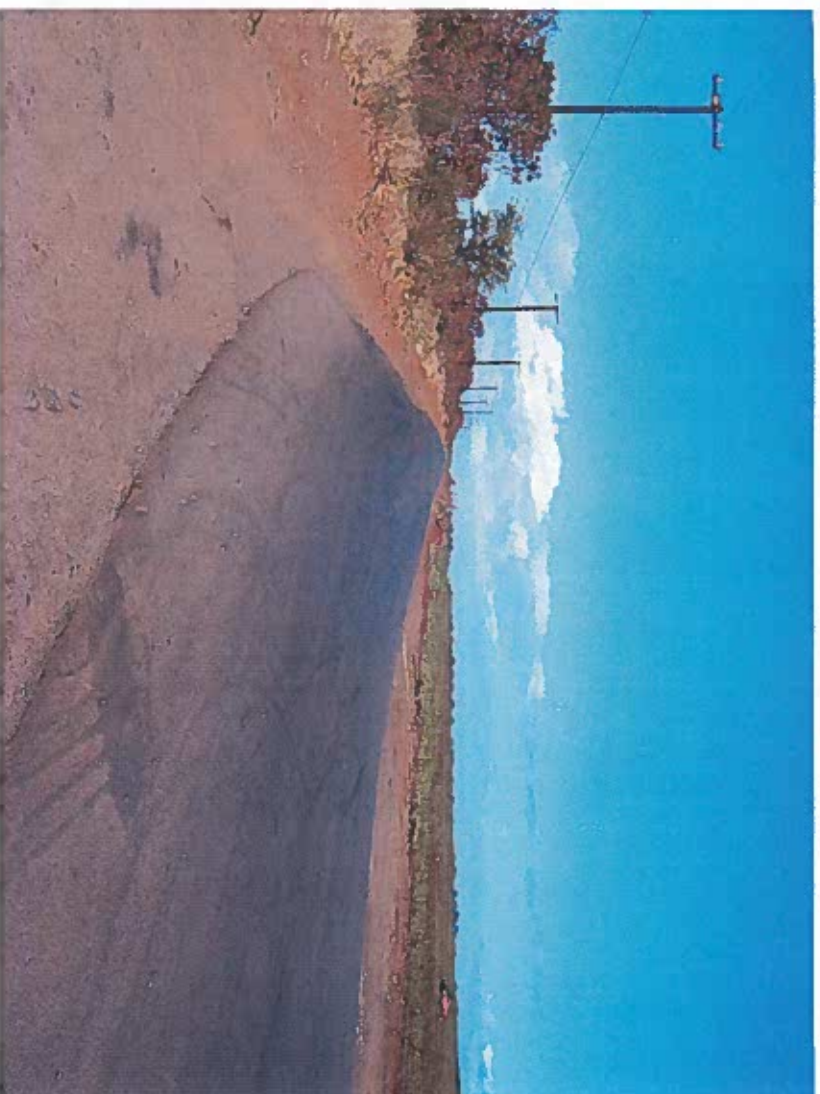
Site Photographs  
 Pu'umene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019







9. Camera facing Southwest: The National Guard Armory (left/rear) and a World War II-era concrete bunker (center/rear) along Mokuiaie Highway as seen from South Firebreak Road.



10. Camera facing North: South Firebreak Road near its intersection with the Hawaiian Cement Access Road.



11. Camera facing East: Intersection of the Hawaiian Cement Access Road and South Firebreak Road.



12. Camera facing East: Entrance to the Hawaiian Cement Quarry.

**FIGURE 4**

Site Photographs  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019





13. Camera facing Northwest: The westbound truck traveling along the Hawaiian Cement Access Road is in the approximate location of the proposed Subdivision Access Road crossing.



15. Camera facing Southeast: A street-level view of the HC&S Irrigation reservoir (left side of the road). The Subject Parcel lies in the background (right side of the road).



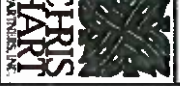
14. Camera facing North: South Firebreak Road looking toward its intersection with the Hawaiian Cement Road. An HC&S Irrigation reservoir lies in the foreground (right).



16. Camera facing North: The HC&S Irrigation reservoir as seen from the berm along the south side of the reservoir.

**FIGURE 4**

Site Photographs  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

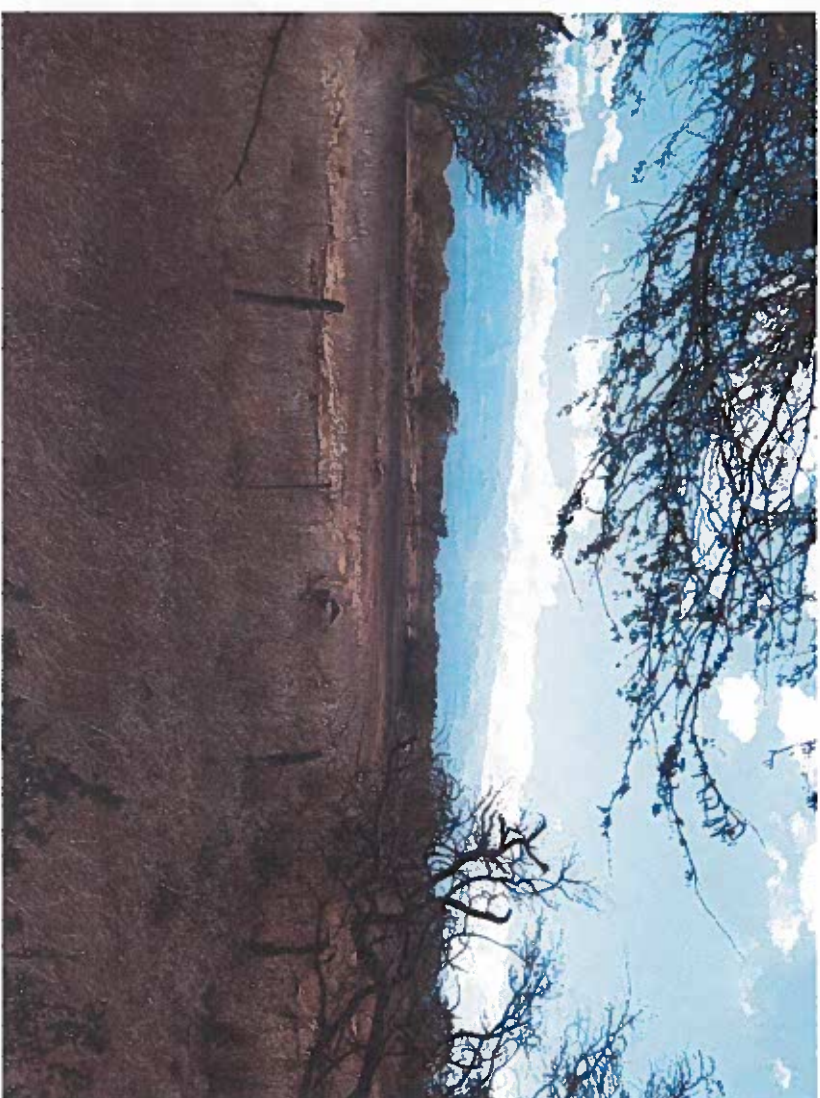




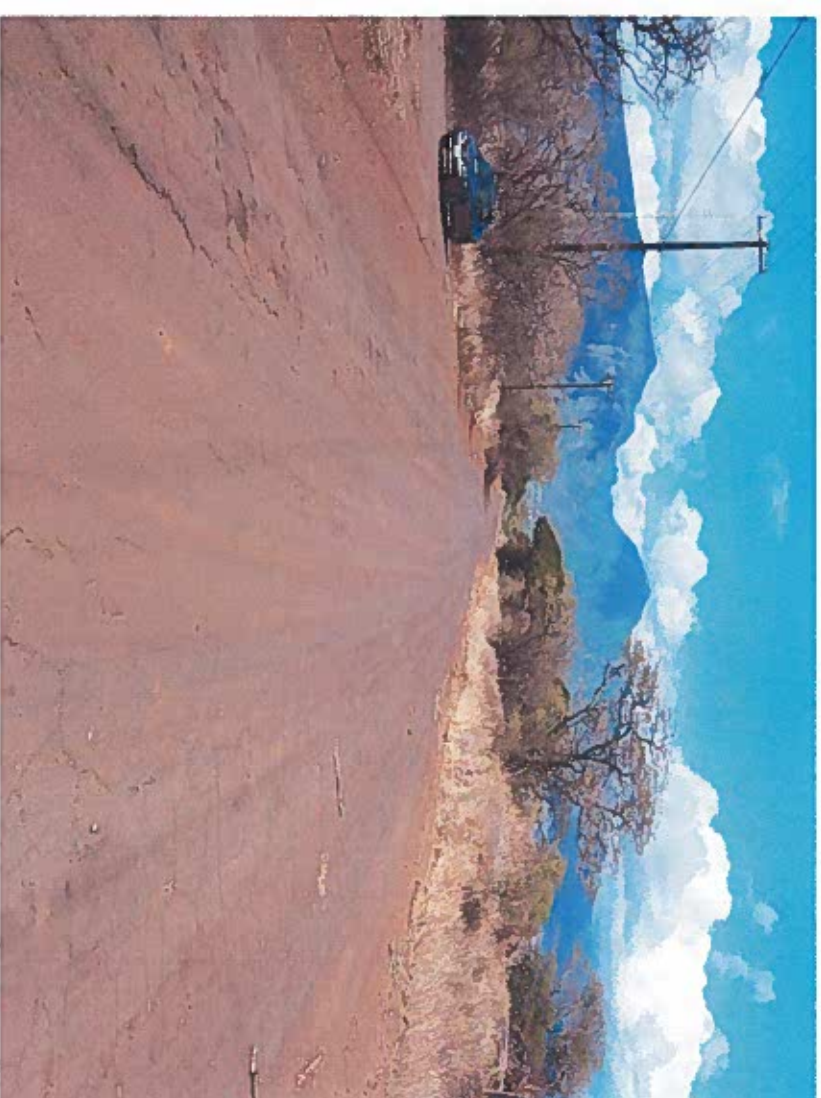
17. Camera facing Southeast: The Subject Parcel (left/center) as seen from the berm along the south side of the HC&S Irrigation reservoir.



19. Camera facing Northeast: LeSea Broadcasting Corp. has a license agreement with Alexander & Baldwin, Inc. (the former land owner) to use a 2-acre portion of the Subject Parcel for broadcast and communications purposes. The license agreement expires on 12/21/13.



18. Camera facing Southeast: A typical scene on the Subject Parcel.



20. Camera facing West: Lower Kihai Road as seen from a point near the northeastern boundary of the Subject Parcel. The Subject Parcel is to the left of the road while the HC&S Irrigation reservoir is further down the road to the right.

**FIGURE 4**

Site Photographs  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

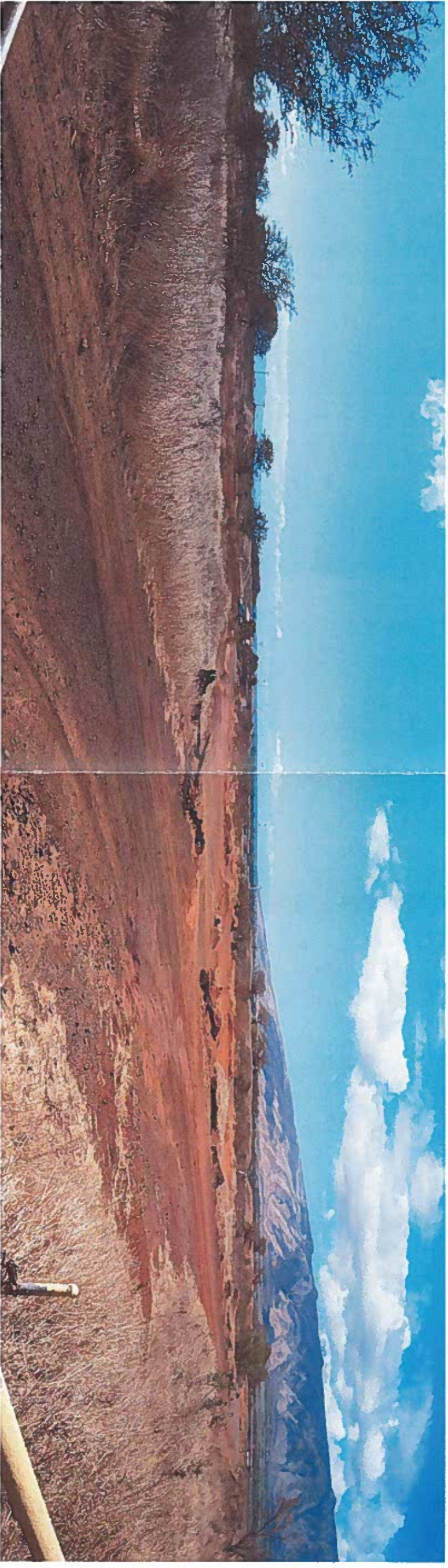




21. Camera facing North: Location of the proposed Subdivision Access Road connection along Lower Kihai Road.



22. Camera facing South: Lower Kihai Road (foreground) and an HC&S sugar cane field located east of and adjacent to the Subject Parcel.

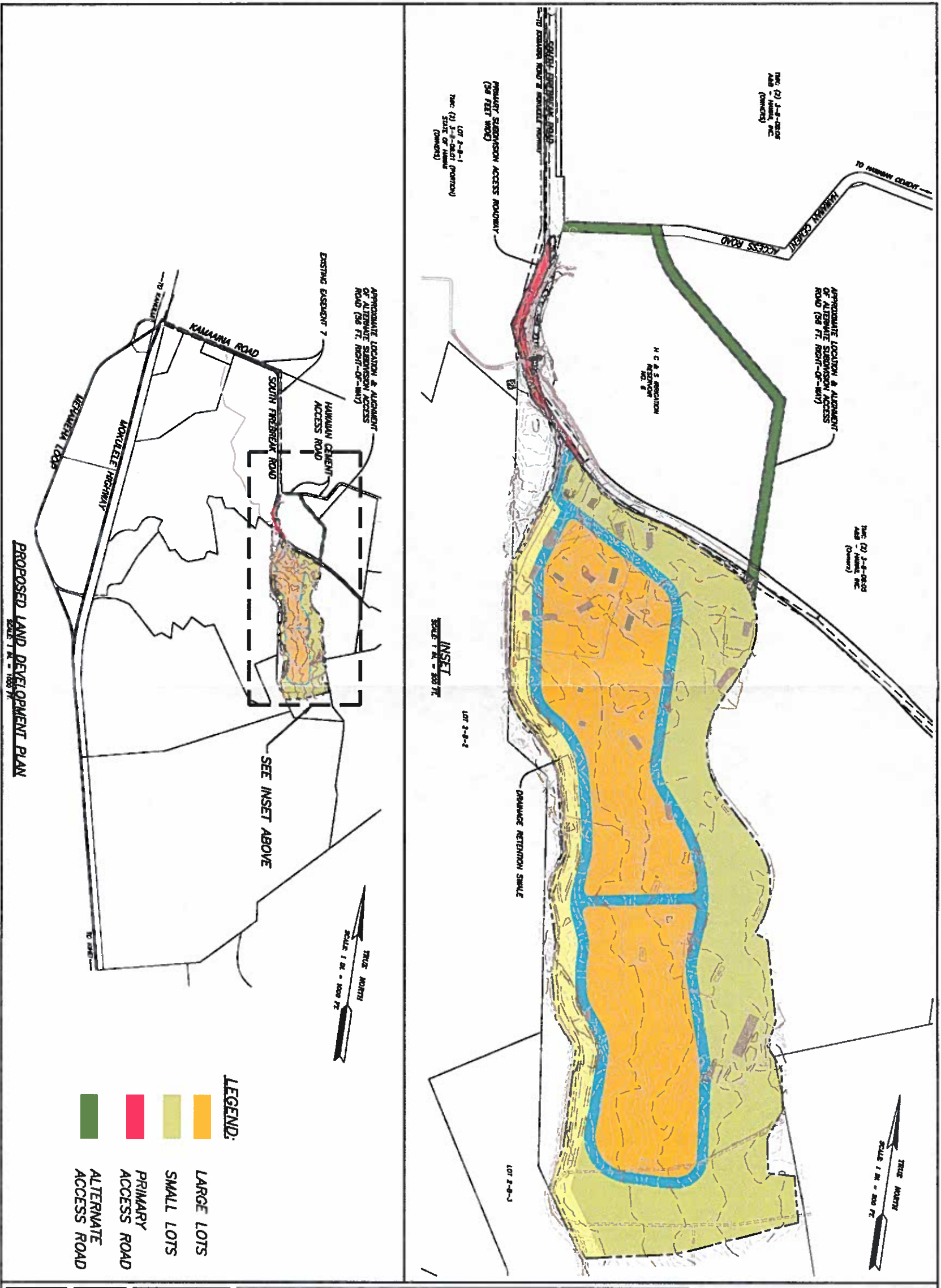


23. Camera facing Southwest: Project District 10 (Old Pu'umene Airport Area) as seen from the northern portion of the Subject Parcel. The Maui Raceway Park lies in the background.

**FIGURE 4**

Site Photographs  
 Pu'umene Heavy Industrial Subdivision  
 TMK (2) 3-0-008: 019





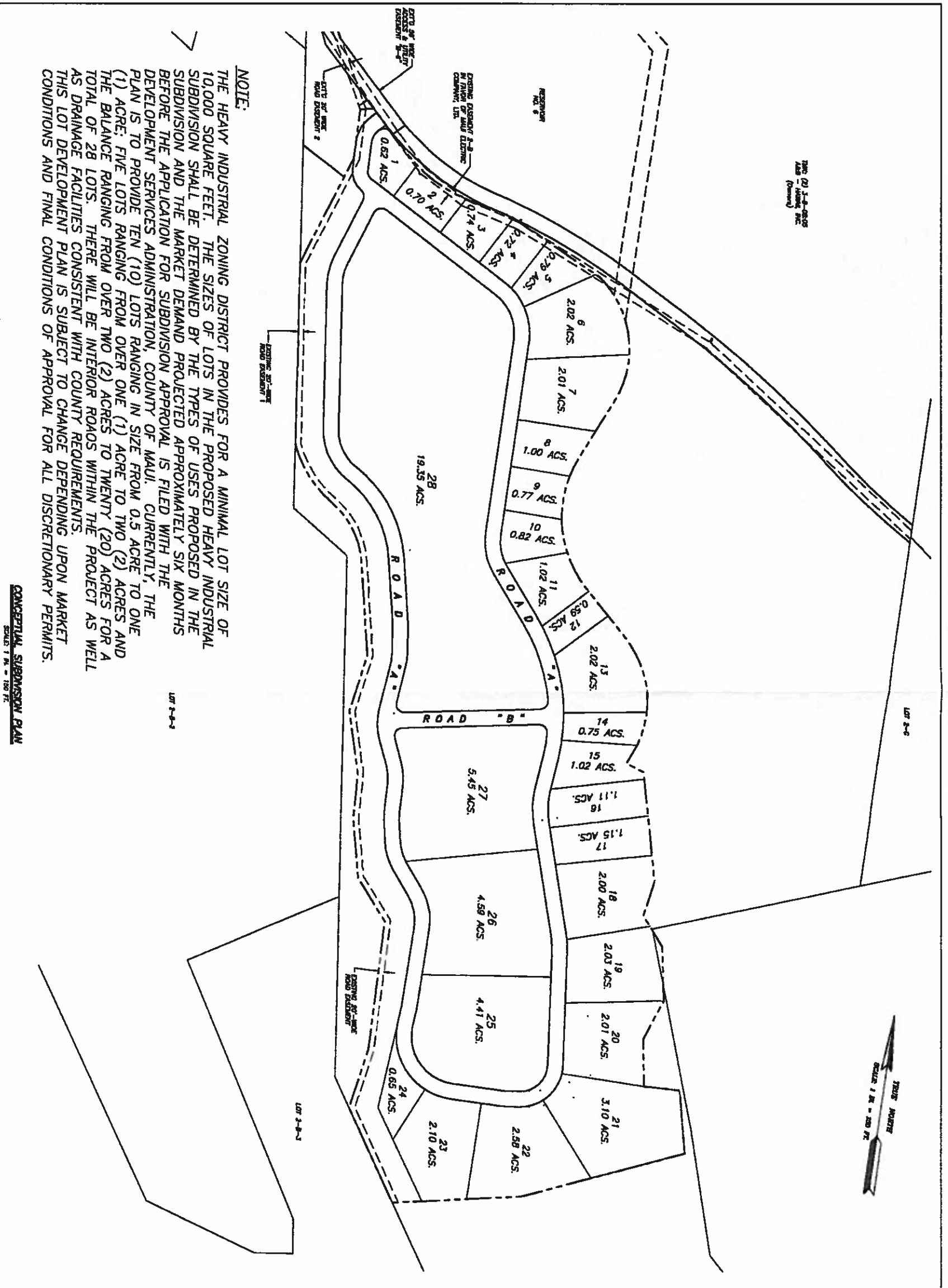
	<p><b>PUUNENE HEAVY INDUSTRIAL SUBDIVISION</b>  T.M.K.: (2) 3-8-08: 19  <b>PUUNENE, MAUI, HAWAII</b>  <b>PROPOSED LAND DEVELOPMENT PLAN</b></p>	<p>DATE: 10/11/11  DRAWN BY: S.A.A.  CHECKED BY: L.A.B.  PROJECT NO.: 2011-08  DRAWING NO.: 2011-08-01  DATE: 5-8-11</p>
<p><b>OTOMO</b>  ENGINEERING, INC.  1115 KALANANAKU AVE., SUITE 200  HONOLULU, HI 96813  TEL: 808-943-8888  WWW.OTOMOENGINEERING.COM</p>		

- LEGEND:**
- LARGE LOTS
  - SMALL LOTS
  - PRIMARY ACCESS ROAD
  - ALTERNATE ACCESS ROAD

**LDP-1**  
SHEET NO. 1 OF 1

**FIGURE 5**  
**PROPOSED LAND DEVELOPMENT PLAN**  
Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008: 019





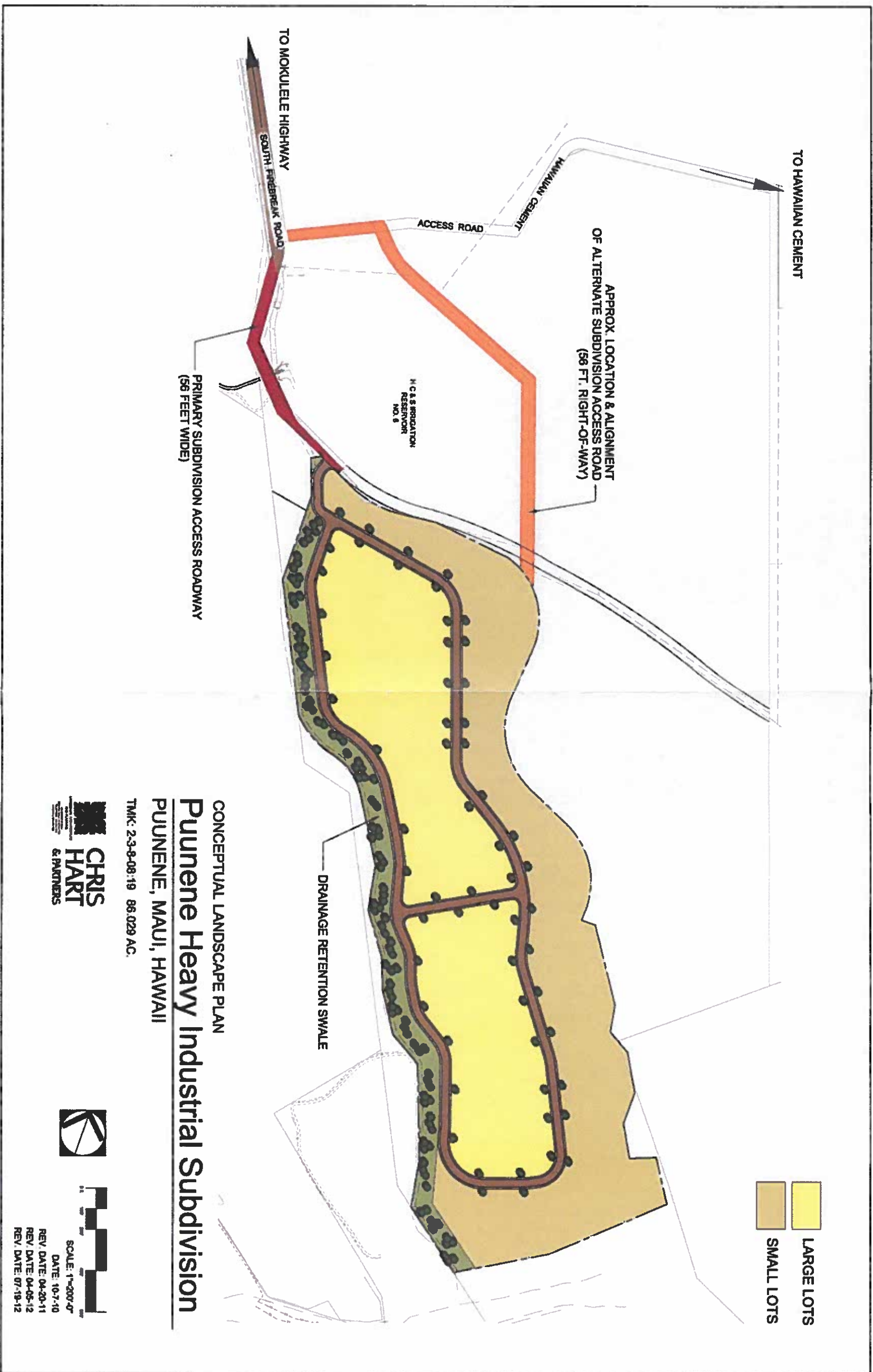
**NOTE:**  
 THE HEAVY INDUSTRIAL ZONING DISTRICT PROVIDES FOR A MINIMAL LOT SIZE OF 10,000 SQUARE FEET. THE SIZES OF LOTS IN THE PROPOSED HEAVY INDUSTRIAL SUBDIVISION SHALL BE DETERMINED BY THE TYPES OF USES PROPOSED IN THE SUBDIVISION AND THE MARKET DEMAND PROJECTED APPROXIMATELY SIX MONTHS BEFORE THE APPLICATION FOR SUBDIVISION APPROVAL IS FILED WITH THE DEVELOPMENT SERVICES ADMINISTRATION, COUNTY OF MAUI. CURRENTLY, THE PLAN IS TO PROVIDE TEN (10) LOTS RANGING IN SIZE FROM 0.5 ACRE TO ONE (1) ACRE; FIVE LOTS RANGING FROM ONE (1) ACRE TO TWO (2) ACRES AND THE BALANCE RANGING FROM OVER TWO (2) ACRES TO TWENTY (20) ACRES FOR A TOTAL OF 28 LOTS. THERE WILL BE INTERIOR ROADS WITHIN THE PROJECT AS WELL AS DRAINAGE FACILITIES CONSISTENT WITH COUNTY REQUIREMENTS. THIS LOT DEVELOPMENT PLAN IS SUBJECT TO CHANGE DEPENDING UPON MARKET CONDITIONS AND FINAL CONDITIONS OF APPROVAL FOR ALL DISCRETIONARY PERMITS.

**CONCEPTUAL SUBDIVISION PLAN**  
 SCALE: 1" = 100 FT.

 OTOMO ENGINEERING, INC. 1000 W. MAUI AVENUE, SUITE 200 MAUI, HAWAII 96753 PHONE: (808) 552-1111 FAX: (808) 552-1112 WWW.OTOMOENGINEERING.COM		<b>PUUNENE HEAVY INDUSTRIAL SUBDIVISION</b> T.M.K.: (2) 3-8-08: 19 PUUNENE, MAUI, HAWAII CONCEPTUAL SUBDIVISION PLAN	
		PREPARED BY: S.A.D. DRAWN BY: L.E.H. PROJECT NO.: 2011-18 DESIGN DATE: 1-16-13 SHEET NO.: 1 OF 1	DATE: 1-16-13

**FIGURE 5A**  
 Not to Scale  
**CONCEPTUAL SUBDIVISION PLAN**  
 Puunene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019





**FIGURE 5B**

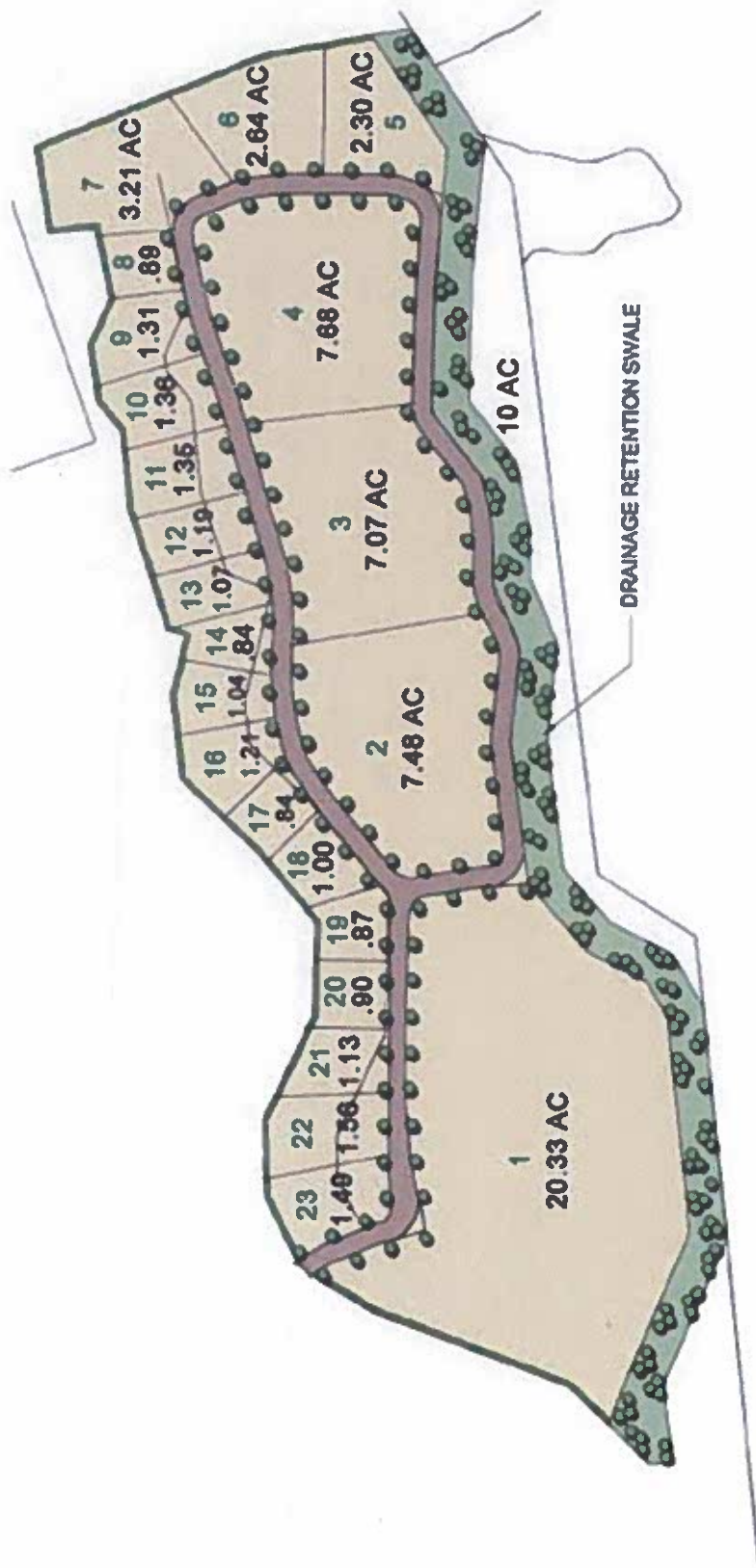
Not to Scale

CONCEPTUAL LANDSCAPE SITE PLAN

Punene Heavy Industrial Subdivision

TMK (2) 3-8-008: 019








Not to Scale

**FIGURE 6**

**Earlier Concept Land Plan**  
 Pu'uhene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

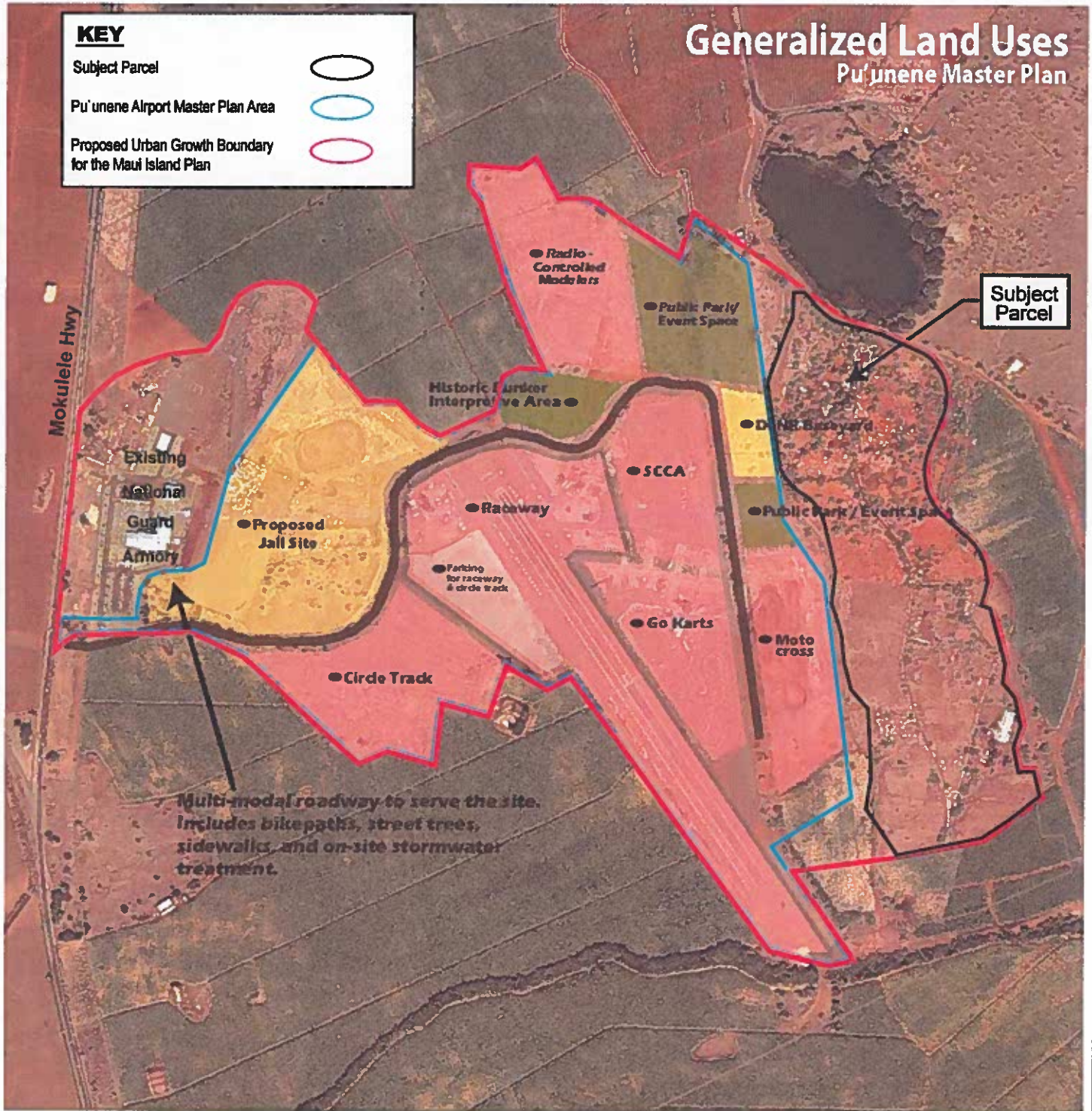


**KEY**

- Subject Parcel 
- Pu'unene Airport Master Plan Area 
- Proposed Urban Growth Boundary for the Maui Island Plan 

# Generalized Land Uses

## Pu'unene Master Plan







**FIGURE 7**

  
Not to Scale




Pu'unene Airport Master Plan -  
Concept Land Uses  
Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008: 019



**State Land Use:**

-  Agricultural
-  Conservation
-  Rural
-  Urban

**Areas of Potential Future Development:**

-  Denoted by Broad Horizontal Stripes
-  DHHL\* Pulehunui Master Plan
-  DLNR\* Pulehunui Master Plan



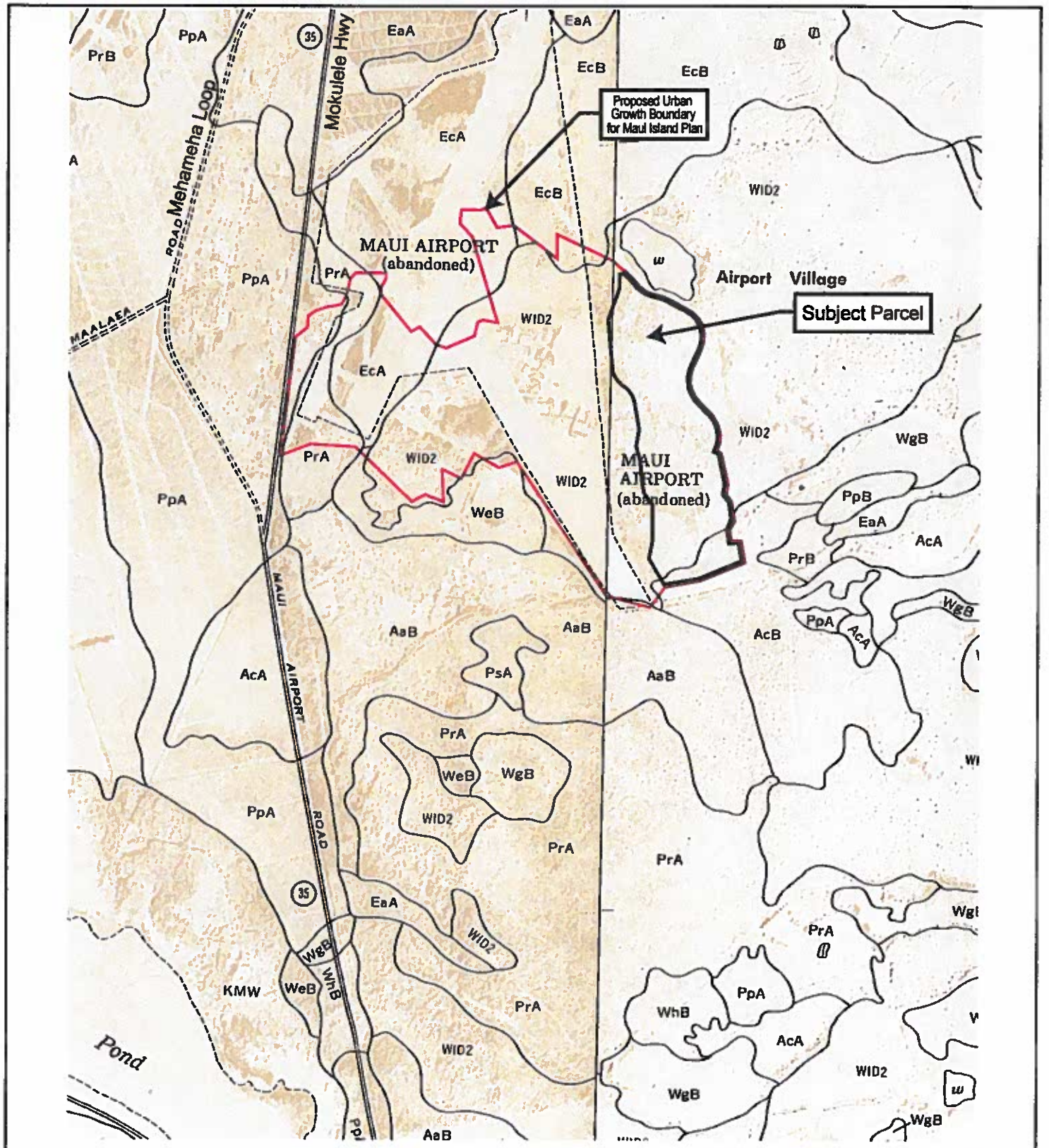
Copyright 2004, County of Maui, HCD Form 6.0.3



**FIGURE 7A**

Not to Scale

**Areas of Potential Future Development**  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

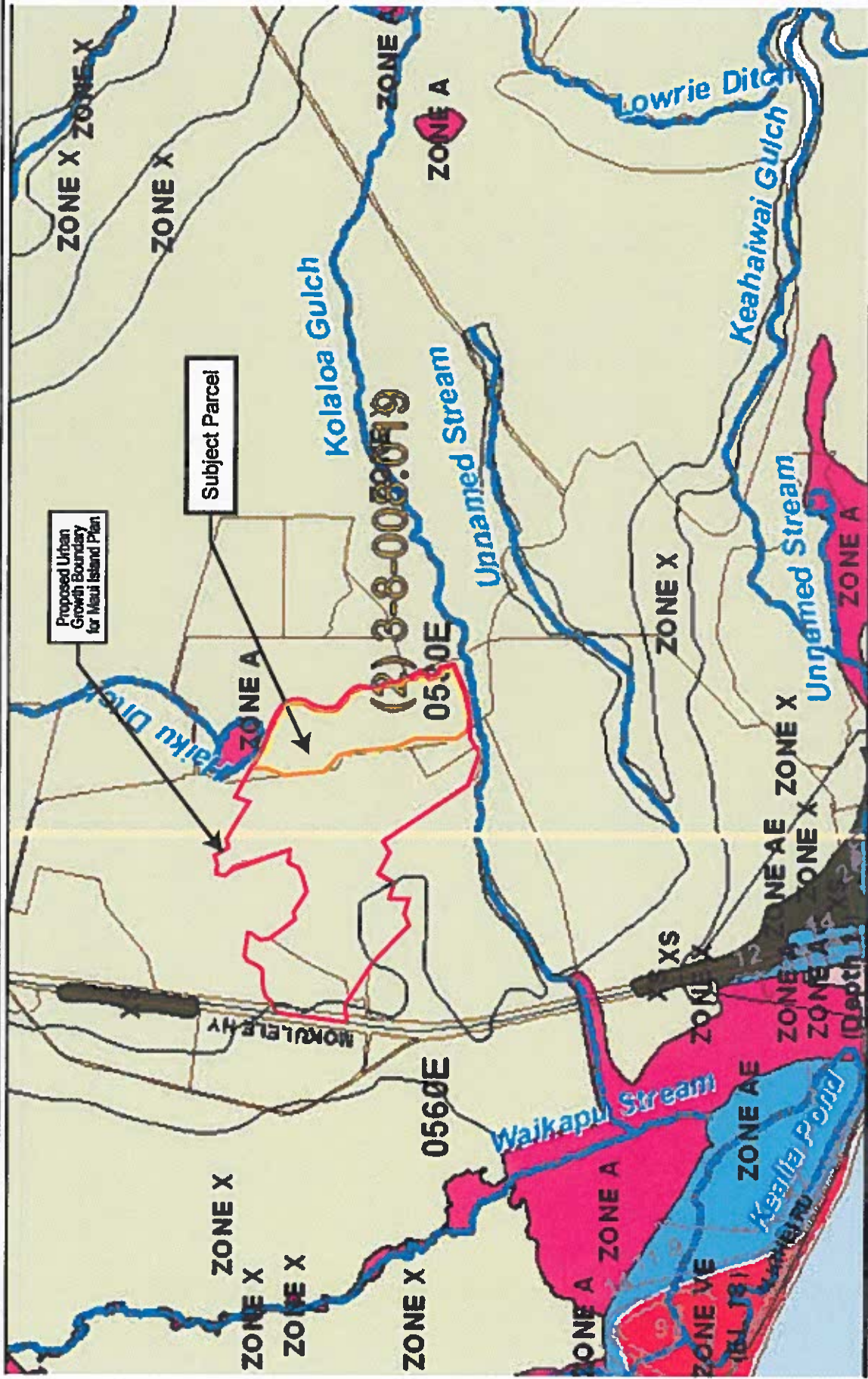


**FIGURE 8**

  
 Not to Scale

**Soil Classifications**  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019





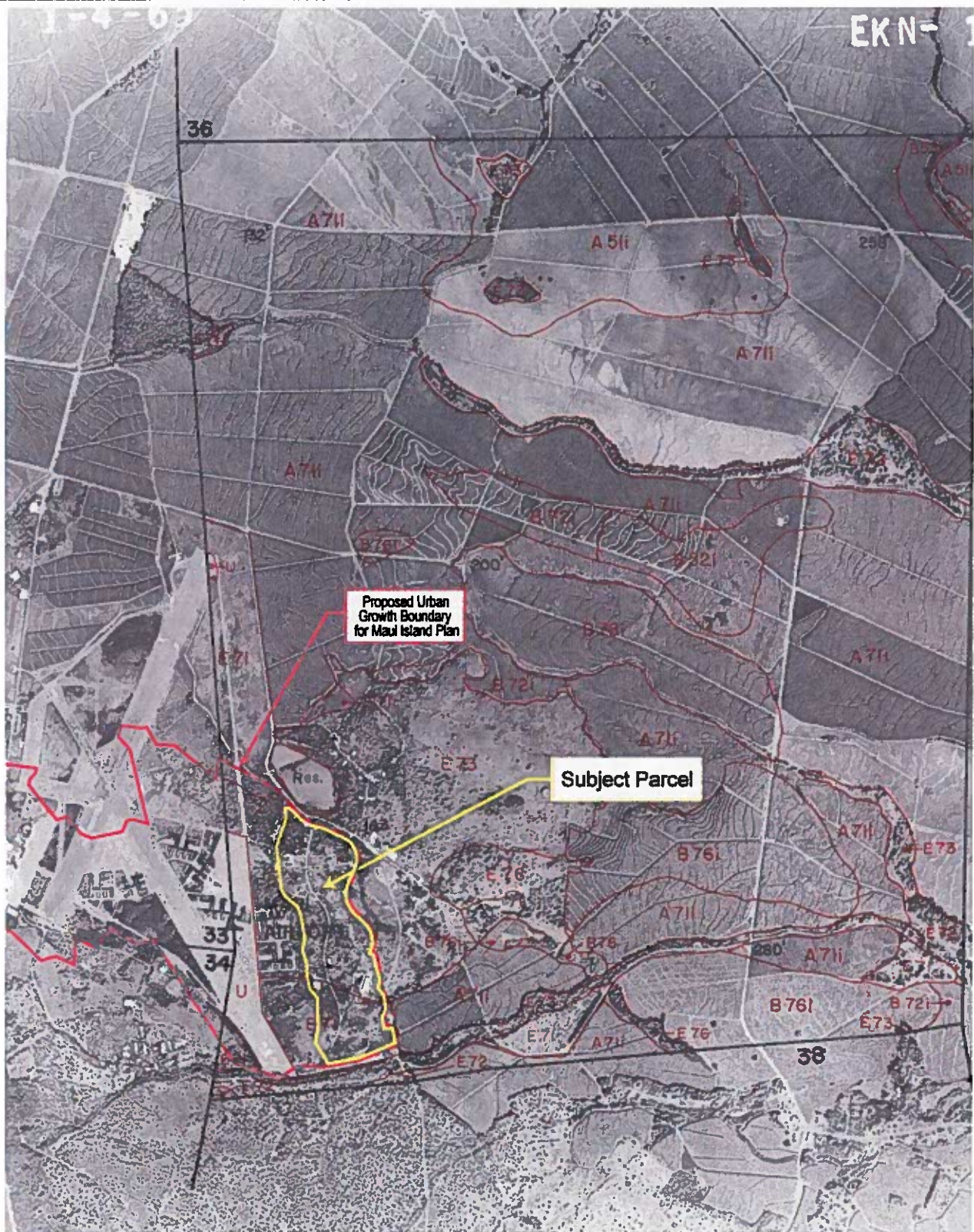
County: MAUI      TMK: (2) 3-8-008-019      Address: OFF MOKULELE HWY      LOMC: NONE



Not to Scale

### FIGURE 9

**Flood Insurance Rate Map**  
 Pū unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019



**FIGURE 10**

Not to Scale

**Soil Productivity Ratings**  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019









Not to Scale

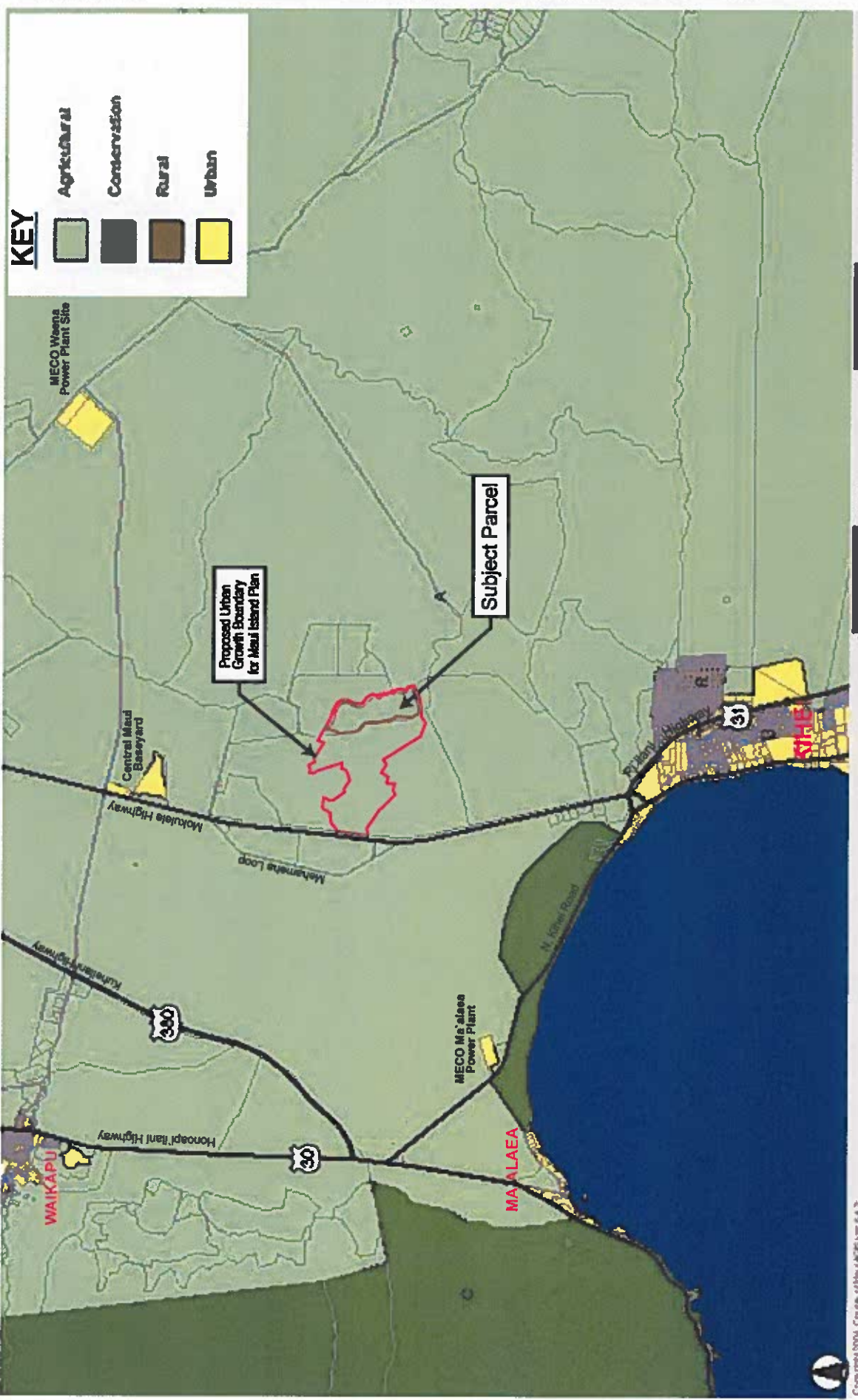
# FIGURE 11

**Important Agricultural Lands**  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019



**KEY**

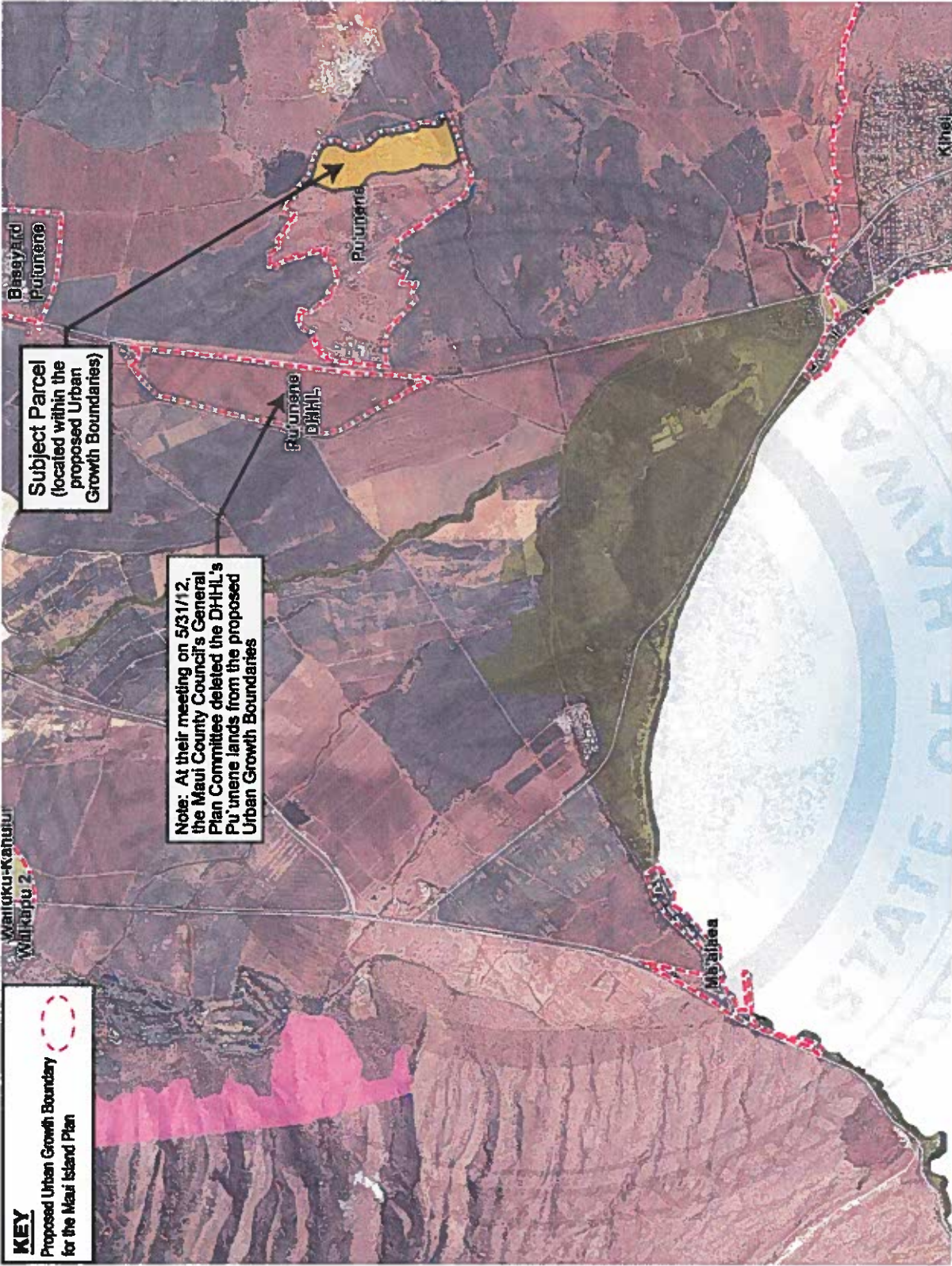
-  Agricultural
-  Conservation
-  Rural
-  Urban



 Not to Scale

**FIGURE 12**

**State Land Use Districts**  
Puʻunene Heavy Industrial Subdivision  
TMK (2) 3-8-008: 019



**KEY**  
 Proposed Urban Growth Boundary  
 for the Maui Island Plan

**Subject Parcel**  
 (located within the  
 proposed Urban  
 Growth Boundaries)

**Note:** At their meeting on 5/31/12,  
 the Maui County Council's General  
 Plan Committee deleted the DPHIL's  
 Pu'unene lands from the proposed  
 Urban Growth Boundaries



Not to Scale

**FIGURE 13**

**Directed Growth Map**  
 Pu'unene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019



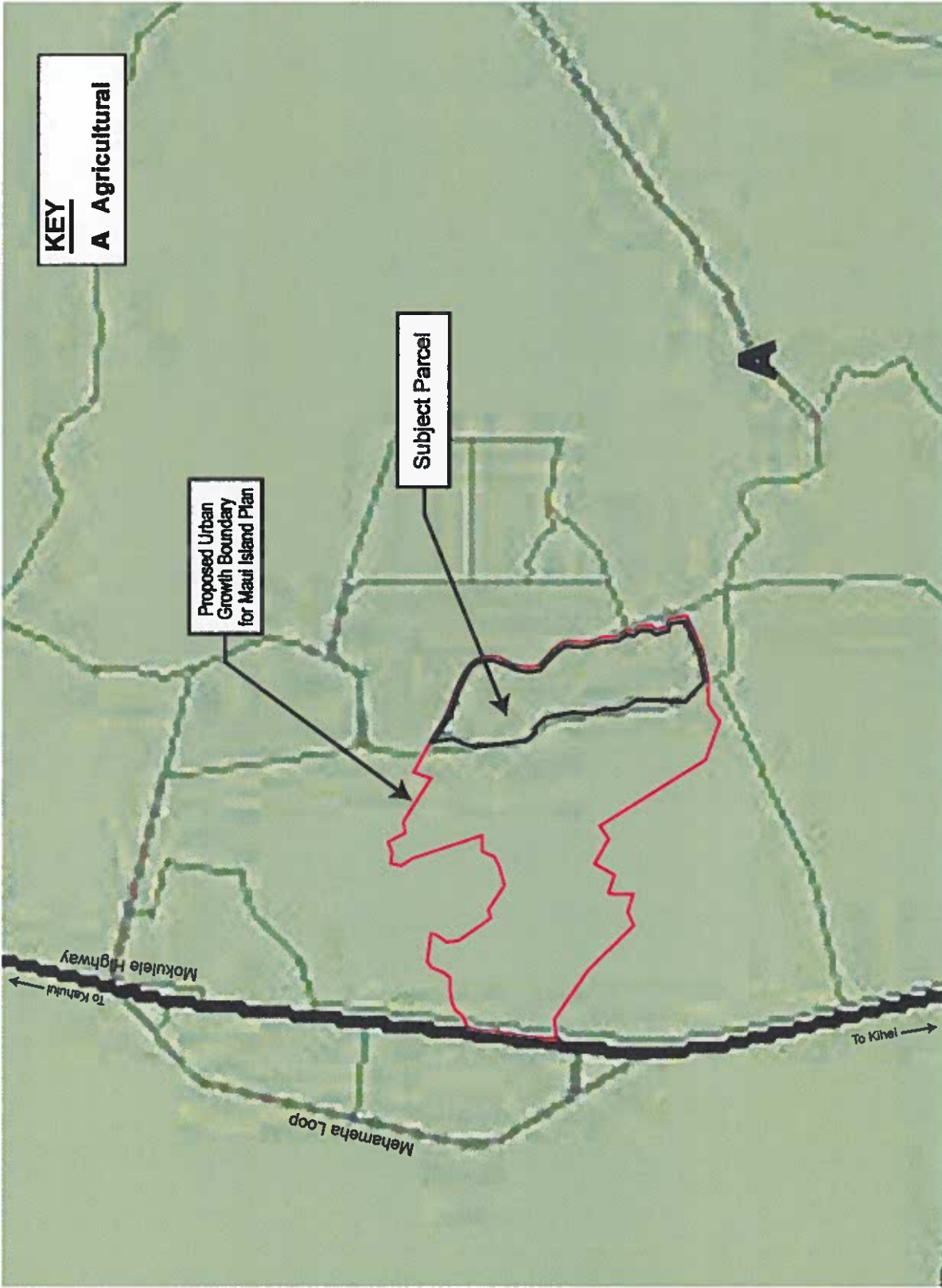


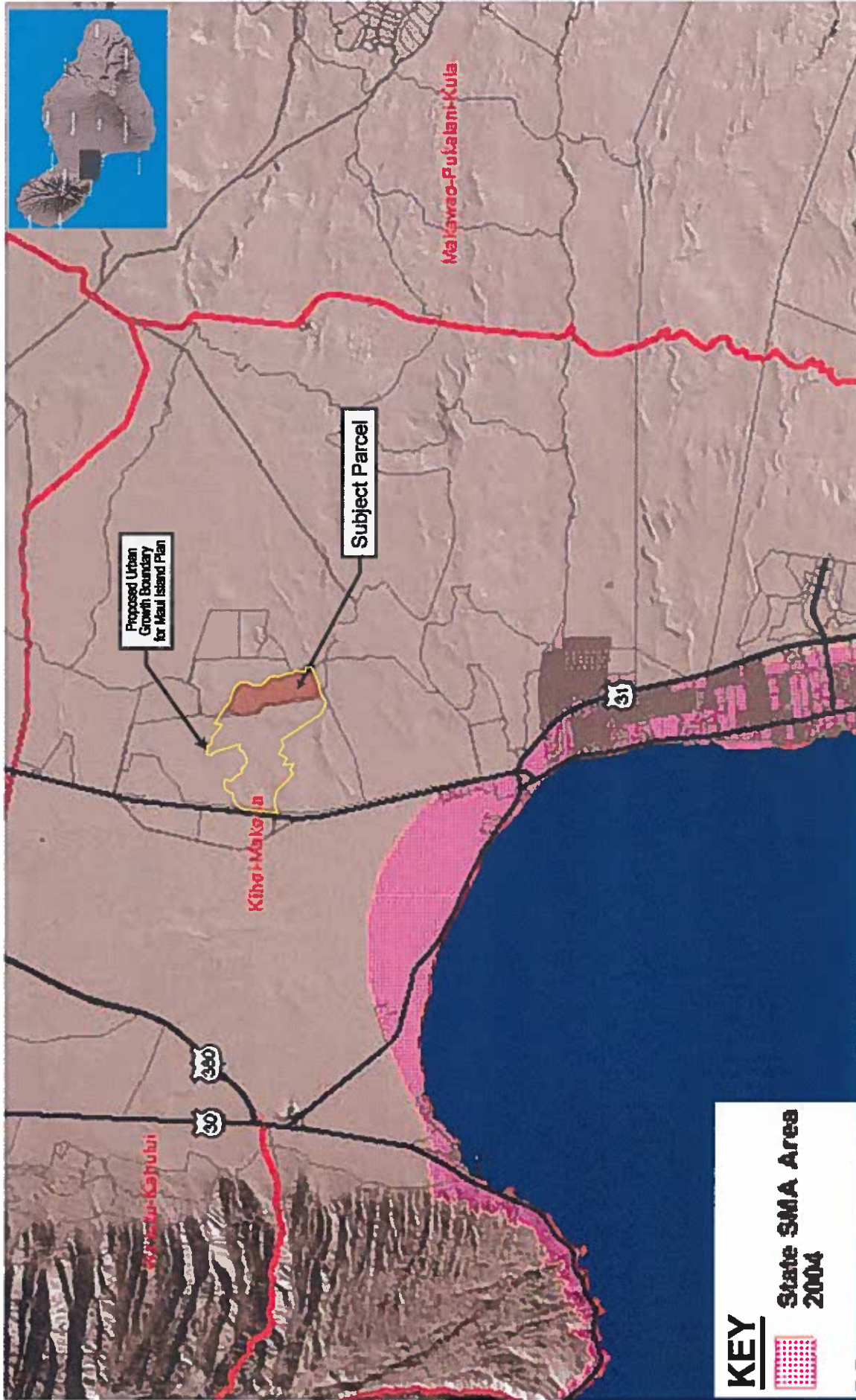


Not to Scale

# FIGURE 15

**Maui County Zoning**  
Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008: 019





Not to Scale

# FIGURE 16

**Special Management Area**  
 Pu'uene Heavy Industrial Subdivision  
 TMK (2) 3-8-008: 019

**KEY**  
 State SMA Area  
 2004

## **APPENDICES**

## **APPENDICES**

<b>Appendix A</b>	Zoning and Flood Confirmation
<b>Appendix B</b>	Topographic Survey Map
<b>Appendix C</b>	M-3, Restricted Industrial Zoning Regulations
<b>Appendix D</b>	Quitclaim Assignment of Partial Interest in Easement 7
<b>Appendix D-1</b>	Request for Use of State Lands
<b>Appendix E</b>	Flora Survey
<b>Appendix F</b>	Faunal Survey
<b>Appendix F-1</b>	Arthropod Study
<b>Appendix F-2</b>	<i>Nene</i> (Hawaiian Goose) Survey
<b>Appendix G</b>	Noise Study
<b>Appendix H</b>	Air Quality Study
<b>Appendix I</b>	Archaeological Inventory Survey
<b>Appendix I-1</b>	SHPD Approval of Inventory Survey
<b>Appendix J</b>	Archaeological Monitoring Plan
<b>Appendix J-1</b>	SHPD Approval of Monitoring Plan
<b>Appendix K</b>	Cultural Impact Assessment

<b>Appendix L</b>	Phase I Environmental Site Assessment and Supplemental Data
<b>Appendix M</b>	Market Study
<b>Appendix N</b>	Agricultural Impact Assessment
<b>Appendix O</b>	Groundwater Resource and Water System Assessment
<b>Appendix O-1</b>	CWRM Letter of Assurance for Well Nos. 4927-02 and 4927-03
<b>Appendix P</b>	Preliminary Engineering Report
<b>Appendix Q</b>	Traffic Impact Analysis Report
<b>Appendix R</b>	Early Consultation Letters
<b>Appendix S</b>	Draft EA Comment Period

**APPENDIX A**  
Zoning & Flood  
Confirmation

11/29/12

COUNTY OF MAUI  
DEPARTMENT OF PLANNING  
Katana Pakui Building  
250 South High Street  
Wailuku, Hawaii 96793



Zoning Administration and  
Enforcement Division (ZAED)  
Telephone: (808) 270-7283  
Facsimile: (808) 270-7634  
E-mail: planning@maui-county.gov

### ZONING AND FLOOD CONFIRMATION FORM

**APPLICANT INFORMATION (To be completed by Applicant)**

APPLICANT NAME Glenn Tadaki (Chris Hart & Partners) TELEPHONE 242-1955 (Ext. 557)

PROJECT NAME Puunene Heavy Industrial Subdivision E-MAIL gtadaki@chpmaui.com

ADDRESS/LOCATION Off Kama'aina Road TAX MAP KEY (2) 3-8-008: 019

Yes Will this Zoning and Flood Confirmation Form be used with a Subdivision Application, including four (4) or more dwelling units on a parcel, but **NOT** including subdivisions listed and processed under the exceptions in Section 18.04.030(B), Maui County Code? **IF YES, LIST THE PROPOSED LAND USES BELOW:**

No

NOTE: 1) Use a separate Zoning and Flood Confirmation Form for each Tax Map Key (TMK) number.  
 2) If the above "Yes" box is checked AND if the zoning information for the subject property contains multiple State Land Use Districts, Community Plan Designations, or County Zoning, a signed and dated Land Use Designations (LUD) Map, prepared by a licensed surveyor showing all the various districts, designations, zonings, and any subdistricts, shall be submitted for review and approval.  
 3) If the above "Yes" box is checked AND if there are multiple State Land Use District designations, the applicant shall procure a District Boundary Interpretation from the State Land Use Commission.

**FOR COUNTY USE ONLY (To be completed by ZAED)**

**ZONING INFORMATION**

STATE LAND USE DISTRICT(S) Agriculture

COMMUNITY PLAN DESIGNATION(S) Agriculture

COUNTY ZONING(S) Agriculture

OTHER DESIGNATION(S) N/A

Yes  No See Additional Comments On Page Two

Yes  No See The Attached Land Use Designation Map

Yes  No SPECIAL MANAGEMENT AREA (SMA)

Yes  No PLANNED DEVELOPMENT

Yes  No PROJECT DISTRICT

**FLOOD INFORMATION**

FLOOD HAZARD AREA ZONE(S) X For Flood Zone AO, FLOOD DEPTH N/A

BASE FLOOD ELEVATION(S) N/A feet mean sea level, Local Tidal Datum.

\*FLOODWAY  Yes  No \*FLOOD DEVELOPMENT PERMIT REQUIRED  Yes  No

\*For flood hazard area zones X or XS, a flood development permit would be required if any work is done in any drainage facility or stream area that would reduce the capacity of the drainage facility, river, or stream, or adversely affect downstream property.

\*For subdivisions in ALL FLOOD HAZARD AREA ZONES (including zones X or XS) that involve streams, gulches, low areas, or any type of drainageway, a designation of the 100 year flood inundation limits or a drainage reserve may be required.

SUBDIVISION CONSISTENCY [ Section 18.04.030(D), Maui County Code ]

N/A (Not Applicable)  \*\*The proposed land uses appear to be consistent \_\_\_\_\_ a unilateral agreement.

Except as permitted in Section 18.04.030(B) MCC, property containing any Interim Zoning shall NOT be subdivided.

Comments: \_\_\_\_\_

\*\*The proposed land uses appear to NOT be consistent.

Comments: \_\_\_\_\_

\*\* All proposed subdivisions will be further reviewed during the subdivision application process to verify subdivision consistency, unilateral agreement requirements, and the conditions associated with a unilateral agreement.

REVIEWED & CONFIRMED BY:

[Signature] 7/12/11

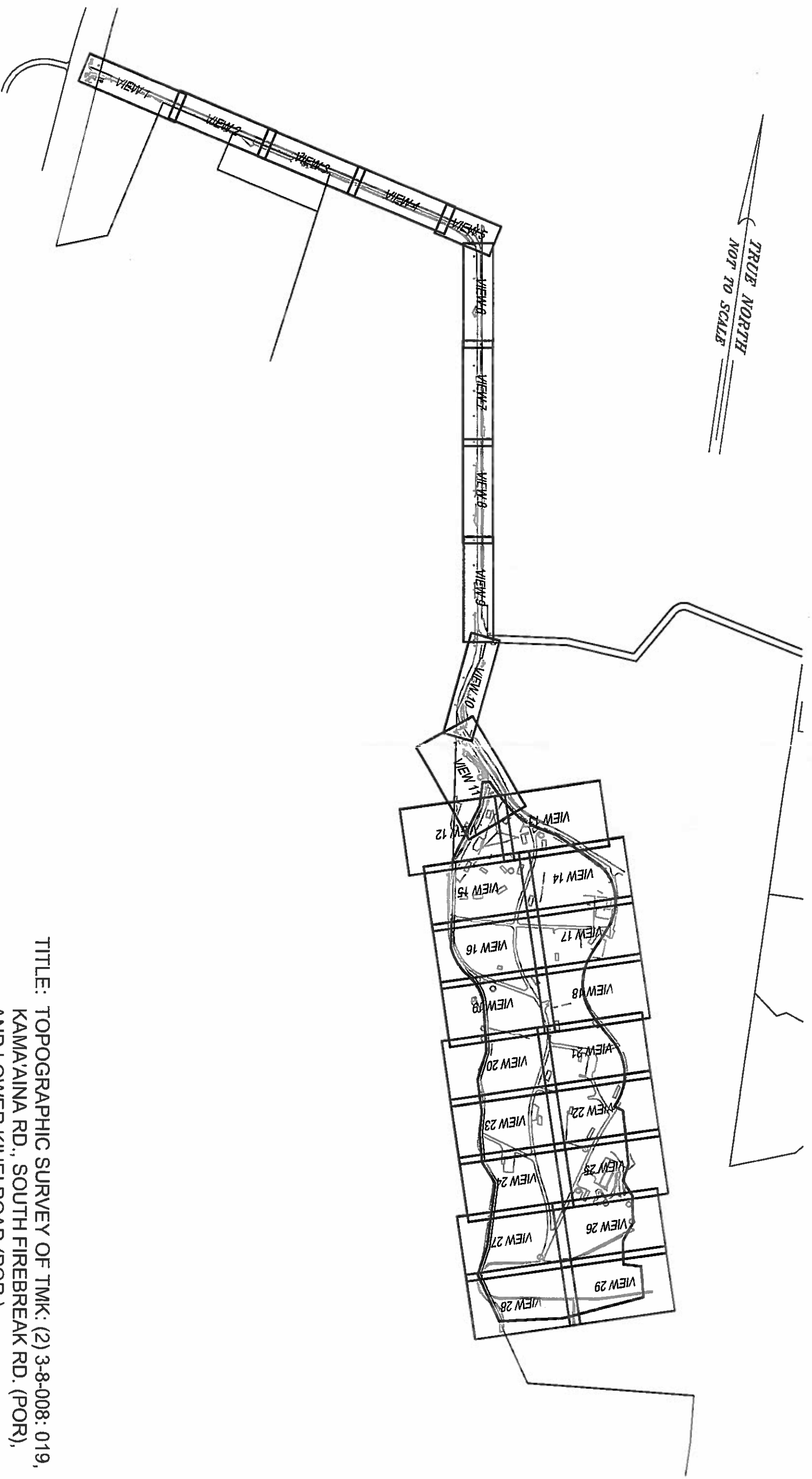
(Signature) (Date)

For: AARON SHINMOTO, Planning Program Administrator, Zoning Administration and Enforcement Division



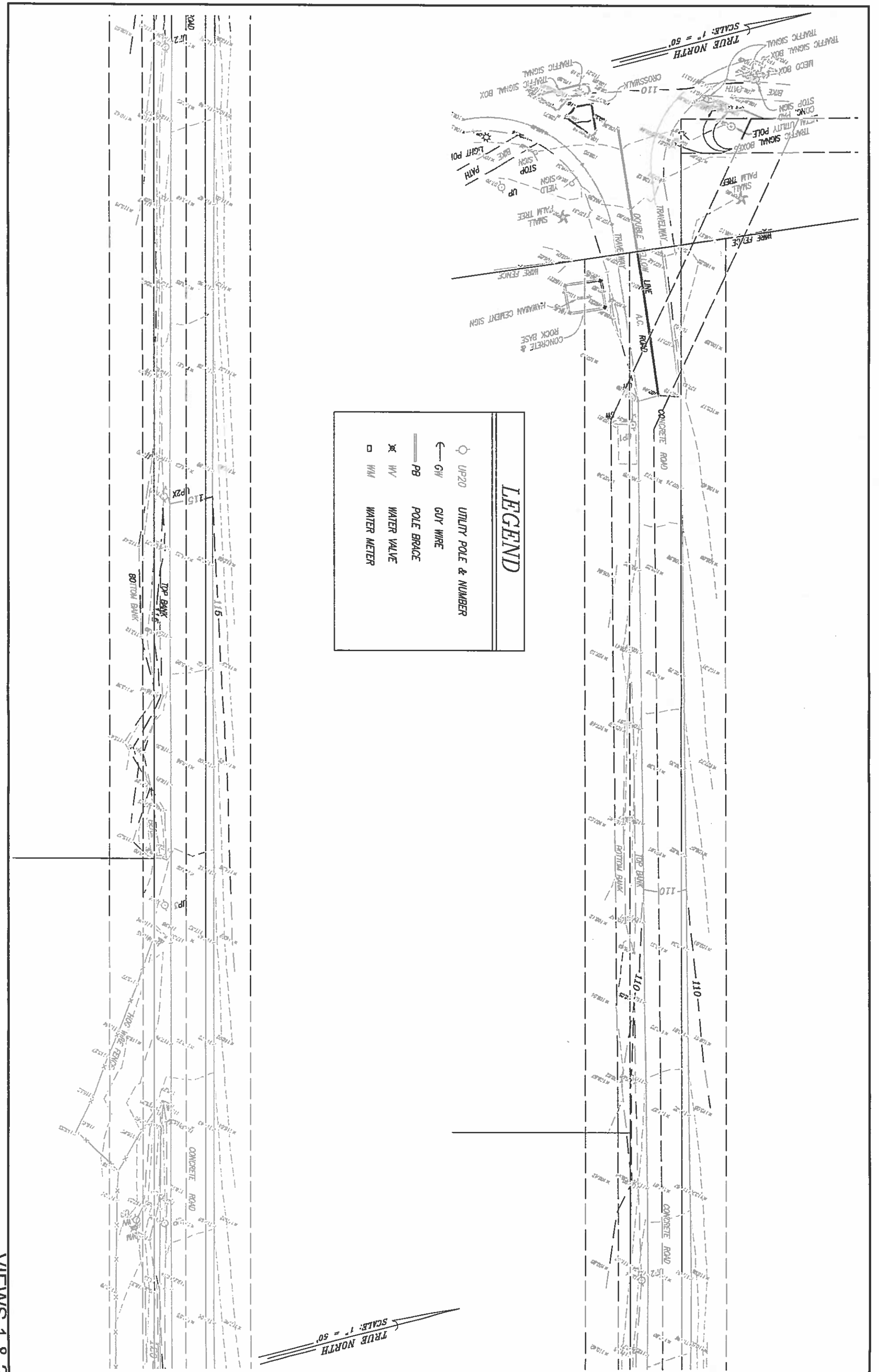
**APPENDIX B**  
Topographic Survey  
Map

TRUE NORTH  
NOT TO SCALE



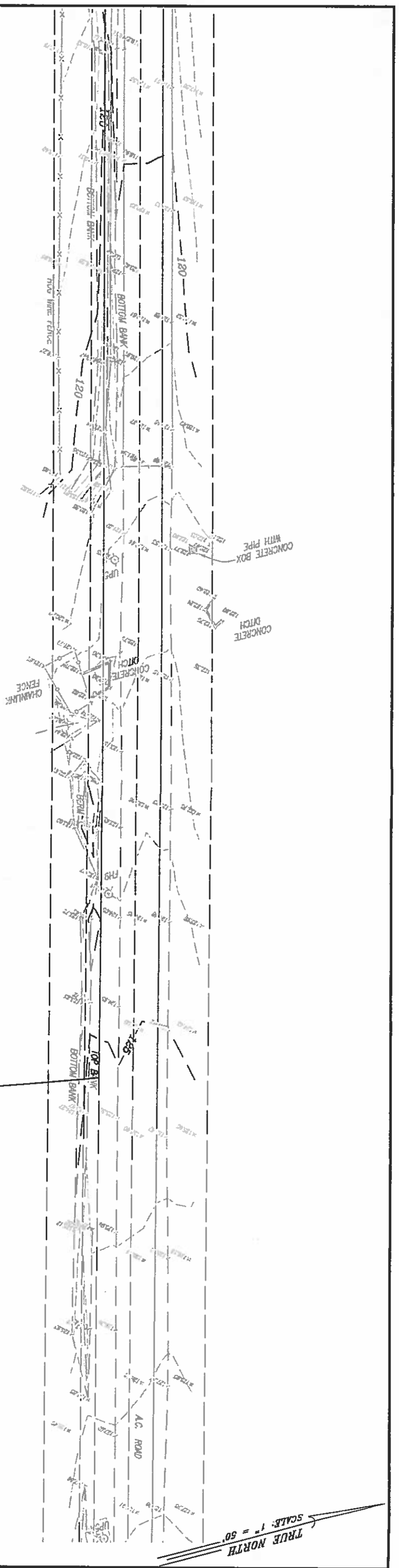
TITLE: TOPOGRAPHIC SURVEY OF TMK: (2) 3-8-008: 019,  
KAMA'AINA RD., SOUTH FIREBREAK RD. (POR),  
AND LOWER KIHEI ROAD (POR.)

TMK PARCEL SIZE: 86.030 ACRES  
LOCATION: PULEHUNUI, WAILUKU, MAUI, HAWAII  
PREPARED BY: AKAMAI LAND SURVEYING



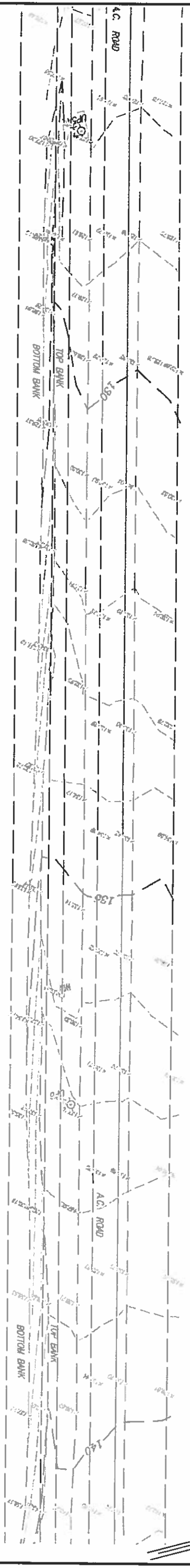
LEGEND	
○ UP20	UTILITY POLE & NUMBER
← GW	GUY WIRE
— PB	POLE BRACE
✕ WV	WATER VALVE
□ WM	WATER METER

TRUE NORTH  
SCALE: 1" = 50'



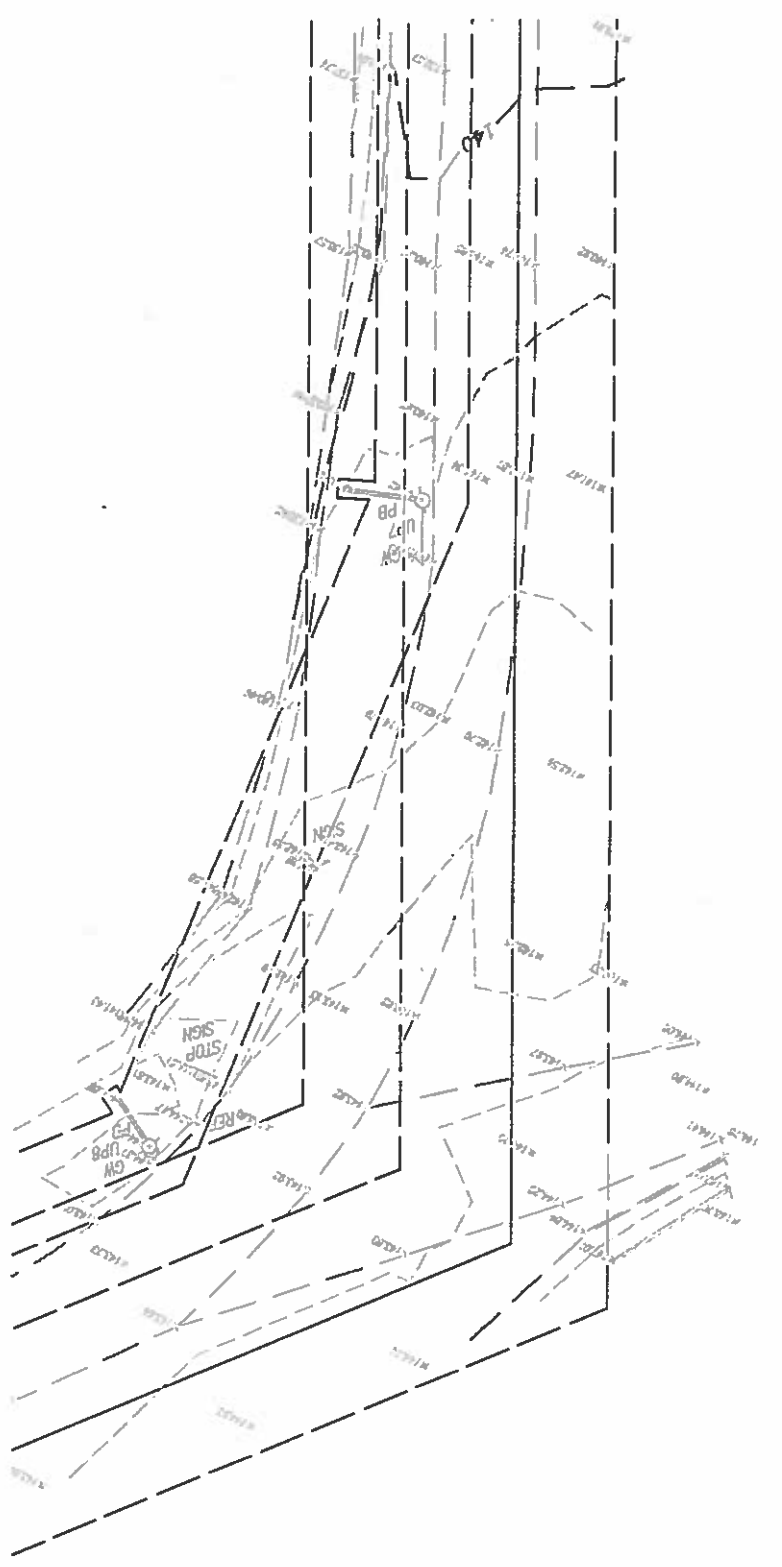
# LEGEND

⊙	UP20	UTILITY POLE & NUMBER
—	GW	GUY WIRE
—	PB	POLE BRACE
⊗	WV	WATER VALVE
□	WM	WATER METER

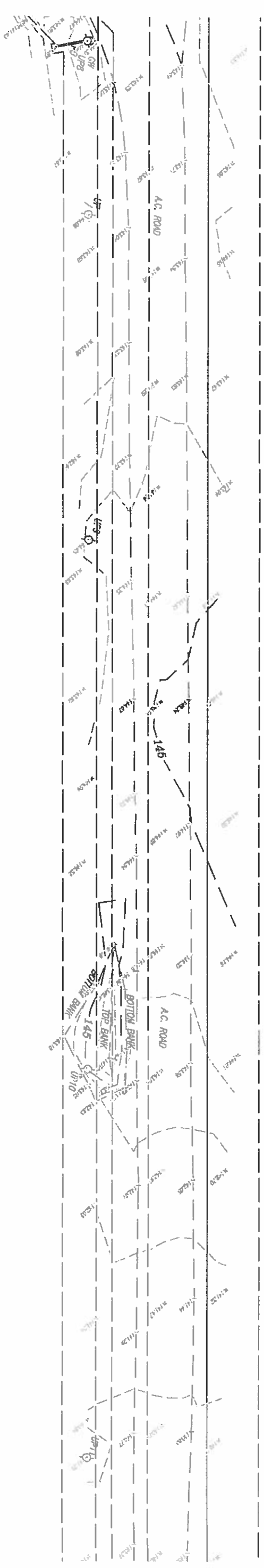


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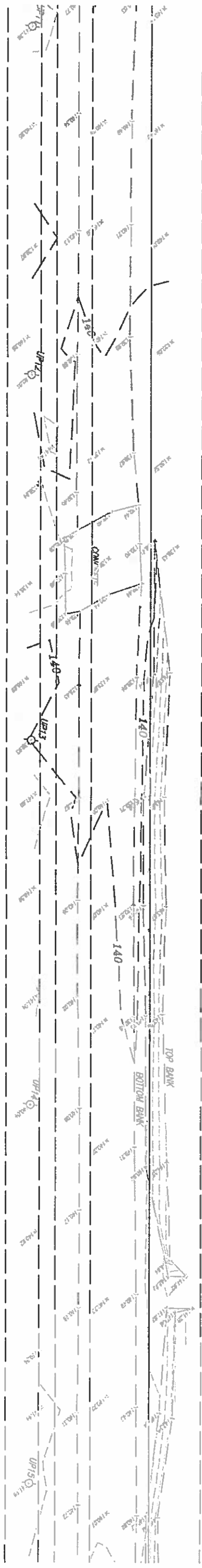
- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ✕ WV WATER VALVE
- WM WATER METER



TRUE NORTH  
SCALE: 1" = 50'



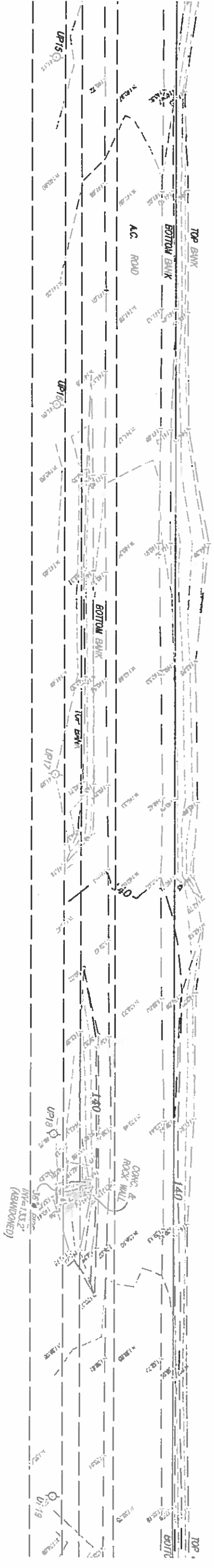
TRUE NORTH  
SCALE: 1" = 50'

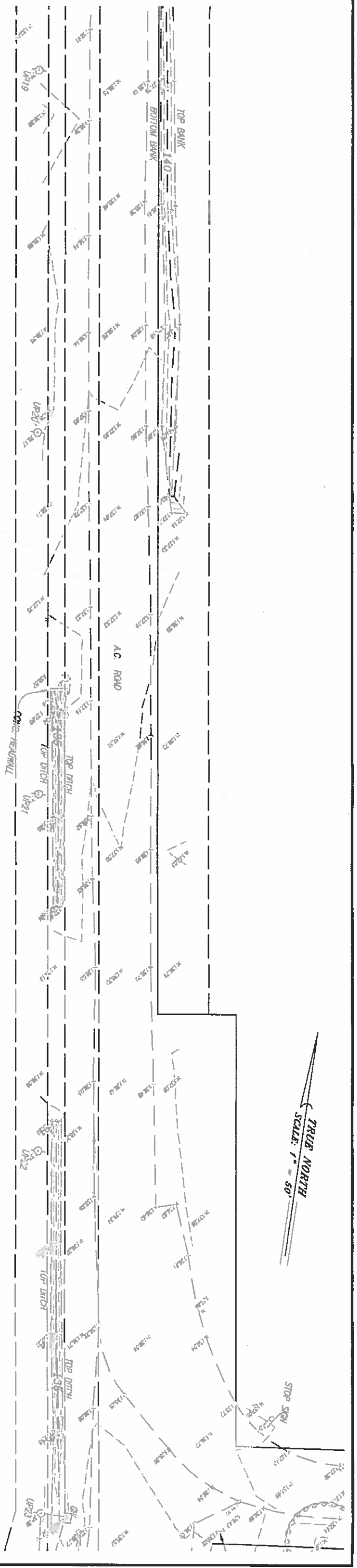


TRUE NORTH  
SCALE: 1" = 50'

LEGEND	
○ UP20	UTILITY POLE & NUMBER
← GW	GUY WIRE
— PB	POLE BRACE
⊗ WV	WATER VALVE
□ WM	WATER METER

TRUE NORTH  
SCALE: 1" = 50'

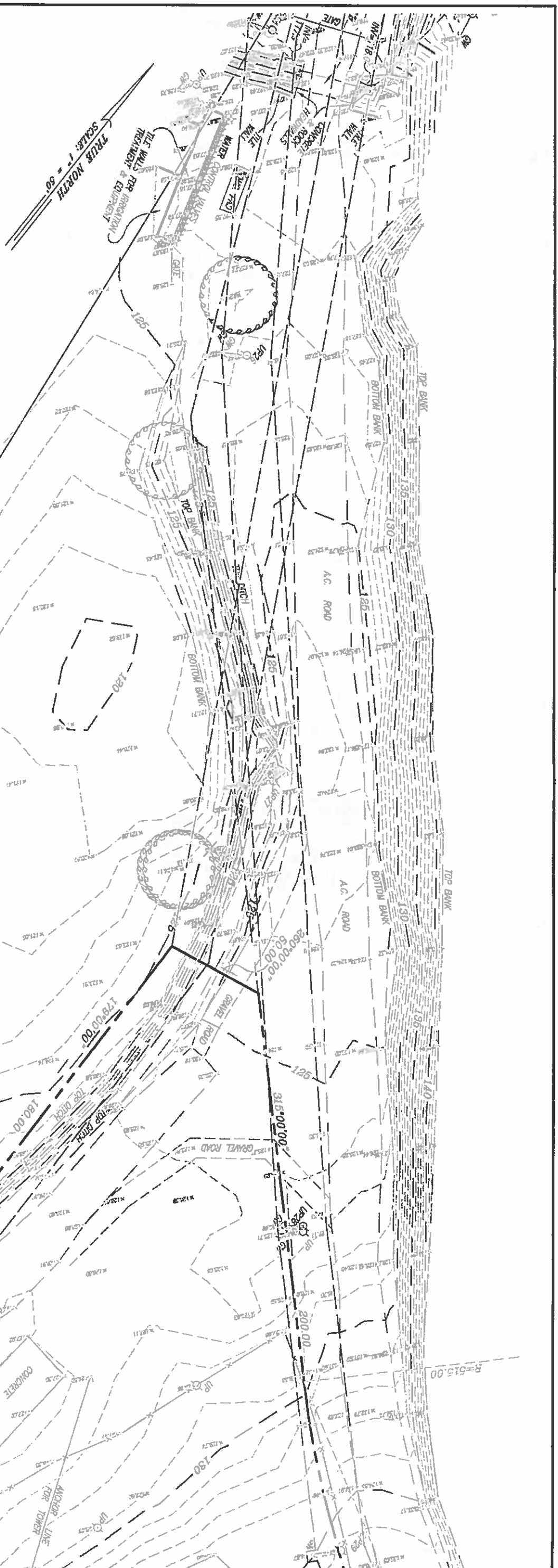




### LEGEND

○ UP20	UTILITY POLE & NUMBER
← GW	GUY WIRE
— PB	POLE BRACE
✕ WV	WATER VALVE
□ WM	WATER METER



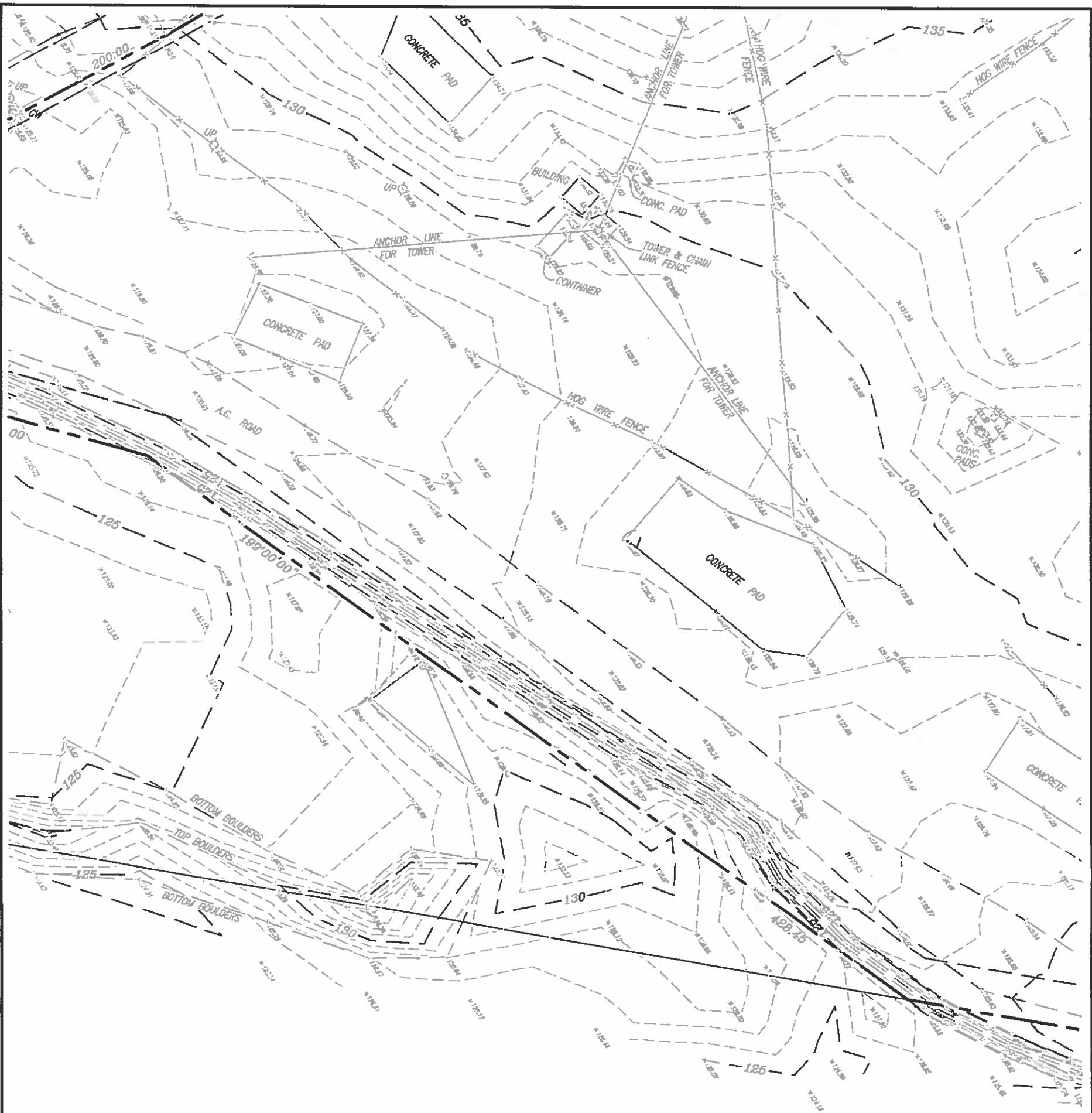


# LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⋈ WV WATER VALVE
- WM WATER METER

VIEW 11





TRUE NORTH  
SCALE: 1" = 50'

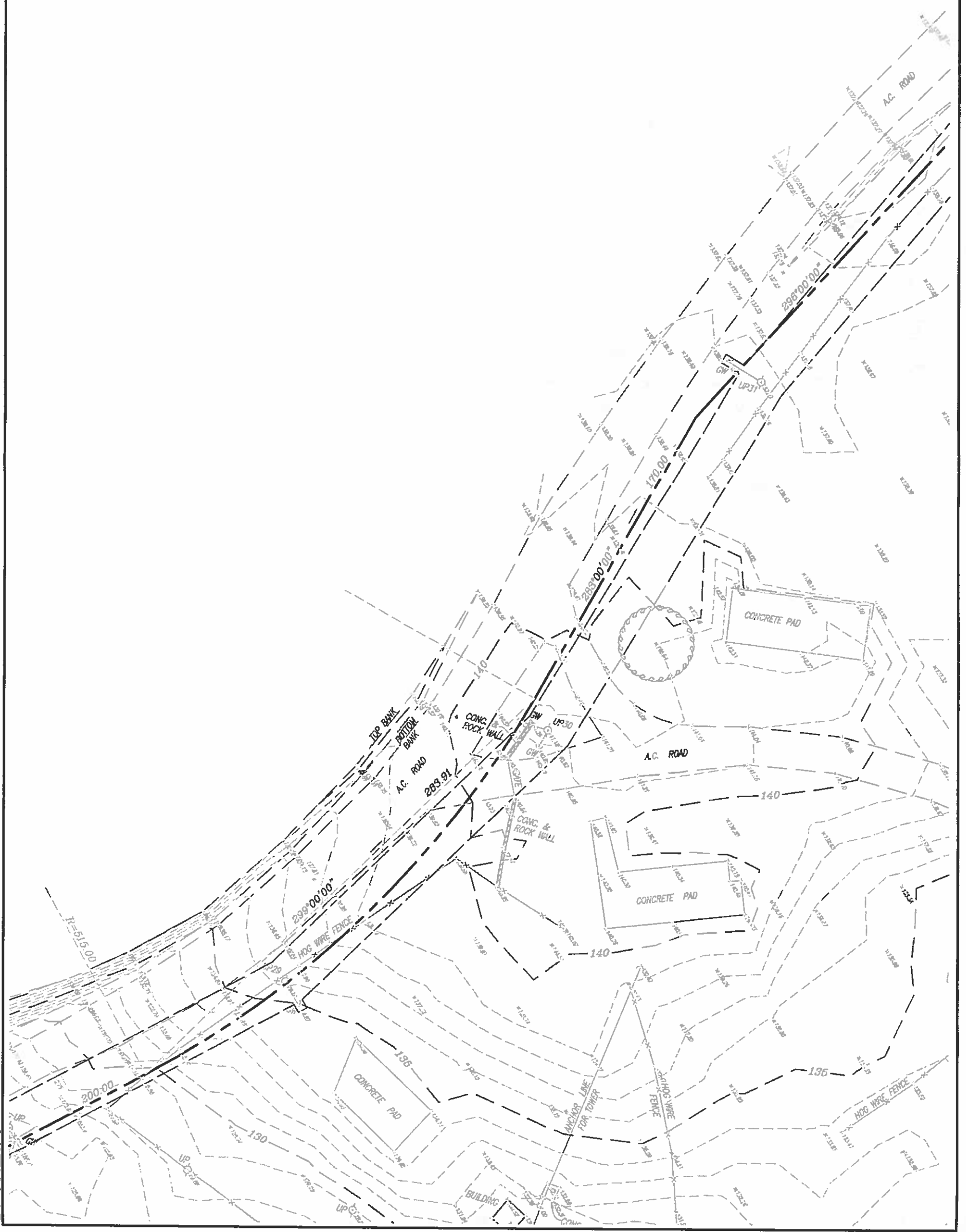
**LEGEND**

- UP20 UTILITY POLE & NUMBER
- GW GUY WIRE
- PB POLE BRACE
- ⌘ WV WATER VALVE
- WM WATER METER

TRUE NORTH  
SCALE: 1" = 50'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⊗ WV WATER VALVE
- WM WATER METER

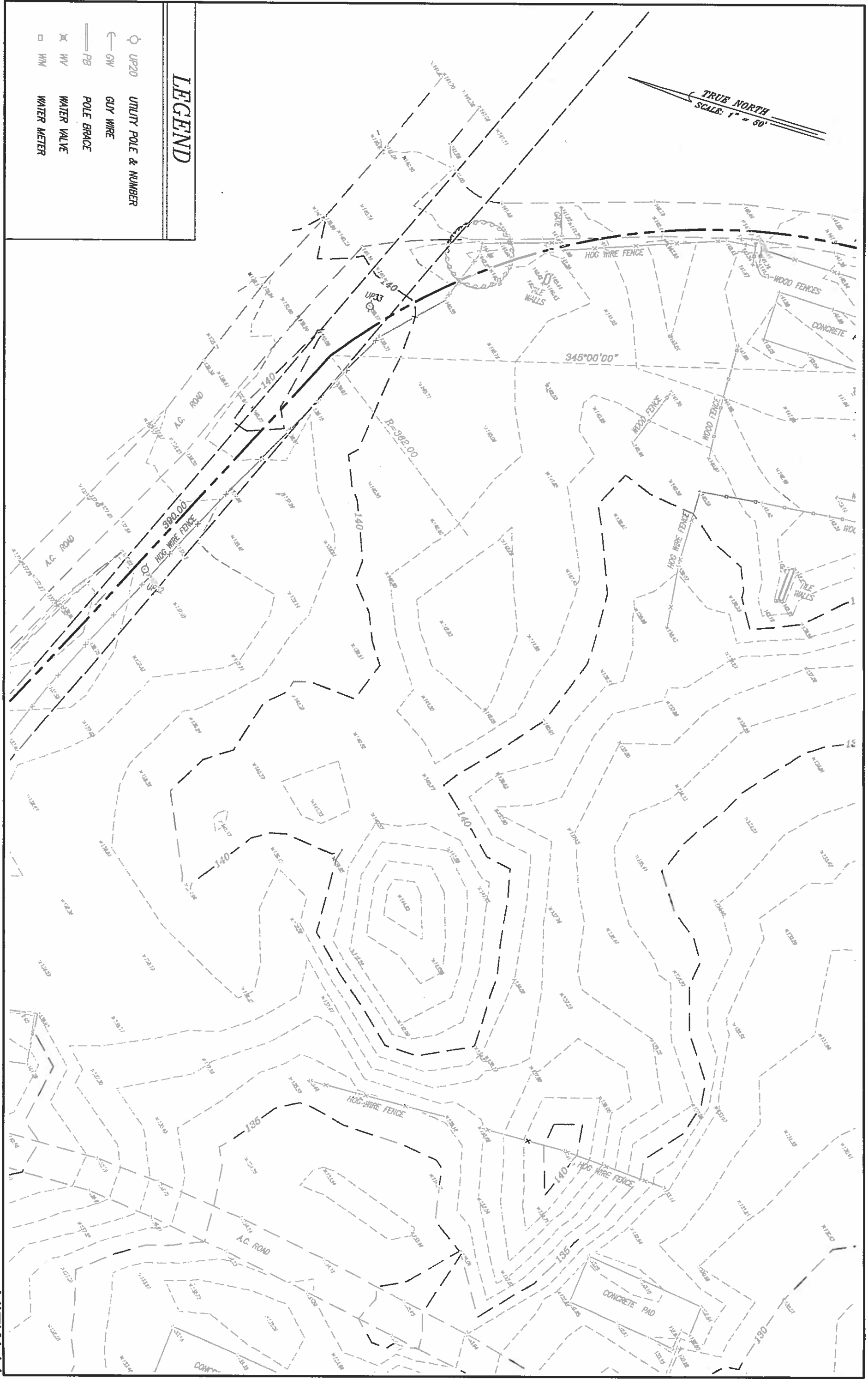


VIEW 13

TRUE NORTH  
SCALE: 1" = 50'

# LEGEND

- UP20 UTILITY POLE & NUMBER
- GW GUY WIRE
- PB POLE BRACE
- ✕ WV WATER VALVE
- WM WATER METER



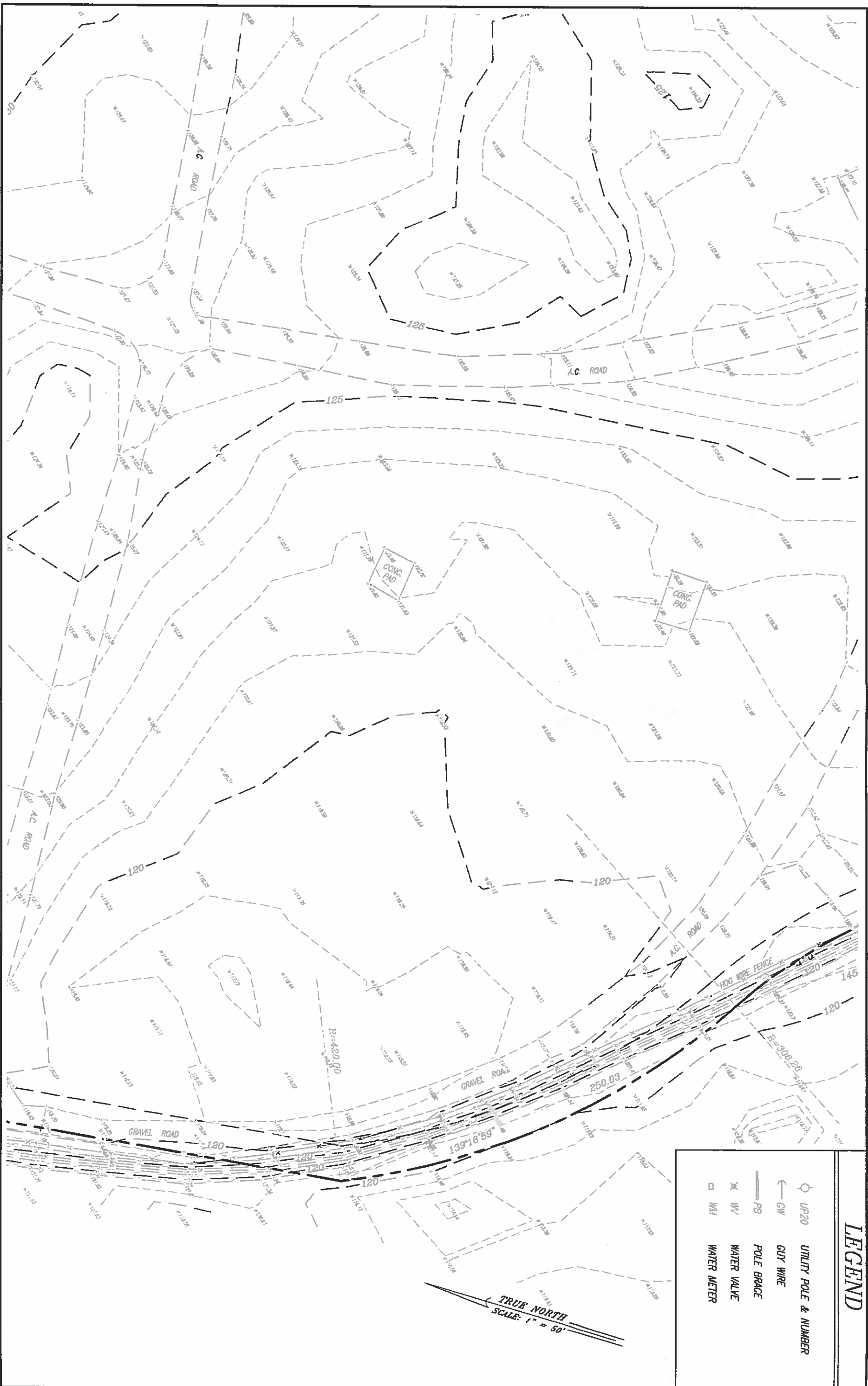
VIEW 14



TRUE NORTH  
SCALE: 1" = 50'

**LEGEND**

- UP20 UTILITY POLE & NUMBER
- GW GUY WIRE
- PB POLE BRACE
- ✱ WV WATER VALVE
- WM WATER METER



**LEGEND**

	UP20	UTILITY POLE & NUMBER
	GW	GUY WIRE
	PB	POLE BRACE
	WV	WATER VALVE
	WM	WATER METER

TRUE NORTH  
SCALE: 1" = 50'

# LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ✕ WV WATER VALVE
- WM WATER METER

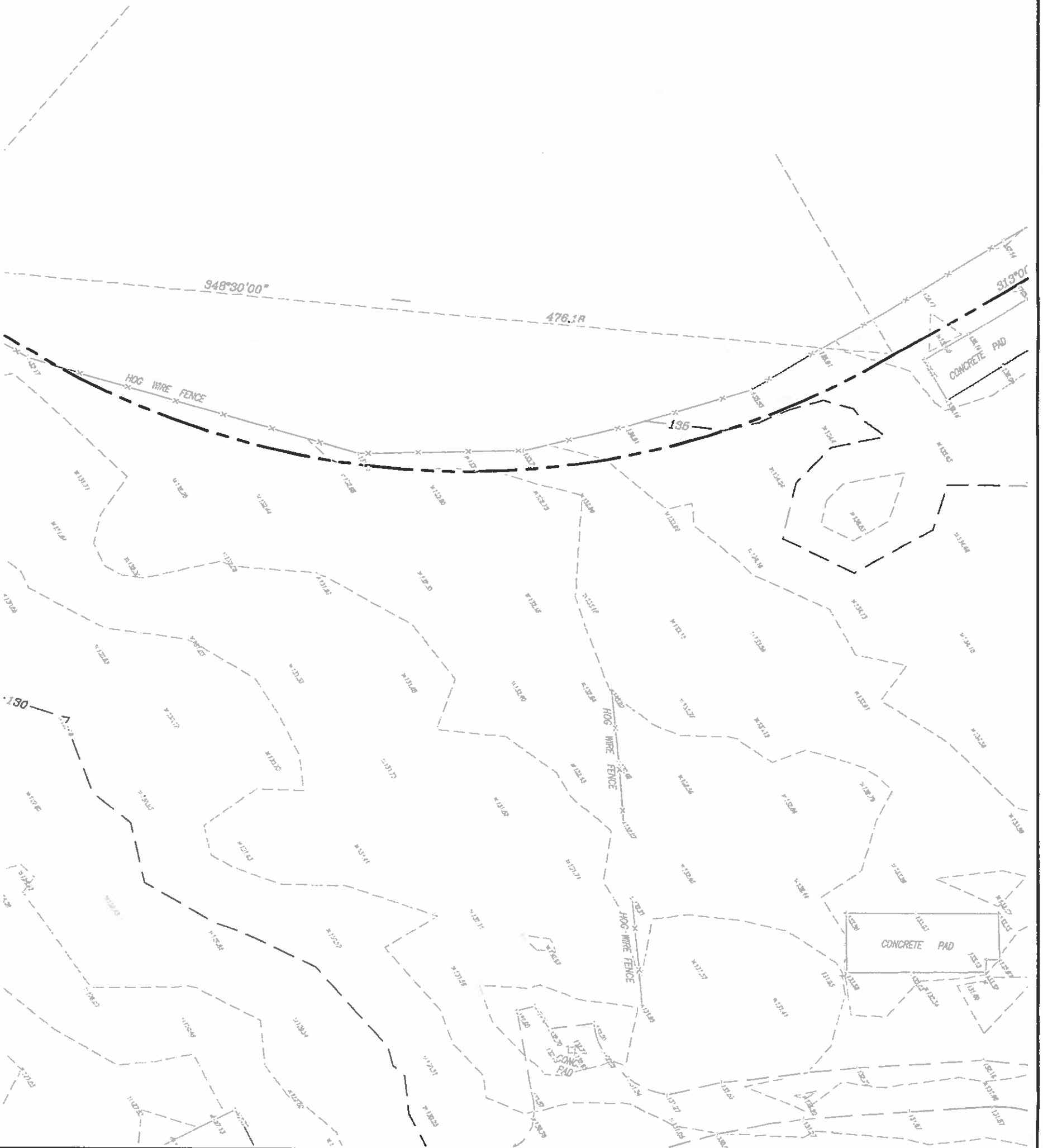
TRUE NORTH  
SCALE: 1" = 50'



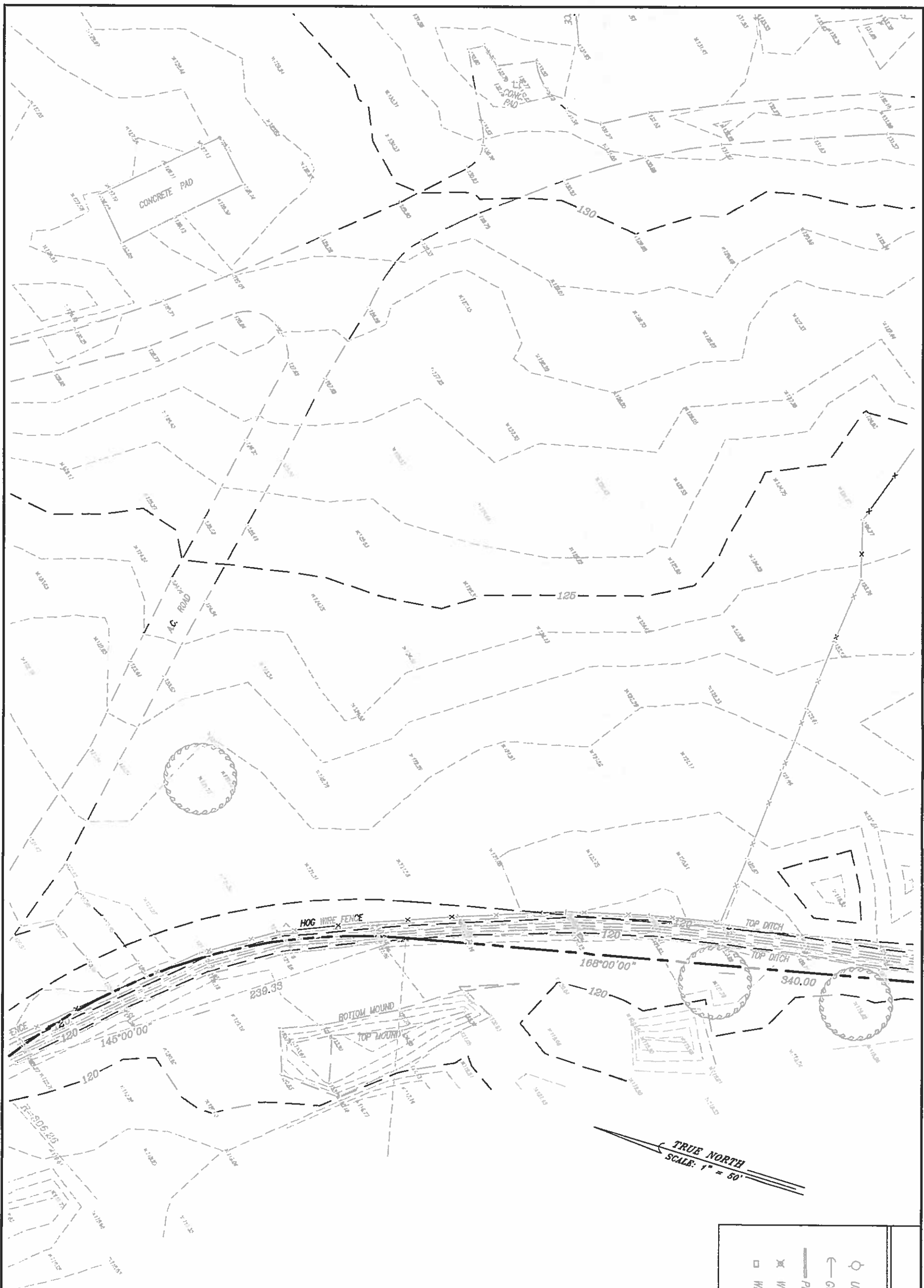
TRUE NORTH  
SCALE: 1" = 50'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ✕ WV WATER VALVE
- WM WATER METER



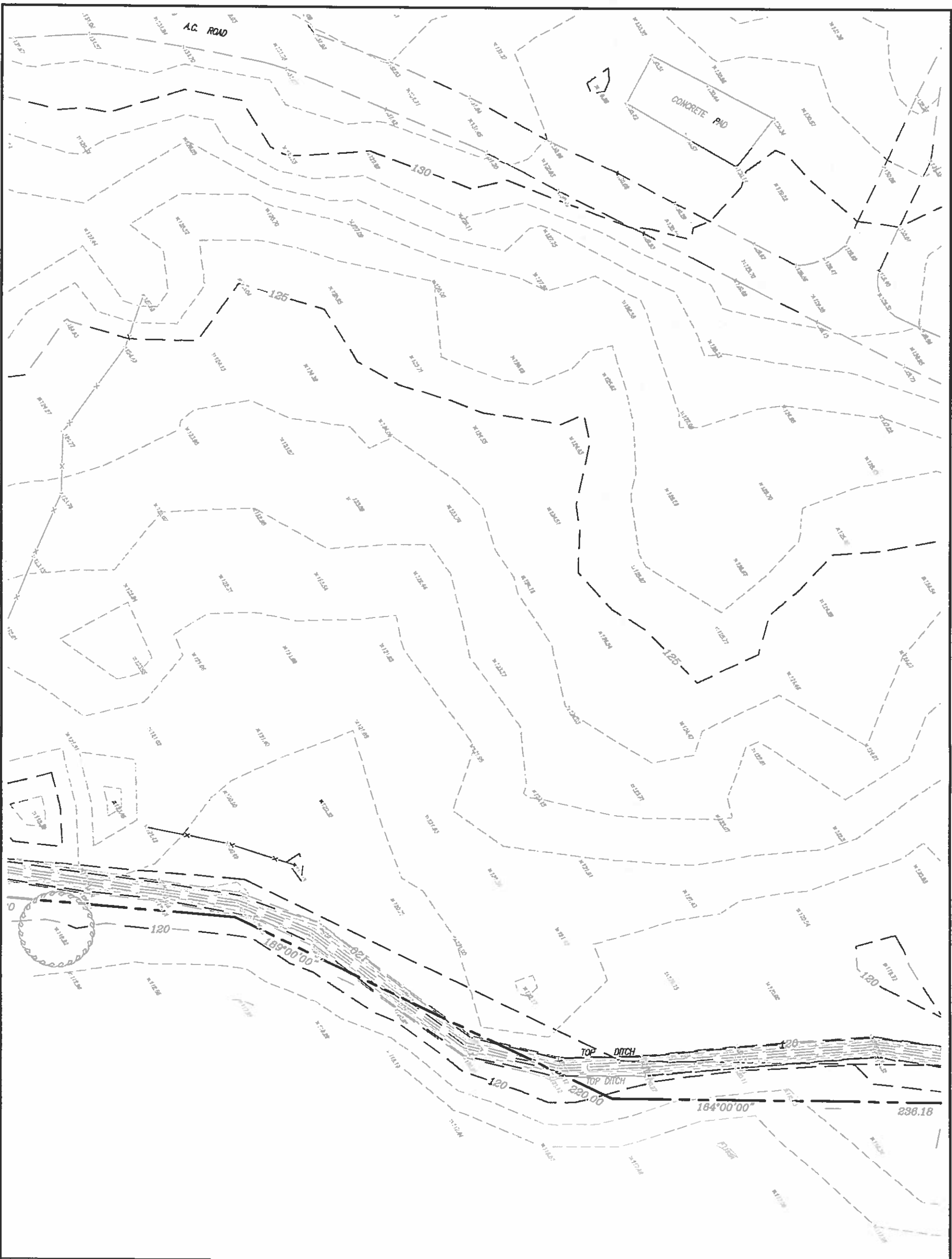
VIEW 18



**LEGEND**

○ UP20	UTILITY POLE & NUMBER
← GW	GUY WIRE
— PB	POLE BRACE
⌘ WV	WATER VALVE
□ WM	WATER METER





TRUE NORTH  
SCALE: 1" = 50'

**LEGEND**

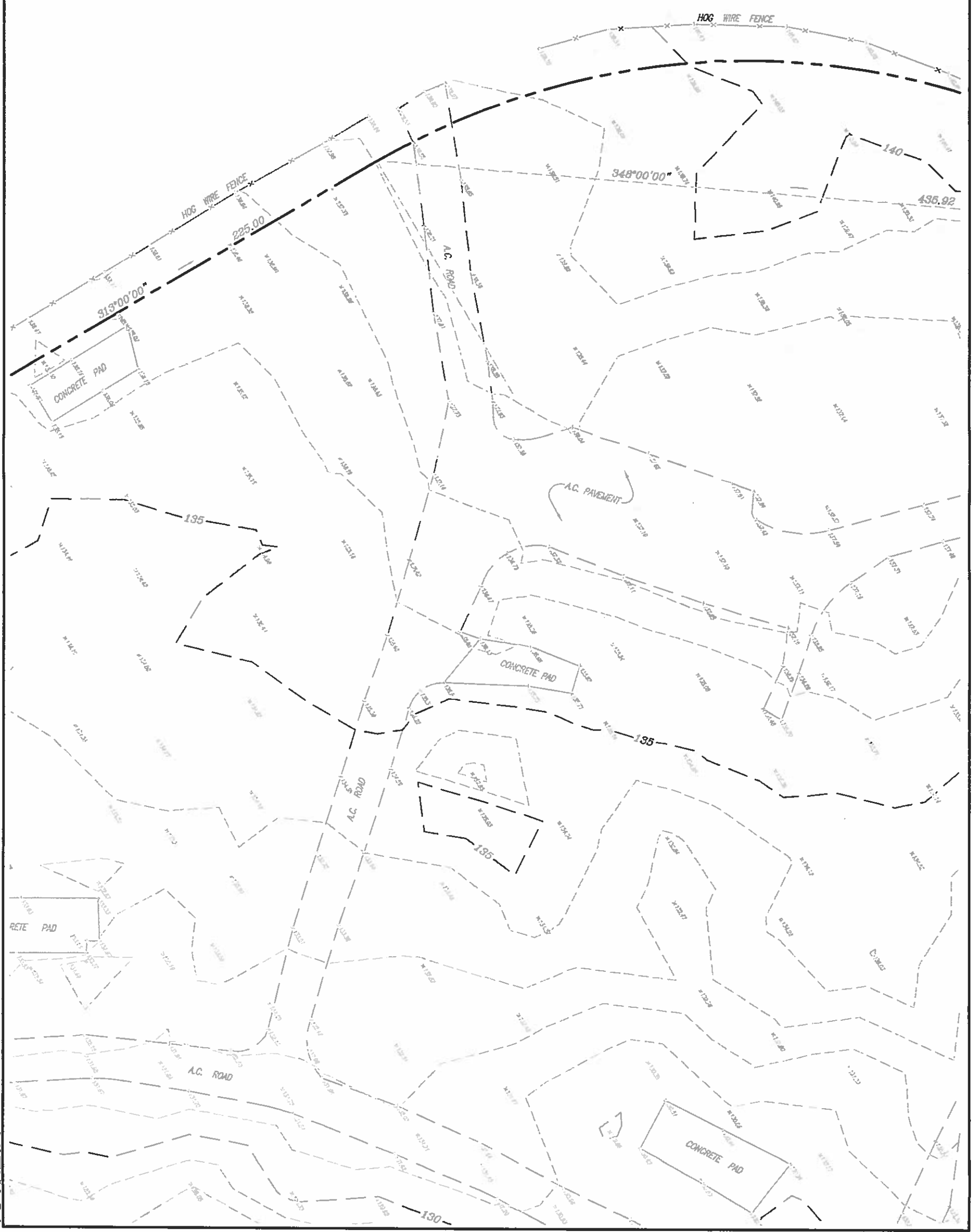
- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ✕ WV WATER VALVE
- WM WATER METER

VIEW 20

TRUE NORTH  
SCALE: 1" = 50'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⊗ WV WATER VALVE
- WM WATER METER

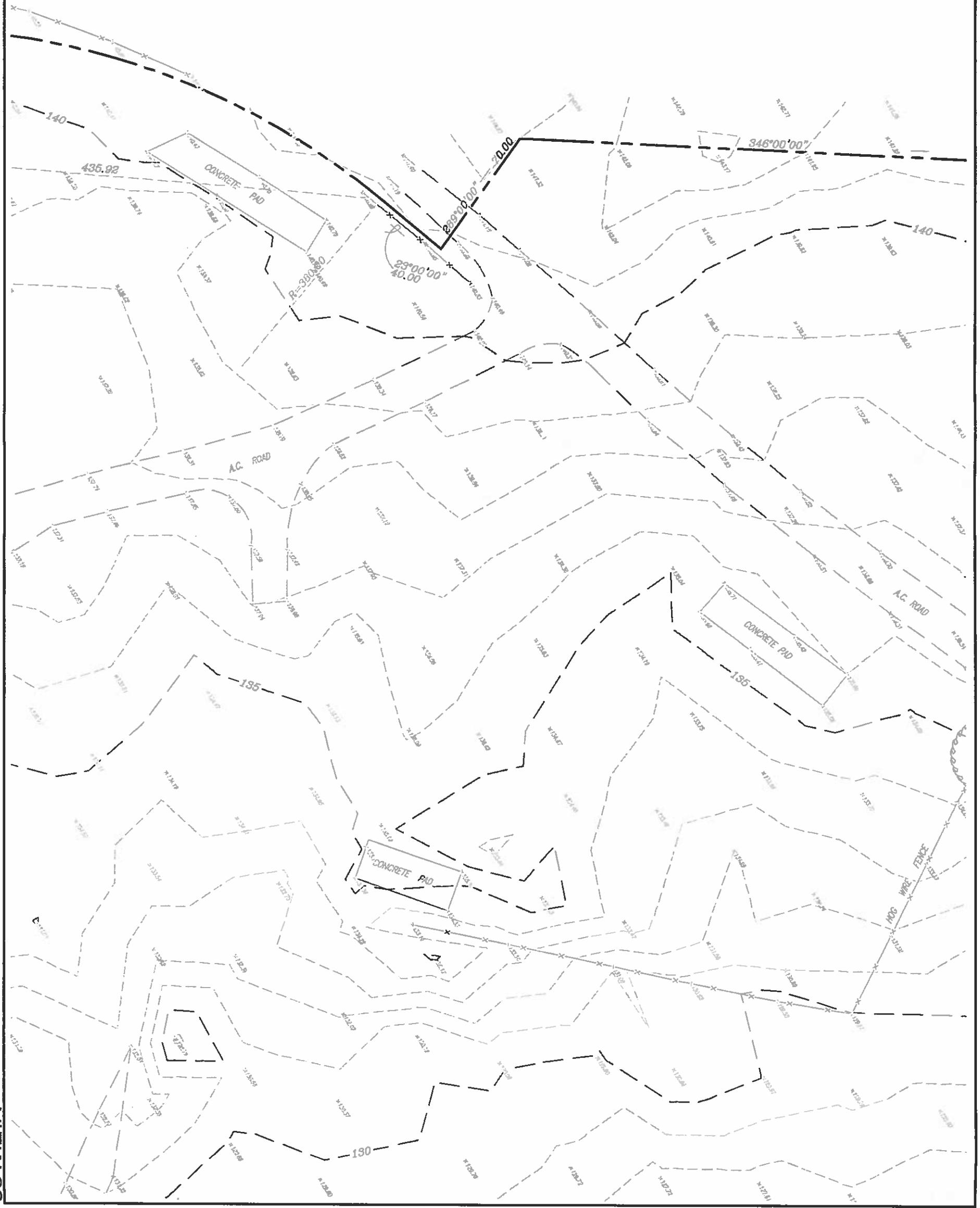


VIEW 21

TRUE NORTH  
SCALE: 1" = 50'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⊗ WV WATER VALVE
- WM WATER METER



VIEW 22



TRUE NORTH  
SCALE: 1" = 50'

**LEGEND**

- UP20 UTILITY POLE & NUMBER
- GW GUY WIRE
- PB POLE BRACE
- ⊗ WV WATER VALVE
- WM WATER METER



**LEGEND**

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⌘ WV WATER VALVE
- WM WATER METER

TRUE NORTH  
SCALE: 1" = 50'

TRUE NORTH  
SCALE: 1" = 80'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⊗ W/V WATER VALVE
- W/M WATER METER

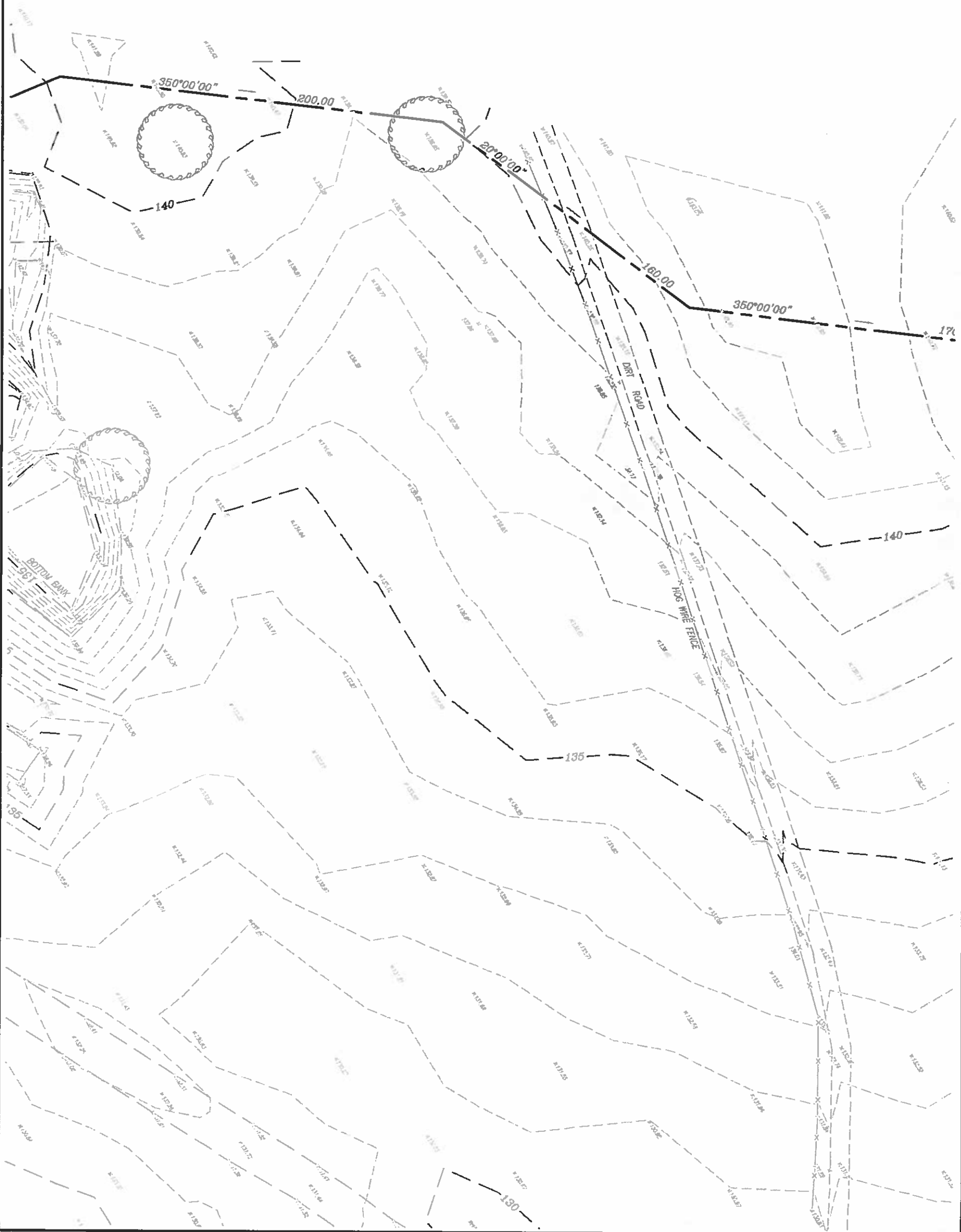


VIEW 25

TRUE NORTH  
SCALE: 1" = 50'






LEGEND

- UP20 UTILITY POLE & NUMBER
- GW GUY WIRE
- PB POLE BRACE
- WV WATER VALVE
- WM WATER METER



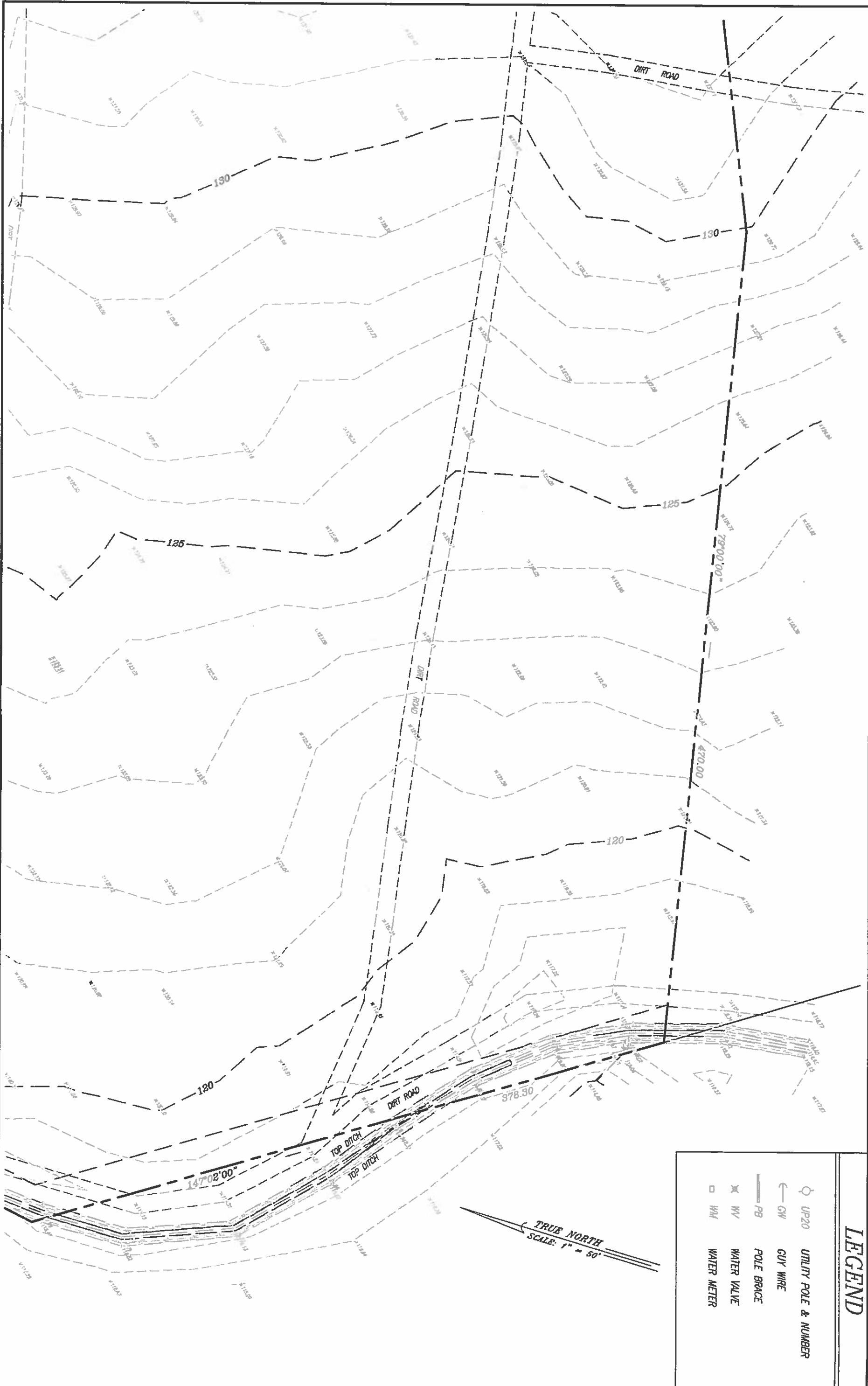


**LEGEND**

	UP20	UTILITY POLE & NUMBER
	GW	GUY WIRE
	PB	POLE BRACE
	WV	WATER VALVE
	WM	WATER METER

TRUE NORTH  
SCALE: 1" = 60'





**LEGEND**

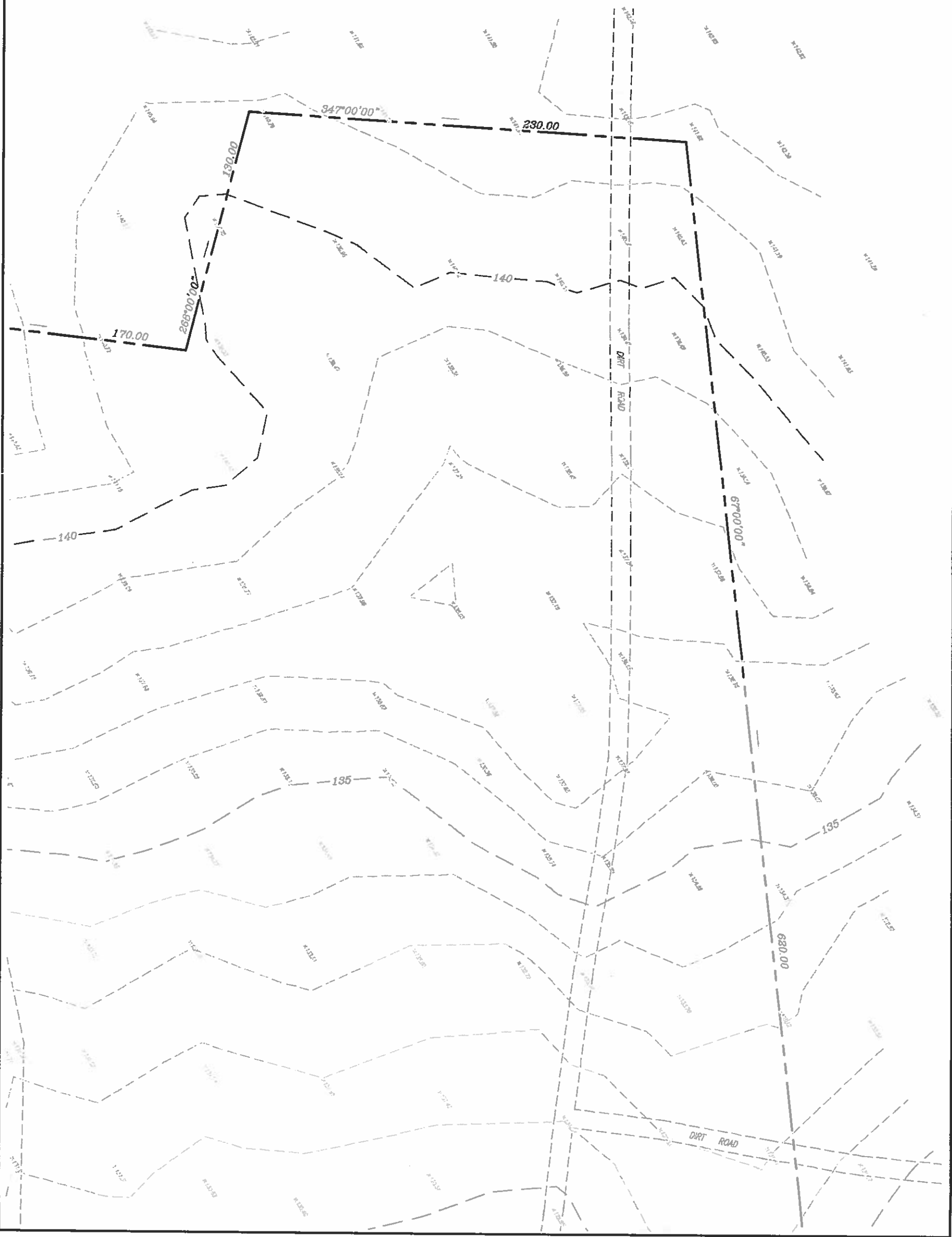
○	UP20	UTILITY POLE & NUMBER
—	GW	GUY WIRE
—	PB	POLE BRACE
⊗	WV	WATER VALVE
□	WM	WATER METER

TRUE NORTH  
SCALE: 1" = 50'

TRUE NORTH  
SCALE: 1" = 50'

LEGEND

- UP20 UTILITY POLE & NUMBER
- ← GW GUY WIRE
- PB POLE BRACE
- ⊗ WV WATER VALVE
- WM WATER METER



VIEW 29

**APPENDIX C**  
**M-3, Restricted  
Industrial Zoning  
Regulations**

ORDINANCE NO. 3977

BILL NO. 74 (2012)

**A BILL FOR AN ORDINANCE AMENDING TITLE 19, MAUI COUNTY CODE, RELATING TO M-3 RESTRICTED INDUSTRIAL DISTRICT**

**BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:**

**SECTION 1.** Title 19, Maui County Code, is amended by adding a new chapter to be appropriately designated and to read as follows:

**\*Chapter 19.25**

**M-3 RESTRICTED INDUSTRIAL DISTRICT**

**Sections:**

- 19.25.010 Purpose and intent.
- 19.25.020 Permitted uses.
- 19.25.030 Accessory uses and structures.
- 19.25.040 Special uses.
- 19.25.050 Development standards.
- 19.25.060 Rulemaking authority.

**19.25.010 Purpose and intent.** Those uses which include the manufacture, processing, storage or treatment of goods from raw materials are permitted in the M-3 restricted industrial district. The district is intended to include manufacturing and nuisance industries. General retail and office uses are specifically excluded from this district.

**19.25.020 Permitted uses.** Within the M-3 restricted industrial district, no building, structure, or premises shall be used, and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

Uses	Notes and exceptions
Acetylene gas manufacture or bulk storage	
Acid manufacture	
Alcohol manufacture	

Ammonia, bleaching powder or chlorine manufacture
Asphalt manufacture of refueling and asphaltic concrete plant
Automobile wracking
Blast furnace or coking oven
Boiler and steel works
Brick, tile or terra cotta manufacture
Canneries
Cement, lime, gypsum, or plaster of paris manufacture
Chemical manufacture
Concrete or cement products manufacture
Crematories, morgues
Energy systems, power plants, substations, and utility facilities, major
Explosives manufacture or storage
Factories
Fertilizer manufacture
Fish canneries
Foundries
Freight classification yard (railroad)
Garbage, offal or dead animals reduction or dumping
Gas manufacture
Glue manufacture
Heavy equipment storage, servicing, and sales
Junk establishment used for storing, depositing, keeping junk or similar goods for business purposes
Landfill, solid waste processing and disposal
Lime kilns
Lumber yard and wood treatment facilities
Machine shops
Oilcloth or linoleum manufacture
Oil storage plants
Paint, oil (including linseed), shellac, turpentine, lacquer, or varnish manufacture
Petroleum or biofuel product manufacturing or wholesale storage of

Petroleum or biofuels	
Petroleum refinery	
Planning mill	
Plastic manufacture	
Quarry or stone mill	
Railroad repair shops	
Recycling processing facilities or material recycling and recovery facilities	
Rock, sand, gravel, or earth excavation, crushing or distribution	
Rolling mills	
Saw mill	
Ship works	
Slaughter of animals	
Soap manufacture	
Stock yard or feeding pens	
Sugar mills and refineries	
Tannery or the curing or storage of raw hides	
Telecommunication towers, antenna and equipment	
Utility facilities, major	
Wood treatment plants	
In general those uses which may be obnoxious or offensive by reason of emission of odor, dust, smoke, gas, noise, vibration and the like, and not allowed in any other district	Provided, however, that any use not specified in this section shall not be permitted unless approved by the planning director as conforming to the intent of this title

19.25.030 Accessory uses and structures. The following uses and structures, located on the same lot, are deemed accessory, customary, incidental, usual, and necessary to the above permitted uses in the district:

Uses	Notes and exceptions
Energy systems, small-scale	
Fences, walls, patios, decks, and other landscape features	
Garages, porte-cochere, mailboxes, ground signs, and trash enclosures	
Office space related to the on-site permitted use	
Retail, or indoor product display area	Limited to 20% of gross floor area
Security/watchman or custodian outbuildings	

Subordinate uses and structures which are determined by the planning director to be clearly incidental and customary to the permitted uses listed herein

19.25.040 Special uses. The following uses and structures shall be permitted in the M-3 restricted industrial district provided a County special use permit, pursuant to section 19.510.070, Maui County Code, has first been obtained.

A. Vent pipes, fans, chimneys, antennae, and equipment on roofs that exceed 199 feet.

19.25.050 Development standards.

	M-3	Notes and exceptions
Minimum lot area (square feet)	10,000	
Minimum lot width (in feet)	75	
Maximum building height (in feet)	90	
Minimum yard setback (in feet)		
Front	None	
Side and rear	0 or the same as the adjoining zoning category whichever is greater	
Free standing antenna or wind turbine structures height and setback	Maximum height of 199 feet and shall be set back 1 foot for every foot in height from all property lines	
Accessory structures allowed within setback area	Mailboxes, trash enclosures, walls, and ground signs	

19.25.060 Rulemaking authority. The planning director may adopt rules to implement this chapter."

SECTION 2. This ordinance shall take effect upon its approval.

APPROVED AS TO FORM  
AND LEGALITY:



MICHAEL J. HOPPER  
Deputy Corporation Counsel  
County of Maui

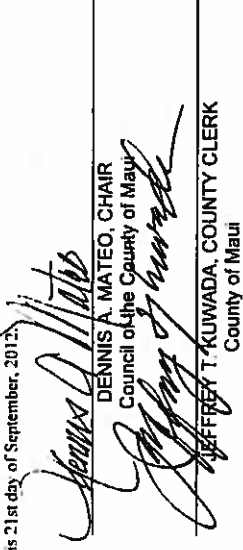
S:\ALL\HOPPER\Amend 19 25 14-3 5-15-12.doc

WE HEREBY CERTIFY that the foregoing BILL NO. 74 (2012)

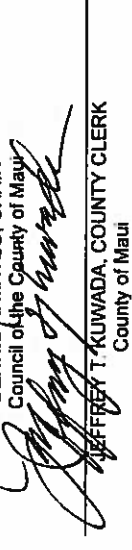
1. Passed FINAL READING at the meeting of the Council of the County of Maui, State of Hawaii, held on the 21st day of September, 2012, by the following vote:

Dennis A. MATEO	Joseph PORTABELLA	Gayle C. BAISA	Robert CARROLL	Estelita COCHRAN	Donald G. COOK, JR.	G. RUI HOKAIA	Nicholas P. VICTORINO	Michael B. WHITE
Aye	Aye	Aye	Aye	Aye	Aye	Aye	Aye	Excused

2. Was transmitted to the Mayor of the County of Maui, State of Hawaii, on the 21st day of September, 2012.  
DATED AT WAILUKU, MAUI, HAWAII, this 21st day of September, 2012:



DENNIS A. MATEO, CHAIR  
Council of the County of Maui



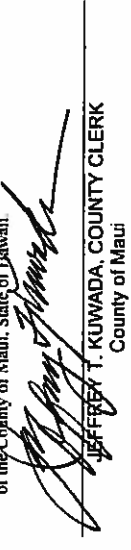
JEFFREY T. KUWADA, COUNTY CLERK  
County of Maui

THE FOREGOING BILL IS HEREBY APPROVED THIS 24 DAY OF September, 2012.



ALAN M. ARAKAWA, MAYOR  
County of Maui

I HEREBY CERTIFY that upon approval of the foregoing BILL, by the Mayor of the County of Maui, the said HILL was designated as ORDINANCE NO. 3977 of the County of Maui, State of Hawaii.



JEFFREY T. KUWADA, COUNTY CLERK  
County of Maui

Passed First Reading on September 7, 2012.  
Effective date of Ordinance September 24, 2012

I HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. 3977 - the original of which is on file in the Office of the County Clerk, County of Maui, State of Hawaii.  
Dated at Wailuku, Hawaii, on

**APPENDIX D**  
Quitclaim  
Assignment of  
Partial Interest in  
Easement 7

IN WITNESS WHEREOF, the Assignor has executed this instrument this  
17th day of March, 2011.

ALEXANDER & BALDWIN, INC.,  
a Hawaii corporation

By: [Signature]  
Name: Nelson N.S. Chou  
Title: Senior Vice President

By: [Signature]  
Name: Charles W. Lounis  
Title: Assistant Secretary

"Assignor"

CMBY 2011 INVESTMENT, LLC,  
a Washington limited liability company

By: JSGNE Investments, Inc.,  
a Washington corporation  
Its Manager

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

"Assignee"

R-122 STATE OF HAWAII  
BUREAU OF CONVEYANCES  
RECORDED  
MAR 17, 2011 06:01 AM  
Doc No(9) 2011-044567



/s/ NICKLANN THOMPSON  
REGISTRAR

20 2/4 212

2

Return by Mail ( ) Pickup ( ) To: ✓  
MS SUZANNE MCGUIRE  
ALEXANDER & BALDWIN INC  
822 BISHOP ST  
HONOLULU, HI 96813  
Tax Map Key No.: (2) 3-4-008: 19  
Tid: 20110901A - 5  
Taxes T1 2043154 NDC  
This document contains 9 pages

**QUITCLAIM ASSIGNMENT OF PARTIAL INTEREST IN EASEMENT**  
(Easement 7)

KNOW ALL MEN BY THESE PRESENTS:

That ALEXANDER & BALDWIN, INC., a Hawaii corporation, of Honolulu, Hawaii, hereinafter called the "Assignor", in consideration of the sum of Ten Dollars (\$10.00) and other valuable consideration to it paid, the receipt of which is hereby acknowledged, does, to the extent permitted, hereby assigns, transfers and quitclaims unto CMBY 2011 INVESTMENT, LLC, a Washington limited liability company, whose address is 1300 N. Holoopono Street, Suite 201, Kilauea, Hawaii 96753, as the owner of property identified as Tax Map Key No. (2)-3-4-008-019 (the "Property"), hereinafter called the "Assignee", and its successors and assigns, WITHOUT RECOURSE AND WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, a nonexclusive right, a partial interest, together with Assignor and any other persons or entities designated by Assignor from time to time, in the use of:

Easement 7, as described in Section 1(f) of that certain Order and Judgment on Declaration of Taking attached hereto and made a part hereof as Exhibit "A";

TO HAVE AND TO HOLD the same unto the Assignee and its successors-in interest to the Property.



IN WITNESS WHEREOF, the Assignor has executed this instrument this  
17th day of March, 2011.

ALEXANDER & BALDWIN, INC.,  
a Hawaii corporation

By: \_\_\_\_\_  
Name: Nelson N.S. Chun  
Title: Senior Vice President

By: \_\_\_\_\_  
Name: Charles W. Loomis  
Title: Assistant Secretary

"Assignor"

CMBY 2011 INVESTMENT, LLC,  
a Washington limited liability company

By: JSGNE Investments, Inc.,  
a Washington corporation  
Its Manager

By: \_\_\_\_\_  
Name: JOHN ZAFOTOCKY  
Title: VICE PRESIDENT

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

"Assignee"

STATE OF HAWAII )  
 ) SS:  
CITY AND COUNTY OF HONOLULU )

On this 11th day of March, 2011, before me personally appeared NELSON N.S.  
CHUN, to me personally known, who, being by me duly sworn or affirmed, did say that such  
person executed the foregoing instrument as the free act and deed of such person, and if applicable  
in the capacity shown, having been duly authorized to execute such instrument in such capacity.



Pamela Simon  
Notary Public, State of Hawaii  
Printed Name: Pamela Simon  
My commission expires: 9-13-2011

(Official Stamp or Seal)

<b>NOTARY CERTIFICATION STATEMENT</b>	
Document Identification or Description: Quitclaim Partial Assignment of Easement Rights (Easement ?)	
Doc. Date: _____ or <input checked="" type="checkbox"/> Undated at time of notarization.	
No. of Pages: <u>9</u>	Jurisdiction: First Circuit (in which notarial act is performed)
<u>Pamela Simon</u> Signature of Notary	Date of Notarization and Certification Statement March 11, 2011
Pamela Simon Printed Name of Notary	(Official Stamp or Seal)

STATE OF HAWAII )  
 ) SS:  
CITY AND COUNTY OF HONOLULU )

On this 11th day of March, 2011, before me personally appeared CHARLES W. LOOMIS, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed this foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.



Pamela Simon  
Notary Public, State of Hawaii  
Printed Name: Pamela Simon  
My commission expires: 9-13-2011

(Official Stamp or Seal)

**NOTARY CERTIFICATION STATEMENT**  
Document Identification or Description: Quitclaim Partial Assignment of Easement Rights (Easement 7)  
Doc. Date: \_\_\_\_\_ or  Undated at time of notarization.  
No. of Pages: 9 Jurisdiction: First Circuit (in which notarial act is performed)  
Pamela Simon March 11, 2011 Date of Notarization and Certification Statement  
Signature of Notary  
Pamela Simon  
Printed Name of Notary

(Official Stamp or Seal)



STATE OF HAWAII )  
 ) SS:  
COUNTY OF MAUI )

On this 11 day of March, 2011, before me personally appeared JOHN ZARUCKY, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.



Mary Jo K. Cabral  
Notary Public, State of Hawaii  
Printed Name: Mary Jo K. Cabral  
My commission expires: December 9, 2013

(Official Stamp or Seal)

**NOTARY CERTIFICATION STATEMENT**  
Document Identification or Description: Quitclaim Partial Assignment of Easement Rights (Easement 7)  
Doc. Date: \_\_\_\_\_ or  Undated at time of notarization.  
No. of Pages: 8 Jurisdiction: Second Circuit (in which notarial act is performed)  
Mary Jo K. Cabral March 11, 2011 Date of Notarization and Certification Statement  
Signature of Notary  
Mary Jo K. Cabral  
Printed Name of Notary

(Official Stamp or Seal)





That the use of said fund was those described in the production of  
nothing but on the production and that the production of nothing but with the  
rights of just compensation with respect to any and every, unconditionally  
with the filing of said production of said; that was deposited in the  
legality of this work for the use of the person entitled thereto the use  
of the balance fund received and to/for balance (1970, 1971, 1972).

IT IS ORDERED, ADVERSE AND REVERSE that by virtue of the filing of  
the production of nothing but the deposit of said money, the above said amounts  
thereinto are immediately vested in the balance estate of JUSTICE and

IT IS FURTHER ORDERED that a copy of this order, to properly served by  
the United States Marshal upon each of the defendants named and upon each and  
every person, company or corporation in possession of said fund in the  
production was transmitted to the production. The United States Marshal ordered  
to post a copy hereof to a competent place in the public file for records  
with the return of his said service to said court.

WITNESSE my hand and the seal of said court, this 1st day of May, 1972.

*[Signature]*  
Judge of the District of Columbia

**APPENDIX D-1**  
Request for Use of  
State Lands

***Request for Use of  
State Lands  
(Original)***



PACIFIC RIM LAND, INC.  
LETTER OF TRANSMITTAL

February 9, 2011

Mr. Daniel Ornellas  
Land Agent  
Dept. of Land and Natural Resources  
Land Division  
Maui District Branch  
54 South High Street, Room 101  
Wailuku, HI 96793

VIA HAND DELIVERY

RE: TMK (2) 3-8-08-019 (Lot 2), Pulehunui, Wailuku, Maui

Please find the following item(s) enclosed:

COPIES	DATE	DESCRIPTION
2 (orig)	2/7/11	Letter request from CMBY 2011 Investment, LLC
2 (orig)	2/4/11	Request for State Lands Application Form
2	1/31/11	Access Easement Plat Map
2		Preliminary concept plan and tax map location

Comments:

If any further information is required, please contact me at 270-5940 or [blanca@pacificrimland.com](mailto:blanca@pacificrimland.com)

Thank you,

Blanca L. Lafolette  
Project Coordinator

CMBY 2011 INVESTMENT, LLC  
C/O P.O. BOX 220  
KIHEI, HAWAII 96753  
808-874-5263

February 7, 2011

Mr. Daniel Ornellas, Land Agent  
State of Hawaii  
Department of Land and Natural Resources  
Land Division  
Maui District Branch  
54 High Street, Room 101  
Wailuku, HI 96793

Re. TMK (2) 3-8-08-019 (Lot 2), Pulehunui, Wailuku, Maui

Dear Mr. Ornellas:

CMBY 2011 Investment, LLC ("CMBY") is currently in the process of purchasing from Alexander & Baldwin, Inc. ("A&B") the above referenced property consisting of approximately 86 acres in Pulehunui, the Old Puunene Airport area (the "Property"). The Property is currently zoned agricultural, and has been included in the Maui Island Plan Urban Growth Boundary.

Upon completion of the purchase, CMBY will seek District Boundary Amendment from State Agricultural to State Urban; Community Plan Amendment from Agricultural to Heavy Industrial; and a Change in Zoning from Agricultural to M2 or M3 Heavy Industrial for the development of the Property. CMBY will then apply to subdivide the Property into a 28-lot heavy industrial use subdivision. CMBY's proposed development for a portion of the Property is for Construction & Demolition Materials Recycling Facility (CDMRF) (see page 2 of Exhibit "2").

In order to access the Property from Mokuale Hwy., CMBY is requesting a 56-foot Grant of Easement for access and utility purposes from The Department of Land and Natural Resources. Attached is an Access Easement Plat Map (Exhibit "1") indicating our request for access. Also included is our Request For State Lands Application Form; and a preliminary concept plan of our proposed project and location in relation to the tax maps (Exhibit "2").

If you would like to discuss the request further, I can be contacted at 270-5940 or [blanca@pacificrimland.com](mailto:blanca@pacificrimland.com)

Sincerely,

Blanca Lafolette  
Project Coordinator

Back: Access Easement Plat Map (Exh. "1")  
Request For State Lands Application Form  
Preliminary concept plan and tax map location (Exh. "2")

STATE OF HAWAII  
 DEPARTMENT OF LAND & NATURAL RESOURCES

REQUEST FOR STATE LANDS  
 APPLICATION FORM

For DLNR use only:  
 Date of request: \_\_\_\_\_  
 Date request recvd: \_\_\_\_\_  
 Date request no. issued: \_\_\_\_\_  
 Request number: \_\_\_\_\_  
 Land Code: \_\_\_\_\_  
 Unit Code: \_\_\_\_\_  
 Status: \_\_\_\_\_  
 Type of Request: \_\_\_\_\_  
 Assigned Land Agent: \_\_\_\_\_

For individual, marital status:  
 Single  Widow/widower  Married - spouse of: \_\_\_\_\_

For partnership or corporation, state of incorporation: Washington

II. AGENT  
 If you have an attorney, consultant or other person processing this request for you, please include the following information.

Agent name: Lafayette Blanca Pacific Rim Land, Inc.  
 Last name First Name

Agent address: P.O. Box 220  
No. and Street

Kihei HI 96753  
 City State Zip Code

Phone numbers: (808) 874-5263 (808) 270-5240 (direct) (808) 357-0085  
 Work Home Cellular

( ) (808) 879-2557 blanca@pacificrimland.com  
 Pager Fax E-mail address

I. APPLICANT  
 Should a land disposition result from your application, the following information will be used in the preparation of the legal documents. Therefore, please include all applicable, full legal names and addresses, one for each person/entity (attach additional sheets as necessary). If title is held by a trust, please include the trustee(s) name(s) and full description of the trust (e.g., George D. Smith, Trustee of the George D. Smith Revocable Living Trust dated June 1, 2001).

Applicant name(s): CMBY 2011 Investment, LLC First Name Last name

Mailing address: P.O. Box 598 No. and Street  
Wenatchee WA 98807  
 City State Zip Code

Phone numbers: (509) 663-5263 ( ) ( )  
 Work Home Cellular

( ) (509) 662-2621 E-mail address  
 Pager Fax

Signature: J. Stephen Goodfellow, Its President Date: 2/4/11  
JSGNB/Investments, Inc. Its Manager

Applicant intends to hold title as:  
 Individual  Corporation  Partnership  
 Husband and Wife  Limited Liability Corporation  Limited Partnership  
 Trust  Non-Profit Corporation  Association  
 Joint Venture  Limited Liability Partnership  
 Other (specify): \_\_\_\_\_

For individual or husband and wife, type of tenancy:  
 Tenant in Severalty  Tenants in Common  Joint Tenants  Tenants by the Entirety

III. TYPE OF REQUEST  
 Right-of-entry (right to temporarily enter onto State lands for a specific purpose)  
 \*An annual immediate right of way access is being requested for legal access while Grant of Easement is being obtained.

Grant of easement (access, utility, seawall, etc.)  
 Month-to-month revocable permit  
 Direct lease (eleemosynary organizations, public utilities, government, renewable energy producers, etc.)  
 Purchase of remnant  
 Land patent in confirmation of a Land Commission Award  
 Land license

Is this request being made to resolve an encroachment or other violation?  Yes  No  
 If yes, explain: N/A

IV. LOCATION AND AREA  
 If your request pertains to a specific parcel, please specify below.

Island:  Oahu  Kauai  Molokai  
 Hawaii  Maui



Town: Palaohuni (Punene) Tax Map Key: (2)3-8-08-019  
 Area: 410,650 sq. ft. (7,333 ft. x 56 ft.) 56.0 acres (circle one)  
 County Zoning: Agricultural  
 State Land Use:  Agricultural  Rural  
 Conservation  Urban  
 Is property located in a Special Management Area?  Yes  No

V. USE  
 Identify the specific uses intended.  
 Agriculture  Basement - Access  
 Business/Commercial  Basement - Utility  
 Industrial  Easement - Seawall  
 Pasture  
 Other (specify): \_\_\_\_\_

A. Fully describe your proposed use of the public lands:  
An approximate 7,333 foot long paved right of way to access (2)3-8-08-019-Lot 2 (the "Property") will be designed and constructed per State and County requirements. The 56-foot requested access is from Mokuole Hwy. and Kamaoia Road to the entrance of the Property. (See Exhibit "1")

B. Attach a location map showing a preliminary sketch or plot plan of your proposed project in relation to the tax maps. (See Exhibit "2")  
 C. Describe any improvements you intend to place on the land and their approximate value:  
Upon completion of County of Maui subdivision approval, the Applicant ("CMBY") will construct a State and County approved right of way. Value will be determined based on construction plans.

D. If constructing improvements, attach a Plan of Development showing improvements to be constructed and their location on the public lands including a timeframe for construction. Upon completion of entitlements for the Property, a Plan of Development for the Construction of the right of way will be designed per State and County requirements

E. Is it your opinion that an environmental assessment is required?  Yes  No  
 LD-01 (rev. 12/02/08) Page 5 of 11

If no, identify exemption: \_\_\_\_\_  
 If yes, describe completion of EA: Use of State Lands, and the Community Plan Amendment from Agriculture to Heavy Industrial will generate the EA

F. Describe what other permits or approvals are required for this use and whether you have obtained such permits or approvals:  
CMBY has begun the process to apply for a District Boundary Amendment from State Agricultural to State Urban; Community Plan Amendment from Agricultural to Heavy Industrial; and a Change in Zoning from Agricultural to M2 or M3 Heavy Industrial

VI. OTHER  
 A. If you are applying for a revocable permit for any type of use, you are required to provide the following information:  
 1) Describe your qualifications and experience in running this type of operation; and  
 2) Describe your long-term intentions for this operation. (Note: Revocable permits are temporary and may be revoked at any time.)  
 B. If you are applying for a revocable permit for pasture or agricultural use, you are required to complete Attachment A. N/A

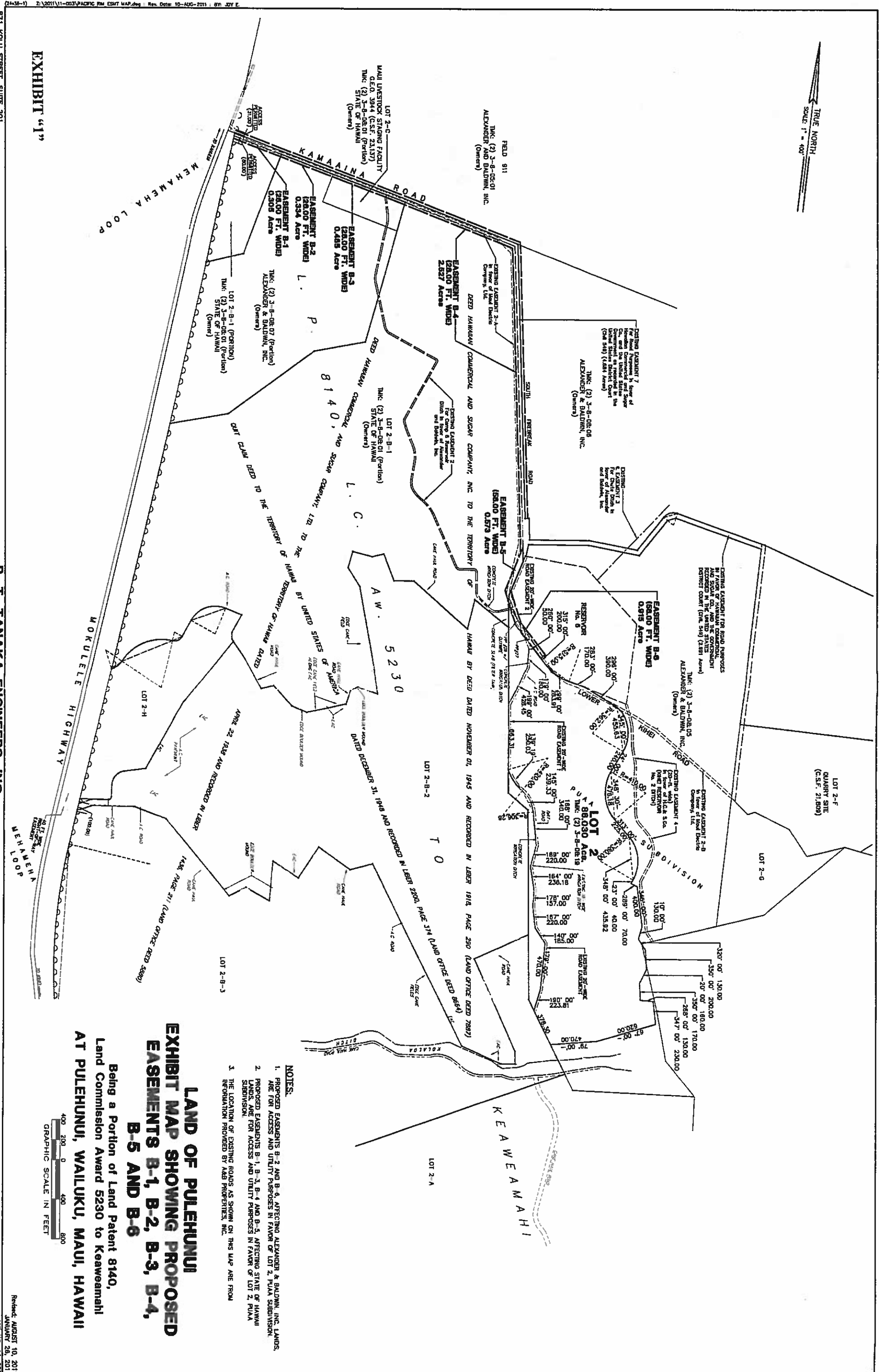
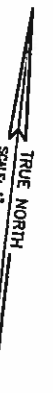
VII. CERTIFICATION  
 I/We hereby certify that the statements and information contained in this application, including all attachments, are true and accurate to the best of my/our knowledge and understand that if any statements are shown to be false or misrepresented, this application may be rejected or my/our lease/permit/agreement may be cancelled.

Blanca Lafollette Printed Name  
 Blanca Lafollette Signature  
 \_\_\_\_\_ Signature  
 \_\_\_\_\_ Date 2/7/11

**For DLNR Use Only: TO CLOSE FUTURE TENANT:**

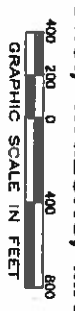
Reason for closing: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Approved by DLA: \_\_\_\_\_  
Date request closed: \_\_\_\_\_



- NOTES:**
1. PROPOSED EASEMENTS B-2 AND B-6, AFFECTING ALEXANDER & BALDWIN, INC. LANDS, ARE FOR ACCESS AND UTILITY PURPOSES IN FAVOR OF LOT 2, PUA SUBDIVISION.
  2. PROPOSED EASEMENTS B-1, B-3, B-4 AND B-5, AFFECTING STATE OF HAWAII LANDS, ARE FOR ACCESS AND UTILITY PURPOSES IN FAVOR OF LOT 2, PUA SUBDIVISION.
  3. THE LOCATION OF EXISTING ROADS AS SHOWN ON THIS MAP ARE FROM INFORMATION PROVIDED BY ABB FROSTENBERG, INC.

**LAND OF PULEHUUNI**  
**EXHIBIT MAP SHOWING PROPOSED**  
**EASEMENTS B-1, B-2, B-3, B-4,**  
**B-5 AND B-6**  
 Being a Portion of Land Patent 8140,  
 Land Commission Award 5230 to Keaweama  
 AT PULEHUUNI, WAILUKU, MAUI, HAWAII




**Subject Parcel**



PUNJAGRAM, PUNE		
REVENUE MAPS BUREAU	TAX MAP	
SECOND DIVISION	SCALE	
	3	800
CONSERVING PARCELS		
SCALE 1:1000		

*Not to scale. All info correct as the date of issue.*

**SUBJECT TO CHANGE**

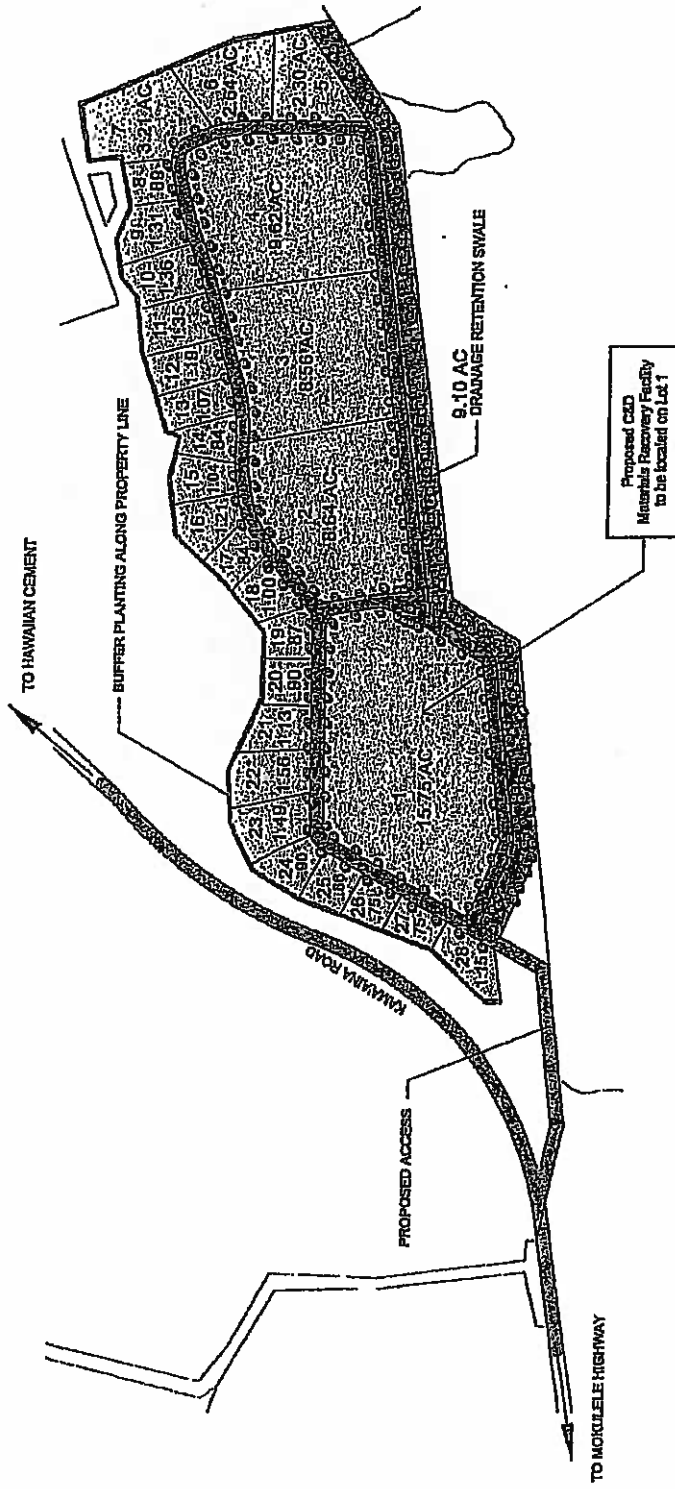


**PUNE 86-ACRE PARCEL**  
Not to Scale

**TMK PARCEL  
LOCATION MAP**

**EXHIBIT "2"**  
**(page 1 of 2)**

*Prepared by: P. P. Bhatnagar, P. P. Bhatnagar, P. P. Bhatnagar*



**CONCEPT SITE PLAN**  
**PUUNENE HEAVY INDUSTRIAL SUBDIVISION**  
**PUUNENE, MAUI, HAWAII**  
TRAC-2-9-06-19 66,029 AC.



DRAWING  
 24x36 SCALE 1"=200' 0"  
 DATE: 10-2-10

**EXHIBIT "2"**  
**(page 2 of 2)**

***Request for Use of  
State Lands  
(Amended)***



P A C I F I C R I M L A N D, I N C.

February 8, 2012

Mr. Daniel Ornellas  
District Land Agent, State of Hawaii  
Department of Land and Natural Resources  
Land Division  
54 High Street, Room 101  
Wailuku, HI 96793

VIA HAND DELIVERY

Subject: Ref. No. 1JMD-101  
Author: D-DO/dy  
CMBY 2011 Investment, LLC; TMK (2) 3-8-08-019  
Land of Pulehunu

Dear Mr. Ornellas:

Thank you for meeting with Clay Sutherland and me on January 12, 2012.

For your background and reference, I wanted to confirm that CMBY 2011 Investment, LLC ("CMBY") currently does not have access to TMK (2) 3-8-08-19 (the "Property"), which property was purchased from Alexander & Baldwin, Inc. ("A&B"). Access from Mokulele Highway is provided by way of Easement 7, as shown on the attached map. However, Easement 7 terminates near the reservoir shown on the map, and access from the terminus of Easement 7 to the Property is sought at this time.

Per our discussion at that meeting, CMBY's current Request for State Lands Application Form (submitted via hand delivery on February 9, 2011), will be resubmitted by your department as an amended application.

The amended application will include: (1) Easement Map indicating Easement A as Option 1, and Easement B as Option 2; (2) Easement A and B plat map, and metes and bounds description for both options; and (3) photographs of Option 1 and Option 2 access roadways. As stated above, our current access is along Easement 7 per the Quitclaim Assignment of Partial Interest in Easement, which terminates prior to reaching the Property; therefore, we would request an easement to allow access beyond the terminus of Easement 7 to the Property. There are two possible routes for such access, as described below as Option 1 and Option 2. We would prefer the right to use Easement A, described as Option 1 below. The two access options are further described as follows:

Option 1. Easement A.

At the point of terminus for Easement 7, we are requesting a 56-foot wide access easement for a roadway. The access roadway would be a 24-foot paved road section suitable for use by all adjacent users, and would continue over lands owned by A&B, land which A&B will grant access rights to CMBY to

Mr. Daniel Ornellas  
Page 2  
February 8, 2012

the property. CMBY has reviewed the topographic map of the area indicating several utilities within the 56 feet, therefore finding the 56-foot width necessary for access to the subject property. If the 56-foot wide access easement request isn't acceptable to the department, we would request your consideration of a right of way adequate to accommodate a 24-foot paved road section and shoulders for drainage and utility uses. By providing CMBY Easement A, the State will benefit by using the access at no cost to the state.

Option 2. Easement B.

Easement 7 intersects with an existing State easement, currently being used for access to the Hawaiian Cement use area and other uses in the area. We are requesting Easement B to allow for access to A&B lands above the reservoir area. From that current access we would continue over lands owned by A&B land, which A&B will grant access rights to CMBY to the subject property.

We would appreciate your review of our request and attachments. If you have any comments to our request that would help support your recommendation to the Board of Land and Natural Resources, please contact me at 874-5263 or on my direct line at 270-5940, or by email at [blanca@pacificrimland.com](mailto:blanca@pacificrimland.com). We look forward to hearing from you.

Sincerely,

Blanca Lafolette  
Project Coordinator for  
CMBY 2011 Investment, LLC

Enc: Easement Map  
Plat map  
Metes and Bounds descriptions  
Photographs of access roadways

EASEMENT A

THE LAND OF PULEHONU  
SITUATED AT PULEHONU, WAILUKU, MAUI, HAWAII  
BEING A PORTION OF LAND PATENT 8140,  
LAND COMMISSION AWARD 5230 TO KEAWEAHI

Beginning at the Southeast corner of this Easement, being 353° 11' 30" 251.47 feet from the Southeast corner of Lot 2-B-1 of the Land of Pulehunu, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU HELE" being 3,289.64 feet North and 16,951.00 feet East and running by azimuths measured clockwise from True South:

1. 156° 03' 127.23 feet along the remainder of Lot 2-B-1;
2. 195° 55' 467.52 feet along the remainder of Lot 2-B-1;
3. 351° 43' 30" 136.66 feet along existing Easement 7;
4. 15° 55' 379.51 feet along Parcel 5 of Tax Map Key (2) 3-8-08;
5. 353° 11' 30" 66.14 feet along Parcel 5 of Tax Map Key (2) 3-8-08 to the point of beginning and containing an area of 0.573 Acre.



R. T. TANAKA ENGINEERS, INC.

*Kirk T. Tanaka*

Kirk T. Tanaka  
Registered Professional Surveyor  
Certificate No. 7223-LS  
License Expires: April 30, 2012

871 Kolu Street, Suite 201  
Wailuku, Hawaii 96793  
February 2, 2012

EASEMENT B

THE LAND OF PULEHONU  
SITUATED AT PULEHONU, WAILUKU, MAUI, HAWAII  
BEING A PORTION OF LAND PATENT 8140,  
LAND COMMISSION AWARD 5230 TO KEAWEAHI

Beginning at the Northwest corner of this Easement, on the Southwest corner of Parcel 6 of Tax Map Key (2) 3-8-08, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU HELE" being 3,943.84 feet North and 17,085.46 feet East and running by azimuths measured clockwise from True South:

1. 263° 45' 602.80 feet along Parcel 6 of Tax Map Key (2) 3-8-08;
2. 274° 40' 25.79 feet along Parcel 6 of Tax Map Key (2) 3-8-08;
3. 4° 40' 50.00 feet along the remainder of Lot 2-B-1;
4. 94° 40' 21.00 feet along Parcel 5 of Tax Map Key (2) 3-8-08;
5. 83° 45' 608.16 feet along Parcel 5 of Tax Map Key (2) 3-8-08;
6. 185° 12' 03" 51.01 feet along the remainder of Lot 2-B-1 to the point of beginning and containing an area of 0.722 Acre.



R. T. TANAKA ENGINEERS, INC.

*Kirk T. Tanaka*

Kirk T. Tanaka  
Registered Professional Surveyor  
Certificate No. 7223-LS  
License Expires: April 30, 2012

871 Kolu Street, Suite 201  
Wailuku, Hawaii 96793  
February 2, 2012



## OPTION 1: EASEMENT A (1 of 2 pages)



Camera facing South from intersection of South Firebreak Road and the Hawaiian Cement road. To the right is the beginning of the requested Easement A



Camera facing Southwest on the requested Easement A. Street level view of the HC&S irrigation reservoir on left side of road.

## OPTION 1: EASEMENT A (2 of 2 pages)

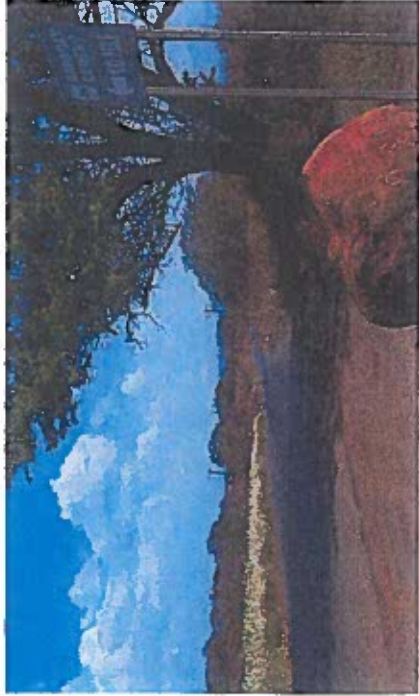


Camera facing Southwest on requested Easement A



Camera facing North on requested Easement A looking toward intersection with the Hawaiian Cement road. HC&S Irrigation lies on the foreground (right)

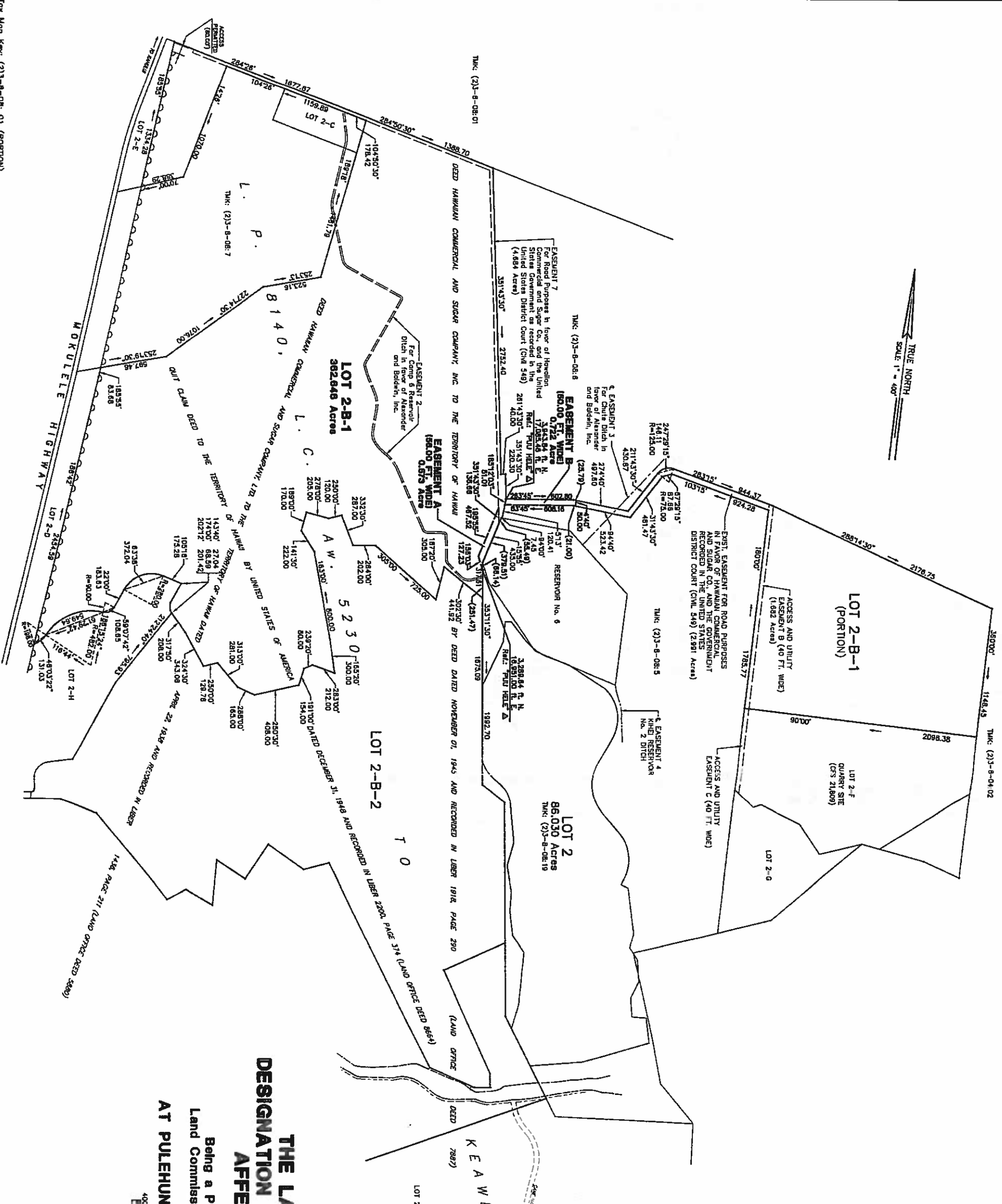
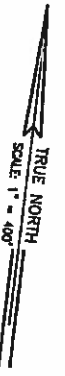
## OPTION 2: EASEMENT B



Camera facing East from Intersection of South Firebreak Road and the Hawaiian Cement road.



Camera facing East on the Hawaiian Cement road.



**THE LAND OF PULEHUNUI  
AFFECTING LOT 2-B-1**

Being a Portion of Land Patent 8140,  
Land Commission Award 5230 to Keaweamahe  
**AT PULEHUNUI, WAILUKU, MAUI, HAWAII**



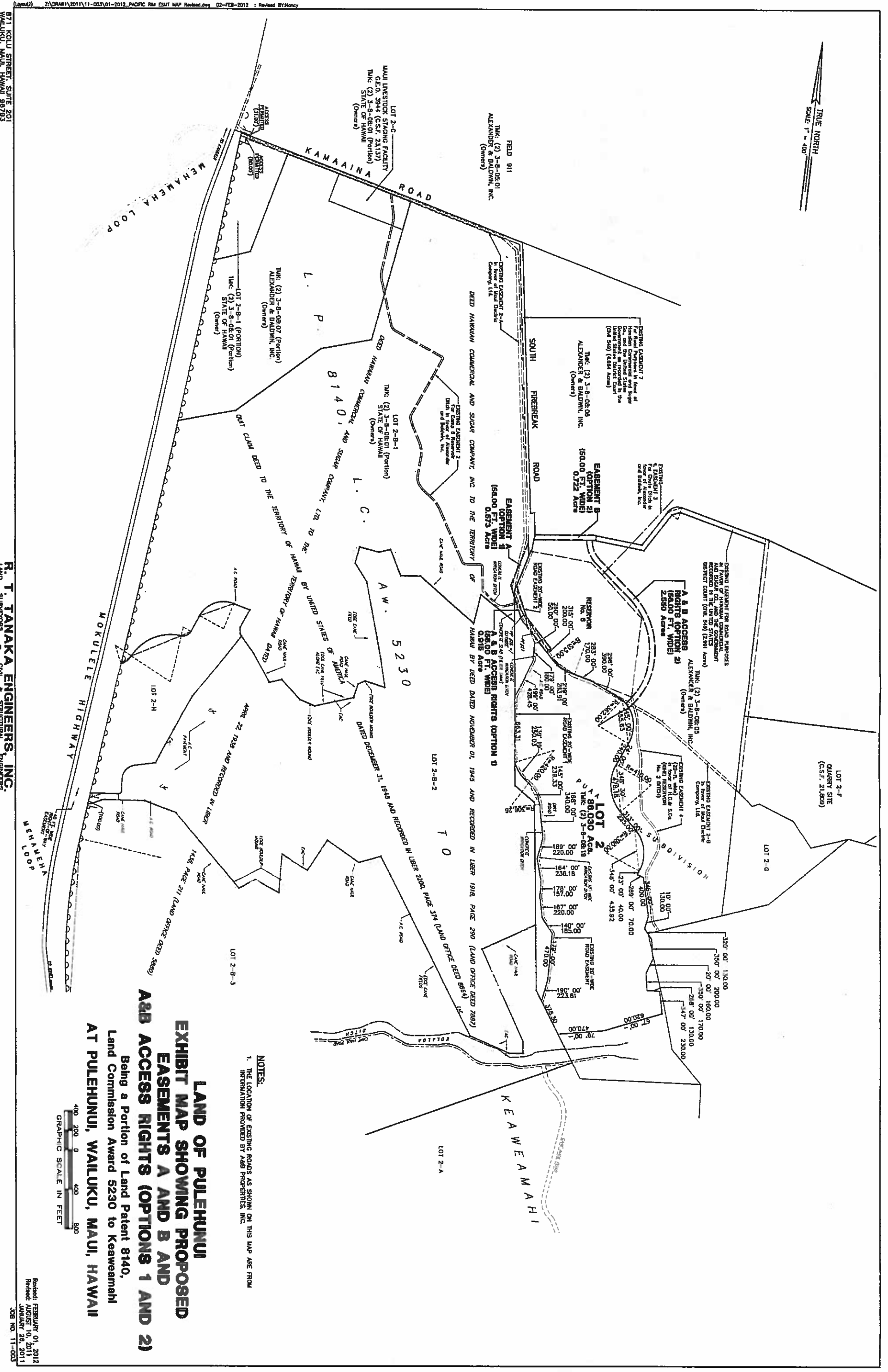
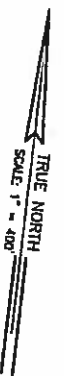
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

*Kirk T. Tanaka*  
KIRK T. TANAKA  
Licensed Professional Land Surveyor  
License Certificate No. 7254  
License Expires April 30, 2012

DATE 02/02/12

**R. T. TANAKA ENGINEERS, INC.**  
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

Top Map Key: (2)3-8-08: 01 (PORTION)  
871 KOLI STREET, SUITE 201  
WAILUKU, MAUI, HAWAII 96793



**NOTES:**  
 1. THE LOCATION OF EXISTING ROADS AS SHOWN ON THIS MAP ARE FROM INFORMATION PROVIDED BY A&B PROPERTIES, INC.

**LAND OF PULEHUNUI  
 EXHIBIT MAP SHOWING PROPOSED  
 EASEMENTS A AND B AND  
 A&B ACCESS RIGHTS (OPTIONS 1 AND 2)  
 Being a Portion of Land Patent 8140,  
 Land Commission Award 5230 to Keaweamahia  
 AT PULEHUNUI, WAILUKU, MAUI, HAWAII**



**R. T. TANAKA ENGINEERS, INC.**  
 LAND SURVEYORS  
 CIVIL & STRUCTURAL ENGINEERS

871 KOLU STREET, SUITE 201  
 WAILUKU, MAUI, HAWAII 96793

Revised: FEBRUARY 01, 2012  
 Revised: AUGUST 10, 2011  
 JANUARY 29, 2011  
 JOB NO. 11-003

**APPENDIX E**  
Flora Survey

**BOTANICAL RESOURCE ASSESSMENT FOR THE  
PROPOSED PU'UNENE HEAVY INDUSTRIAL SUBDIVISION  
PU'UNENE, MAUI, HAWAII**

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<i>Appendix</i>	
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**Prepared by:**

**Maya LeGrande**  
LeGrande Biological Surveys Inc  
68-310 Kikou Street  
Waihatua HI 96791

**Prepared for:**  
CMBY 2011 Investment, LLC  
1300 N. Holopono St., Suite 201  
P.O. Box 220  
Kihei, HI 96753

**August 2011**

## INTRODUCTION

This report includes the findings of a plant inventory conducted in Pulehuani on the island of Maui, including portions of a parcel owned by CMBY2011 Investment, LLC (TMK (2) 3-8-08:19) and various easements required for access to the proposed subdivision. LeGrande Biological Surveys Inc. carried out a botanical field survey of the above location on the 16<sup>th</sup> and 17<sup>th</sup> of August 2011. The primary objectives of the field studies were to:

- 1) inventory the flora and;
- 2) provide a general description of the vegetation on the project site;
- 3) search for threatened and endangered species as well as species of concern; and
- 4) provide recommendations regarding potential impacts to the biological resources of the area in regards to the proposed development of the survey area.

Federal and State of Hawaii listed species status follows U.S. Fish and Wildlife Listed and Candidate Species (USFWS 2008) and Federal Register (2002).

## GENERAL SITE DESCRIPTION

The 86-acre subject parcel is located in Pulehuani to the south of Pu'uhene town proper. The subject property lies to the east of the Old Pu'uhene Airport (Maui Airport). Currently the area to the west is being used for recreational motor sports, the areas to the east and south are in crop cultivation, and to the north bordered by Lower Kihei Road. Additional to the subject parcel, two roadway easements were surveyed for this project, a 56-foot wide easement owned by the state along the existing Kama'aina Road, and an alternative 56-wide easement which travels around the existing Reservoir No. 6 to the north of the subject property.

## METHODS

Topographic maps were examined to determine terrain characteristics, access, boundaries, and reference points. Prior to undertaking the field studies, a search was made of the pertinent literature to familiarize the principal investigator with other botanical studies conducted in the general area. A walk-through survey method was used. The field survey included the 86-acre subject parcel as well and the two proposed roadway easements, both 56 feet wide. The easement transects were surveyed between 100 to 150 feet wide as the exact location of the easement could not be ascertained in the field and the construction of the roadway will no doubt include an area wider than the easement itself.

Notes were made on plant associations and distribution, disturbances, topography, substrate types, exposure, drainage, etc. Plant identifications were made in the field; plants that could not be positively identified were photo documented and described for later determination in the BISH herbarium, and for comparison with the recent taxonomic literature.

## VEGETATION

The subject parcel is characterized by Dry Kiawe/Buifelgrass vegetation. The main subject property is at approximately 120 feet in elevation. The easements range from 110 to 140 feet elevations along the roadway from Mokuale Highway to above the reservoir. The Mean Annual Rainfall is 12 to 20 inches per year. The NRCS Soil Survey delineates the entire 86-acre parcel

and both easements as WID2: Waiakoa extremely stony silty clay loam, 3 to 25 percent slope, eroded (NRCS, 2011).

There were a total of 50 plant species observed within the survey sites. 44 are alien (introduced) and 6 are indigenous (native to the Hawaiian Islands and elsewhere). Therefore, 88% of the plant species observed are alien and 12% are native. An inventory of all the plants observed within the survey area is presented in the species list (Table 1) at the end of the report.

### Main Parcel

The dominant vegetation of the subject parcel is a kiawe (*Prosopis pallida*)/buifelgrass (*Cenchrus ciliaris*) grassland with a koa hoole (*Leucaena leucocephala*) scrub transition between the southern boundary of the property. The northern section appears to have had relatively recent grading with large boulder piles near the gate entrance. Several other weedy native species were observed scattered throughout the property including; Jimson weed (*Datura stramonium*), cheese weed (*Melva parviflora*), Lion's ear (*Leonotis nepetalifolia*), hairy spurge (*Chamaesyce hirta*), *Anarrathus* sp., and golden crownbeard (*Yerbesina encelioides*). Few native species were observed within the survey area. They include three indigenous species, ilima (*Sida fallax*), popolo (*Solanum americanum*), and uhaloa (*Waltheria indica*).

The northeast corner of the subject property appeared to be in cattle operation historically. Several water troughs and barbed wire fencing are still evident in the area and other concrete structures that may be associated with ranching.

### State Easement

The "lower 56' easement" follows Kama'aina Road (State owned), South Firebreak Road (State & privately owned), and Lower Kihei Road (privately owned) with current sugar cane cultivation to the west and a reservoir bank to the east. Dominant roadside weeds are buffel grass and koa hiale shrubs. Others species scattered along roadsides and the reservoir embankment include partridge pea (*Chamaecrista nictitans* subsp. *patellaria* var. *glabrata*), swollen finger grass (*Chloris barbata*), castor bean (*Ricinus communis*), mauienie (*Cynodon dactylon*), kaliko (*Euphorbia heterophylla*), graceful spurge (*Chamaesyce hypericifolia*), obscure morning glory (*Ipomoea obscura*), and smooth rattlespod (*Crotalaria pallida*).

### Reservoir Easement

The "Upper 56' easement" borders the existing reservoir to the north and east. Monkeypod (*Samanea saman*) and Siris (*Albizia lebbek*) are the dominant tree species around the east boundary of the easement mixed with a Koa hiale scrub. At the northern end of the reservoir a portion of the easement crosses over a drainage canal. Large Java plum (*Syzygium cumini*) trees dominate the area around the canal. During our survey we observed 'auku'u (Black-crowned night heron) roosting in the Java plum trees. Several other plant species were noted in the area including two indigenous species: milo (*Thespesia populnea*) and hala (*Pandanus tectorius*), as well as Guinea grass (*Panicum maximum*), and banana (*Musa* sp.).

As the easement heads north from the subject parcel it crosses a road leading to the Hawaii Cement Plant and then heads west into current sugar cane fields. A drainage ditch near the area where the easement turns west (past the reservoir) contains some plant species that are usually found near standing or running water. They included one native species 'ae'ae (*Bacopa maritima*), and several non-native species such as water morning glory (*Ipomoea aquatica*), kalo

(*Colocasia esculentia*), false daisy (*Eclipta prostrata*), and vasey grass (*Paspalum urvillei*).

#### DISCUSSION & RECOMMENDATIONS

The vegetation on the project site is dominated by introduced species such as buffel grass, koa haole, kiawe, etc. Of a total of 50 plant species inventoried on the property, 44 (88%) are introduced and 6 (12%) are native. Of the natives, all 6 are indigenous, that is they are native to the Hawaiian Islands and elsewhere. These are the 'ilima, 'uhaloa, popolo, hala, mīlo, and 'ae 'ae.

None of the plants observed during the survey is a threatened or endangered species or a species of concern (U.S. Fish and Wildlife Service, 2008). The survey area has been impacted over time by agricultural and vehicular use and its biological resources have been altered from its native state. No wetlands were encountered during this survey. None of the three essential criteria for defining a federally recognized wetland were present within the study site. Those being: hydrophytic vegetation, hydric soils, and wetland hydrology.

The proposed Pu'uene Heavy Industrial Subdivision and access easements are not expected to have significant negative impacts on the botanical resources of the site or the general region.

The client received comments from the USFWS regarding Blackburn Sphinx Moth host plants possibly occurring on the site. The recommendation to carry out the plant survey during or after the rainy season was noted. Host plants such as the introduced tree tobacco were observed very infrequently during the survey. Only a few small plants were seen over the entire subject property. Surrounding areas in Kihei and along the highway in Pu'uene had an abundance of tree tobacco during the same dates as the survey was carried out. The area encompassed by our survey does not appear to be an optimum area for BSM host plants. As such, it is our opinion that a follow up survey in the spring is not warranted under the circumstances.

The reservoir easement borders the existing reservoir for much of its length. If this alignment is chosen for the easement, there should be a buffer between the reservoir and easement roadway during construction to protect the emergent native vegetation and native waterfowl present at the reservoir.

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TABLE 1. PLANT SPECIES LIST

The following checklist is an inventory of all the plant species observed within the survey area of the proposed Pu'uene Heavy Industrial Subdivision [TMK (2) 3-8-08:19] and various easements required for access to the proposed subdivision during a site visit (August 16-17, 2011). The plant names are arranged alphabetically by family and then by species into two groups: Monocots and Dicots. The taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner *et al.* (1990), Wagner and Herbst (1999) and Staples and Herbst (2005). Recent name changes are those recorded in the Hawaii Biological Survey series (Evetius and Eldredge, eds., 1999-2002) and the BISH native-naturalized checklist March 2010.

For each species, the following name is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Where the plant was observed; marked as in either the coastal or mauka sections of the project area or both.
4. Biogeographic status. The following symbols are used:

A = Alien species introduced to the Hawaiian Islands by humans, intentionally or accidentally.  
 I = Indigenous species native to the Hawaiian Islands and also found elsewhere in the world.  
 E = Endemic species found only in the Hawaiian Islands.

SCIENTIFIC NAME	COMMON NAME	STATUS
<b>MONOCOTS</b>		
<b>ARACEAE</b>		
<i>Colocasia esculenta</i> (L.) Schott	Kalo, taro	A
<b>MUSACEAE</b>		
<i>Musa</i> sp. L.	banana	A
<b>PANDANACEAE</b>		
<i>Pandanus tectorius</i> Parkinson ex Z	hala, screw-pine	I
<b>POACEAE</b>		
<i>Cenchrus ciliaris</i> L.	buffel grass	A
<i>Chloris barbata</i> (L.) Sw.	swollen finger grass	A
<i>Cynodon dactylon</i> (L.) Pers	manicna	A
<i>Eragrostis amabilis</i> (L.) Wight & Arn. Ex Nees	java grass	A
<i>Panicum maximum</i> L.	guinea grass	A

SCIENTIFIC NAME	COMMON NAME	STATUS
<b>POACEAE</b>		
<i>Paspalum urvillei</i> Steud.	wesley grass	A
<i>Saccharum officinarum</i> L.	ko, sugar cane	A
<b>DICOTS</b>		
<b>AMARANTHACEAE</b>		
<i>Amaranthus spinosus</i> L.	pakai kuku, spiny amaranth	A
<i>Amaranthus viridis</i> L.	shchaka, pakopakai, slender amaranth	A
<b>ASTERACEAE</b>		
<i>Eclypta prostrata</i> (L.) L.	false daisy	A
<i>Echtrachia californica</i>	california poppy	A
<i>Pluchea indica</i> (L.) Less	sourbush, marsh fleabane	A
<i>Tridax procumbens</i> L.	coat buttons	A
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown beard	A
<b>CHENOPODIACEAE</b>		
<i>Chenopodium murale</i> L.	Lamb's quarters	A
<b>CONVOLVULACEAE</b>		
<i>Ipomoea aquatica</i> Forsk.	Water morning glory	A
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	Obscure morning glory	A
<i>Merremia aegyptia</i> (L.) Urb.	Hairy merremia	A
<b>CUCURBITACEAE</b>		
<i>Momordica charantia</i> L.	bitter melon	A
<b>EUPHORBIACEAE</b>		
<i>Chamaecyparis hirta</i> (L.) Millsp.	hairy spurge, garden spurge	A
<i>Chamaecyparis hypericifolia</i> (L.) Millsp.	graceful spurge	A
<i>Euphorbia heterophylla</i> L.	kaliko	A

SCIENTIFIC NAME	COMMON NAME	STATUS
EUPHORBACEAE		
<i>Ricinus communis</i> L.	castor bean	A
FABACEAE		
<i>Albizia lebbek</i> (L.) Benth.	Sida tree	A
<i>Chamaecrista nictitans</i> subsp. <i>penellaria</i> var. <i>glabrata</i> (Vogel) H.S.Irwin & Barneby	Partridge pea	A
<i>Crotalaria incana</i> L.	fuzzy rattlepod	A
<i>Crotalaria pallida</i> Aiton	smooth rattlepod	A
<i>Desmanthus pennsylvanicus</i> (L.) Thell.	Slender or virgale trifoliosa	A
<i>Leucaena leucocephala</i> (Lam.) de Wit	Koa hoale	A
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	Kiawe, mesquite	A
<i>Samanea saman</i> (Jacq.) Merr.	Monkey pod	A
LAMIACEAE		
<i>Leonotis nepetalifolia</i> (L.) R. Br.	Lion's ear	A
MALVACEAE		
<i>Abutilon grandifolium</i> (Willd.) Sweet	Hairy abutilon	A
<i>Malva parvifolia</i> L.	Cheese weed	A
<i>Malvastrum coccineum</i> subsp. <i>coccineum</i> (L.) J.E. Burdet	False mallow	A
<i>Sida fallax</i> Walp.	Ilima	I
<i>Sida spinosa</i> L.	nila	A
<i>Thespesia peruviana</i> (L.) Sol. ex Correa		I
MYRTACEAE		
<i>Syzygium cumini</i> (L.) Streets	Java plum	A
NYCTAGINACEAE		
<i>Baobab</i> <i>baobab</i> L.	baobab	A

SCIENTIFIC NAME	COMMON NAME	STATUS
PLANTAGINACEAE		
<i>Bacopa monnieri</i> (L.) Pennell	*Ac'be	I
SOLANACEAE		
<i>Datura stramonium</i> L.	Jimson weed	A
<i>Nicotiana glauca</i> L.	toobacco	A
<i>Physalis angulata</i> L.	Husk tomato	A
<i>Solanum americanum</i> Mill.	popolo	I
<i>Solanum lycopersicum</i> var. <i>cerasiforme</i> (Dunal) D.M.Spooner, G.J. Anderson & R.K.Jansen	tomato, cherry tomato	A
STERCULIACEAE		
<i>Waltheria indica</i> L.	uhaloo	I

Appendix: Site Photographs

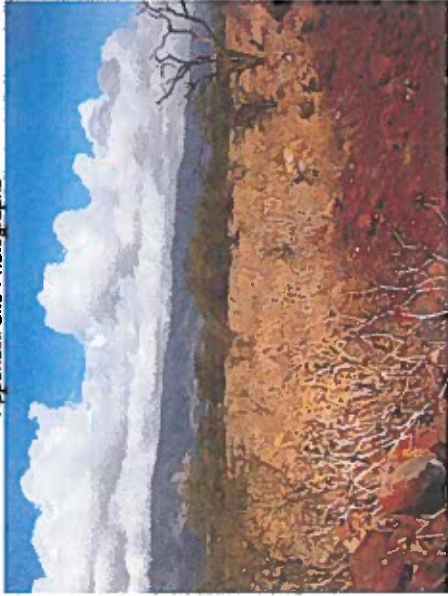


Figure 1. Vegetation of the 86-acre subject property is dominated by kawa trees and buffelgrassland.



Figure 2. Lands adjacent to the southern section of the subject property are currently cultivated in sugar cane.



Figure 3. Vegetation along the Reservoir easement.

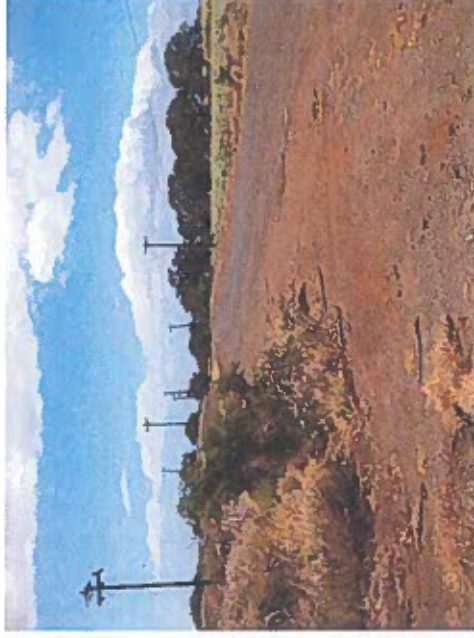


Figure 4. Roadside vegetation along portion of State Roadway Easement.

**APPENDIX F**  
Faunal Survey

## INTRODUCTION

The purpose of this report is to provide the findings of a two day (6, 7 July 2011) field survey of property proposed for the Pu' unene Heavy Industrial Subdivision Project at Pu' unene, Maui TMK (2) 3-8-008: 019. In addition to the data obtained from the field survey, relevant published and unpublished sources are also noted in the report. These resources add a broader perspective of the wildlife in this region of the island. The goals of the survey were:

- 1- Document the species of birds and mammals observed on or near the property.
- 2- Devote special attention to documenting the presence and/or possible use of this area by native and migratory species particularly those that are listed as threatened or endangered.

## SITE DESCRIPTION

This proposed project is located on a 86 acre parcel. Access to the proposed subdivision will be provided by Kama' unua Road and South Firebreak Road via a 56 foot wide access and utility easement. An alternative subdivision access road around the north and east side of an Hawaiian Commercial & Sugar irrigation reservoir was also examined. The property currently contains mostly alien (introduced) vegetation

## AVIFAUNAL AND FERAL MAMMAL SURVEY FOR THE PROPOSED PU'UNENE HEAVY INDUSTRIAL SUBDIVISION PU'UNENE, MAUI, TMK: (2)3-8-888:019

### Report prepared for:

CMBY 2011 Investment, LLC

### Survey and Report by:

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Faunal (Bird & Mammal) surveys  
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### Report (third revision)

8 August 2011

dominated by Kiawe or Mesquite trees (*Prosopis pallida*) and dry grass/weeds. Surrounding lands are in sugar cane and similar dry brush/grass. An active irrigation reservoir is located nearby to the north of the property and adjacent to South Firebreak Road. This reservoir is fairly large with emergent vegetation along portions of its shoreline.

#### SURVEY PROTOCOL

The field survey was conducted over two consecutive days (6, 7, July 2011). Data were collected in the early morning and late in the day when birds and mammals are most active and more easily detected. Visual and auditory observations form the basis of the data. The entire property was examined along with adjoining lands including the irrigation reservoir. Observations of mammals were primarily limited to visual sightings. The evening of 6 July 2011 was devoted to a search for the presence of the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). A Peterson Electronic AB Ultrasound Detector D 100 was used to listen for echolocating bats at several sites throughout the property and along the roads around the site as well as at the irrigation reservoir.

Weather during the survey was generally clear with some light passing showers in the early morning and evening. The wind was gusting above 30mph during mid-day.

Scientific and common vernacular names used in this report follow Honacki et al. (1982) and Pyle (2002).

#### RESULTS AND DISCUSSION

##### Native Land Birds:

No native land birds were observed on the survey. The only species that might on rare occasions occur in this area is the Hawaiian Short-eared Owl or Pueo (*Asio flammeus sandwichensis*) (Pratt et al. 1987, Hawaii Audubon Society (2005). The Pueo is listed by the State of Hawaii as endangered on Oahu but not on Maui. They forage over an array of habitats including: forests, grasslands, agricultural fields and nest on the ground in high, dense grass (Hawaii Audubon Society 2005).

##### Native Waterbirds:

An average of 16 Aukr'u or Black-crowned Night Heron were observed over the two day survey around the irrigation reservoir, but none were seen on the property proposed for development. This species is indigenous to Hawaii. It is not listed as endangered or threatened. They forage on a wide variety of prey and wetland habitats. Over 40 Koloa or Hawaiian Duck (*Anas wyvilliana*) were tallied on the irrigation reservoir on both mornings of the survey. Koloa are an endangered species. Those on Maui are believed to be hybrids between the Koloa and Mallard (Hawaii Audubon

Society 2005). An average of 31 Hawaiian Coot or Alae Ke'oke'o (*Fulica alai*) were counted on the irrigation reservoir during the survey. This endangered waterbird is common on Maui. The only other native waterbird that might occur at times along the edges of the irrigation pond is the endangered Hawaiian or Black-necked Stilt or Ae'o (*Himantopus mexicanus knudseni*).

**Migratory shorebirds:**

At this time of year migratory shorebirds are on their breeding grounds in the arctic and subarctic. They winter in Hawaii between August and April. The only species that would potentially occur on this site would be the Pacific Golden-Plover or Kolea (*Ploveria fulva*). Kolea forage for insects on lawns and other habitats in Hawaii. They can be seen on cane haul roads and in agricultural fields (Pratt et al. 1987, Hawaii Audubon Society 2005 ). They are not a threatened or endangered species. A few plover likely occur on this site during August – April. No other migratory shorebirds would likely occur at this site.

**Alien (Introduced) Birds:**

The property contains the usual array of introduced birds seen on similar property in Central Maui (Bruner 1993, 1994, 1995, 1996, 2002). Table One notes the species recorded on this survey. None of these are listed as endangered or threatened.

**Mammals:**

The only feral mammal observed was the Small Indian Mongoose (*Hesperestes javanicus*). Rats (*Rattus spp.*) and Mice (*Mus musculus*) also likely occur on the site along with perhaps feral cats (*Felis catus*). No endangered Hawaiian Hoary Bat were detected by the ultrasound device during an evening search of the property on 6 July 2011. I know of no recent documented records for the Hawaiian Hoary Bat in the area of the proposed project. The Hawaiian Hoary Bat roosts solitarily in trees. They forage for flying insects in a wide variety of habitats including forests, agricultural lands, urban areas, as well as over bays and ponds (Tomich 1986, Kepler and Scott 1990, Jacobs 1991, 1993, Duval and Duvall 1991, Reynolds et al. 1998, and Bonaccorso 2008 pers. comm.).

**EXECUTIVE SUMMARY AND RECOMMENDATIONS**

This survey found the typical assemblage of non-native (alien) birds and mammals on the proposed Heavy Industrial Subdivision Property. No endangered or threatened avian species were observed nor expected given the available resources on this site. The nearby irrigation reservoir, however, is utilized by at least two endangered waterbirds (Kolea, Alaeke'oke'o. This reservoir sits beside South Firebreak Road. The waterbirds were not responsive to the traffic noise from nearby roadways. The vegetation buffer around the irrigation pond also visually shields the birds from human disturbance unless one climbs up the embankment and walks along the edge of the pond. The

proposed Heavy Industrial Subdivision Project and alternative subdivision access road should not adversely impact the waterbirds at this reservoir. The road and 86 acre property is hidden from the actual irrigation pond by a high embankment and vegetation. The only potential migratory shorebird that might forage along roads and cleared areas in Pu'unene is the Pacific Golden-Plover. It is not threatened or endangered. I know of no published bat sightings for the area involved in this project. However, because they forage over a wide variety of habitats it is possible they could on rare occasion occur in this area. Bonaccorso (2008 pers. comm.) has conducted extensive research on the Hawaiian Hoary Bat on the island of Hawaii. He recommends that trees in a project area not be cut or disturbed between the months of April and August if there is any current evidence bats occur in the area. At this time of year young flightless bats are left in the tree while their mother forages.

TABLE ONE

Alien (Introduced Birds) found on a 6, 7 July 2011 field survey of TMK (2) 3-8-008: 019 at Pu'unene, Maui.

Common Name	Scientific Name
Cattle Egret	<i>Bubulcus ibis</i>
Gray Francolin	<i>Francolinus pondicerianus</i>
Black Francolin	<i>Francolinus francolinus</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Barn Owl	<i>Tyto alba</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Common Myna	<i>Acridotheres tristis</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>



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**APPENDIX F-1**  
Arthropod Study

PU'UNENE HEAVY INDUSTRIAL SUBDIVISION  
ARTHROPOD STUDY – PULEHU, MAUI

Pu'unenē Heavy Industrial Subdivision Project  
ARTHROPOD STUDY

Pulehu, Maui

INTRODUCTION

The Pu'unenē Heavy Industrial Subdivision project lies on 86 acres of undeveloped land in lower Pulehu, East Maui TMK (2) 3-8-08:19. This survey also includes the primary access road and the alternate access road to the project (see Figure 1). The project area has a plantation reservoir to the north, sugar cane fields and a rock crusher/cement operation to the east and south, and Maui Raceway Park to the west. The project area lies about a mile to the east of Mokulele Highway. This arthropod study was initiated by the owners in response to environmental requirements of the planning process.

SITE DESCRIPTION

This area was the site of a former hog farm operation and as a result is heavily disturbed by intensive human and animal use. Much of the area remains cleared of vegetation with a network of old asphalt roadways. The existing vegetation consists mostly of buffelgrass (*Cenchrus ciliaris*) with scattered kiawe trees (*Prosopis pallida*). The terrain is gently sloping down to the west at elevations from 110 feet to 140 feet above sea level. Soils consist primarily of Waikoua Extremely Stony Silty Clay Loam (Poote et al, 1972). Rainfall averages about 12 inches per year with the bulk falling in a few winter storms (Armstrong 1983).

By:  
Robert W. Hobdy  
Environmental Consultant  
Koakomo, Maui

Prepared for: CMBY 2011 Investment, LLC

July 23, 2012

## SURVEY OBJECTIVES

Survey objectives were to inventory all arthropod species occurring on the property, recording species, distribution, abundance and status, and to identify any native species with special focus on any that are Endangered or Threatened species.

## METHODS

A walk-through survey method was employed, covering all parts of the project area. Binoculars and a magnifying lens were used and field notes taken for reference work.

## RESULTS

A total of 15 arthropods were recorded during the survey, representing seven Orders of spiders and insects. Taxonomy and nomenclature follow Nishida et al (1992). Just two species were common, the blowfly (*Excaliphora latifrons*) and the honey bee (*Apis mellifera*). All others were uncommon to rare in the project area.

One native dragonfly was recorded, the globe skimmer (*Pantala flavescens*). This dragonfly is indigenous to Hawaii and quite common. It is also native worldwide in the tropics. It is of no particular environmental interest or concern.

Looked for but not seen was the Endangered Blackburn's sphinx moth *Manduca blackburni* (USFWS, 2000). None of its preferred alternate host plants, the tree tobacco (*Nicotiana glauca*) were found on the property and no adult moths, eggs or larvae were seen.

No other rare or endangered insects were seen.

## CONCLUSIONS

There were no Endangered or Threatened arthropod species found during the survey on this dry, un-irrigated project area. From an entomological standpoint the proposed developments on this property would not have a significant negative impact on the arthropod resources in this part of Maui.

No recommendations with regard to the arthropod fauna are deemed appropriate or necessary.

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance for Arthropods only. 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
Order ARANEAE - spiders			
ARANEIDAE (Orb Weaver Family)	European garden spider	non-native	rare
<i>Araneus diadematus</i> Clerck			
SALTICIDAE (Jumping Spider Family)	Adamsen's house jumper	non-native	uncommon
<i>Hasarius adamseni</i> Audouin			
Order COLEOPTERA - beetles			
CRYPTOPHAGIDAE (Silken Fungus Beetle Family)	silken fungus beetle	non-native	rare
<i>Henoticus serratus</i> Gyllenhal			
Order DIPTERA - flies			
CALLIPHORIDAE (Blowfly Family)	blowfly	non-native	common
<i>Eucalliphora latifrons</i> Hough	blowfly	non-native	rate
<i>Rhina testacea</i> Robineau-Desvoidy	vinegar fly	non-native	uncommon
DROSOPHILIDAE (Fruit Fly Family)	dump fly	non-native	rate
<i>Chymomyza praecox</i> Williston			
MUSCIDAE (House Fly Family)			
<i>Musca sorbens</i> Wiedemann			
Order HYMENOPTERA - bees, wasps & ants			
APIIDAE (Honey Bee Family)	honey bee	non-native	common
<i>Apis mellifera</i> Linnaeus			
FORMICIDAE (Ant Family)	Argentine ant	non-native	rate
<i>Linepithema humile</i> Mayr			
MEGACHILIDAE (Leafcutter Bee Family)	leafcutter bee	non-native	rate
<i>Megachile genitilis</i> Cresson			
SPHECIDAE (Sphecoid Wasp Family)	jewel wasp	non-native	rate
<i>Ampulex compressa</i> Fabricius			
VESPIDAE (Vespid Wasp Family)	golden paper wasp	non-native	uncommon
<i>Polistes aurifer</i> Saussure			
Order LEPIDOPTERA - butterflies & moths			
NOCTUIDAE (Owllet Moth Family)	corn ear worm moth	non-native	rate
<i>Helioverpa zea</i> Boddie			
Order ODONATA - dragonflies & damselflies			
LIBELLULIDAE (Skimmer Dragonfly Family)	globe skimmer	indigenous	uncommon
<i>Pantala flavescens</i> Fabricius			
Order ORTHOPTERA - grasshoppers & crickets			
ACRIDIDAE (Grasshopper Family)	short-horned grasshopper	non-native	uncommon
<i>Oedipoda atripennis</i> Thunberg			

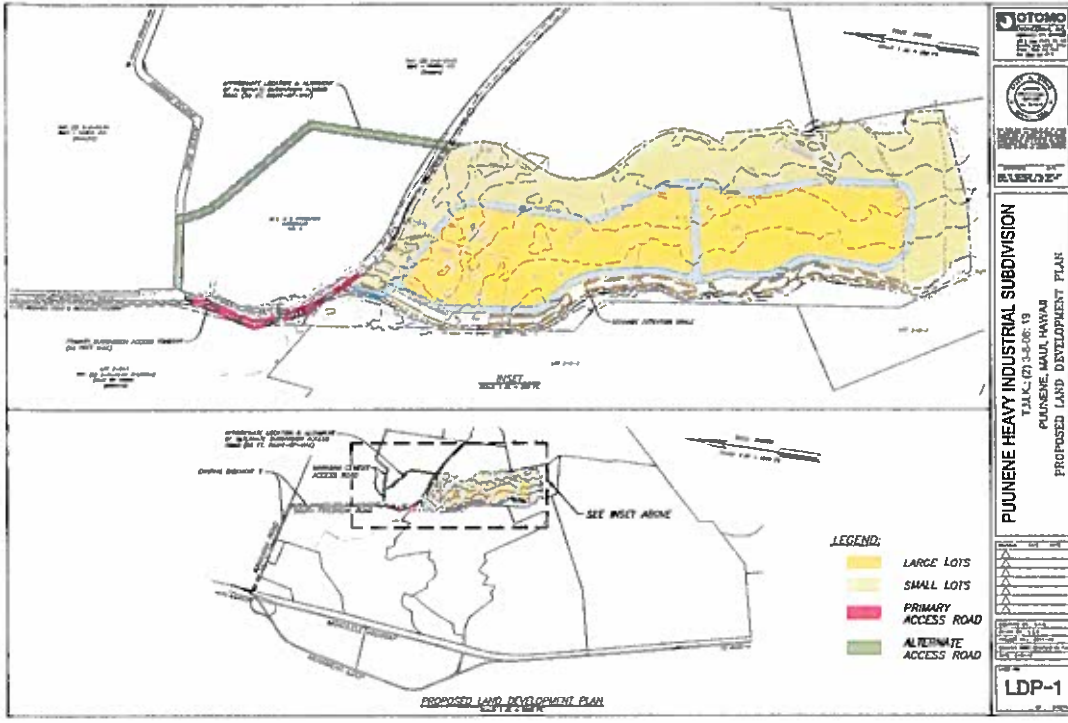


Figure 1

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**APPENDIX F-2**  
*Nene* (Hawaiian  
Goose) Survey

## INTRODUCTION

SURVEY CONDUCTED ON JULY 16, 2012  
FOR THE NENE OR HA WAIIAN GOOSE (*Bramia sonniverensis*)  
PU'UNENE HEAVY INDUSTRIAL SUBDIVISION PROJECT  
PULEHU, MAUI

The Pu'unenē Heavy Industrial subdivision project lies on 86 acres of undeveloped land in lower Pulehu, East Maui TMK (2) 3-8-08:19. Also included in this survey are the primary access road and the alternate access road to the project (see Figure 1). The project area has a plantation reservoir to the north, sugar cane fields and a rock crusher/cement operation to the east and south, and Maui Raceway Park to the west. The project area lies about a mile to the east of Mokulele Highway. This nēnē survey was initiated by the owners in response to comments received during the review of the biological studies submitted in support of the Environmental Assessment for the Pu'unenē Heavy Industrial Subdivision Project.

## SITE DESCRIPTION

This area was the site of a former hog farm operation and as a result is heavily disturbed by intensive human and animal use. Much of the area remains cleared of vegetation with a network of old asphalt roadways. The existing vegetation consists mostly of buffelgrass (*Cenchrus ciliaris*) with scattered kiawe trees (*Prosopis pallida*). The terrain is gently sloping down to the west at elevations from 110 feet to 140 feet above sea level. Soils consist primarily of Waiakea Extremely Stony Silty Clay Loam (Foote et al, 1972). Rainfall averages about 12 inches per year with the bulk falling in a few winter storms (Armstrong 1983).

By:  
Robert W. Hobby  
Environmental Consultant  
Keakomo, Maui

## SURVEY OBJECTIVES

This survey was called for to assess the potential of this project area for providing habitat for nēnē even if only incidental or temporary in nature and to document any such usage. It was intended to provide a random "snapshot" in time to assess this potential.

## METHODS

The survey was conducted as a walk-through reconnaissance to all parts of the project area. Binoculars were employed to get a detailed view of any nēnē activity on the ground or in the air. Nēnē are large and often vocal birds whose presence is easy to detect, especially in such open habitat as is found on this property.

Prepared for: CMBY 2011 Investment, LLC

July 23, 2012



## RESULTS

No nēnē were seen on the ground or in flight over the project area. Many smaller birds were fairly plentiful including gray francolins (*Francoelinus pondicerianus*), black francolin (*Francoelinus francolinus*), zebra dove (*Geopelia striata*) and spotted dove (*Streptopelia chinensis*), but none of the much larger nēnē were observed anywhere on the project area. There was little in the way of food or water resources on this property that would attract nēnē here.

## DISCUSSION AND CONCLUSIONS

Nēnē are vegetarians that eat a variety of grasses, small fruits, seeds and other herbaceous vegetation. They prefer damp or wet sites with succulent young grasses. They are also powerful fliers that can cover many miles in search of preferred resources. They can often be seen on irrigated areas such as newly planted cane fields, large parks, golf courses, pastures and even on hydro mulched roadside banks. Their use of such areas is unpredictably intermittent and temporary. Each of these wide-ranging, temporary resources can be termed important habitat for these Endangered nēnē, but to call any one of them essential to their survival is too much of a stretch.

The 86 acre project area is an un-irrigated parcel that is located in one of the driest parts of Maui. The area experiences long, hot and dry summers during which the grasses and herbaceous plants become sear and withered. In even a substantial wet season here the vegetation is tough and the greenness fleeting. There is nothing in this environment that would equate to preferred habitat for nēnē or which would attract them to feed or breed here. That no nēnē were observed here during this survey is an expected outcome, consistent with the existing environmental resources.

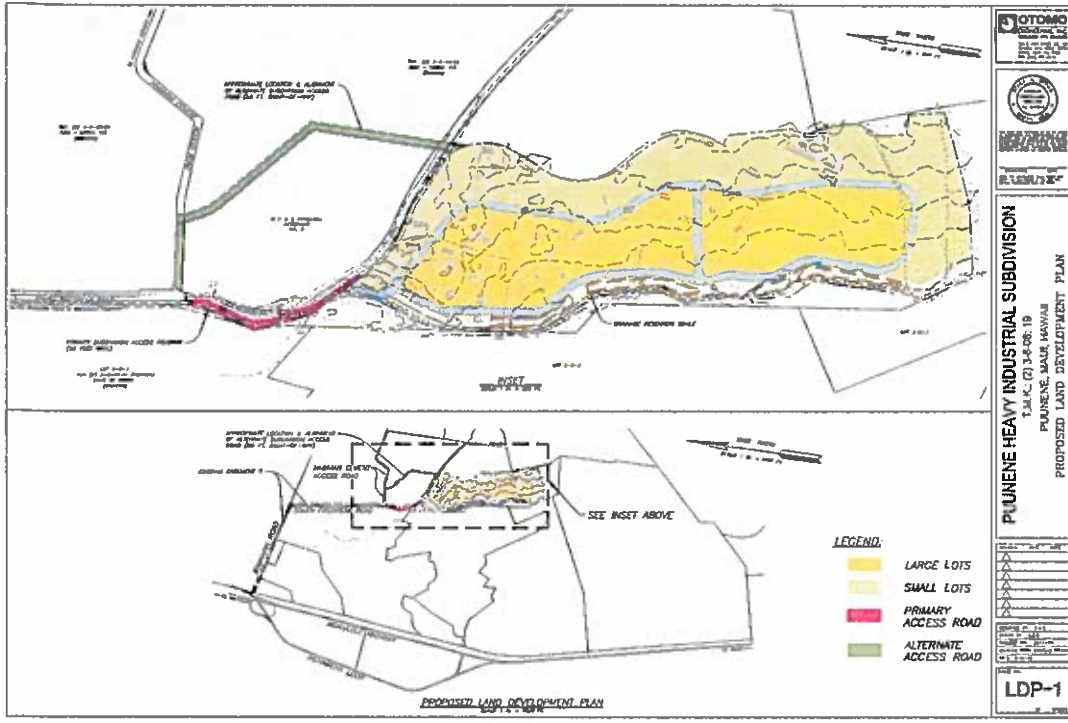


Figure 1

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**APPENDIX G**  
Noise Study

**ACOUSTIC STUDY FOR THE  
PUUNENE HEAVY INDUSTRIAL SUBDIVISION  
PUUNENE, MAUI, HAWAII**

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**NOVEMBER 2011**

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## CHAPTER 1. SUMMARY

The existing and future traffic noise levels in the vicinity of the proposed Puunene Heavy Industrial Subdivision in Puunene, Maui were evaluated for their potential impacts and their relationship to current FHAIHD noise standards. The traffic noise level increases along the roadways servicing the project site (see Figure 1) were calculated. No significant increases in traffic noise levels are predicted to occur along Mokulele Highway as a result of project traffic following project build-out by CY 2015. Large increases of 6.4 DNL are expected to occur along the roadways used by project traffic between the project site and Mokulele Highway.

Along Mokulele Highway in the vicinity of the project site, traffic noise levels are expected to increase by approximately 1.3 to 1.4 DNL by CY 2015 as a result of project and non-project traffic. Of this increase, a 1.0 DNL increase is expected to occur from non-project traffic by CY 2015. Project traffic will account for approximately 0.3 to 0.4 DNL units of noise increase along Mokulele Highway in the immediate vicinity of the project. Along Kamaaina Road and South Firebreak Road between Mokulele Highway and the project site, traffic noise levels are expected to increase by 6.4 DNL by CY 2015 as a result of project traffic. This level of traffic noise increase resulting from project generated traffic along Kamaaina Road and South Firebreak Road are considered to be large. The 6.4 DNL predicted increase in project generated traffic noise levels are limited to the roadways used by project traffic between Mokulele Highway and the project site, and are not expected to generate adverse noise impacts by CY 2015 due to the absence of noise sensitive developments along these roadways.

The project site is located near an existing quarry, with large buffer distances to the closest residential developments. The closest neighboring developments include a rock quarry, the Maui Humane Society a motor-sport raceway, an industrial subdivision, and military office facilities. Predicted worst case noise emissions from operating equipment within the proposed Puunene Heavy Industrial Subdivision are not expected to exceed noise impact thresholds at the nearest noise sensitive developments. Compliance with State Department of Health noise regulations for fixed on-site equipment are recommended to minimize adverse noise impacts on adjacent and distant properties.

Adverse noise impacts are not expected to occur during construction of the proposed project due to the relatively large buffer distances to the nearest developed properties and due to the non-noise sensitive nature of the neighboring properties. Because construction activities may be audible within the project site and at nearby properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of quiet equipment and compliance with State Department of Health construction noise regulations are recommended as standard mitigation measures.

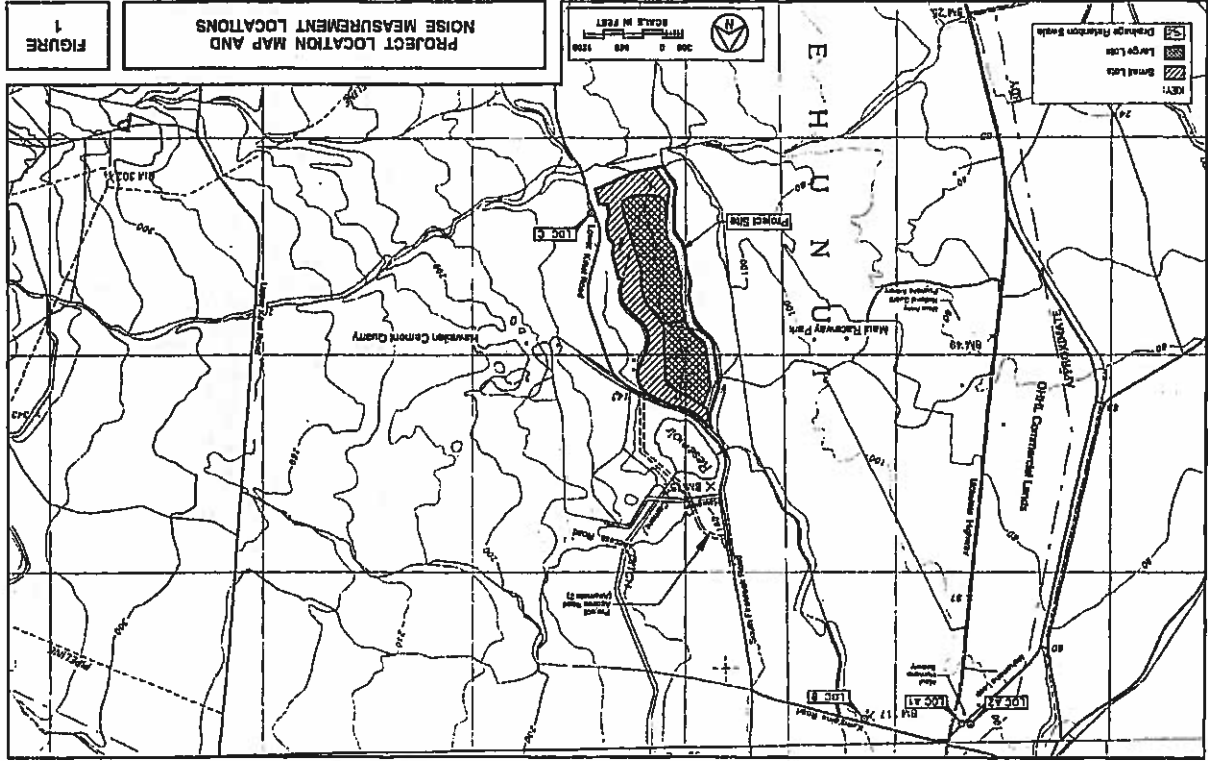


FIGURE 1

## CHAPTER II. PURPOSE

The primary objective of this study was to describe the existing and future traffic noise environment in the environs of the proposed Puunene Heavy Industrial Subdivision in Puunene on the island of Maui. Traffic forecasts for 2015 were used. Traffic noise level increases and impacts associated with the proposed project were to be determined within the project site as well as along the public roadways which are expected to service the project traffic. A specific objective was to determine future traffic noise level increases associated with both project and non-project traffic, and the potential noise impacts associated with these increases.

Noise impacts from on-site activities and short term construction noise at the project site were also included as noise study objectives. Recommendations for minimizing identified noise impacts were also to be provided as required.

## CHAPTER III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP TO LAND USE COMPATIBILITY

The noise descriptor currently used by federal agencies (such as FH/ HUD) to assess environmental noise is the Day-Night Average Sound Level (DNL). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. By definition, the minimum averaging period for the DNL descriptor is 24 hours. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the DNL descriptor. A more complete list of noise descriptors is provided in Appendix B to this report.

Table 1, derived from Reference 1, presents current federal noise standards and acceptability criteria for residential land uses. Table 2, also extracted from Reference 1, presents the general effects of noise on people in residential use situations. Land use compatibility guidelines for various levels of environmental noise as measured by the DNL descriptor system are shown in Figure 2 (from Reference 2). As a general rule, noise levels of 55 DNL or less occur in rural areas, or in areas which are removed from high volume roadways. In urbanized areas which are shielded from high volume streets, DNL levels generally range from 55 to 65 DNL, and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 DNL, and as high as 75 DNL when the roadway is a high speed freeway. In the project area, traffic noise levels associated with Mokulele Highway are typically greater than 65 DNL along the Right-of-Way due to the relatively large volume of traffic and high vehicle speeds on this thoroughfare.

For purposes of determining noise acceptability for funding assistance from federal agencies (FH/ HUD and VA), an exterior noise level of 65 DNL or less is considered acceptable for residences. This standard is applied nationally (Reference 3), including Hawaii. Because of our open-living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior-to-interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 DNL does not eliminate all risks of noise impacts. Because of these factors, and as recommended in Reference 4, a lower level of 55 DNL is considered as the "Unconditionally Acceptable" (or "Near-Zero Risk") level of exterior noise. However, after considering the cost and feasibility of applying the lower level of 55 DNL, government agencies such as FH/ HUD and VA have selected 65 DNL as a more appropriate regulatory standard.

For commercial, industrial, and other non-noise sensitive land uses, exterior noise levels as high as 75 DNL are generally considered acceptable. Exceptions to this occur when naturally ventilated office and other commercial establishments are exposed to exterior levels which exceed 65 DNL.

On the island of Maui, the State Department of Health (DOH) regulates noise from construction activities through the issuance of permits for allowing excessive

TABLE 1

**EXTERIOR NOISE EXPOSURE CLASSIFICATION  
(RESIDENTIAL LAND USE)**

NOISE EXPOSURE CLASS	DAY-NIGHT SOUND LEVEL	EQUIVALENT SOUND LEVEL	FEDERAL (1) STANDARD
Minimal Exposure	Not Exceeding 55 DNL	Not Exceeding 55 Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 DNL But Not Above 65 DNL	Above 55 Leq But Not Above 65 Leq	Acceptable(2)
Significant Exposure	Above 65 DNL But Not Above 75 DNL	Above 65 Leq But Not Above 75 Leq	Normally Unacceptable
Severe Exposure	Above 75 DNL	Above 75 Leq	Unacceptable

Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.

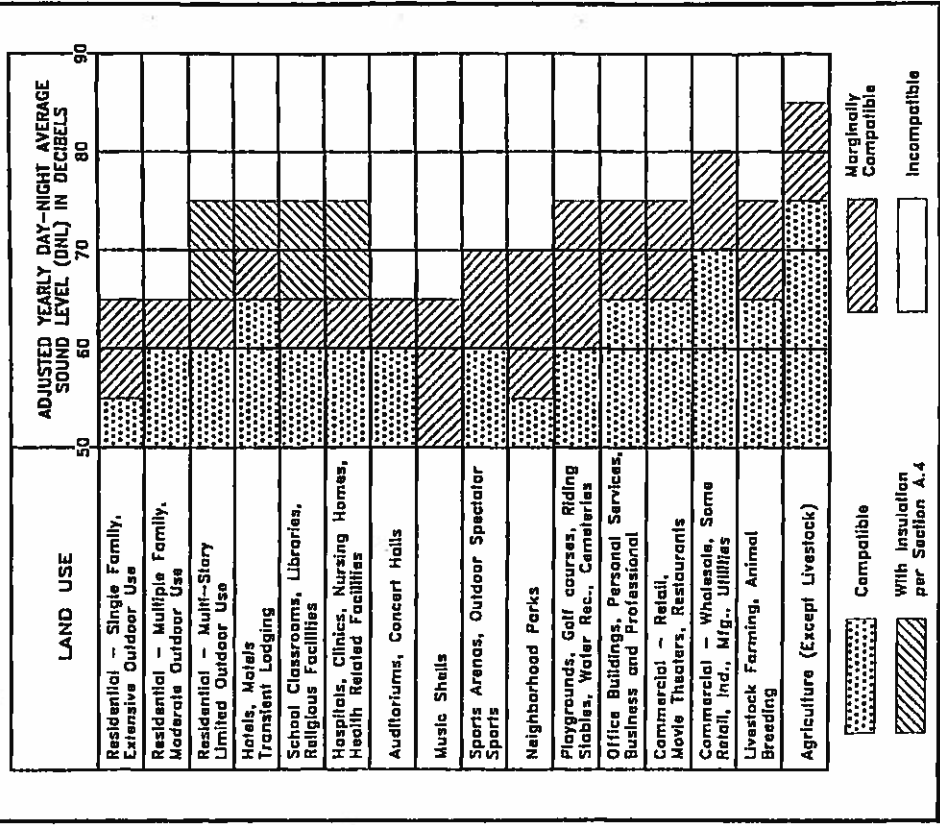
TABLE 2  
EFFECTS OF NOISE ON PEOPLE  
(Residential Land Uses Only)

Effects <sup>1</sup>	Hearing Loss	Speech Interference <sup>2</sup>		Qualitative Description	%Sensitivity	Distances in Meters for 95% Sensitivity	% of Population <sup>3</sup> Highly Annoyed <sup>4</sup>	Average Community Reaction <sup>4</sup>	Area Attitude Towards General Community
		Indoor	Outdoor						
75 and above	May Begin to Occur	80%	0.5	Very Severe	37%	Noise is likely to be the most important of all adverse aspects of the community environment.	Very Severe	Noise is likely to be the most important of all adverse aspects of the community environment.	Area Attitude Towards General Community
	Will Not Occur	98%	0.8	Will Not Occur	25%	Noise is one of the most important adverse aspects of the community environment.	Severe	Noise is one of the most important adverse aspects of the community environment.	Area Attitude Towards General Community
	Will Not Occur	100%	1.5	Will Not Occur	15%	Noise is one of the important adverse aspects of the community environment.	Significant	Noise is one of the important adverse aspects of the community environment.	Area Attitude Towards General Community
	Will Not Occur	100%	2.0	Will Not Occur	9%	Noise may be considered an adverse aspect of the community environment.	Moderate	Noise may be considered an adverse aspect of the community environment.	Area Attitude Towards General Community
	Will Not Occur	100%	2.5	Will Not Occur	4%	Noise considered no more important than various other environmental factors.	Slight	Noise considered no more important than various other environmental factors.	Area Attitude Towards General Community
	55 and below	Will Not Occur	100%	3.5	Will Not Occur	4%	Noise considered no more important than various other environmental factors.	Slight	Noise considered no more important than various other environmental factors.

1. "Speech Interference" data are drawn from the following tables in EPA's "Levels Document": Table 3, Fig. D-1, Fig. D-2, Fig. D-3. All other data from National Academy of Science 1977 report "Guidelines for Preparing Environmental Impact Statements on Noise," Report of Working Group on Evaluation of Environmental Impact of Noise.  
2. Depends on attitudes and other factors.  
3. The percentages of people reporting annoyance to lesser extent are higher in each case. An unknown small percentage of people will report being "highly annoyed" even in the quietest surroundings. One reason for the difficulty all people have in integrating annoyance over a very long time is that attitudes or other non-acoustic factors can modify this. Noise at low levels can still be an important problem, particularly when it intrudes into a quiet environment.  
4. NOTE: Research implicates noise as a factor producing stress-related health effects such as heart disease, high-blood pressure and asthma and other disease. High-level noise, however, have not as yet been quantified.



noise during limited time periods. State DOH noise regulations are expressed in maximum allowable property line noise limits rather than DNL (see Reference 5). Although they are not directly comparable to noise criteria expressed in DNL, State DOH noise limits for residential, commercial, and industrial lands equate to approximately 55, 60, and 76 DNL, respectively.



LAND USE COMPATIBILITY WITH YEARLY AVERAGE DAY-NIGHT AVERAGE SOUND LEVEL (DNL) AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED.  
 (Source: American National Standards Institute S12.9-1998/Part 5)

**FIGURE 2**

CHAPTER IV. GENERAL STUDY METHODOLOGY

Existing traffic noise levels were measured at four locations (A1, A2, B, and C) in the project environs to provide a basis for developing the project's traffic noise contributions along the roadways which will service the proposed development. The locations of the measurement sites are shown in Figure 1. Noise measurements were performed during the month of October 2011. The results of the traffic noise measurements were compared with calculations of existing traffic noise levels to validate the computer model used. The traffic noise measurement results, and their comparisons with computer model predictions of existing traffic noise levels are summarized in Table 3.

Traffic noise calculations for the existing conditions as well as noise predictions for the Year 2015 were performed using the Federal Highway Administration (FHWA) Traffic Noise Model (Reference 6). Traffic data entered into the noise prediction model were: roadway and receiver locations; hourly traffic volumes; average vehicle speeds; estimates of traffic mix; and "Lawn and Loose Soil" propagation loss factors. The traffic data and forecasts for the project (Reference 7), plus the spot traffic counts obtained during the noise measurement periods were the primary sources of data inputs to the model. Appendix C summarizes the AM and PM peak hour traffic volumes for CY 2011 and 2015 which were used to model existing and future traffic noise along the roadways in the vicinity of the project site. For existing and future traffic along the roadways in the vicinity of the project site, it was assumed that the 24-hour DNL along those roadways were equal to the average noise levels, or Leq(h), during the AM peak traffic hour plus 1 dB. This assumption was based on computations of both the hourly Leq and the 24-hour DNL of traffic noise on Mokulele Highway (see Figure 3) using State of Hawaii hourly traffic counts from Reference 8.

Traffic noise calculations for both the existing and future conditions in the project environs were developed for ground level receptors with and without the benefit of shielding from natural terrain features or man made obstructions. Traffic noise levels were also calculated for future conditions with and without the proposed project. The forecasted changes in traffic noise levels over existing levels were calculated with and without the project, and noise impact risks evaluated. The relative contributions of non-project and project traffic to the total noise levels were also calculated, and an evaluation of possible traffic noise impacts was made.

Evaluations of potential noise impacts from on site noise sources were performed by predicting the noise levels from on site noise sources at the closest residential developments in Kinei (2.3 miles), Pukalani (6.4 miles), and Kahului (4.0 miles). These predictions assumed that each of the small and large lots of the industrial subdivision emitted the maximum sound level of 70 dBA as allowed for industrial properties by the State DOH noise regulations (Reference 5). A total of 28 subdivision lots, each with 70 dBA noise emitters located within each lot (for a total of 28 continuous noise sources), was assumed for these noise modeling purposes. The

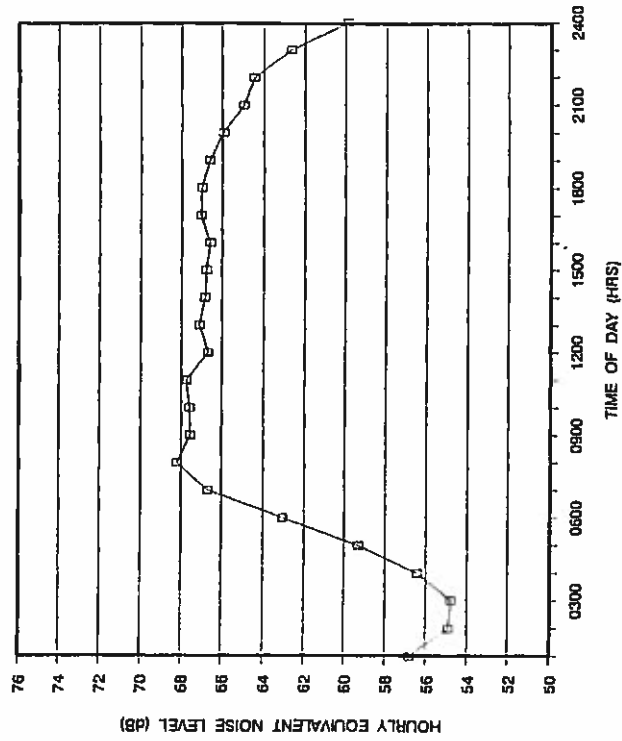
TABLE 3  
TRAFFIC AND BACKGROUND NOISE MEASUREMENT RESULTS

LOCATION	Time of Day	Avg. Speed (MPH)	Hourly Traffic Volume	Measured Leq (dB)	Predicted Leq (dB)
A1. 96 FT from the center line of Mokulele Hwy. (10/24/11)	TO	55	2,123	69.9	69.9
	TA	55	2,123	61.9	62.0
A2. 196 FT from the center line of Mokulele Hwy. (10/24/11)	TO	55	2,123	69.9	69.9
	TA	55	2,123	61.9	62.0
B. 50 FT from the center line of Kamaeha Rd (10/24/11)	TO	35	58	58.9	58.9
	TA	35	58	58.9	58.9
C. 44 FT from the center line of Firebreak Rd. (10/24/11)	TO	35	3	60.1	60.1
	TA	35	3	60.1	60.1
A1. 96 FT from the center line of Mokulele Hwy. (10/24/11)	TO	50	2,384	66.6	66.9
	TA	50	2,384	66.6	66.9
A2. 196 FT from the center line of Mokulele Hwy. (10/24/11)	TO	50	2,384	66.6	66.9
	TA	50	2,384	66.6	66.9

worst case sound levels at the closest residential developments in Kihei, Pukalani, and Kahului resulting from this noise modeling assumption were then compared to existing background noise levels and noise impact criteria.

Calculations of average exterior and interior noise levels from construction activities were performed for typical naturally ventilated and air conditioned buildings. Predicted noise levels were compared with existing background ambient noise levels, and the potential for noise impacts was assessed.

**FIGURE 3**  
**HOURLY VARIATIONS OF TRAFFIC NOISE AT 96 FT**  
**SETBACK DISTANCE FROM THE CENTERLINE OF**  
**MOKULELE HIGHWAY NEAR MAUI RACEWAY PARK**  
**(STA. B74031100336; MAY 13, 2009)**



0 96 FT from Roadway Centerline (69.0 DNL)

V. EXISTING ACOUSTICAL ENVIRONMENT

The existing background ambient noise levels within the project site are relatively low and less than 50 dBA, except during passbys of heavy motor vehicles on the cane field service roads or during flybys of aircraft operating at Kahului Airport. Traffic along Mokuiele Highway does not control the background noise levels at the project site due to the very large (approximately 1 mile) buffer distance between the project site and Mokuiele Highway. The loudest noise sources at the project site are probably agricultural machines and heavy trucks during planting or harvesting seasons on the project site.

Traffic and background ambient noise measurements were obtained in October 2011 at four locations (A1, A2, B, and C) in the project environs. These locations are shown in Figure 1. The results of the traffic and background ambient noise measurements are summarized in Table 3, with measurement locations identified in Figure 1. The measurement locations were located at ground level. As shown in Table 3, correlation between measured and predicted traffic noise levels was satisfactory. The Traffic Noise Model's "Loose Soil" and "Lawn" propagation loss factors were used to obtain the good correlation.

Calculations of existing traffic noise levels during the AM and PM peak traffic hours are presented in Table 4. The hourly Leq (or Equivalent Sound Level) contribution from each roadway section in the project environs was calculated for comparison with forecasted traffic noise levels with and without the project. In Table 4, the AM peak hour Leq values were assumed to be approximately 1 dB lower than the DNL values for the roadways shown. The existing setback distances from the roadways centerlines to their associated 65 and 70 DNL contours were also calculated as shown in Table 5. The contour line setback distances do not take into account noise shielding effects or the additive contributions of traffic noise from intersecting street sections.

The existing traffic noise levels in the project environs along the Mokuiele Highway Rights-of-Way are in the "Significant Exposure, Normally Unacceptable" category for residences, and at or greater than 65 DNL along the highway's Rights-of-Way. The existing traffic noise levels in the project environs along Mokuiele Highway's Rights-of-Way are approximately 70 to 71 DNL. Existing traffic noise levels at the Maui Humane Society building closest to Mokuiele Highway are approximately 65 to 66 DNL, which is considered to be acceptable for office buildings. Existing traffic noise levels at the Maui Army National Guard Puunene Armory is approximately 56 DNL, which is also considered to be acceptable for office buildings. Existing traffic noise levels at the industrial subdivision south of Waihee Road intersection with Mokuiele Highway range from approximately 55 DNL to 71 DNL, which is also considered to be acceptable for industrial land uses.

EXISTING (CY 2011) TRAFFIC VOLUMES AND NOISE LEVELS  
ALONG ROADWAYS IN PROJECT AREA  
(AM OR PM PEAK HOUR)

LOCATION	SPEED (MPH)	TOTAL VPH *****	AUTOS	TRUCKS	50' Leq	100' Leq	200' Leq
Mokuiele Hwy, North of Kamahana Rd. (AM)	55	2,197	2,129	37	76.5	69.6	62.6
Mokuiele Hwy, South of Kamahana Rd. (AM)	50	2,390	2,370	14	73.2	66.2	59.1
Mokuiele Hwy, South of Kamahana Rd. (PM)	55	2,147	2,085	36	76.3	69.4	62.5
Mokuiele Hwy, South of Kamahana Rd. (PM)	50	2,373	2,352	14	73.1	66.2	59.1
Kamahana Rd, At Mokuiele Hwy. (AM)	35	57	27	3	60.8	55.6	51.1
Kamahana Rd, At Mokuiele Hwy. (PM)	35	57	27	3	60.8	55.6	51.1
Mehameha Lp, At Mokuiele Hwy. (AM)	25	35	35	0	44.3	38.0	32.0
Mehameha Lp, At Mokuiele Hwy. (PM)	25	35	35	0	44.3	38.0	32.0
Under Project Access Alternative 1:							
South Firebreak Rd, N. of Quarry Access Rd. (AM)	35	57	27	5	60.8	55.6	51.1
South Firebreak Rd, N. of Quarry Access Rd. (PM)	35	57	27	5	60.8	55.6	51.1
Quarry Access Rd, At South Firebreak Rd. (AM)	35	57	27	3	60.8	55.6	51.1
Quarry Access Rd, At South Firebreak Rd. (PM)	35	57	27	3	60.8	55.6	51.1
South Firebreak Rd, S. of Quarry Access Rd. (AM)	35	57	27	3	60.8	55.6	51.1
South Firebreak Rd, S. of Quarry Access Rd. (PM)	35	57	27	3	60.8	55.6	51.1
Under Project Access Alternative 2:							
South Firebreak Rd, N. of Project Access Rd. (AM)	35	57	27	5	60.8	55.6	51.1
South Firebreak Rd, N. of Project Access Rd. (PM)	35	57	27	5	60.8	55.6	51.1
South Firebreak Rd, S. of Project Access Rd. (AM)	35	57	27	3	60.8	55.6	51.1
South Firebreak Rd, S. of Project Access Rd. (PM)	35	57	27	3	60.8	55.6	51.1
Quarry Access Rd, At South Firebreak Rd. (AM)	35	57	27	3	60.8	55.6	51.1
Quarry Access Rd, At South Firebreak Rd. (PM)	35	57	27	3	60.8	55.6	51.1
Project Access Rd, At South Firebreak Rd. (AM)	35	57	27	3	60.8	55.6	51.1
Project Access Rd, At South Firebreak Rd. (PM)	35	57	27	3	60.8	55.6	51.1

CHAPTER VI. FUTURE NOISE ENVIRONMENT

TABLE 5  
EXISTING AND CY 2015 DISTANCES TO 65  
AND 70 DNL CONTOURS

STREET SECTION	65 DNL SETBACK (FT)		70 DNL SETBACK (FT)	
	EXISTING	CY 2015	EXISTING	CY 2015
Mokulele Hwy North of Kamaaina Rd.	174	202	106	122
Mokulele Hwy South of Kamaaina Rd.	172	194	104	118
Kamaaina Rd. At Mokulele Hwy.	33	67	17	44
Mehameha Ln. At Mokulele Hwy.	6	6	3	3
<b>Under Project Access Alternative 1:</b>				
South Firebreak Rd. N. of Quarry Access Rd.	33	78	17	41
Quarry Access Rd. At South Firebreak Rd.	33	33	17	17
South Firebreak Rd. S. of Quarry Access Rd.	N/A	68	N/A	38
<b>Under Project Access Alternative 2:</b>				
South Firebreak Rd. N. of Project Access Rd.	33	78	17	41
South Firebreak Rd. S. of Project Access Rd.	33	33	17	17
Quarry Access Rd. At South Firebreak Rd.	33	33	17	17
Project Access Rd. At South Firebreak Rd.	N/A	68	N/A	36

NOTES:

- (1) All setback distances are from the roadway's centerlines.
- (2) See TABLES 4 and 5 for traffic volume, speed, and mix assumptions.
- (3) Setback distances are for ground level receptors.

Predictions of future traffic noise levels were made using the traffic volume assignments of Reference 7 for CY 2015 with the proposed project. Estimates of CY 2015 traffic volumes with and without the project were contained in Reference 7. The future projections of project plus non-project traffic noise levels on the roadways which would service the project are shown in Table 6 for the AM and PM peak hours of traffic, under the Build Alternative. Predicted increases in the setback distances to the 65 and 70 DNL contours are shown in Table 5. The separate non-project and project traffic noise contributions for the Build Alternative are shown in Table 7.

Very small changes in traffic noise levels (0.3 to 0.4 DNL) are expected along Mokulele Highway in the project environs between CY 2011 and 2015 as a result of project traffic. The growth in non-project traffic by CY 2015 is predicted to result in a traffic noise level increase of 1.0 DNL along Mokulele Highway. By CY 2015, traffic noise levels in the project area along Mokulele Highway are expected to increase primarily due to the anticipated growth in non-project traffic, and it will be difficult to determine the increases in future traffic noise associated with the project traffic.

Along the project access roads between Mokulele Highway and the project site, existing traffic noise levels are expected to increase by 3.7 to 6.4 DNL solely as a result of project traffic. No changes in non-project traffic noise levels are expected along the access roads between the project site and Mokulele Highway. The increases in traffic noise levels due to project traffic are relatively high, but these increases are expected to occur in currently undeveloped, agricultural lands.

The dominant traffic noise sources in the project environs will continue to be traffic along Mokulele Highway, with the increases in future traffic noise levels being relatively small along these two roadways and primarily associated with non-project traffic.

Future traffic noise levels on the proposed project site will continue to be unaffected by traffic noise along Mokulele Highway due to the large buffer distance to the highway. Future traffic noise levels on the project site will be controlled by project traffic moving within the industrial subdivision and moving to and from the industrial subdivision. These future traffic noise levels within the industrial subdivision are not expected to exceed 70 DNL, and should be acceptable for the planned industrial land uses.

**TABLE 7**  
**CALCULATIONS OF PROJECT AND NON-PROJECT**  
**TRAFFIC NOISE CONTRIBUTIONS (CY 2015)**  
**(DNL)**

STREET SECTION	NOISE LEVEL INCREASE DUE TO:	
	NON-PROJECT TRAFFIC	PROJECT TRAFFIC
Mokulele Hwy. North of Kamaaina Rd.	1.0	0.4
Mokulele Hwy. South of Kamaaina Rd.	1.0	0.3
Kamaaina Rd. At Mokulele Hwy.	0.0	3.7
Mehameha Lp. At Mokulele Hwy.	0.0	0.0
<b>Under Project Access Alternative 1:</b>		
South Firebreak Rd. N. of Quarry Access Rd.	0.0	6.4
Quarry Access Rd. At South Firebreak Rd.	0.0	0.0
South Firebreak Rd. S. of Quarry Access Rd.	N/A *	60.9
<b>Under Project Access Alternative 2:</b>		
South Firebreak Rd. N. of Project Access Rd.	0.0	6.4
South Firebreak Rd. S. of Project Access Rd.	0.0	0.0
Quarry Access Rd. At South Firebreak Rd.	0.0	0.0
Project Access Rd. At South Firebreak Rd.	N/A *	60.9

**Note:**  
 \* Existing noise levels from agricultural equipment are not included.

LOCATION	SPEED (MPH)	TOTAL VEH TRUCKS	AUTOS	MTRUCKS	FUTURE (CY 2015) TRAFFIC VOLUMES AND NOISE LEVELS			ALONG ROADWAYS IN PROJECT AREA			(AM OR PM PEAK HOUR, BUILD)		
					50' Leg	100' Leg	200' Leg	50' Leg	100' Leg	200' Leg	50' Leg	100' Leg	200' Leg
Mokulele Hwy. North of Kamaaina Rd. (AM)	55	2,941	3,035	42	77.9	71.0	64.1	77.9	71.0	64.1	77.9	71.0	64.1
Mokulele Hwy. South of Kamaaina Rd. (AM)	55	2,790	2,873	34	77.6	70.7	63.7	77.6	70.7	63.7	77.6	70.7	63.7
Mokulele Hwy. South of Kamaaina Rd. (PM)	50	3,236	3,266	10	74.5	67.6	60.6	74.5	67.6	60.6	74.5	67.6	60.6
Kamaaina Rd. At Mokulele Hwy. (AM)	35	381	529	84	67.5	59.3	57.2	67.5	59.3	57.2	67.5	59.3	57.2
Kamaaina Rd. At Mokulele Hwy. (PM)	35	374	508	84	67.1	61.6	56.7	67.1	61.6	56.7	67.1	61.6	56.7
Mehameha Lp. At Mokulele Hwy. (AM)	25	35	508	72	66.4	58.8	56.7	66.4	58.8	56.7	66.4	58.8	56.7
Mehameha Lp. At Mokulele Hwy. (PM)	25	35	508	72	66.4	58.8	56.7	66.4	58.8	56.7	66.4	58.8	56.7
Under Project Access Alternative 1:													
South Firebreak Rd. N. of Quarry Access Rd. (AM)	35	391	529	84	67.5	62.0	57.2	67.5	62.0	57.2	67.5	62.0	57.2
South Firebreak Rd. N. of Project Access Rd. (AM)	35	374	508	72	67.1	61.6	56.7	67.1	61.6	56.7	67.1	61.6	56.7
South Firebreak Rd. S. of Project Access Rd. (AM)	35	374	508	72	67.1	61.6	56.7	67.1	61.6	56.7	67.1	61.6	56.7
Quarry Access Rd. At South Firebreak Rd. (AM)	35	28	36	25	60.8	55.6	51.1	60.8	55.6	51.1	60.8	55.6	51.1
Quarry Access Rd. At South Firebreak Rd. (PM)	35	28	36	25	60.8	55.6	51.1	60.8	55.6	51.1	60.8	55.6	51.1
South Firebreak Rd. S. of Quarry Access Rd. (PM)	35	354	472	59	66.4	60.9	56.0	66.4	60.9	56.0	66.4	60.9	56.0
South Firebreak Rd. S. of Quarry Access Rd. (AM)	35	354	472	59	66.4	60.9	56.0	66.4	60.9	56.0	66.4	60.9	56.0
Under Project Access Alternative 2:													
South Firebreak Rd. S. of Quarry Access Rd. (PM)	35	352	472	60	66.5	61.0	56.1	66.5	61.0	56.1	66.5	61.0	56.1
Project Access Rd. At South Firebreak Rd. (PM)	35	352	472	60	66.5	61.0	56.1	66.5	61.0	56.1	66.5	61.0	56.1

**CHAPTER VII. DISCUSSION OF PROJECT-RELATED NOISE IMPACTS AND POSSIBLE MITIGATION MEASURES**

**Traffic Noise.** Existing traffic noise levels along Mokulele Highway are relatively high, and are expected to remain so through CY 2015. Risks of future traffic noise impacts along the highway should continue to be low due to the absence of noise sensitive receptors along the highway in the project environs.

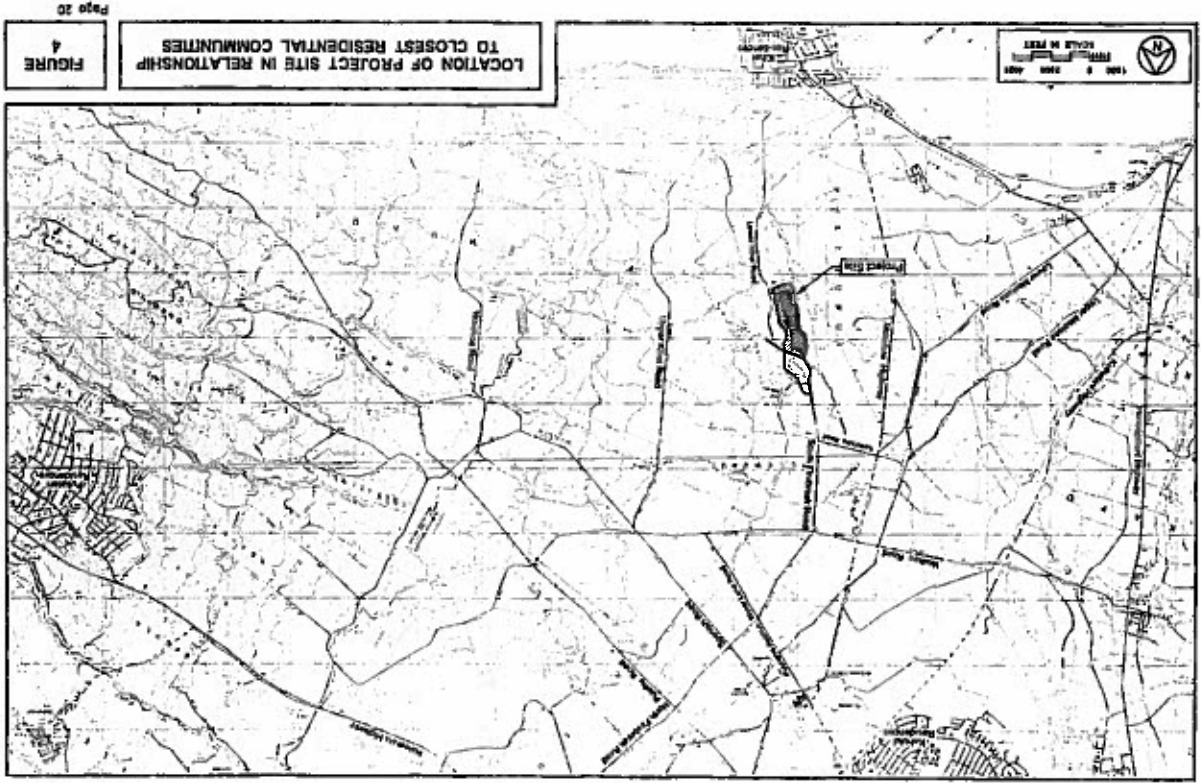
Project related traffic along Mokulele Highway is not expected to cause measurable increases in future traffic noise levels. The predicted increases of 0.3 to 0.4 DNL in project related traffic noise are small compared to the 1.0 DNL increase expected from non-project traffic. For these reasons, traffic noise mitigation measures should not be required.

**On-Site Noise Sources.** By existing State Department of Health regulations, fixed machinery on industrial lots may emit sound levels continuously during the day and night, as long as their sound levels do not exceed 70 dBA at the lots' property boundaries. Therefore, using the industrial subdivision plan shown in Figure 1, it was assumed that there could be 4 large lots and 24 small lots within the subdivision. A total of 28 noise sources, each emitting sound levels of 70 dBA at their respective lot boundary lines, was assumed for modeling the potential sound level emissions from on-site sources within the proposed industrial subdivision. Under these hypothetical worst case conditions, the combined sound level from the 28 lots of the industrial subdivision would be approximately 45 dBA at 4,900 feet (0.93 mile) distance from the center of the subdivision. A continuous outdoor sound level of 45 dBA is considered to be acceptable by the State DOH and by all federal agencies for single family residences. Because there are no noise sensitive developments within 4,900 feet of the proposed heavy industrial subdivision (see Figure 4), risks of adverse noise impacts from on site noise sources are considered to be minimal.

Predicted noise levels under the hypothetical worst case condition described above were developed at the closest residential developments. These hypothetical worst case levels were: 29 dBA in Kihel at Kaloohia Street; 3 dBA in Pukalani at Opalipali Place; 19 dBA at Puanene near the Sugar Museum; and 17 dBA in Kanului at Makali Street. These worst case levels are very low, and will be below existing nighttime background noise levels in these communities.

Noise mitigation measures which limit the noise from fixed mechanical equipment to those allowed by the State Department of Health (Reference 5) should be required of all tenants within the industrial subdivision.

**General Construction Noise.** Audible construction noise will probably be unavoidable during the entire project construction period. The total time period for construction is unknown, but it is anticipated that the actual work will be moving from one location on the project site to another during that period. Actual length of exposure



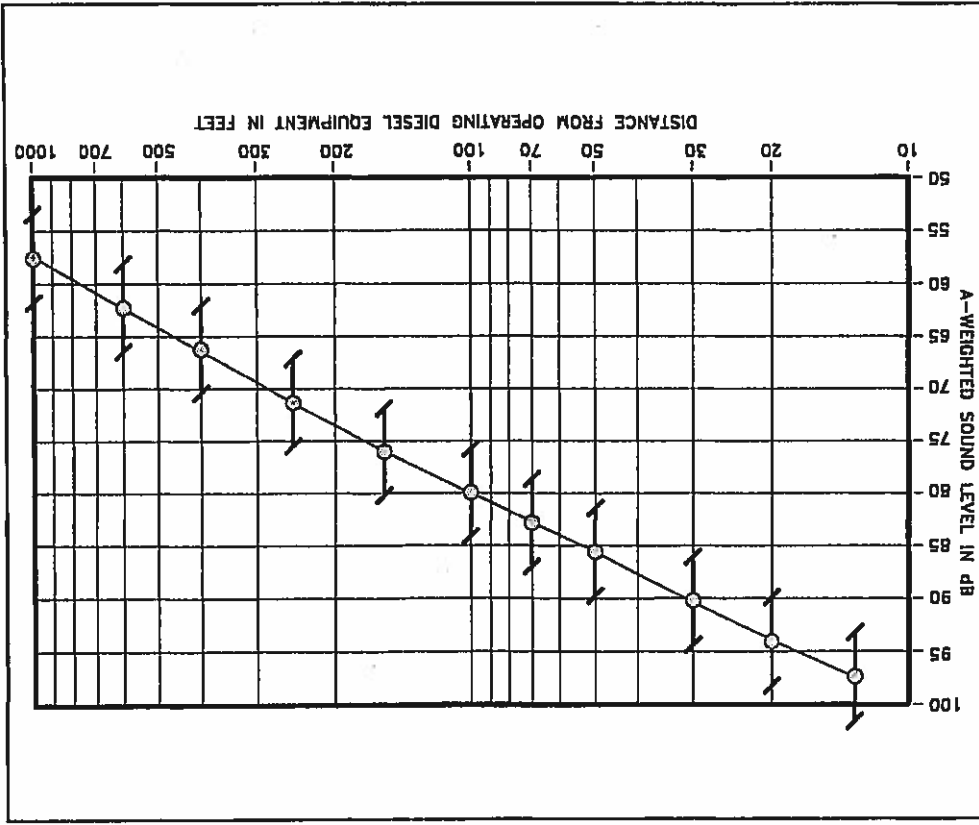
to construction noise at any receptor location will probably be less than the total construction period for the entire project. Typical levels of exterior noise from construction activity (excluding pile driving activity) at various distances from the job site are shown in Figure 5. The impulsive noise levels of impact pile drivers are approximately 15 dB higher than the levels shown in Figure 5, while the intermittent noise levels of vibratory pile drivers are at the upper end of the noise level ranges depicted in the figure. Typical levels of construction noise inside naturally ventilated and air conditioned structures are approximately 10 and 20 dB less, respectively, than the levels shown in Figure 5.

The closest residences to the project site are well beyond the 1,000 feet separation distance shown in Figure 5, and for this reason, risks of adverse noise impacts from construction activity on the project site are expected to be very low. The noise from construction activities will decrease and be masked by traffic noise from Mokuale Highway at the Maui Humane Society and National Guard facilities.

Peak airborne noise levels from pile driving may be as much as 15 dBA greater than noise levels shown in Figure 5 for non-impulsive (steady) construction noise sources. Although the pile driving can produce more intense noise levels, each pulse is of short individual duration (less than one second). Therefore, its impact on speech communication is not as severe as that of a steady source of the same noise level.

Adverse noise impacts are more likely to occur following completion of initial site preparation and infrastructure construction activities and at the initial subdivision tenants who are exposed to building construction noise from neighboring or nearby lots of the same subdivision. Adverse noise impacts are not expected to occur inside air conditioned structures which are beyond 200 FT of a building construction site. Inside naturally ventilated structures, interior noise levels (with windows or doors opened) are estimated to range between 65 to 53 dBA at 200 FT to 600 FT distances from the building construction site. Closure of all doors and windows facing the building construction site would generally reduce interior noise levels by an additional 5 to 10 dBA.

The use of properly muffled construction equipment should be required on all job sites. The incorporation of State Department of Health construction noise limits and curfew times, which are applicable throughout the State of Hawaii (Reference 5), is another noise mitigation measure which is normally applied to construction activities. Figure 6 depicts the normally permitted hours of construction. Noisy construction activities are not allowed on Sundays and holidays, during the early morning, and during the late evening and nighttime periods under the DOH permit procedures.



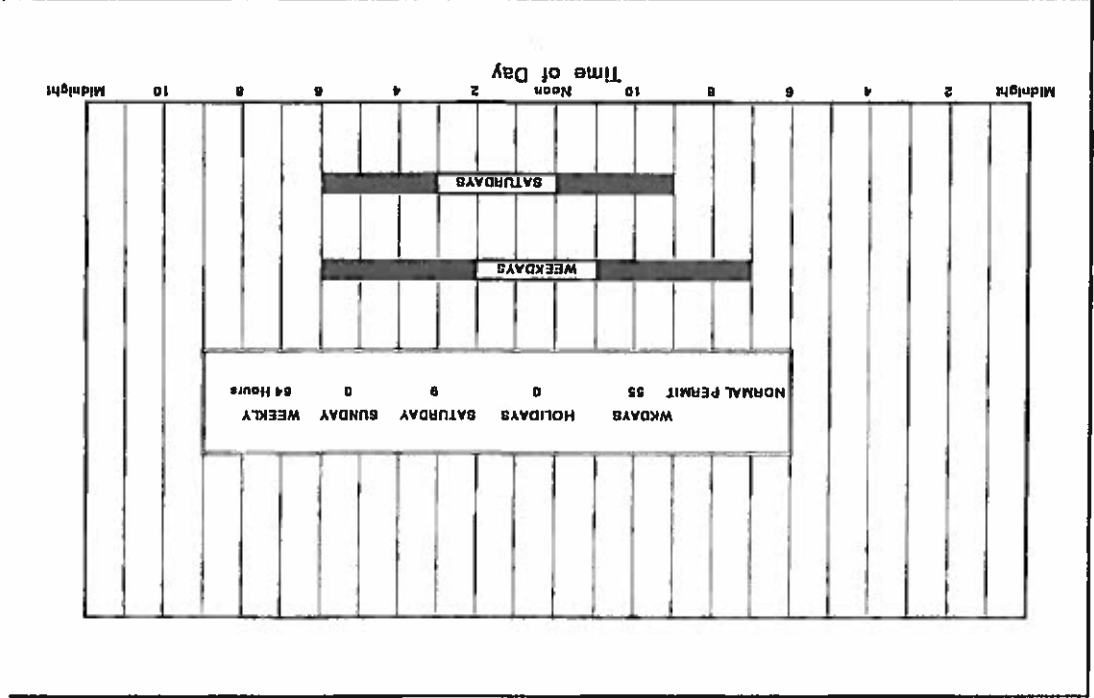
ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 5



**FIGURE 6**

**AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE**



**APPENDIX A. REFERENCES**

- (1) "Guidelines for Considering Noise in Land Use Planning and Control;" Federal Interagency Committee on Urban Noise; June 1980.
- (2) American National Standard, "Sound Level Descriptors for Determination of Compatible Land Use;" ANSI S12.9-1998/ Part 5; Acoustical Society of America.
- (3) "Environmental Criteria and Standards, Noise Abatement and Control, 24 CFR, Part 51, Subpart B;" U.S. Department of Housing and Urban Development; July 12, 1979.
- (4) "Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety;" U.S. Environmental Protection Agency; EPA 550/9-74-004; March 1974.
- (5) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.
- (6) "FHWA Highway Traffic Noise Model User's Guide," FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; January 1998 and Version 2.5 Upgrade (April 14, 2004).
- (7) "Traffic Impact Analysis Report for Puunene Heavy Industrial Subdivision;" Philip Rowell and Associates; September 26, 2011.
- (8) Hourly Traffic Counts At Station B74031100336, Mokuiele Highway Near Maui Raceway Park; Hawaii State Department of Transportation, May 13, 2009.

APPENDIX B (CONTINUED)

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table 1. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table 1.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table 1 was developed (Table 11). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E, ...). If no weighting network is specified, A-weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table 11 permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L<sub>10h</sub> with the L<sub>10hA</sub>.

Although not included in the tables, it is also recommended that "L<sub>10p</sub>" and "L<sub>10pA</sub>" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 55 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, L<sub>eq</sub> is designated the "equivalent sound level". For L<sub>10</sub>, L<sub>5</sub>, and L<sub>1h</sub>, "equivalent" may be used in the complete name, but, for brevity, or designation averaging by definition, it is omitted. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, dBA, dBS, and dBN are not to be used. Examples of this preferred usage are: the Perceived Noise Level (PNL) was found to be 75 dB. L<sub>10</sub> = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of the unit except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Levels" (ENL). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighted Loss of Hearing" (PWL) shall be used consistent with CBMA Working Group 69 Report Guidelines for Proposing Environmental Impact Statements (1977).

TABLE 1  
A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

TERM	SYMBOL
1. A-Weighted Sound Level	L <sub>A</sub>
2. A-Weighted Sound Power Level	L <sub>WA</sub>
3. Maximum A-Weighted Sound Level	L <sub>max</sub>
4. Peak A-Weighted Sound Level	L <sub>Apk</sub>
5. Level Exceeded x% of the Time	L <sub>x</sub>
6. Equivalent Sound Level	L <sub>eq</sub>
7. Equivalent Sound Level over Time (T) <sup>(1)</sup>	L <sub>eq(T)</sub>
8. Day Sound Level	L <sub>d</sub>
9. Night Sound Level	L <sub>n</sub>
10. Day-Night Sound Level	L <sub>dn</sub>
11. Yearly Day-Night Sound Level	L <sub>dn(Y)</sub>
12. Sound Exposure Level	L <sub>SE</sub>

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is L<sub>eq(1)</sub>). Time may be specified in non-quantitative terms (e.g., could be specified a L<sub>eq(WASH)</sub> to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II  
RECOMMENDED DESCRIPTOR LIST

TERM	A-WEIGHTING	ALTERNATIVE <sup>(1)</sup> A-WEIGHTING	OTHER <sup>(2)</sup> WEIGHTING	UNWEIGHTED
1. Sound (Pressure) Level	L <sub>A</sub>	L <sub>pA</sub>	L <sub>B</sub> , L <sub>pB</sub>	L <sub>p</sub>
2. Sound Power Level	L <sub>WA</sub>		L <sub>WB</sub>	L <sub>w</sub>
3. Max. Sound Level	L <sub>max</sub>	L <sub>Amax</sub>	L <sub>Bmax</sub>	L <sub>pmax</sub>
4. Peak Sound (Pressure) Level	L <sub>Apk</sub>		L <sub>Bpk</sub>	L <sub>pk</sub>
5. Level Exceeded x% of the Time	L <sub>x</sub>	L <sub>AX</sub>	L <sub>Bx</sub>	L <sub>px</sub>
6. Equivalent Sound Level	L <sub>eq</sub>	L <sub>Aeq</sub>	L <sub>Beq</sub>	L <sub>peq</sub>
7. Equivalent Sound Level Over Time(T)	L <sub>eq(T)</sub>	L <sub>Aeq(T)</sub>	L <sub>Beq(T)</sub>	L <sub>peq(T)</sub>
8. Day Sound Level	L <sub>d</sub>	L <sub>Ad</sub>	L <sub>Bd</sub>	L <sub>pd</sub>
9. Night Sound Level	L <sub>n</sub>	L <sub>An</sub>	L <sub>Bn</sub>	L <sub>pn</sub>
10. Day-Night Sound Level	L <sub>dn</sub>	L <sub>Adn</sub>	L <sub>Bdn</sub>	L <sub>pdn</sub>
11. Yearly Day-Night Sound Level	L <sub>dn(Y)</sub>	L <sub>Adn(Y)</sub>	L <sub>Bdn(Y)</sub>	L <sub>pdn(Y)</sub>
12. Sound Exposure Level	L <sub>S</sub>	L <sub>SA</sub>	L <sub>SB</sub>	L <sub>Sp</sub>
13. Energy Average Value Over (Non-Time Domain) Set of Observations	L <sub>eq(e)</sub>	L <sub>Aeq(e)</sub>	L <sub>Beq(e)</sub>	L <sub>peq(e)</sub>
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	L <sub>x(e)</sub>	L <sub>AX(e)</sub>	L <sub>Bx(e)</sub>	L <sub>px(e)</sub>
15. Average L <sub>x</sub> Value	L <sub>x</sub>	L <sub>AX</sub>	L <sub>Bx</sub>	L <sub>px</sub>

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E-weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is Leq(1). Time may be specified in non-quantitative terms (e.g., could be specified as Leq(WASH) to mean the washing cycle noise for a washing machine.

APPENDIX C

SUMMARY OF BASE YEAR AND YEAR 2015  
TRAFFIC VOLUMES

ROADWAY LANES	**** CY 2011 ****		CY 2015 (NO BUILD)		CY 2015 (BUILD)	
	AM VPH	PM VPH	AM VPH	PM VPH	AM VPH	PM VPH
Mokulele Hwy, N. of Kamaaina Rd. (NB)	1,104	1,218	1,309	1,557	1,430	1,788
Mokulele Hwy, N. of Kamaaina Rd. (SB)	1,093	1,172	1,354	1,547	1,597	1,609
Two-Way	2,187	2,390	2,743	3,104	3,025	3,397
Mokulele Hwy, S. of Kamaaina Rd. (NB)	1,101	1,190	1,366	1,529	1,535	1,557
Mokulele Hwy, S. of Kamaaina Rd. (SB)	1,046	1,163	1,307	1,556	1,336	1,659
Two-Way	2,147	2,373	2,693	3,087	2,873	3,286
Kamaaina Rd. At Mokulele Hwy. (EB)	37	8	37	8	429	108
Kamaaina Rd. At Mokulele Hwy. (WB)	20	28	20	28	100	400
Two-Way	57	36	57	36	529	508
Meleakaha Ln. At Mokulele Hwy. (EB)	4	30	4	30	4	30
Meleakaha Ln. At Mokulele Hwy. (WB)	31	11	31	11	31	11
Two-Way	35	41	35	41	35	41
South Firebreak Rd. N. of Quarry Access Rd. (NB) Alt. 1	20	29	20	28	100	400
South Firebreak Rd. N. of Quarry Access Rd. (SB) Alt. 1	37	8	37	8	429	108
Two-Way	57	36	57	36	529	508
Quarry Access Rd. At S. Firebreak Rd. (EB) Alt. 1	37	8	37	8	37	8
Quarry Access Rd. At S. Firebreak Rd. (WB) Alt. 1	20	28	20	28	20	28
Two-Way	57	36	57	36	57	36
South Firebreak Rd. S. of Quarry Access Rd. (NB) Alt. 1	N/A	N/A	N/A	N/A	80	372
South Firebreak Rd. S. of Quarry Access Rd. (SB) Alt. 1	N/A	N/A	N/A	N/A	392	100
Two-Way	N/A	N/A	N/A	N/A	472	472
Project Access Rd. N. of Project Access Rd. (NB) Alt. 2	20	28	20	28	100	400
Project Access Rd. N. of Project Access Rd. (SB) Alt. 2	37	8	37	8	429	108
Two-Way	57	36	57	36	529	508
South Firebreak Rd. S. of Project Access Rd. (NB) Alt. 2	20	28	20	28	20	28
South Firebreak Rd. S. of Project Access Rd. (SB) Alt. 2	37	8	37	8	37	8
Two-Way	57	36	57	36	57	36
Quarry Access Rd. At S. Firebreak Rd. (EB) Alt. 2	37	8	37	8	37	39
Quarry Access Rd. At S. Firebreak Rd. (WB) Alt. 2	20	28	20	28	20	28
Two-Way	57	36	57	36	57	67
Project Access Rd. At S. Firebreak Rd. (EB) Alt. 2	N/A	N/A	N/A	N/A	392	100
Project Access Rd. At S. Firebreak Rd. (WB) Alt. 2	N/A	N/A	N/A	N/A	80	372
Two-Way	N/A	N/A	N/A	N/A	472	472

**APPENDIX H**  
Air Quality Study

**AIR QUALITY STUDY  
FOR THE PROPOSED**

**PUUNENE HEAVY INDUSTRIAL SUBDIVISION**

**PUUNENE, MAUI, HAWAII**

Prepared for:

**CMBY 2011 Investment, LLC**

November 2011



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1 Summary of State of Hawaii and National Ambient Air Quality Standards
2 Mean Wind Speed and Prevailing Direction for Kahului Airport
3 Air Pollution Emissions Inventory for Island of Maui, 1993

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- 4 Annual Summaries of Ambient Air Quality Measurements for Monitoring Stations Nearest Puunene Heavy Industrial Subdivision Project
- 5 Estimated Worst-Case 1-Hour Carbon Monoxide Concentrations Along Roadways Near Puunene Heavy Industrial Subdivision Project
- 6 Estimated Worst-Case 8-Hour Carbon Monoxide Concentrations Along Roadways Near Puunene Heavy Industrial Subdivision Project

1.0 SUMMARY

CMBY 2011 Investment, LLC is proposing to develop the Puunene Heavy Industrial Subdivision in Puunene on the island of Maui. Preliminarily, the proposed project will provide a total of 28 lots on 86 acres zoned for heavy industry. This study examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed facilities. Mitigative measures are suggested to reduce any potential air quality impacts where possible and appropriate.

Both federal and state standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone, and lead. In some cases, such as for carbon monoxide, the Hawaii air quality standards are more stringent than the national standards.

Regional and local climate, together with the amount and type of human activity, generally dictate the air quality of a given location. The climate of the project area is very much affected by its elevation near sea level and by nearby mountains. Northeast trade winds occur most of the time and tend to be channeled through the area by the terrain. Local winds (such as land/sea breezes and upslope/downslope winds) affect the wind flow when the trade winds are weak or absent. Temperatures in the project area are generally very consistent and warm with average daily temperatures ranging from about 63°F to 86°F. Rainfall in the project area is minimal with an average of only about 13 inches per year.

boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.

To assess the potential long-term impact of emissions from project-related motor vehicle traffic operating on roadways in the project area after construction is completed, a computerized air quality modeling study was undertaken. The project traffic study indicated that the intersection of Kamaaina Road and Mokuale Highway would likely be the only intersection affected by project-related traffic. The air quality modeling study estimated current worst-case concentrations of carbon monoxide at this intersection and predicted future levels both with and without the proposed project. During worst-case conditions, model results indicated that present 1-hour and 8-hour worst-case carbon monoxide concentrations are well within both the state and the national ambient air quality standards. In the year 2015 without the project, worst-case carbon monoxide concentrations were generally predicted to decrease (improve) slightly, and concentrations would remain well within standards. With the project in the year 2015, worst-case carbon monoxide concentrations were projected to increase only slightly compared to the without project case. Concentrations would remain well within standards. Due to the small impact the project is expected to have, implementing mitigation measures for long-term traffic-related air quality impacts is probably unnecessary and unwarranted.

Except for periodic impacts from volcanic emissions (vog) and possibly occasional localized impacts from traffic congestion and local agricultural sources, the present air quality of the project area is believed to be relatively good. There is very little air quality monitoring data available from the Hawaii Department of Health for the project area, but the limited data that are available suggest that concentrations are generally within state and national air quality standards, except for occasional high concentrations of particulate matter due to agricultural tilling operations and/or brush fires or sugarcane burning.

If the proposed project is given the necessary approvals to proceed, it may be inevitable that some short- and/or long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust at the project

At this time, the specific tenants of the proposed industrial subdivision have not been identified. Some of the allowed industrial uses for this type of zoning could involve significant emissions of air pollution which could result in direct impacts on air quality. Given specific information, potential air quality impacts from industrial sources can be estimated using computerized atmospheric dispersion models. Although detailed information concerning the specific industries that may locate at this development is not available at this stage of the project, before any air pollution sources can be built anywhere in the state, an application must be submitted to the Department of Health for a permit to construct the facility, and detailed information concerning any air pollution emissions will need to be provided in the application. Depending on the expected emission rates, a detailed air quality impact assessment may be required before construction can begin. The required assessment must demonstrate that the facility will comply with all applicable air quality standards. Thus, while an air quality impact assessment of project-related industrial emissions is not presently feasible, an assessment may be required in the future when specific industries propose to locate at this development.

## 2.0 INTRODUCTION

CMBY 2011 Investment, LLC is proposing to develop the Puunene Heavy Industrial Subdivision on approximately 86 acres in Puunene, Maui. Preliminarily, the proposed project will subdivide the project into 28 lots zoned for heavy industry. The project site is located approximately 1.4 miles east of Mokulele Highway in the vicinity of the Old Puunene Airport (see Figure 1 for project location). Access to and egress from the project will be via Kamaaina Road, which intersects Mokulele Highway adjacent to the

Maui Humane Society. Development of the proposed subdivision would begin in 2012. Currently, there is no estimate of when the subdivided lots will be fully developed and occupied, but for the purposes of this report, the year 2015 is assumed.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short- and long-term direct or indirect air quality impacts that could result from construction and use of the proposed facilities as planned. Measures to mitigate impacts by the project are suggested where possible and appropriate.

## 3.0 AMBIENT AIR QUALITY STANDARDS

Ambient concentrations of air pollution are regulated by both national and state ambient air quality standards (AAQS). National AAQS are specified in Section 40, Part 50 of the Code of Federal Regulations (CFR), while State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules. Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, national and state AAQS have been established for particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. The state has also set a standard for hydrogen sulfide. National AAQS are stated in terms of both primary and secondary standards for most of the regulated air pollutants. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects of a pollutant". Secondary public welfare impacts may include



such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated air pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given air pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow a specified number of exceedances each year.

The Hawaii AAQS are in some cases considerably more stringent than the comparable national AAQS. In particular, the Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit. On the other hand, the current Hawaii AAQS for sulfur dioxide are probably less stringent than the national standards. During the early part of 2010, the national primary annual and 24-hour standards for sulfur dioxide were revoked in favor of a new national 1-hour standard which is considered to be more stringent than the Hawaii short-term standards. The Hawaii AAQS for sulfur dioxide have not yet been updated to bring them in line with the national standards.

In 1993, the state revised its particulate standards to follow those set by the federal government. During 1997, the federal government again revised its standards for particulate, but the new standards were challenged in federal court. A Supreme Court ruling was issued during February 2001, and as a result, the new standards for particulate were finally implemented during 2005. To date, the Hawaii Department of Health has not updated the state particulate standards.

In September 2001, the state vacated the state 1-hour standard for ozone and an 8-hour standard was adopted that was the same as the national standard. During 2008, the national standard for ozone was again revised and made more stringent. The Hawaii standard for ozone has not yet been amended to follow the national standard.

During the latter part of 2008, EPA revised the standard for lead making the standard more stringent. So far, the Hawaii Department of Health has not revised the corresponding state standard for lead.

During early 2010, a national 1-hour primary standard for nitrogen dioxide was implemented. To date, Hawaii has not promulgated a 1-hour standard for nitrogen dioxide, but the Hawaii annual standard for this pollutant is more stringent than the national annual standard.

#### 4.0 REGIONAL AND LOCAL CLIMATOLOGY

Regional and local climatology significantly affect the air quality of a given location. Wind, temperature, atmospheric turbulence, mixing height and rainfall all influence air quality. Although the climate of Hawaii is relatively moderate throughout most of the state, significant differences in these parameters may occur from one location to another. Most differences in regional and local climates within the state are caused by the mountainous topography.

The topography of Maui is dominated by the great volcanic masses of Haleakala (10,023 feet) and the West Maui Mountains (5,788 feet). The island consists entirely of the slopes of these mountains and of a connecting isthmus. Haleakala is still considered to be an active volcano and last erupted about 1790. The project site is located on the isthmus between Haleakala and the West Maui Mountains at an elevation of about 130 feet above mean sea level.

Maui lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Because the project area is located in the valley between Haleakala and the West Maui Mountains and the valley is unobstructed to the north, it receives relatively good ventilation much of the time from the northeast trade winds which tend to be channeled through the valley by the terrain. Local winds such as land/sea breezes and/or upslope/downslope winds also influence the wind pattern for the area when the trade winds are weak or absent. At night, winds are often drainage winds that move downslope and out to sea. During winter, occasional strong winds from the south

or southwest occur in association with the passage of winter storm systems. Table 2 shows monthly mean wind speed and prevailing wind direction statistics for Kahului Airport, which is located about 7 miles to the north of the project site. Wind data from Kahului are at least semi-representative of winds at the project site. As indicated in the table, ventilation is good throughout the year with monthly mean speeds ranging from about 11 to 15 miles per hour. Wind speeds in summer tend to be strongest. The monthly prevailing wind direction year round is from the northeast.

Air pollution emissions from motor vehicles, the formation of photochemical smog, and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentrations of air pollution from elevated plumes. In Hawaii, the annual and daily variation of temperature depends to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. Historical data from the old Puunene Airport, the site of the proposed project, indicate that the average daily minimum and maximum temperatures for this area of Maui are 63°F and 86°F, respectively [1].

Small scale, random motions in the atmosphere (turbulence) cause air pollutants to be dispersed as a function of distance or time from the point of emission. Turbulence is caused by both mechan-

ical and thermal forces in the atmosphere. It is often measured and described in terms of Pasquill-Gifford stability class. Stability class 1 is the most turbulent and class 6 is the least. Thus, air pollution dissipates the best during stability class 1 conditions and the worst when stability class 6 prevails. In the Puunene area, stability classes 5 or 6 typically occur during the nighttime or early morning hours when temperature inversions form due to radiational cooling or to drainage flow from the nearby mountains. Stability classes 1 through 4 occur during the daytime, depending mainly on the amount of cloud cover and incoming solar radiation and the onset and extent of the sea breeze.

Mixing height is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface can become trapped within the mixing layer. In Hawaii, minimum mixing heights tend to be high because of mechanical mixing caused by the trade winds and because of the temperature moderating effect of the surrounding ocean. Low mixing heights may sometimes occur, however, at inland locations and even at times along coastal areas early in the morning following a clear, cool, windless night. Coastal areas also may experience low mixing levels during sea breeze conditions when cooler ocean air rushes in over warmer land. Mixing heights in Hawaii typically are above 3,000 feet (1,000 meters).

Rainfall can have a beneficial effect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water soluble.

Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The climate of the project area is relatively dry. Historical records from the old Puunene Airport show that this area of Maui averages about only 13 inches of precipitation per year, with the summer months being the driest [1].

#### 5.0 PRESENT AIR QUALITY

Present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural, and/or agricultural sources. Table 3 presents an air pollutant emission summary for the island of Maui for calendar year 1993. This is the most recent year for which an island-wide emission inventory is available. The emission rates shown in the table pertain to manmade emissions only, i.e., emissions from natural sources are not included. As suggested in the table, most of the manmade particulate and sulfur oxides emissions on Maui originate from point sources, such as power plants and other fuel-burning industries. Nitrogen oxides emissions are roughly equally divided between point sources and area sources (mostly motor vehicle traffic). The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic and sugar cane burning), while hydrocarbons are emitted mainly from point sources. Emissions today are probably higher than those shown in the table, but the proportional relationships are likely about the same.

The largest sources of air pollution in the immediate project area are most likely associated with agricultural operations. There are also a small number of industrial sources within a few miles, and air pollution emissions occur from automobile traffic using

Mokulele Highway to the west of the project site. Emissions from these sources consist primarily of particulate, carbon monoxide and nitrogen oxides. Volcanic emissions from distant natural sources on the Big Island also affect the air quality at times during kona wind conditions. By the time the volcanic emissions reach the project area, they consist mostly of fine particulate sulfate.

Table 4 summarizes the data from the Kihei monitoring station. Two size fractions of particulate matter were measured at the station: particulate matter less than 10 microns diameter (PM-10) and particulate matter less than 2.5 microns diameter (PM-2.5). Annual second-highest 24-hour PM-10 concentrations (which are most relevant to the air quality standards) ranged from 60 to 119 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) between 2005 and 2008. Average annual concentrations ranged from 20 to 26  $\mu\text{g}/\text{m}^3$ . One exceedance of the state standard was recorded during 2005. This was reported to be due to agricultural tilling operations in the area. Another exceedance of the standard was reported during 2007. This was considered an exceptional event due to a brush fire nearby. Monitoring of PM-10 at the Kihei monitoring station was discontinued in 2009.

As indicated in Table 4, annual 24-hour 98<sup>th</sup> percentile PM-2.5 particulate concentrations (which are most relevant to the air quality standards) ranged from 8 to 16  $\mu\text{g}/\text{m}^3$  between 2005 and 2009. Average annual concentrations ranged from 4 to 6  $\mu\text{g}/\text{m}^3$ . One relatively high value was flagged during 2006 due to fireworks. No exceedances of the state standard were recorded during this period.

Given the limited air pollution sources in the area, it is likely that air pollution concentrations are near natural background levels most of the time, except possibly for locations adjacent to agricultural operations or near traffic-congested intersections.

#### 6.0 SHORT-TERM IMPACTS OF PROJECT

Short-term direct and indirect impacts on air quality could potentially occur due to project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project site, from a temporary increase in local traffic caused by commuting construction workers, and from the disruption of normal traffic flow caused by roadway lane closures.

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with site clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately. This is because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [2] has provided a rough

estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions at the project site would likely be somewhere near that level, depending on the amount of rainfall that occurs. In any case, State of Hawaii Air Pollution Control Regulations [3] prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase is essential.

Adequate fugitive dust control can usually be accomplished by the establishment of a frequent watering program to keep bare-dirt surfaces in construction areas from becoming significant sources of dust. In dust-prone or dust-sensitive areas, other control measures such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching, and/or using wind screens, may be necessary. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting materials that could be blown away. Haul trucks tracking dirt onto paved streets from unpaved areas is often a significant source of dust in construction areas. Some means to alleviate this problem, such as road cleaning or tire washing, may be appropriate. Paving of parking areas and/or establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions. Monitoring dust at the project boundaries could be considered to quantify and document the effectiveness of dust control measures.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the annual standard for nitrogen dioxide is not likely to be violated by short-term construction equipment emissions. Also, the new short-term (1-hour) standard for nitrogen dioxide is based on a three-year average; thus it is unlikely that relatively short-term construction emissions would exceed the standard. Carbon monoxide emissions from diesel engines are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Project construction activities could also obstruct the normal flow of traffic at times to such an extent that overall vehicular emissions in the project area will temporarily increase. The only means to alleviate this problem will be to attempt to keep roadways open during peak traffic hours and to move heavy construction equipment and workers to and from construction areas during periods of low traffic volume. Thus, most potential short-term air quality impacts from project construction can be mitigated.

## 7.0 LONG-TERM IMPACTS OF PROJECT

### 7.1 Roadway Traffic

After construction is completed, use of the proposed facilities will result in increased motor vehicle traffic in the project area, potentially causing long-term impacts on ambient air quality. Motor vehicles with gasoline-powered engines are

significant sources of carbon monoxide. They also emit nitrogen oxides and other contaminants.

Federal air pollution control regulations require that new motor vehicles be equipped with emission control devices that reduce emissions significantly compared to a few years ago. In 1990, the President signed into law the Clean Air Act Amendments. This legislation required further emission reductions, which have been phased in since 1994. More recently, additional restrictions were signed into law during the Clinton administration, and these began to take effect during the next decade. The added restrictions on emissions from new motor vehicles will lower average emissions each year as more and more older vehicles leave the state's roadways. It is estimated that carbon monoxide emissions, for example, will go down by an average of about 20 percent per vehicle during the next 10 years due to the replacement of older vehicles with newer models.

To evaluate the potential long-term ambient air quality impact of motor vehicle traffic using the proposed new roadway facilities, computerized emission and atmospheric dispersion models can be used to estimate ambient carbon monoxide concentrations along roadways within the project area. Carbon monoxide is selected for modeling because it is both the most stable and the most abundant of the pollutants generated by motor vehicles. Furthermore, carbon monoxide air pollution is generally considered to be a microscale problem that can be addressed locally to some extent, whereas nitrogen oxides air pollution most often is a regional issue that cannot be addressed by a single project.

For this project, three scenarios were selected for the carbon monoxide modeling study: (1) year 2011 with present conditions, (2) year 2015 without the project, and (3) year 2015 with the project. To begin the modeling study of the three scenarios, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. For this study, the one key intersection identified in the traffic study, Kamaaina Road at Mokulele Highway, was also selected for air quality analysis. These included the following intersections.

The traffic impact report for the project [4] describes the existing and projected future traffic conditions and laneage configurations of the study intersection in detail. In performing the air quality impact analysis, it was assumed that all recommended traffic mitigation measures would be implemented.

The main objective of the modeling study was to estimate maximum 1-hour average carbon monoxide concentrations for each of the three scenarios studied. To evaluate the significance of the estimated concentrations, a comparison of the predicted values for each scenario can be made. Comparison of the estimated values to the national and state AAQS was also used to provide another measure of significance.

Maximum carbon monoxide concentrations typically coincide with peak traffic periods. The traffic impact assessment report

evaluated morning and afternoon peak traffic periods. These same periods were evaluated in the air quality impact assessment.

The EPA computer model MOBILE6.2 [5] was used to calculate vehicular carbon monoxide emissions for each year studied. One of the key inputs to MOBILE6.2 is vehicle mix. Unless very detailed information is available, national average values are typically assumed. For the existing case and for the future without project scenario, national average values were assumed for all intersection approaches except those indicated in the traffic study which had predominantly heavy-duty truck traffic. In the future with the project, it was assumed that all approaches would have vehicle mixes somewhere near national average values. Based on national average vehicle mix figures, the present vehicle mix in the project area was estimated to be 35.4% light-duty gasoline-powered automobiles, 51.7% light-duty gasoline-powered trucks and vans, 3.6% heavy-duty gasoline-powered vehicles, 0.2% light-duty diesel-powered vehicles, 8.6% heavy-duty diesel-powered trucks and buses, and 0.5% motorcycles. For the future scenarios studied, the vehicle mix was estimated to change slightly with fewer light-duty gasoline-powered automobiles and more light-duty gasoline-powered trucks and vans.

Ambient temperatures of 59 and 68 degrees F were used for morning and afternoon peak-hour emission computations, respectively. These are conservative assumptions since morning/afternoon ambient temperatures will generally be warmer than this, and carbon monoxide emission estimates given by MOBILE6.2 generally have an inverse relationship to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE6.2, these data were then input to an atmospheric dispersion model. EPA air quality modeling guidelines [6] currently recommend that the computer model CAL3QHC [7] be used to assess carbon monoxide concentrations at roadway intersections, or in areas where its use has previously been established, CALINE4 [8] may be used. Until a few years ago, CALINE4 was used extensively in Hawaii to assess air quality impacts at roadway intersections. In December 1997, the California Department of Transportation recommended that the intersection mode of CALINE4 no longer be used because it was thought the model had become outdated. Studies have shown that CALINE4 may tend to over-predict maximum concentrations in some situations. Therefore, CAL3QHC was used for the subject analysis.

CAL3QHC was developed for the U.S. EPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It is designed to predict 1-hour average pollutant concentrations near roadway intersections based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Although CAL3QHC is intended primarily for use in assessing atmospheric dispersion near signalized roadway intersections, it can also be used to evaluate unsignalized intersections. This is accomplished by manually estimating queue lengths and then applying the same techniques used by the model for signalized intersections. Currently, the one and only intersection studied for this project is signalized.

meters were used in all cases. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration. Concentration estimates were calculated at wind directions of every 5 degrees.

Existing background concentrations of carbon monoxide in the project vicinity are believed to be at low levels. Thus, background contributions of carbon monoxide from sources or roadways not directly considered in the analysis were accounted for by adding a background concentration of 0.5 parts per million (ppm) to all predicted concentrations for 2011. Although increased traffic is expected to occur within the project area within the next several years with or without the project, background carbon monoxide concentrations may not change significantly since individual emissions from motor vehicles are forecast to decrease with time. Hence, a background value of 0.5 ppm was assumed to persist for the future scenarios studied.

#### Predicted Worst-Case 1-Hour Concentrations

Table 5 summarizes the final results of the modeling study in the form of the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations. These results can be compared directly to the state and the national AAQS. Estimated worst-case carbon monoxide concentrations are presented in the table for three scenarios: year 2011 with existing traffic, year 2015 without the project and year 2015 with the project. The locations of these estimated worst-case 1-hour concentrations all occurred at or very near the indicated intersection.

Input peak-hour traffic data were obtained from the traffic study cited previously. This included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings (where applicable). All emission factors that were input to CAL3QHC for free-flow traffic on roadways were obtained from MOBILE6.2 based on assumed free-flow vehicle speeds corresponding to the posted or design speed limits.

Model roadways were set up to reflect roadway geometry, physical dimensions and operating characteristics. Concentrations predicted by air quality models generally are not considered valid within the roadway-mixing zone. The roadway-mixing zone is usually taken to include 3 meters on either side of the traveled portion of the roadway and the turbulent area within 10 meters of a cross street. Model receptor sites were thus located at the edges of the mixing zones near the single intersection that was studied for all three scenarios. This implies that pedestrian sidewalks either already exist or are assumed to exist in the future. All receptor heights were placed at 1.8 meters above ground to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 6 was assumed for the morning cases, while atmospheric stability category 4 was assumed for the afternoon cases. These are the most conservative stability categories that are generally used for estimating worst-case pollutant dispersion within rural areas for these periods. A surface roughness length of 10 cm and a mixing height of 1000



of 0.5. This accounts for two factors: (1) traffic volumes averaged over eight hours are lower than peak 1-hour values, and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. Based on monitoring data, 1-hour to 8-hour persistence factors for most locations generally vary from 0.4 to 0.8 with 0.6 being the most typical. One study based on modeling [9] concluded that 1-hour to 8-hour persistence factors could typically be expected to range from 0.4 to 0.5. EPA guidelines [10] recommend using a value of 0.7 unless a locally derived persistence factor is available. Recent monitoring data for locations on Oahu reported by the Department of Health [11] suggest that this factor may range between about 0.2 and 0.6 depending on location and traffic variability. Considering the location of the project and the traffic pattern for the area, a 1-hour to 8-hour persistence factor of 0.5 will likely yield reasonable estimates of worst-case 8-hour concentrations.

The resulting estimated worst-case 8-hour concentrations are indicated in Table 6. For the 2011 scenario, the estimated worst-case 8-hour carbon monoxide concentration for the single location studied (Kamaaina Road at Mokulele Highway) was 2.6 ppm. The estimated worst-case concentration for the existing case was well within both the state standard of 4.4 ppm and the national limit of 9 ppm.

For the year 2015 without project scenario, the worst-case concentration at the intersection of Kamaaina Road and Mokulele Highway was 2.4 ppm. This is slightly lower than the existing case and within the standards.

As indicated in the table, the highest estimated 1-hour concentration within the project vicinity for the present (2011) case was 5.1 ppm. This was projected to occur during the morning peak traffic hour near the intersection of Kamaaina Road at Mokulele Highway. The predicted worst-case 1-hour concentration for the 2011 scenario was well within both the national AAQS of 35 ppm and the state standard of 9 ppm.

In the year 2015 without the proposed project, the highest worst-case 1-hour concentration at the intersection of Kamaaina Road and Mokulele Highway was predicted to continue to occur during the morning with a value of 4.8 ppm. Compared to the existing case, the worst-case concentration decreased (improved), and worst-case concentrations remained well within the state and national standards.

Predicted 1-hour worst-case concentrations for the 2015 with project scenario increased only slightly compared to the without project case at the study intersection. Similar to the 2015 without project case, the maximum concentration was predicted to occur during the morning peak hour at the intersection of Kamaaina Road at Mokulele Highway, increasing to 5.3 ppm. Worst-case concentrations remained well within the state and federal standards.

#### Predicted Worst-Case 8-Hour Concentrations

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor

industries that involve the manufacture or treatment of goods from raw materials. Examples of some of the permitted uses include: alcohol manufacture, automobile wrecking, canneries, chemical manufacture, concrete manufacture, factories, lumber yard, machine shops, paint manufacture, petroleum products manufacture and sugar mills and refineries. In general, areas zoned for heavy industry are intended for those uses which may be offensive or obnoxious because of odor, dust, smoke, gas, noise, vibration and the like. Some industries, however, are declared to be special uses and require a use permit. Some of these include: acid manufacture, ammonia manufacture, asphalt manufacture, crematories, explosives manufacture, fertilizer manufacture, fish canneries, quarry or stone mill, rock crushing, petroleum refinery, saw mill and animal slaughter.

Without specific information concerning stack heights and stack gas temperatures, exit velocities and emission rates, air quality impacts from the potential industrial facilities locating within the proposed industrial subdivision cannot be quantitatively estimated. At the present time, such detailed information is not available. However, Hawaii air pollution control rules [3] require that any activity that causes air pollution must obtain written approval from the director of the Hawaii Department of Health. This written approval generally involves applying for both a permit to construct and a permit to operate. At the time of application, detailed information must be provided by the applicant concerning the type and nature of any air pollution emissions and the emission control technology that would be utilized. Depending on the magnitudes of the project emissions and other factors, air quality impact analyses and/or air quality monitoring may be required before the application to construct/operate is approved. Thus, even though an assessment of

For the 2015 with project scenario, the estimated worst-case concentration increased only slightly compared to the without project case to a value of 2.6 ppm, indicating minimal project impact. The predicted 8-hour concentration for this scenario was well within both the national and the state AAQS.

#### Conservativeness of Estimates

The results of this study reflect several assumptions that were made concerning both traffic movement and worst-case meteorological conditions. One such assumption concerning worst-case meteorological conditions is that a wind speed of 1 meter per second with a steady direction for 1 hour will occur. A steady wind of 1 meter per second blowing from a single direction for an hour is extremely unlikely and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above. The 8-hour estimates are also conservative in that it is unlikely that anyone would occupy the assumed receptor sites (within 3 m of the roadways) for a period of 8 hours.

#### 7.2 Industrial Sources

Air pollution emissions from industrial sources locating within the proposed heavy industrial subdivision could potentially result in direct impacts on air quality. While the specific industrial residents of the proposed project have not yet been identified, it is possible that at least some of these will have the potential to emit significant amounts of air pollution. In general, the Maui County Code pertaining to heavy industrial use allows for

potential direct impacts from project air pollution emissions cannot be done at this time, state rules may require that such

analyses be performed at a later date when specific businesses apply to locate at the proposed industrial subdivision.

#### 8.0 CONCLUSIONS AND RECOMMENDATIONS

The existing air quality in the project area is predominantly good, although there have been incidents of relatively high particulate concentrations at the nearby Department of Health air quality monitoring station in Kihei. These incidents have been attributed to either agricultural tilling operations or to brush fires.

The major potential short-term air quality impact of the project will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month, depending on rainfall. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Use of wind screens and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the site that have been disturbed could be controlled by mulching or by the use of chemical soil stabilizers. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Establishment of landscaping early in the construction schedule will also help to control dust. Monitoring dust at the project boundary during the period of construction could be

considered as a means to evaluate the effectiveness of the project dust control program and to adjust the program if necessary.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur both from on-site construction equipment and from vehicles used by construction workers and from trucks traveling to and from the project. Increased vehicular emissions due to disruption of traffic by construction equipment and/or commuting construction workers can be alleviated by moving equipment and personnel to the site during off-peak traffic hours.

After the proposed project is completed, any long-term impacts on air quality in the project area due to emissions from project-related motor vehicle traffic should be negligible. Worst-case concentrations of carbon monoxide should remain within both the state and the national ambient air quality standards. Implementing any air quality mitigation measures for long-term traffic-related impacts is probably unnecessary and unwarranted.

At this time, sufficient detail is not available describing the facilities that may be located within the proposed industrial subdivision to perform any quantitative impact assessments. Some of the types of facilities allowed by county zoning could emit significant amounts of air pollution. In any case, before any air pollution sources can be built anywhere in the state, an application must be submitted to the Department of Health for a permit to construct the facility, and detailed information concerning any air pollution emissions will need to be provided in the application. If deemed necessary, the Department of Health

may require the applicant to assess the air quality impact of the proposed emissions.

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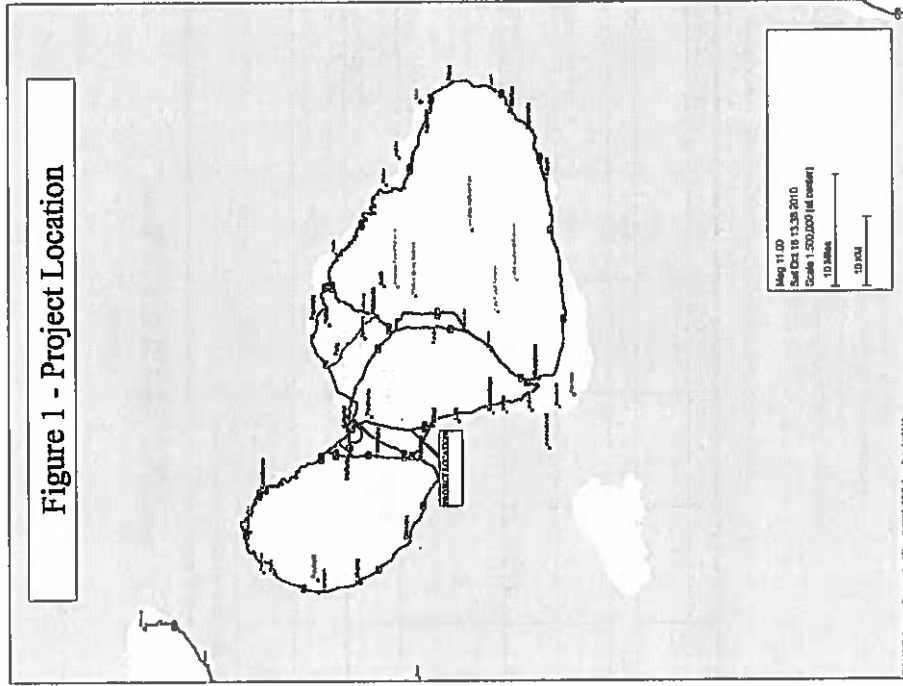


Table 1  
 SUMMARY OF STATE OF HAWAII AND NATIONAL  
 AMBIENT AIR QUALITY STANDARDS

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaii
Particulate Matter (<10 microns)	µg/m <sup>3</sup>	Annual	150 <sup>a</sup>	-	50
		24 Hours	150 <sup>a</sup>	150 <sup>b</sup>	150 <sup>b</sup>
Particulate Matter (<2.5 microns)	µg/m <sup>3</sup>	Annual	15 <sup>c</sup>	15 <sup>c</sup>	-
		24 Hours	35 <sup>d</sup>	35 <sup>d</sup>	-
Sulfur Dioxide	ppm	Annual	-	-	0.03
		24 Hours	-	-	0.14 <sup>e</sup>
		3 Hours	-	0.5 <sup>f</sup>	0.5 <sup>f</sup>
Nitrogen Dioxide	ppm	1 Hour	0.075 <sup>g</sup>	-	-
		Annual	0.053	0.053	0.04
Carbon Monoxide	ppm	1 Hour	0.100 <sup>f</sup>	-	-
		8 Hours	9 <sup>h</sup>	-	4.4 <sup>b</sup>
Ozone	ppm	1 Hour	35 <sup>b</sup>	-	9 <sup>b</sup>
		8 Hours	0.075 <sup>g</sup>	0.075 <sup>g</sup>	0.08 <sup>g</sup>
Lead	µg/m <sup>3</sup>	3 Months	0.15 <sup>h</sup>	0.15 <sup>h</sup>	-
		Quarter	1.5 <sup>i</sup>	1.5 <sup>i</sup>	1.5 <sup>i</sup>
Hydrogen Sulfide	ppm	1 Hour	-	-	35 <sup>b</sup>

<sup>a</sup> Not to be exceeded more than once per year on average over three years.

<sup>b</sup> Not to be exceeded more than once per year.

<sup>c</sup> Three-year average of the weighted annual arithmetic mean.

<sup>d</sup> 98th percentile value of the 24-hour concentrations averaged over three years.

<sup>e</sup> Three-year average of annual fourth-highest daily 1-hour maximum.

<sup>f</sup> 98th percentile value of the daily 1-hour maximum averaged over three years.

<sup>g</sup> Three-year average of annual fourth-highest daily 8-hour maximum.

<sup>h</sup> Rolling 3-month average.

<sup>i</sup> Quarterly average.

Table 2  
 MEAN WIND SPEED AND PREVAILING DIRECTION  
 FOR KAHULUI AIRPORT, MAUI

Month	Speed (mph)	Direction
Jan	11.1	NE
Feb	11.6	NE
Mar	11.6	NE
Apr	13.3	NE
May	12.8	NE
Jun	15.2	NE
Jul	15.2	NE
Aug	14.6	NE
Sep	13.4	NE
Oct	12.3	NE
Nov	11.4	NE
Dec	11.3	NE
Year	12.8	NE

Notes: Mean wind speeds are based on data from 1996 to 2006. Mean wind direction based on data from 1992 to 2002.

Source: Desert Research Institute, Western Regional Climate Data Center.

Table 3  
AIR POLLUTION EMISSIONS INVENTORY FOR  
ISLAND OF MAUI, 1993

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	63,275	7,030	70,305
Sulfur Oxides	6,419	nil	6,419
Nitrogen Oxides	7,312	8,618	15,930
Carbon Monoxide	4,612	20,050	24,662
Hydrocarbons	1,991	234	2,225

Source: Final Report, "Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii", prepared for Hawaii Department of Health by J.L. Shoemaker & Associates, Inc., 1996

Table 4  
ANNUAL STATISTICS OF AIR QUALITY MEASUREMENTS FOR  
MONITORING STATIONS NEAREST FURUKEE HEAVY INDUSTRIAL SUBDIVISION PROJECT

Parameter / Location	2005	2006	2007	2008	2009
Particulate (PM-10) / Kilohai					
24-Hour Averaging Period:					
No. of Samples	337	337	326	311	-
Highest Concentration (µg/m <sup>3</sup> )	155	72	281*	78	-
2 <sup>nd</sup> Highest Concentration (µg/m <sup>3</sup> )	119	66	93	60	-
No. of State AQGS Exceedances	1	0	1*	0	-
Annual Average Concentration (µg/m <sup>3</sup> )	25	22	26	20	-
Particulate (PM-2.5) / Kilohai					
24-Hour Averaging Period:					
No. of Samples	108	109	78	59	358
Highest Concentration (µg/m <sup>3</sup> )	10	30*	11	16	26
98 <sup>th</sup> Percentile Concentration (µg/m <sup>3</sup> )	8	10	10	15	16
No. of State AQGS Exceedances	0	0	0	0	0
Annual Average Concentration (µg/m <sup>3</sup> )	5	5	5	6	4

\*Exceptional event (brush fire)

\*Data flagged due to fireworks

Source: State of Hawaii Department of Health, "Annual Summaries, Hawaii Air Quality Data, 2005 - 2009"

Table 5

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS  
ALONG ROADWAYS NEAR PUNENE HEAVY INDUSTRIAL SUBDIVISION PROJECT  
(parts per million)

Roadway Intersection	Year/Scenario					
	2011/Present		2015/Without Project		2015/With Project*	
	AM	PM	AM	PM	AM	PM
Kamaaina Road at Mokuale Highway	5.1	2.6	4.8	2.8	5.3	3.2

Hawaii State AAQS: 9  
National AAQS: 35

\*Including traffic mitigation.

Table 6

ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS  
ALONG ROADWAYS NEAR PUNENE HEAVY INDUSTRIAL SUBDIVISION PROJECT  
(parts per million)

Roadway Intersection	Year/Scenario		
	2011/Present	2015/Without Project	2015/With Project*
Kamaaina Road at Mokuale Highway	2.6	2.4	2.6

Hawaii State AAQS: 4.4  
National AAQS: 9

\*Including traffic mitigation.



**APPENDIX I**  
Archaeological  
Inventory Survey

**AN ARCHAEOLOGICAL INVENTORY SURVEY  
OF AN APPROXIMATE 917 METER (3,007.8 FEET) LONG ALTERNATE  
ACCESS ROAD AND AN 86.029-ACRE PROPERTY IN PUUNENE,  
PŪLEHU NUI AHUPUA'A, WAILUKU DISTRICT,  
ISLAND OF MAUI, HAWAII  
[TMK: (2) 3-8-008: POR. 005, POR. 006, AND 019]**

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**ABSTRACT**

Scientific Consultant Services, Inc. (SCS) conducted Archaeological Inventory Survey of an approximate 917 meter (3,007.8 feet) long alternate access road [TMK: (2) 3-8-008: pors. 005 and 006] and the 86.029-acre subject property [TMK: (2) 3-8-008:019] in Pū unēne, Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawaii. The proposed project area was comprised of two areas separated by an asphalt road. The larger portion of the proposed project area and two thirds of the alternate access road were previously investigated, in 1999, by International Archaeological Research Institute Incorporated (Tomonari-Tuggle *et al.* 2001) as part of a larger Inventory Survey and designated as the former Naval Air Station Puunene as Housing Area A, Southern and Northeastern Portions. Within the proposed project area, the 1999 International Archaeological Research Institute Incorporated (IARI) study identified two archaeological sites comprised of a section associated with the former Naval Air Station Puunene, State Site 50-50-09-4164, and a post-World War II cattle ranching site, State Site 50-50-09-4801 (*ibid*) (Tomonari-Tuggle *et al.* 2001). The current research led to relocation of these two historic sites, assessed the presence/absence of features within two sites, and identified previously undocumented features within the two sites.

A majority of the historic features within the proposed project area have been heavily impacted by modern mechanical clearing and ensuing debris removal. In general, most of the features composing State Site 50-50-09-4164 were mechanically impacted, abandoned, and neglected. The historic features associated with State Site 50-50-09-4801 were abandoned and neglected, but not mechanically impacted. Archival research has indicated the northern half of the proposed project area had been utilized for a pig farm and scrap metal storage site, while the southern half of the subject property remained fallow. A total of fifteen (15) features, interpreted as either NAS Puunene-related or post-war cattle ranching-related features, were not previously recorded. Of these 15 features recorded during the current study, three features were located in the State Site 50-50-09-4801 post-war cattle ranching area. The remaining twelve (12) features were located in the State Site 50-50-09-4164 former Naval Air Station Puunene area (Housing Area A).

To supplement the surface pedestrian survey, a total of twenty (20) stratigraphic trenches were mechanically excavated by SCS. Only one stratigraphic trench (ST-6) revealed the presence of subsurface architecture at Facility 177 (SCS Site T-25). The feature was initially utilized as a military storehouse and converted for animal husbandry purposes.

The features recorded herein as relates to the former two sites remain significant under Criterion D. State Site 50-50-09-4164 has also been assessed as significant under Criterion A, as it has yielded information important to the history of Maui. These 15 features have been recorded and subsumed under the existing State site numbers. No further archaeological work is recommended for the larger portion of the proposed project area. Since an updated Archaeological Inventory Survey was not conducted past the perimeter of the alternate access road, archaeological features that were documented during the 1999 International Archaeological Research Institute Incorporated (IARI) survey on the east and west sides of the access road (see Tomonari-Tuggle *et al.* 2001) could be impacted should physical alteration be applied. Thus, Archaeological Monitoring is recommended for the alternate access road.

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## INTRODUCTION

At the request of CMBY 2011 Investment, L.L.C. (CMBY), Scientific Consultant Services, Inc. (SCS), conducted an Archaeological Inventory Survey for the Puuene Heavy Industrial Subdivision Project (the proposed project area) on an approximately 917 meter (3,007.8 feet) long alternate access road [TMK: (2) 3-8-008: pors. 005 and 006] and on 86.029-acre parcel [TMK: (2) 3-8-008: 019] within Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawaii (Figures 1, 2, and 3). According to the County of Maui Real Property Tax Division website, <http://www.mauipropertytax.com/>, the fee owner of the 86.029-acre subject property [TMK: (2) 3-8-008:019] is identified as CMBY. The fee owner of TMK: (2) 3-8-008:005 and 006 on which the 917 meter (3,007.8 feet) long alternate access road would be located, if necessary, is identified as Alexander & Baldwin, Inc.

Fieldwork was conducted between June 27 and 30, 2011 by SCS archaeologists Ian Bassford, B.A., and Guerin Toms, B.A., under the direction of Michael F. Dege, Ph.D., Principal Investigator. An Archaeological Inventory Survey was performed to investigate the presence/absence of archaeological features on the subject parcel, and if found, assess feature function, construction methods, associated cultural deposits, and site significance.

The proposed project area was previously subject to archaeological inquiry. In 1999 International Archaeological Research Institute, Inc. (IARI) conducted an Archaeological Inventory Survey of a large area, part of which included the proposed project area (Tommanari-Tuggle *et al.* 2001). During the IARI survey, two archaeological sites, State Site 50-50-09-4164 (former World War II Naval Air Station Puuene) and State Site 50-50-09-4801 (post-World War II cattle ranching site) were newly identified (*ibid.*). During the current inventory survey, SCS archaeologists relocated these two previously identified archaeological sites and supplemented the initial study with the identification of additional, previously undocumented surface features within the two sites. Regarding the 917 meter (3,007.8 feet) long alternate access road, although the 1999 IARI survey documented archaeological features set back from both sides of the road, the purpose of the current project was to focus only on the alternate access road and right of way, and not further beyond the footprint of the alternate access road.

## GEOGRAPHIC SETTING

Although both portions of the proposed project area are separated by an existing asphalt road, the 917 meter (3,007.8 feet) long alternate access road and 86.029-acre parcel are situated approximately 2.0 miles inland from the Kihei coastline, between c. 80 to 120 feet (24 to 37

meters) above mean sea level (amsl), on the lower west slope of Haleakalā. The 917 meter (3,007.8 feet) long alternate access road is located in Tax Map Keys (2) 3-8-008:005 and 006 both of which are owned by Alexander & Baldwin, Inc. The north, east, and south flanks of the 86.029-acre portion of the proposed project area are bordered by private land owned by Alexander & Baldwin, Inc. [TMK: (2) 3-8-008:005]. The west side of the proposed project area is bordered by private land owned by Alexander & Baldwin, Inc. [TMK: (2) 3-8-008:030] and land owned by the State of Hawaii [TMK: (2) 3-8-008:037]. Vehicular access from Mokuale Highway to the 86.029-acre subject parcel will be provided via Kama aina road, South Firebreak Road, and Lower Kihei Road via access and utility easements that are being requested from the State of Hawaii and Alexander & Baldwin, Inc. In the unlikely event the easements are not granted, access to the subject parcel will be provided by the 917 meter (3,007.8 feet) long alternate access road. At the time of this writing, there were several asphalt paved roads that divided the larger portion of the proposed project area into several unequal-sized sections; the names of the roads were not known.

The 917 meter (3,007.8 feet) long alternate access road was found in various conditions. With an average width of approximately 6.1 m (20 ft.), the southern half consisted of a dirt road that was not in constant use while the northern half was comprised of a paved asphalt road that was being used by Hawaiian Cement and active sugarcane lands. A bridge constructed by Hawaiian Cement was observed in the asphalt section of the alternate access road. Otherwise, the lands on which the alternate access road was situated, sat fallow.

Most of the proposed project area contained undulating terrain. The larger portion was slightly undulated amongst patches of flat terrain. Trees on the proposed project area had attained heights of approximately 30 feet tall. Approximately 30 percent of the proposed project area had grown fallow since the departure of a pig farm and scrap metal storage site. Basalt boulders from the size of basketballs to the size of a 55-gallon drum littered the landscape and created physical obstacles (Figure 4).

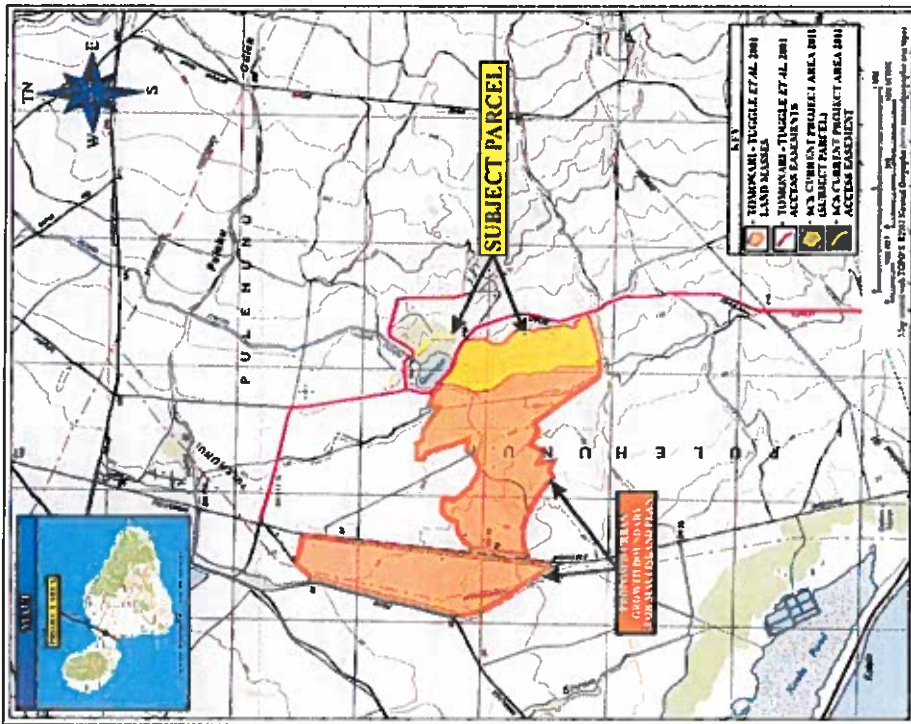


Figure 1: United States Geological Survey (USGS) 1992 Puu O Kaili Quadrangle Map Showing Proposed Project Location and the Alternate Access Road.

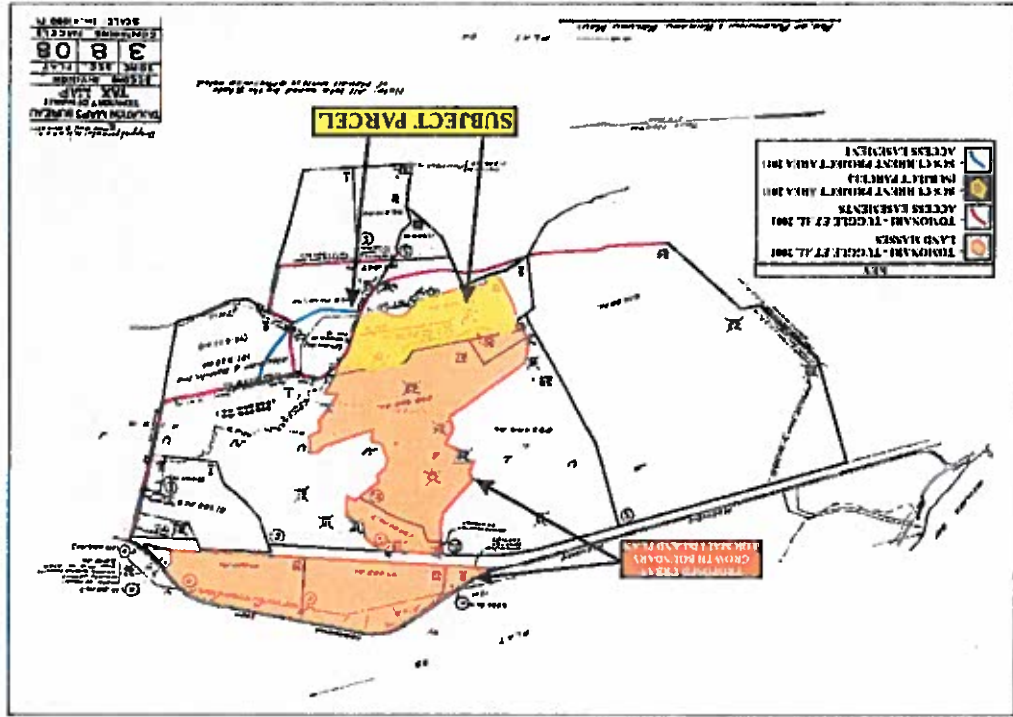


Figure 2: Tax Map Key (TMK) (2) 3-8-008 Showing Proposed Project Location and the Alternate Access Road.

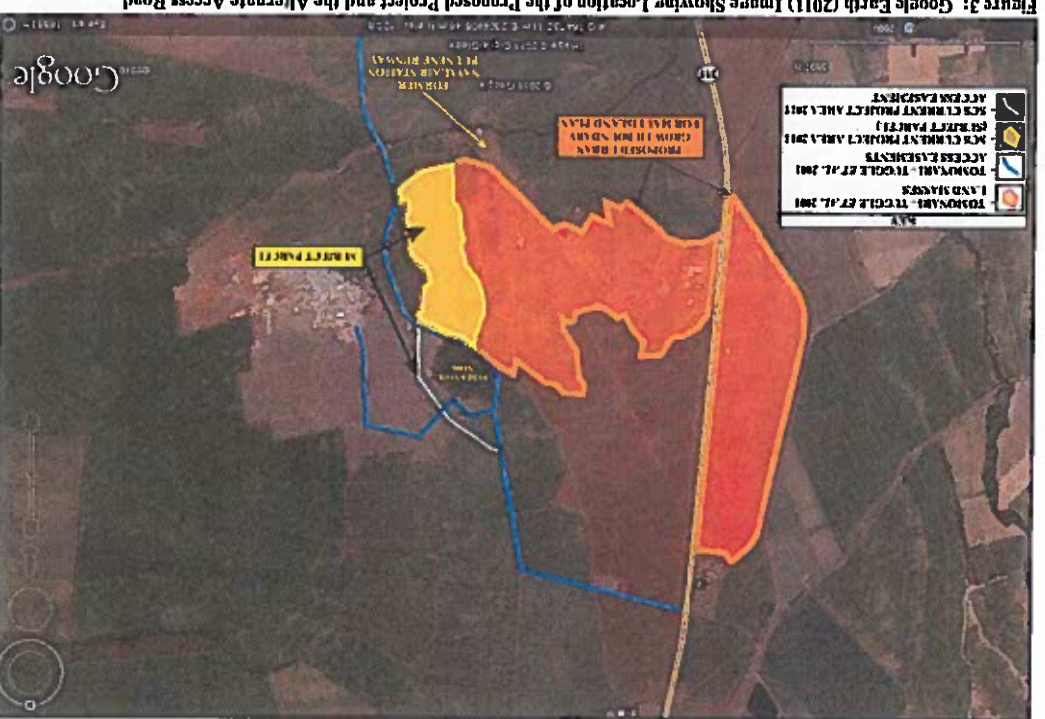


Figure 3: Google Earth (2011) Image Showing Location of the Proposed Project and the Alternate Access Road.

The landscape condition of the proposed project area's larger portion was varied. The northern portion of the proposed project area was cleaned up within the recent past, according to Ken Nomura of Alexander & Baldwin, Inc. Mr. Nomura relayed to the SCS field crew that following CMBY's purchase of the 86,029-acre property, Alexander & Baldwin, Inc. had cleared the land of debris associated with a pig farm and scrap metal storage site that had previously utilized the property. The result was that various portions of the project area were mechanically altered, on the surface and in subsurface contexts (Figure 5). Visibility of the mechanically altered ground surface was excellent. The mechanical clearance of the debris was not applied to the proposed project area, in its entirety. The areas that were not mechanically cleared were covered with dried, two to four feet tall grasses and vegetation. Nonetheless, man-made features were visible due to the mechanical clearance and the dried vegetation.



Figure 4: Photograph of Representative Basalt Boulders Amongst Tall Grass. View to Northeast.

## SOILS

Based on Foote *et al.* (1972: 126-127; Map 106), the proposed project area is mainly situated within the Waiakoa very stony silty clay loam (WID2) series with a small section at the southern end of the proposed project area containing Alae cobbly sandy loam (AcB) (*ibid.*: 26; Map 106). The Waiakoa extremely stony silty-clay loam which occurs on 3 to 25 percent slopes and is eroded, with medium runoff and severe erosional hazard. Stones cover approximately 3 to 15 percent of this soil surface. With the exception of sugarcane, this soil type has been utilized for pasture and wildlife. The Alae cobbly sandy loam has a slow runoff, is a slight erosional hazard, and is typically utilized for pastureland and sugarcane.

Subsurface testing of the WID2 and AcB soils on the southern portion of the proposed project area revealed the presence of volcanic cinders strata that were interpreted during the current survey as natural strata. Naturally occurring rounded basalt cobbles and small boulders were also being exposed during the excavation of the proposed project area matrices.

## VEGETATION

With the exception of few plant native species such as *'ilima* (*Sida fallax*) and *'uhaloa* (*Waltheria americana*), vegetation in the proposed project area was generally composed of non-native introductions. Although decomposing grasses dominated the vegetation regime, large vegetation common to arid regions such as *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), castor bean (*Ricinus communis*), lion's ear (*Leonotis nepetifolia*), spiny amaranth (*Amaranthus spinosus*), tomato (*Solanum* sp.), goosefoot (*Chenopodium* sp.), golden crownbeard (*Verbesina encelioides*), kīu (*Koala*; *Acacia farnesiana*), balsam pear (*Momordica charantia*), *koali kua hulu* (*Merramia aegyptia*), hairy abutilon (*ma* or *Abutilon grandifolium*), and coat buttons (*Tridax procumbens*) were present.

## CLIMATE

The project area lies near the dry, arid region of Maui's southwest coast. Rainfall indicators, according to Price (1983:62), show that the project area receives no more than five inches per year, with accumulations occurring mostly during the months of December and January. Unlike lower coastal elevations, higher elevations of Pūlehu Nui Ahupua'a receive more precipitation due to fog drip and lower temperature climates. The frequency of the project area receiving upland wash is based on the amount of water accumulated upslope and the available water drainages created within or near the project area.

Given the lack of constant water resources within the proposed project area, Traditional-type (*i.e.*, pre-1778 A.D.) crops such as dryland sweet potato may have been the only feasible



Figure 5: Photograph of Representative Impacted Area from Recent Mechanical Excavation. View to Southeast.

subsistence resource planted in the area prior to the advent of large-scale plantation-type irrigation systems. Of the twenty (20) stratigraphic trenches excavated during the current survey, only eight (8) trenches revealed no more than a single soil layer. The windy conditions of the proposed project area suggest soils within the proposed project area may have been adversely affected. Upland, gravitational wash also may have contributed to soil movement through the proposed project area environs during the Traditional-Period.

#### TRADITIONAL AND HISTORIC SETTING

Pālehu Nui Ahupua'a is located on the southwestern side of Maui in the modern districts of both Wailuku and Makawao. Prior to being named the District of Makawao, the same district was traditionally known as Kula District. The proposed project area would have been partially within the traditional District of Kula. As such, the proposed project area's traditional and historic settings will be highlighted with events that occurred in the traditional District of Kula rather than in the modern District of Wailuku.

The proposed project area is situated near the leeward coast that is located on the lower, western slope of Maui's largest volcano, Haleakala, the latter which rises to over 3,048 meters (10,000 ft) amsl. The coastal area, on which the proposed project area lies, is currently referred to as "Kīhei," which translates as "cape" or "cloak" in Hawaiian (Pukui *et al.* 1974:110).

#### TRADITIONAL TIMES

Oral documentation for pre-Contact activity exists for the district of Kula as a whole that document activities such as chiefly (*ali'i*) landings, battles, and catholic work practices such as fishing and planting (Sterling 1998). Documented oral accounts of pre-Contact activities and events occurring in the Kīhei area, specifically naming Pālehu Nui Ahupua'a, are limited to events that occurred on a single, given period rather than long terms events (*e.g.*, area used as a place of worship for an extended period of time). A. Formander, in Sterling (1998:253), reported that the area of Kīheipukoa was the location "where peace was concluded and festive reunions took place of warlike encounters." The festive reunions took place once Alapaiui, once *Mōi* of Maui, found out that his nephew Kamehamehanui succeeded him. A separate story dates to 1776 when Kalani'opu'u landed his warring faction at Kīheipukoa between Kēalia and Kapa'ahu thinking that "the *Alapa* were to drink of the waters of Wailuku. The *Alapa* were those who excelled at being warriors. Unfortunately for Kalani'opu'u, his warriors lost when battling with forces of Kahekēi at Wailuku.

#### HISTORIC TIMES

Although some accounts informally mention the possibility that Spanish traders may have known about the Hawaiian Islands two hundred years prior to the "discovery" by Captain James Cook on the H.M.S. Resolution, Cook was the first known Westerner to have recorded the Hawaiian Islands (Speakman 1978:19). When Cook "discovered" Maui in November 1778, he anchored near Kahului. Although attempting to travel to Maui's western end, he never travelled to the leeward side of East Maui where the proposed project area lies. The first Western explorer credited with landing on Maui is Admiral Jean Francois Galaup, Comte de la Perouse of France. La Perouse, the name most used to recognize the French explorer, set foot in the area known today as La Perouse Bay, an area south of Mākena.

From the early historic period, several industries became paramount in Kula: whaling, Irish potato cultivation, ranching, and sugar cane cultivation. Most of these endeavors transformed the upland landscape itself. The coastal areas were more impacted by commerce-related activities (*e.g.*, businesses, hostels, stores). Kolb *et al.* (1997:68-69) state that Kalepolepo (*i.e.*, Kīhei) was an important provisioning area through the 1830s, when the area became "a hub of activity for all of Kula." From the 1840s to 1860s a whaling station was maintained in Kīhei. According to Colin *et al.* (14:2000), in 1849 John Halstead constructed "The Koa House" at Kalepolepo in Kīhei, one of several such buildings supporting the whaling industry in Kīhei. The Koa House served as a store, a residence, and a gathering place for whalers.

Following Contact, one of the greatest historic events impacting the population of the Hawaiian Islands was the Māhele of 1848. Thought to have been created under pressure from foreigners, Kamehameha III (Kamehameha III) enacted the Māhele, which altered the system of land transactions and legal land ownership processes for the entire population of the islands:

By mid-century, the fledgling [Hawaiian] Kingdom undertook the single most significant inducement to cultural change, the Great *Māhele* or division of lands between the king, chiefs, and government, establishing land ownership on a Western-style, fee-simple basis. From this single act, an entire restructuring of the ancient social, economic, and political order followed [Kirih 1985:309].

The Māhele statute paved the way for the private ownership of land [awarded claims were called Land Commission Awards]. The proposed project area does not contain Land Commission Awards (LCAs). However, LCA 5230 is the closest to the proposed project area



and is shown on TMK (2) 3-8-04 to exist north of the proposed project area on the plains of Pūlehu Nui Ahupua'a (see Figure 2). LCA 5230 was awarded to Keaweama'ihi on September 28, 1853 with following Royal Patent numbers 8140 and 8252 being issued to the same individual on March 16, 1855 concluding a payment of \$5.00 (Burgett and Spear 1997:5). On this LCA Keaweama'ihi claimed 5 *apana* (land portions), 7 *lo'i* (wet taro) and 2 *kūia* (pastures). Saltwater-associated geography (*i.e.*, shore and dunes) was also claimed by Keaweama'ihi as part of LCA 5230.

Based on a map contained within Sterling (1998:242) in conjunction with the tax map keys, the *ahupua'a* of Pūlehu Nui is shown to continue northeast upslope on the northwest side of Haleakala. LCA 5230 also extends into the upper portion of Pūlehu Nui Ahupua'a. An overview of upland LCAs within the upland portion of Pūlehu Nui Ahupua'a reveal that land at the higher elevations were utilized for sweet and Irish potatoes (Waltona 'Aina 2011). LCA 9019:3, claimed by Helehuā, located just below the modern Kula Highway and between Holopuni and Pūlehu Roads, had pasture lands claimed. As a side note, Irish potatoes were also existent at the time of the claim (*i.e.*, the year 1848) although to pinpoint the location of such is difficult due to insufficient map sources. Above the Kula Highway, LCA 4567:4 claimed by Wahine in 1848, stated that Irish potatoes were present on his land and that sweet potatoes were also grown on his land, although not on the same piece of land (*ibid.*). Supplemental ethnographic research concerning upland LCA usage includes Bartholomew and Bailey (115:1994) who relay that "Hawaiians in higher elevations... traditionally grew sweet potatoes." For an in-depth look of LCA usage in upland areas of adjacent *ahupua'a*, please see Kolb *et al.* 1997.

Based on the information provided by the Tax Map Key, it appears that LCA 5230 is quite extensive and extends over a large portion of the *ahupua'a*. It further indicates that LCA 5230 is the largest LCA awarded in Pūlehu Nui Ahupua'a. Thus, it is difficult to ascertain where particular activities were conducted (*e.g.*, *lo'i*, *kūia*, *apana*) within the LCA.

In Sterling (1998:254-257) it was reported that the late Governor W. L. Moechouua was an "owner" of Pūlehu Nui Ahupua'a and the boundaries of the *ahupua'a* were somewhat vague. Through the information provided by the Māhele, it was acknowledged that Keaweama'ihi previously owned land within the *ahupua'a*. Oral testimonies from multiple sources contribute to somewhat more specific but general boundaries of the *ahupua'a* and conclusions were found in favor of the late governor.

From the mid-19<sup>th</sup> Century to the early 20<sup>th</sup> Century, coastal activity remained concentrated at Kalepolepo, but by the 1870s whaling diminished and the potato industry moved to the Ulupalakua area (Colin *et al.* 26:2000). Coastal Kula became somewhat of a dusty, "dirty place" (Wilcox 1921). As a result of industry movement out of the Kihei area (for a time) or the vast expanses of land available, Haleakala Ranch utilized many coastal portions of Kula in the later 1800s.

Like the rest of Hawai'i (and the world) during the 1940s, Kihei in Pūlehu Nui Ahupua'a was interrupted by the advent of World War II (WWII). The coast from Ma'āleā to Makena was used by United States military forces as training areas in preparation for amphibious assaults that were to be made in the Pacific war theater (Davis and Fortini 2004, Tome and Dega 2004). The main military service operating along the coastal region of the Wāiluku and Makawao (Kula) Districts was the United States Marine Corps' 4<sup>th</sup> Marine Division, which used the coast during the latter part of 1944. The beautiful beaches of Kihei and Wailea were transformed with the construction of concrete military bunkers to simulate enemy positions expected during amphibious combat operations. A non-4<sup>th</sup> Marine Division military unit that also trained along the coastline was the underwater demolition teams, known as UDT. Comprised of Army and Navy personnel, these people were trained to rig and detonate explosives on various obstacles in the way of the U.S. amphibious assaults.

Following WWII, the Kihei coastline returned to its tranquil activities of ranching and the development of residential areas. During the 1960s, the Kihei surge was set for development of the area as a vacation haven for tourists and homebuyers which continues to the present day.

#### PREVIOUS ARCHAEOLOGY IN GENERAL AREA

Archaeological studies in the greater area began in the early 20<sup>th</sup> Century by T. Thrum (1909), J. Stokes (1909-1916), and W. M. Walker (1931). These surveys included areas of leeward Maui and inventoried both coastal and upland sites of the Kula District. In the *ahupua'a* of Pūlehu Nui Walker listed two sites identified as Haleokane Heiau and Nininiwai Heiau (see Sterling 1998:253).

Archival research indicates few archaeological projects have been conducted near the proposed project area. Although these projects occurred some distance from the subject parcel they are directly relevant. These studies provide background information to the current study

area. The reader is referred to Tomonari-Tuggle *et al.* (2001:61-63) which provides a succinct summary of these studies.

Kennedy (1988) conducted a visual inspection of TMK: (2) 3-8-004:029 that did not identify archaeological sites. The absence of sites was attributed to prior development of the area for a construction baseyard with an installation of a large concrete culvert. In 1991 the Bishop Museum conducted an Archaeological Inventory Survey for the Kai Makani project that produced negative findings on the ground surface or subsurface contexts (Kotunno-Hazuka (1991)).

In 1992 Aki Simoto Consulting conducted an Archaeological Inventory Survey of the proposed location for the Kihai Gateway Complex which led to the identification of State Site 50-50-09-31, a remnant, historic concrete bridge (crossing Waiakoa Stream. It was suggested that the bridge was probably related to a narrow gauge cane railroad that operated through the area and may have serviced Kihai Camp 1 (Simoto and Pantalco 1992).

Between 1995 and 1999 Scientific Consultant Services, Inc. conducted an Inventory Survey (followed by two addendums) for the Puunene Bypass/ Mokuieie Highway Improvements Corridor located in TMK: (2) 3-8-04, 05, 06, and 07; Burrett and Spear 1997; Chaffee *et al.* 1999). No additional archaeological sites were identified. However, one previously recorded site was relocated and identified as the Naval Air Station Puunene Dump Site (State Site 50-50-09-4164). Scientific Consultant Services, Inc. conducted an archaeological study on TMK: (2) 3-9-041:027, which included excavation of nine stratigraphic trenches. No new sites were identified (Pestana and Dega 2002).

In 2005 Scientific Consultant Services, Inc. conducted an Archaeological Inventory Survey, including limited subsurface testing, was conducted on a 9.289-acre property in North Kihai, Maui, Hawaii; [TMK: (2) 3-8-004:028] (Tome and Dega 2005). The proposed project area, located immediately adjacent and abutting the southern boundary of the Hale Pihani Park, had been partially modified by illegal dumping, utilization as an informal dirt bike course, and ranching activities. Two archaeological sites comprising four structural features were newly identified during this Inventory Survey. The sites were interpreted respectively as a World War II-related site (State Site 50-50-09-5801, WW II training site) and a traditional Hawaiian site (State Site No. 50-50-09-5802, pre-Contact agricultural/habitation complex). The two sites date utilization of the subject parcel from the pre-Contact Period (*i.e.*, pre-1778) to the United States Marine Corps' 4<sup>th</sup> U.S. Marine Division training during the closing years of World War II.

#### PREVIOUS ARCHAEOLOGY IN THE PROPOSED PROJECT AREA

The proposed project area [TMK: (2) 3-8-008:019] represents a portion of a larger project area previously subject to an Archaeological Inventory Survey in 1999 by International Archaeological Research Institute Inc. (IARI) (Tomonari-Tuggle *et al.* 2001) (Figures 6 and 7). In addition to surveying the proposed project area [TMK: (2) 3-8-008:019] as part of the initial survey, IARI also surveyed the remaining parcels in TMK: (2) 3-8-008. International Archaeological Research Institute Inc. (Tomonari-Tuggle *et al.* 2001) found that TMK: (2) 3-8-008 was utilized by multiple commercial businesses at the time which included:

- agriculture (sugarcane; Hawaiian Commercial and Sugar Company (HC&S), Ltd.),
- rock quarrying [Hawaiian Cement, (Maui Concrete and Aggregate Division)],
- motorsports recreational areas (Maui Raceway Park),
- an animal shelter (Maui Humane Society),
- a pig farm (Maui Hog) and scrap metal storage site, and
- a crop dusting operation (Murray Air, Ltd.).

Spread amongst the commercial businesses were five (5) archaeological sites.

- Former Naval Air Station Puunene (State Site 50-50-09-4164; Feature Amount: 165)
- Sugarcane Plantation Features (State Site 50-50-09-4800; Feature Amount: 7)
- Post-World War II Ranching Features (State Site 50-50-09-4800; two complexes of corrals, fences, troughs)
- Old Kihai Railroad Bed (State Site 50-50-09-4802; Feature Amount: 1)
- Haiku Ditch and Reservoir (State Site 50-50-09-4802; Feature Amount: 5)

IARI determined that at least two of these archaeological sites were used for multiple historic activities (Tomonari-Tuggle *et al.* 2001). For example, the crop dusting operation utilized the former Naval Air Station Puunene's airstrip as a runway for their planes. A few of the standing military structures located on the proposed project area [TMK: (2) 3-8-008:019] were converted from military features to holding facilities for pigs.

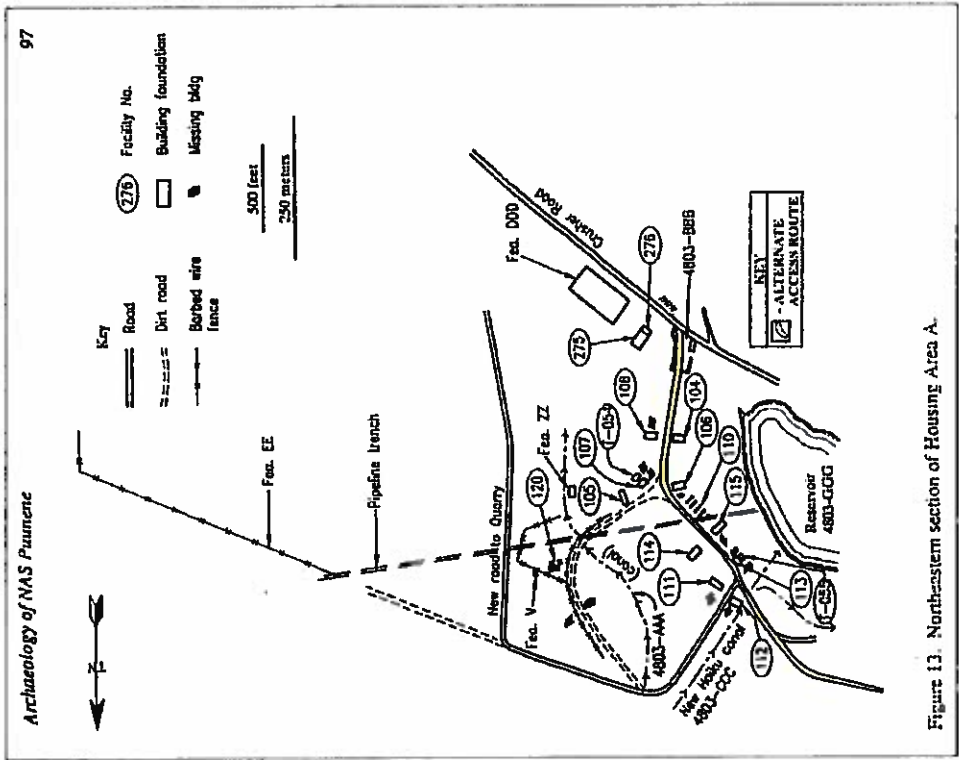
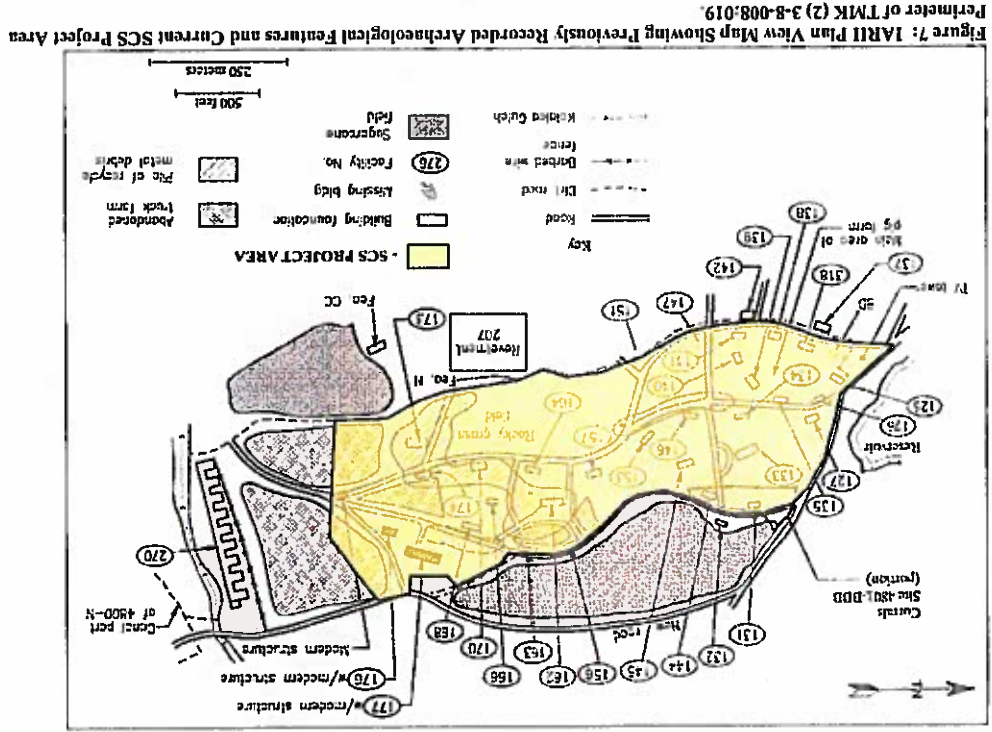


Figure 13. Northeastern section of Housing Area A.

Figure 6: International Archaeological Research Institute Incorporated (IARI) Plan View Map Showing Previously Recorded Archaeological Features and Current SCS Project Area Alternate Road.



The archaeological sites located in the proposed project area TMK: (2) 3-8-008:019 consist of the former Naval Air Station Puanene, which was recognized as a World War II archaeological site and designated as State Site 50-50-09-4164, and two post-World War II cattle ranching complexes that were consolidated and designated as State Site 50-50-09-4801. The current Archaeological Inventory Survey led to relocation of most of the previously identified sites, as well as several newly identified features. These new features have been incorporated into the existing State site numbers (see Inventory Survey Results Section below).

#### SETTLEMENT PATTERN

Numerous settlement models for the traditional district of Honua'ula (and its Kula extent such as the proposed project area) have been proposed by researchers, including those by Kirch (1970), Barrera (1974), Cleghorn (1975), Cordy (1977), Cordy and Athens (1988), and Gosser *et al.* (1993 and Gosser *et al.* 1995). Parallels may be drawn between the studies above with the project area based physiographic and archaeological characteristics.

Cordy and Athens (1988) suggested that although the traditional district of Honua'ula seems to have had a fairly harsh environment; people settled in this district and coped successfully with the elements, both on the coast and inland. Early surveys indicated that the region between the coast and inland farming areas have been labeled the 'barren zone,' which was used for temporary or seasonal habitation and agriculture. Cordy and Athens (1998) agreed that major land use patterns, initially generated by archaeologists in the 1970s, indicated that inland areas where rainfall was adequate were primarily farming zone. Permanent habitation and intensity of settlement correlated to rainfall amounts (Cordy and Athens 1988:23-24, 100-103; Gosser *et al.* 1993).

Prehistorically, crops in the inland areas were dryland taro, sweet potato, and banana (Barrera 1974; Cordy and Athens 1988:18). More relevant to the proposed project area is Handy and Handy's description of environmental conditions on the leeward side of Haleakala.

The great bulk and altitude of Haleakala- makes its southern flank practically a water-less desert, and the southeast and west flanks relatively dry, so that there were no *lo'i* (pond fields) cultivation at all. The arid country below the west and south slopes of Haleakala-, including Kula, Honua'ula, Kahikinui, and Kaupo, were dependent on sweet potato (Handy and Handy 1972:488).

Irish potato became an important crop in the mid-1800s. Ranching became a significant enterprise in the uplands during historic times.

Based on a synthesis of previous archaeological work in the intermediate or barren zone of the Kula District where the proposed project area is located, the landscape was expected to contain a few prehistoric sites, such as scattered temporary or seasonal habitations and associated dryland agricultural sites. Site density in this area is likely very low. Farther inland in this region sites might include field shelters and special activity areas represented by small C-shaped structures, terraces, platforms, rock mounds, and caves. Construction of these features is expected to be less formal and more random than those along the coast (Gosser *et al.* 1993). Historic-period features have been recorded with perhaps more frequency in the barren zone, given limited habitation through time, making this an ideal training area. Historic period sites may include features related to WW II training such as c-shaped structures and concrete encasements/foundations, among others. Walls and enclosures representing the ranching era were also thought possible.

#### METHODOLOGY

##### FIELD METHODOLOGY

Multiple field tasks were completed during the Archaeological Inventory Survey program. First, pedestrian survey was conducted in order to identify archaeological sites and assess the proposed project area geographical/physiographical features. Transect spacing of twenty meters (65.62 feet) intervals was employed when surface visibility was high, primarily in the mechanically altered areas. Interval spacing of ten meters (32.81 feet) or less between SCS personnel was employed within the dried vegetation areas to ensure adequate area coverage during the survey. Once archaeological sites were located, they were marked with biodegradable fluorescent pink and blue flagging tape. During the pedestrian survey, results were compiled on standard graphing paper as well as with digital photography. Each site was given an SCS temporary site designation (e.g. T-1) and plotted on a United States Geological Survey (USGS) map with a handheld Garmin GPS Map 60 CSx global positioning system (GPS) unit. The datum and coordinate system used for the GPS unit was NAD83 and UTM (Universal Transverse Mercator). True north compass orientation was also employed. All measurements were recorded in metric. Individual sites were also documented in plan view. Site boundaries were primarily determined by feature architecture boundaries. Exploration on the exterior of the features failed to yielded cultural materials and thus, each feature recorded herein was defined by their exterior architecture. Vegetation within the proposed project area was identified using Whistler (1995) and Neal (1965)

Mechanically excavated stratigraphic trenches were utilized to locate any associated subsurface midden deposits. A total of 20 trenches were excavated throughout the larger portion of the proposed project area. No excavation was conducted on the alternate access road. Soil stratigraphy encountered during excavation was documented utilizing metric graph paper and United States Department of Agriculture (USDA) Munsell soil color charts (Appendix A). Only portable archaeological cultural materials were found on the ground surface of the proposed project area. No portable archaeological cultural materials were found within the excavation of stratigraphic trenches.

#### LABORATORY METHODOLOGY

All field notes, digital photographs, and collected archaeological materials were curated at the SCS laboratory in Honolulu. Representative stratigraphic profiles have been drafted for presentation within this report. Representative plan view sketches showing location and morphology of identified sites/features/deposits were illustrated. All retrieved artifact and samples are cleaned, sorted, and analyzed (Appendix B). No definitive archaeological food midden samples were observed. Thus, none are available for analysis. Significant artifacts are scanned or photographed and classified for qualitative analysis. All metric measurements and weights are also recorded for quantitative analysis. All data are clearly recorded on standard laboratory forms that included numbers and weights (as appropriate) of each constituent category. Laboratory results are presented in Appendix B of this report.

#### INVENTORY SURVEY RESULTS

An Archaeological Inventory Survey, including limited subsurface testing, was conducted on the 86,029-acre subject property in Puunene, Island of Maui, Hawaii (TMK: (2) 3-8-008: 019) (see Figures 1 and 2). The 917 meter (3,007.8 feet) long alternate access road [TMK: (2) 3-8-008: por. 005 and 006] was not subjected to excavation since most of the access route was already established (i.e., there is a combination of a dirt and asphalt road), and the area that did not contain an established road contained active sugarcane cultivation. Although the 1999 IARJI survey documented archaeological features close to the east and west sides of the alternate access road, no archaeological sites or features were observed in the alternate access road corridor. These features that were documented along the alternate access road were assigned to State Site 50-50-09-4801, interpreted as a post-World War II cattle ranching site.

As stated elsewhere in this report, the proposed project area was previously subject to an Archaeological Inventory Survey in 1999 by IARJI (see Figures 6 and 7). The proposed project area, part of the larger former Naval Air Station Puunene, was designated by the air station as

Housing Area A, Southern and Northeastern portions. Within the larger portion of the proposed project area, the IARJI survey identified two archaeological sites comprised of a section associated with the former Naval Air Station Puunene (State Site 50-50-09-4164), as well as a post-World War II cattle ranching site (State Site 50-50-09-4801). The current survey relocated the two historic sites, assessed the presence/absence of those features within two sites, and identified previously undocumented features within the two sites (Figure 8). The newly identified features have been subsumed under the previous State site number designations.

Most of the historic features within in the proposed project area were heavily impacted by modern mechanical clearing and ensuing debris removal. The majority of those mechanically impacted features belonged to the former Naval Air Station Puunene (State Site 50-50-09-4164). Some of the historic features belonging to State Site 50-50-09-4164 did appear to have been mechanically impacted but also abandoned and neglected prior to any mechanical alterations. Prior to the mechanical disturbance, the north half of the proposed project area had been utilized for a pig farm (Maui Hog) and a scrap metal storage site. The south half of the subject property remained fallow.

A total of fifteen (15) features, interpreted as either related to the NAS Puunene or post-war cattle ranching period, were identified by SCS but not previously recorded during the IARJI survey (Tomonari-Tuggle *et al.* 2001). Of the 15 features that were not recorded, three (3) features were located in the State Site 50-50-09-4801 post-war cattle ranching area. The remaining twelve (12) features were located in the State Site 50-50-09-4164 former Naval Air Station Puunene area (Housing Area A).

To supplement the surface pedestrian survey, a total of twenty (20) stratigraphic trenches were mechanically excavated across the larger portion of the proposed project area (Table 1; see Figure 8 and Appendix A). Only one stratigraphic trench (ST-6) revealed the presence of subsurface architecture. This trench was placed at Facility 177 (SCS Site T-25) and the evidence showed that the historic feature was re-utilized in the recent past for animal husbandry. Besides Facility 177, no other surface features were subjected to excavation. No subsurface features were observed in any of the other 19 stratigraphic trenches. The following details the total list of SCS temporary sites recorded during the current Archaeological Inventory Survey. These features are being subsumed under the previously acquired State site numbers. No subsurface testing was conducted of the alternate access road due to its establishment as an unimproved road and partial location in an active sugarcane field.

The criteria outlined in the Hawaii Administrative Rules §13-275-6 was used to evaluate the significance of State Site 50-50-09-4164 and State Site 50-50-09-4801 (see Significance Assessments and Recommendations Section).

Table 1: Trenching Data

Stratigraphic Trench Identification	GPS Coordinates	Long Axis Orientation (Degree and North-type)	Dimensions (meters; L x W x Max. Depth)	Dimensions (feet; L x W x Max. Depth)	Exposed Strata Amount	Cultural Material Observed in Stratum	Stratum Interpretation
ST-1	East 765116 North 2303502	69/249° True	4.7 x 0.5 x 1.0	15.42 x 1.64 x 3.28	2	None	I-Natural II-Natural
ST-2	East 765184 North 2303438	63/243° True	5.1 x 0.5 x 1.1	16.73 x 1.64 x 3.61	2	None	I-Natural II-Natural
ST-3	East 765164 North 2303344	89/269° True	4.6 x 0.5 x 1.3	15.09 x 1.64 x 4.27	6	None	I-Natural II-Natural III-Natural IV-Natural V-Natural VI-Natural
ST-4	East 765229 North 2303382	68/248° True	4.8 x 0.5 x 1.3	15.75 x 1.64 x 4.27	4	None	I-Natural II-Natural III-Natural IV-Natural
ST-5	East 765279 North 2303466	84/264° True	5.3 x 0.5 x 0.85	17.39 x 1.64 x 2.79	4	Asphalt (I); Basalt Gravel (II); Basalt Gravel (III)	I-Fill II-Fill III-Fill IV-Natural
ST-6	East 765299 North 2303515	79/259° True	10.0 x 0.5 x 1.0	32.81 x 1.64 x 3.28	7	Concrete Slab (I); Basalt Gravel (II); Concrete Wall (III); Asphalt (IV)	I-Fill II-Fill III-Fill IV-Fill V-Disturbed Natural VI-Natural VII-Natural
ST-7	East 765279 North 2303638	004/184° True	4.5 x 0.5 x 0.8	14.76 x 1.64 x 2.62	2	None	I-Natural II-Natural
ST-8	East 765238 North 2303769	59/259° True	4.3 x 0.5 x 1.1	14.11 x 1.64 x 3.61	3	Asphalt (I)	I-Fill II-Disturbed Natural III-Natural
ST-9	East 765070 North 2303739	89/269° True	4.0 x 0.5 x 0.6	13.12 x 1.64 x 1.97	1	None	I-Natural
ST-10	East 765038 North 2303690	89/269° True	3.3 x 0.5 x 1.0	10.83 x 1.64 x 3.28	3	None	I-Natural II-Natural III-Natural

Stratigraphic Trench Identification	GPS Coordinates	Long Axis Orientation (Degree and North-type)	Dimensions (meters; L x W x Max. Depth)	Dimensions (feet; L x W x Max. Depth)	Exposed Strata Amount	Cultural Material Observed in Stratum	Stratum Interpretation
ST-11	East 765063 North 2303621	64/244° True	4.0 x 0.5 x 0.9	13.12 x 1.64 x 2.95	2	None	I-Natural II-Natural
ST-12	East 765043 North 2303871	179/359° True	6.1 x 0.5 x 1.2	20.01 x 1.64 x 3.94	1	None	I-Natural
ST-13	East 764956 North 2303913	76/256° True	5.0 x 0.5 x 1.0	16.4 x 1.64 x 3.28	1	None	I-Natural
ST-14	East 764999 North 2303985	64/244° True	6.0 x 0.5 x 1.0	19.69 x 1.64 x 3.28	1	None	I-Natural
ST-15	East 765117 North 2304100	42/222° True	4.2 x 0.5 x 1.3	13.78 x 1.64 x 4.27	2	None	I-Natural II-Natural
ST-16	East 765035 North 2304138	70/250° True	3.8 x 0.3 x 0.8	12.47 x 1.64 x 2.62	1	None	I-Natural
ST-17	East 764983 North 2304062	49/229° True	4.6 x 0.5 x 0.9	15.09 x 1.64 x 2.95	1	Plastic (I)	I-Disturbed Natural
ST-18	East 764903 North 2304044	65/245° True	5.8 x 0.5 x 1.0	19.03 x 1.64 x 3.28	1	None	I-Disturbed Natural
ST-19	East 764886 North 2304105	63/243° True	5.6 x 0.5 x 1.0	18.37 x 1.64 x 3.28	2	None	I-Natural II-Natural
ST-20	East 764999 North 2304279	004/184° True	5.2 x 0.5 x 0.8	17.06 x 1.64 x 2.62	3	Concrete (I); Plastic (II)	I-Fill II-Disturbed Natural III-Natural

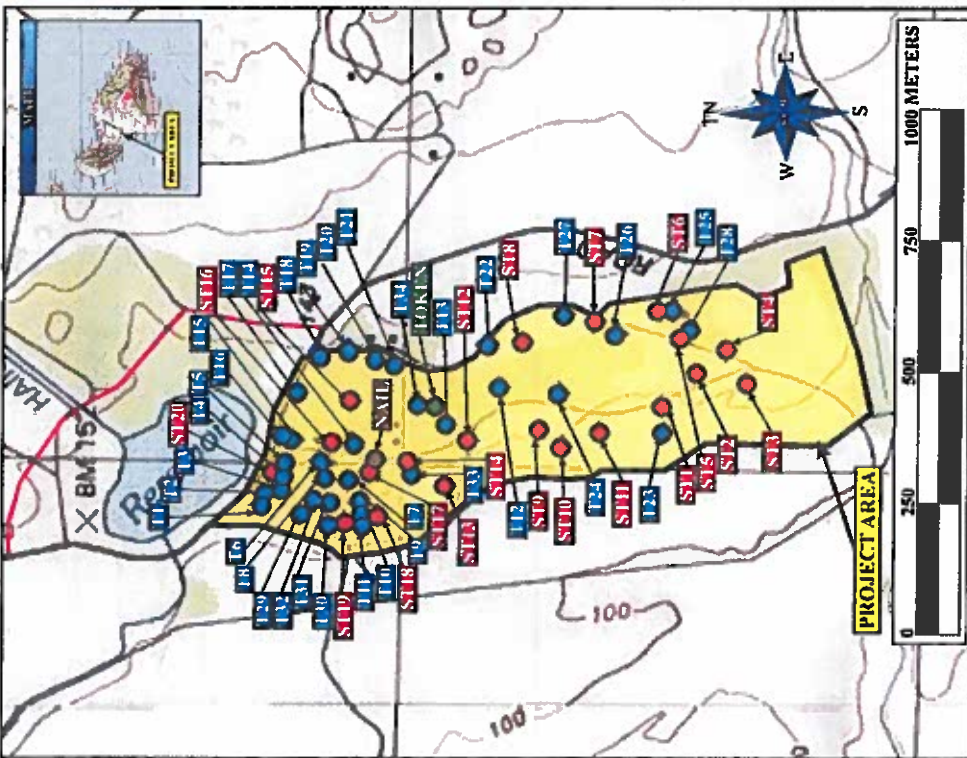


Figure 8: USGS 1992 Puu O Kali Quadrangle Map Showing SCS Archaeological Sites and Trench Locations.

**STATE SITE 50-50-09-4164 FORMER N.A.S. PUUNENE HOUSING AREA A SOUTHERN PORTION**

Of the total 34 features identified by SCS during the current survey, thirty (30) features (T-1 through T-17 and T-22 through T-34) were found to be associated with the former Naval Air Station Puunene, which was previously designated as State Site 50-50-09-4164. Of these thirty features, twelve (12) were not identified during the previous IARI survey. These twelve features, designated herein as "temporary sites", consist of three (3) rock walls, one (1) loading ramp (with platform), and eight (8) concrete foundations. The following provides descriptions of all thirty features identified associated with State Site 50-50-09-4164, inclusive of an update for those features previously recorded in 1999 by IARI.

SCS Temporary Site: T-1  
 GPS Coordinates: East 764912/ North 2304270  
 Previous Archaeological Recordation: None  
 Features: 1  
 Feature Type: Concrete slab  
 Feature Function: Possible building foundation  
 Feature Structural Integrity: Fair  
 Feature Age Association: Possible World War II  
 Criterion Significance: D  
 Recommendations: No further work

SCS Site T-1 consisted of a rectangular concrete slab interpreted as a building foundation. Located on relatively flat terrain amongst dried grasses, the feature measured approximately 22.6 m long by 8.8 m wide (74.15 x 28.87 feet) with a long axis oriented southeast-northwest (165/345° True). The feature was constructed of concrete and steel rebar and not recorded during the 1999 IARI survey. IARI noted that a building was missing where T-1 was located. Cultural materials observed on the surface of the foundation were identified as ferrous metal wire, window and bottle glass sherds, and a United States (US) 1944 "S" copper wheat penny. T-1 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-2  
 GPS Coordinates: East 764939/ North 2304264  
 Previous Archaeological Recordation: None  
 Features: 1  
 Feature Type: Wall

Feature Function: Boundary  
Feature Structural Integrity: Fair  
Feature Age Association: Possible World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-2 consisted of a wall interpreted as a possibly being constructed during World War II, during the existence of N.A.S. Puunene. Located on relatively flat terrain amongst dried grasses, live *kiawe* (*Prosopis pallida*) and *kaali kua hulu* (*Merremia aegyptia*), the feature measured approximately 25.0 m long by 4.0 m wide (82.02 x 13.12 feet) and heights above ground surface ranged from of 0.2 to 1.3 meters (0.66 x 4.27 feet), with up to five courses of dry laid, piled basalt rocks. The feature's long axis was oriented southeast-northwest (174/354° True) and constructed of sub-angular and sub-rounded basalt pebbles, cobbles, and small boulders. In plan view, the west face of the wall is angular, and curvilinear on its east face. T-2 was not recorded during the 1999 IARU survey. Cultural materials observed on the wall were identified as a piece of a waterworn branch coral, several glass bottle and jug sherds, ferrous metal wire insulation, a whiteware cup base sherd with a painted blue whale design, and a US 1944 "S" copper wheat penny. This feature was not impacted by recent mechanical clearance of the proposed project area.

SCS Site T-3 consisted of a concrete slab interpreted as a building foundation. Located on slight (3°) east to west slope amongst *hale kaa* (*Leucaena leucocephala*), castor bean (*Ricinus communis*), *kaali kua hulu* (*Merremia aegyptia*), and dried grasses, the concrete slab measured approximately 23.0 m long by 9.0 m wide (75.46 x 29.53 feet). The feature's long axis was oriented northeast-southwest (015/195° True) and constructed of concrete and steel rebar.

SCS Site T-4 consisted of a basalt rock wall. Located on small hill top amongst *kaali kua hulu* (*Merremia aegyptia*), *kiawe* (*Prosopis pallida*), and dried grasses, the rock wall was curvilinear and measured approximately 22.0 m long by 1.0 to 1.5 m wide (72.18 x 3.28 x 4.92 feet). The T-4 end points were oriented northeast-southwest (059/239° True) and constructed of small, sub-rounded and sub-angular basalt boulders. T-4 was not recorded during the 1999 IARU survey. No cultural materials were observed on or near the site, and the site was not impacted by recent mechanical clearance of the proposed project area.

SCS Site T-5 consisted of an L-shaped concrete slab. This feature was interpreted as a building foundation. Located on a slightly elevated area amongst *kaali kua hulu* (*Merremia*

SCS Temporary Site: T-3  
GPS Coordinates: East 764949/ North 2304248  
Previous Archaeological Recordation: IARU (Facility 125)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for military barracks, later civilian quarters  
Feature Structural Integrity: Good  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Temporary Site: T-4  
GPS Coordinates: East 764975/ North 2304226  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Wall  
Feature Function: Boundary  
Feature Structural Integrity: Fair  
Feature Age Association: Unknown  
Criterion Significance: D  
Recommendations: No further work

SCS Temporary Site: T-5  
GPS Coordinates: East 764999/ North 2304226  
Previous Archaeological Recordation: IARU (Facility 126)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for military barracks, later civilian quarters  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-3 consisted of a concrete slab interpreted as a building foundation. Located on slight (3°) east to west slope amongst *hale kaa* (*Leucaena leucocephala*), castor bean (*Ricinus communis*), *kaali kua hulu* (*Merremia aegyptia*), and dried grasses, the concrete slab measured approximately 23.0 m long by 9.0 m wide (75.46 x 29.53 feet). The feature's long axis was oriented northeast-southwest (015/195° True) and constructed of concrete and steel rebar.



*acrylioides*, tomato (*Solanum* sp.), spiny amaranth (*Amaranthus spinosus*), *uhaloa* (*Waltheria indica*), klu (*Acacia farnesiana*), goosefret (*Chenopodium* sp.), and dried grasses, the concrete slab measured approximately 22.7 m long by 9.9 m wide (74.48 x 32.48 feet). T-5's long axis was oriented northeast-southwest (120/300° True) and constructed of concrete and steel rebar. T-5 was previously recorded during the 1999 IARII survey as Facility 126. Cultural materials observed on the foundation surface were identified as bottle and window glass sherds and non-diagnostic ferrous metal and plastic. T-5 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-6

GPS Coordinates: East 765002/ North 2304155

Previous Archaeological Recordation: IARII (Facility 135)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for Chief Petty Officer barracks, later civilian quarters

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-6 consisted of a concrete slab interpreted as a building foundation. Located in a shallow swale amongst spiny amaranth (*Amaranthus spinosus*), klu (*Acacia farnesiana*), hairy abutilon (*Abutilon grandifolium*), golden crown beard (*Verbesina encelioides*), lion's ear (*Leonotis nepetifolia*), coat buttons (*Tridax procumbens*), and dried grasses, the concrete slab measured approximately 22.4 m long by 8.4 m wide (73.49 x 27.56 feet). T-6's long axis was oriented southeast-northwest (165/345° True) and constructed of concrete and steel rebar. T-6 was previously recorded during the 1999 IARII survey as Facility 135. Although not in use during the current survey, it was apparent that T-6 once had multiple rooms, as evident by the presence of multiple, mechanically altered low standing walls within the perimeter of the concrete slab. As each room had a cement trough, T-6 was interpreted as having been utilized by the pig farm that had recently occupied a portion of the proposed project area. Cultural material observed on the foundation surface was identified as bottle glass sherds, milled wood, galvanized nails, and a ceramic electrical insulator. T-6 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-7

GPS Coordinates: East 764967/ North 2304104

Previous Archaeological Recordation: IARII (Facility 139)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for military barracks, later civilian quarters

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-7 consisted of a concrete slab interpreted as a building foundation. Located on a slightly elevated area amongst golden crown beard (*Verbesina encelioides*), goosefret (*Chenopodium* sp.), and dried grasses, the concrete slab measured approximately 22.4 m long by 9.0 m wide (73.49 x 29.53 feet). T-7's long axis was oriented northeast-southwest (029/209° True) and constructed of concrete and steel rebar. T-7 was previously recorded during the 1999 IARII survey as Facility 139. Although not in use during the current survey, it was apparent that T-7 once had multiple rooms, as evidenced by the presence of multiple, mechanically altered low standing walls within the perimeter of the concrete slab (Figure 9). As each room had cement trough, T-7 was interpreted as utilized by the pig farm that had recently occupied a portion of the proposed project area. Cultural material observed on the foundation surface was identified as a plastic PVC pipe and an electrical rubber insulator. T-7 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-8

GPS Coordinates: East 764971/ North 2304146

Previous Archaeological Recordation: None

Features: 1

Feature Type: Concrete slab

Feature Function: Possible building foundation

Feature Structural Integrity: Fair

Feature Age Association: Possible World War II

Criterion Significance: D

Recommendations: No further work

SCS Site T-8 consisted of a concrete slab interpreted as a building foundation. Located on a slightly elevated area amongst golden crown beard, spiny amaranth, tomato, *halole kua*,

balsam pear (*Momordica charantia*), klu, lion's ear, and *koali kua hulu*, and dried grasses, the concrete slab measured approximately 17.2 m long by 6.4 m wide (56.43 x 21.0 feet). T-8's long axis was oriented northeast-southwest (004/284° True) and constructed of concrete and steel rebar. T-8 was not recorded during the 1999 IARI survey. Although not in use during the current survey, it was previously utilized by the pig farm because the exterior of the concrete slab's east and west sides were sloped inward, this for liquid drainage of animal waste. Cultural material observed on the foundation surface was identified as a green rubber hose, galvanized nails, ferrous metal, milled wood, and non-diagnostic plastic. T-8 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-9

GPS Coordinates: East 764922/ North 2304079

Previous Archaeological Recordation: IARII (Facility 140)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for military barracks, later civilian quarters

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-9 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on slight (~2°) northwest to southeast slope amongst golden crown beard and dried grasses, T-9 measured approximately 22.5 m long by 9.0 m wide (73.82 x 29.53 feet) with a long axis oriented southeast-northwest (059/239° True). T-9 was constructed of concrete and steel rebar and was previously recorded during the 1999 IARI survey. Cultural material observed on the surface of the foundation were identified as non-ferrous metal, bottle glass sherds, milled wood, galvanized nails, and a plastic container cap. T-9 was also impacted by recent mechanical clearance of the proposed project area.



Figure 9: Photograph of SCS Site T-9 Pigery Structure with Rooms. View to Northwest.

SCS Temporary Site: T-10

GPS Coordinates: East 764894/ North 2304074

Previous Archaeological Recordation: None

Features: 1

Feature Type: Concrete slab

Feature Function: Possible building foundation

Feature Structural Integrity: Fair

Feature Age Association: Possible World War II

Criterion Significance: D

Recommendations: No further work

SCS Site T-10 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively flat terrain amongst goosefeet and dried grasses, T-10 measured approximately 9.7 m long by 5.6 m wide (31.82 x 18.37 feet) with a long axis oriented southeast-northwest (169/349° True). T-10 was constructed of concrete and steel rebar and was not recorded during the 1999 IARJII survey. Cultural material observed on the surface of the foundation was identified as bottle glass sherds, basalt gravel, and a steel cable. T-10 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-11

GPS Coordinates: East 764882/ North 2304074

Previous Archaeological Recordation: IARJII (Facility 141)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for military recreation building and dispensary

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-11 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively flat terrain amongst goosefeet, *uhalaia*, *halaie kaa*, klu, and dried grasses, T-11 measured approximately 14.3 m long by 6.8 m wide (46.92 x 22.31 feet) with a long axis oriented southeast-northwest (169/349° True). T-11 was constructed of concrete and steel rebar and was recorded during the 1999 IARJII survey. Cultural material observed during the current survey on the surface of the foundation was identified as ferrous metal nails, ceramic

tile, plastic beverage bottles, and a green rubber hose. T-11 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-12

GPS Coordinates: East 765147/ North 2303813

Previous Archaeological Recordation: IARJII (Facility 157)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for military barracks, later bachelor officer quarters

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-12 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively flat terrain amongst dried grasses, T-12 measured approximately 22.6 m long by 8.9 m wide (74.15 x 29.49 feet) with a long axis oriented southeast-northwest (170/350° True). T-12 was constructed of concrete and steel rebar and was recorded during the 1999 IARJII survey. Cultural material observed during the current survey on the surface of the foundation was identified as ferrous metal, plastic, a wound light blue glass bead, and sawn animal bones; the glass bead was collected. T-12 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-13

GPS Coordinates: East 765078/ North 2303913

Previous Archaeological Recordation: IARJII (Facility 153)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for military barracks, later mess attendant barracks

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-13 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively flat terrain amongst dried grasses, T-13 measured

approximately 42.5 m long by 8.9 m wide (139.44 x 29.2 feet) with a long axis oriented southeast-northwest (140/320° True). Constructed of concrete and steel rebar, T-13 was recorded during the 1999 IARJI survey. Cultural material observed during the current survey on the surface of the foundation was identified as plastic and a porcelain plate sherd. T-13 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-14  
GPS Coordinates: East 765038/ North 2304093  
Previous Archaeological Recordation: IARJI (Facility 134)

Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for military barracks, later civilian quarters  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-14 consisted of a rectangular-shaped concrete slab interpreted as a building foundation (Figures 10 and 11). Located on relatively flat terrain amongst lion's ear, *kianve*, and dried grasses, T-14 measured approximately 19.5 m long by 9.0 m wide (63.98 x 29.53 feet) with a long axis oriented southeast-northwest (173/353° True). Constructed of concrete and steel rebar, T-14 was recorded during the 1999 IARJI survey. Cultural material observed during the current survey on the surface of the foundation was identified as window glass sherds. T-14 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-15  
GPS Coordinates: East 765046/ North 2304218  
Previous Archaeological Recordation: IARJI (Facility 127)

Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for Chief Petty Officer barracks, later civilian quarters  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-15 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on an approximate 10 to 15° southwest to northeast slope amongst lion's ear, spiny amaranth, tomato, golden crown beard, and dried grasses, T-15 measured approximately 22.4 m long by 8.8 m wide (73.49 x 28.87 feet) with a maximum above ground surface build of approximately 1.0 m. The long axis of the site was oriented southeast-northwest (149/329° True). Constructed of concrete and steel rebar, T-15 was recorded during the 1999 IARJI survey. Cultural material observed during the current survey on the surface of the foundation was identified as ferrous and non-ferrous metal (*i.e.*, pipes and an air compressor fitting). On the mechanically affected ground surface located to the north of the site were ophiu (*Celiana* sp.) shells. These shell remnants were interpreted as modern marine food midden. T-15 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-16  
GPS Coordinates: East 765048/ North 2304234  
Previous Archaeological Recordation: None

Features: 1  
Feature Type: Wall  
Feature Function: Boundary  
Feature Structural Integrity: Fair  
Feature Age Association: Indeterminate  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-16 consisted of a linear basalt rock wall interpreted as utilized for boundary purposes. Located on relatively level terrain amongst lion's ear, tomato, *kianve*, and dried grasses, T-16 measured approximately 5.7 m long by 1.1 m wide (18.7 x 3.61 feet) and above ground surface heights of 0.6 to 1.1 m. T-16 wall was constructed of up to four (4) courses high of piled, dry-laid sub-rounded basalt cobbles and small boulders and had a long axis oriented southeast-northwest (55/235° True). T-16 was not recorded during the 1999 IARJI survey. Cultural material observed during the current survey on the site's architecture was identified as a concrete fragment and a ferrous metal paint can. T-16 was not impacted by recent mechanical clearance of the proposed project area.



Figure 10: Photograph of SCS Site T-14 Foundation Over View. View to Southeast.

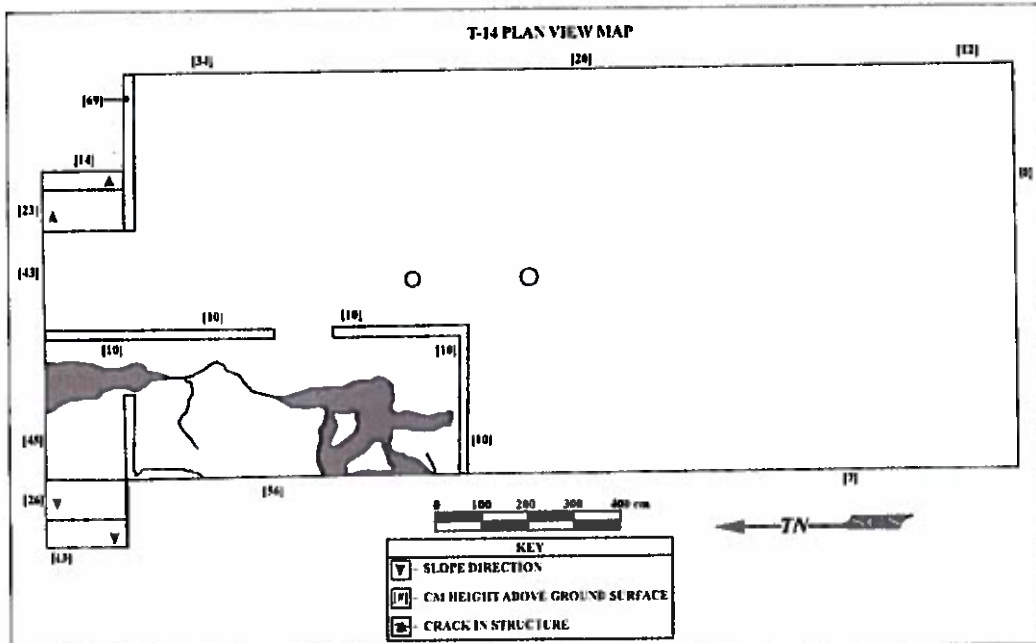


Figure 11: Plan View Drawing of SCS Site T-14 Foundation.

SCS Temporary Site: T-17  
GPS Coordinates: East 765132/ North 2304204  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Poor  
Feature Age Association: Indeterminate  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-17 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively level terrain next to a mechanically created earthen ditch amongst *klawe* and dried grasses, T-17 measured approximately 7.0 m long by 7.0 m wide (22.97 x 22.97 feet). The long axis of the site was oriented northeast-southwest (02.6/206° True). Constructed of concrete, T-17 was not recorded during the 1999 IARJII survey. Cultural material observed during the current survey on the surface of the foundation was identified as basalt gravel, concrete fragments, and a two-hole marine shell button of which the button was collected. Mechanically displaced soil matrices had been relocated onto the surface of the site prior to the current survey and obscured the total surface area of the site.

SCS Temporary Site: T-22  
GPS Coordinates: East 765229/ North 2303838  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Excellent  
Feature Age Association: Indeterminate  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-22 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively level terrain amongst dried grasses, T-22 measured approximately 18.4 m long by 6.8 m wide (60.37 x 22.31 feet). The long axis of the site was oriented southeast-northwest (130/310° True). Constructed of concrete and rebar, T-22 was not

recorded during the 1999 IARJII survey. Cultural material observed during the current survey on the surface of the foundation was identified as basalt gravel, steel nails, and concrete fragments. T-22 was not impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-23  
GPS Coordinates: East 765068/ North 2303499  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Excellent  
Feature Age Association: Indeterminate  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-23 consisted of a rectangular concrete slab interpreted as a building foundation. Located on relatively level terrain amongst dried grasses, T-23 measured approximately 14.7 m long by 6.4 m wide (48.23 x 21.0 feet). The long axis of the site was oriented southeast-northwest (130/310° True). Constructed of concrete and rebar, T-22 was not recorded during the 1999 IARJII survey. Cultural material observed during the current survey on the surface of the foundation was identified as window glass shards. Although T-23 was located near the IARJII recorded Facility 173, the horizontal dimensions of T-23 do not match the horizontal dimensions of Facility 173. Thus, T-23 was not interpreted during the current survey as Facility 173. T-23 was not impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-24  
GPS Coordinates: East 765140/ North 2303699  
Previous Archaeological Recordation: IARJII (Facility 164)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for military barracks  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

approximately 10.0 m long by a varying 0.5 to 1.0 m wide (32.81 x 1.64–3.28 feet). ST-6 was excavated to a depth of 2.80 m below the surface of the site's architecture. Although no cultural material was found in the excavation of ST-6, subsurface architecture was exposed and revealed the site's construction sequence. The excavation of ST-6 revealed the presence of seven (7) strata comprised of soil matrices and site architecture (see Appendix A).

- Layer I (0–10 cmbs) was a secondary concrete slab that was constructed following the military departure of the former Naval Air Station Puntumenc.
- Layer II (10–60 cmbs) was a compact, yellowish red (5YR 4/6, dry) silty clay with angular basalt pebbles and cobbles. Based on stratigraphic positioning, Layer II was interpreted as fill stratum that was utilized to elevate a future structure.
- Layer III (60–95 cmbs) was a primary concrete wall located above the ground surface. Layer III was observed in Layers IV, V, and VI.
- Layer IV (95–100 cmbs) was a black (10YR 2/1, dry) asphalt interpreted as imported fill for the site's parking lot. With the asphalt removed, the concrete wall that was arbitrarily labeled as Layer III was observed.
- Layer V (100–125 cmbs) was a brown (7.5YR 4/4, dry) silt with volcanic cinder. It is possible that Layer V is fill however, it could not be confirmed definitively as such due to the lack of geological testing within the proposed project area. With Layer V removed, the concrete wall arbitrarily labeled as Layer III, was observed below the ground surface.
- Layer VI (125–175 cmbs) was a compact, dark reddish brown (5YR 3/4, dry) silty clay. Layer VI was interpreted as a natural stratum. With Layer VI removed, the concrete wall arbitrarily labeled Layer III was observed and terminated in at the bottom of Layer VI. Besides the concrete wall that was observed, no other cultural material or subsurface architecture was observed.
- Layer VII (175–285 cmbs) was a compact, dark brown (7.5YR 3/4 dry) silty clay. Layer VII was interpreted as a natural stratum. Constructed in the upper stratum of Layer VII was a concrete grade beam that was probably laid in a perimeter-like fashion in preparation for the laying of the concrete foundation. Besides the concrete grade beam that was observed, no other cultural material or subsurface architecture was observed.

SCS Site T-24 consisted of an L-shaped concrete slab interpreted as a building foundation. Located on relatively level terrain amongst dried grasses, T-24 measured approximately 22.1 m long by 9.0 m wide (72.51 x 29.53 feet). The long axis of the site was oriented northeast-southwest (026/206° True). Constructed of concrete and rebar, T-23 was recorded during the 1999 IARI survey. Cultural material observed during the current survey on the surface of the foundation was identified as galvanized nails and concrete fragments. T-24 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-25

GPS Coordinates: East 765300/ North 2303486

Previous Archaeological Recordation: IARII (Facility 177)

Features: 1

Feature Type: Concrete slab

Feature Function: Building foundation for storehouse

Feature Structural Integrity: Fair

Feature Age Association: World War II

Criterion Significance: A and D

Recommendations: No further work

SCS Site T-25 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for a storehouse. Located on relatively level terrain amongst dried grasses, T-25 measured approximately 47.0 m long by 10.0 m wide (154.2 x 32.81 feet). The long axis of the site was oriented northeast-southwest (020/200° True). Constructed of concrete and rebar, T-25 was recorded during the 1999 IARI survey. During the current survey, what was interpreted as the top of the foundation was sloped from the west downward toward the east. The purpose of the slope was to drain away fluids related to animal waste. Stratigraphic Trench 6 was utilized to examine the site's method of construction that resulted in the exposure of subsurface architecture (Figures 12 and 13). Cultural material observed during the current survey on the surface of the foundation was identified as concrete bricks, aluminum cans, and bottle glass sherds. T-25 was impacted by recent mechanical clearance of the proposed project area.

Stratigraphic Trench 6

Stratigraphic Trench 6 (ST-6) was placed across the surface architecture of SCS Site T-25's (IARI Facility 177) west side to locate subterranean architecture and any cultural material that might aid in the interpretation of the site's function (see Figures 12 and 13). Measuring



Figure 12: Photograph of SCS Site T-25 Western Perimeter and Stratigraphic Trench 6 Over View. View to East.

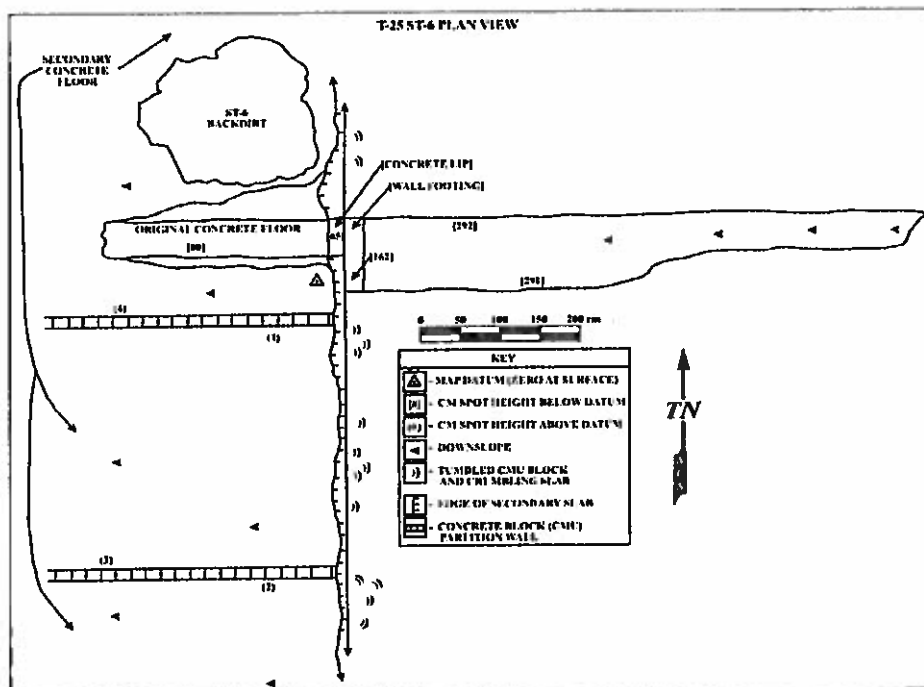


Figure 13: Plan View Drawing of SCS Site T-25 Western Perimeter and Stratigraphic Trench 6.



Given that the excavation of Stratigraphic Trench 6 across SCS Temporary Site T-25 western structural perimeter revealed multiple construction phases, the following is an interpretation of the site's construction sequence:

- 1) A trench was excavated to create a rectangular shape and was filled with concrete that created a concrete based grade beam.
- 2) Once the concrete grade beam was dry, a concrete wall (Layer III) of approximately 90 cm (2.95 feet) high was constructed, utilizing wooden forms, on the concrete grade beam.
- 3) A concrete slab for the foundation was poured on the east side of the concrete wall.
- 4) The site was abandoned by the military following the end of World War II.
- 5) The site was re-utilized by civilians for as an animal pen. In the process, soil fill of approximately 50 cm thick was laid over the concrete foundation.
- 6) Near the top of the soil fill (*i.e.*, Layer II), a shallow [approximately 20 cm (0.66 feet) deep] trench was excavated to facilitate the creation of a thin concrete grade beam of approximately 10 cm (0.33 feet) thick.
- 7) On the thin concrete grade beam, a concrete brick wall was constructed. These walls were likely the walls that separated animals.
- 8) Following the construction the walls that separated the animals, a thin (approximately 10 cm (0.33 feet) thick) sloped northwest to southeast concrete foundation was laid over the Layer II soil fill. The thin concrete foundation was sloped to facilitate the drainage of liquids associated with the site being utilized as for animal husbandry.

SCS Temporary Site: T-26  
GPS Coordinates: East 765253/ North 2303593  
Previous Archaeological Recordation: IARIJ (Facility 168)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for military squadron shops and a storehouse  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-26 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for squadron shops and a storehouse. Located on relatively level terrain amongst dried grasses, T-26 measured approximately 24.5 m long by 6.6 m wide (80.38 x 21.65 feet). The long axis of the site was oriented northeast-southwest (020/200° True). Constructed of concrete and rebar, T-26 was recorded during the 1999 IARIJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as galvanized nails. T-26 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-27  
GPS Coordinates: East 765292/ North 2303689  
Previous Archaeological Recordation: IARIJ (Facility 163)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for a military storehouse  
Feature Structural Integrity: Good  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-27 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for a military storehouse. Located on relatively level terrain amongst dried grasses, T-27 measured approximately 30.0 m long by 6.3 m wide (98.43 x 20.67 feet). The long axis of the site was oriented northeast-southwest (020/200° True). Constructed of concrete and rebar, T-27 was recorded during the 1999 IARIJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as galvanized nails, concrete fragments, and a aluminum can. T-27 was not impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-28  
GPS Coordinates: East 765265/ North 2303454  
Previous Archaeological Recordation: IARIJ (Facility 176)  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Building foundation for a military garage and maintenance  
Feature Structural Integrity: Fair  
Feature Age Association: World War II

Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-28 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for a military garage and maintenance. Located on relatively level terrain amongst dried grasses, T-28 measured approximately 24.3 m long by 6.2 m wide (80.15 x 20.34 feet). The long axis of the site was oriented northeast-southwest (020/200° True). Constructed of concrete and rebar, T-28 was recorded during the 1999 IARJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as milled wood, ferrous metal nuts and bolts, and a plastic pen. T-28 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-29  
GPS Coordinates: East 764897/ North 2304194  
Previous Archaeological Recordation: IARJ (Facility 318)

Features: 1

Feature Type: Concrete slab  
Feature Function: Building foundation for a military galley  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-29 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for a military galley. Located on relatively level terrain amongst lion's ear, *kānva*, goosefoot, and dried grasses, T-29 measured approximately 30.0 m long by 12.5 m wide (98.43 x 41.01 feet). The long axis of the site was oriented northeast-southwest (010/190° True). Constructed of concrete and rebar, T-29 was recorded during the 1999 IARJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as plastic, window glass sherds, and basalt gravel. T-29 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-30  
GPS Coordinates: East 764881/ North 2304141  
Previous Archaeological Recordation: IARJ (Facility 138)

Features: 1

Feature Type: Concrete slab  
Feature Function: Building foundation for Chief Petty Officer barracks; later civilian quarters  
Feature Structural Integrity: Fair  
Feature Age Association: World War II  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-30 consisted of a rectangular-shaped concrete slab interpreted as a building foundation for chief petty officer barracks and later, civilian quarters. Located on relatively level terrain amongst *haole koa*, castor bean, and dried grasses, T-30 measured approximately 23.0 m long by 9.0 m wide (75.46 x 29.53 feet). The long axis of the site was oriented northeast-southwest (005/185° True). Constructed of concrete and rebar, T-30 was recorded during the 1999 IARJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as milled wood, window glass sherds, basalt gravel, and steel nuts and bolts. T-30 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-31  
GPS Coordinates: East 764922/ North 2304142  
Previous Archaeological Recordation: None

Features: 1

Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Fair  
Feature Age Association: Possible World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-31 consisted of a rectangular-shaped concrete slab interpreted as a possible building foundation. Located on relatively level terrain amongst lion's ear, spiny amaranth, tomato, goosefoot, and dried grasses, T-31 measured approximately 16.0 m long by 6.2 m wide (52.49 x 20.34 feet). The long axis of the site was oriented northeast-southwest (109/289° True). Constructed of concrete and rebar, T-31 was not recorded during the 1999 IARJ survey. Cultural material observed during the current survey on the surface of the foundation was identified as milled wood, mirror and window glass sherds, and galvanized nails. T-31 was impacted by recent mechanical clearance of the proposed project area.

oriented northeast-southwest (79/259° True). Constructed of concrete and rebar, T-33 was not recorded during the 1999 IARII survey. Cultural material observed during the current survey on the surface of the foundation was identified as non-diagnostic plastic, a whiteware ceramic sherd, and a galvanized pipe. T-33 was impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-34  
GPS Coordinates: East 765113/ North 2303972  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Fair  
Feature Age Association: Possible World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-34 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively level terrain amongst dried grasses, T-34 measured approximately 16.0 m long by 7.0 m wide (52.49 x 22.97 feet). The long axis of the site was oriented southeast-northwest (149/329° True). Constructed of concrete and rebar, T-34 was not recorded during the 1999 IARII survey. Cultural material observed during the current survey on the surface of the foundation was identified as concrete fragments, coral, basalt gravel, and calcareous sand. T-34 was not impacted by recent mechanical clearance of the proposed project area.

**STATE SITE 50-50-09-4801 POST-WAR CATTLE RANCHING COMPLEXES**  
Four (4) SCS temporary sites (numbered T-18 through T-21) were identified in the easternmost area of previously assigned State Site 50-50-09-4801, a post-war cattle ranching complex. Of the four features found during the current work, T-19 was the only one not previously recorded during the 1999 IARII survey.

SCS Temporary Site: T-18  
GPS Coordinates: East 765205/ North 2304161  
Previous Archaeological Recordation: Unknown  
Features: 1

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SCS Temporary Site: T-32  
GPS Coordinates: East 764928/ North 2304169  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete ramp and platform  
Feature Function: Possible loading dock  
Feature Structural Integrity: Fair  
Feature Age Association: Possible World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-32 consisted of a single feature comprised of two components physically attached to each other. These two components were identified as a rectangular concrete ramp and square platform interpreted as a possible loading dock. Located on relatively level terrain amongst *kaale koo*, castor bean, and dried grasses, T-32 measured approximately 14.5 m long by 3.7 m wide (47.57 x 12.14 feet). The long axis of the site was oriented northeast-southwest (020/200° True). Constructed of concrete and rebar, T-32 was not recorded during the 1999 IARII survey. No cultural material observed during the current survey on the surface of the possible loading dock. Although T-32 was not impacted by recent mechanical clearance of the proposed project area, abandonment and neglect has collapsed the square platform.

SCS Temporary Site: T-33  
GPS Coordinates: East 764979/ North 2303980  
Previous Archaeological Recordation: None  
Features: 1  
Feature Type: Concrete slab  
Feature Function: Possible building foundation  
Feature Structural Integrity: Fair  
Feature Age Association: Possible World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-33 consisted of a rectangular-shaped concrete slab interpreted as a building foundation. Located on relatively level terrain amongst dried grasses, T-33 measured approximately 7.4 m long by 6.0 m wide (24.28 x 19.69 feet). The long axis of the site was

47

Feature Type: Water trough  
Feature Function: Cattle rehydration  
Feature Structural Integrity: Excellent  
Feature Age Association: Post-World War II  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-18 consisted of a rectangular-shaped trough interpreted as a water trough for cattle rehydration. Located on relatively level terrain amongst *kizwe*, lion's ear, and dried grasses, T-18 measured approximately 2.03 m long by 1.03 m wide (6.66 x 3.38 feet) and constructed four concrete bricks high. The long axis of the site was oriented northeast-southwest (096/276° True). Constructed of cement brick bounded with cement, T-18 was not singularly described during the 1999 IARII survey. Thus, it is unknown if T-18 was present during the 1999 IARII survey. No cultural material was observed during the current survey on or near the site. T-18 was not impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-19  
GPS Coordinates: East 765217/ North 2304108  
Previous Archaeological Recordation: IARII (Facility 131)  
Features: 2

Feature Types: Concrete slab (Feature 1), water trough (Feature 2)  
Feature Function: Building foundation for military barracks, later civilian quarters (Feature 1); cattle rehydration station (Feature 2)  
Feature Structural Integrity: Excellent  
Feature Age Association: World War II (concrete slab); post-World War II (water trough)  
Criterion Significance: A and D  
Recommendations: No further work

SCS Site T-19 consisted of two features. The first is a rectangular-shaped concrete slab interpreted as a building foundation (Feature 1). The second feature consisted of a water trough (Feature 2) interpreted as a cattle rehydration station. Located on relatively level terrain amongst *kizwe*, lion's ear, golden crown beard, and dried grasses, the T-19 Feature 1 foundation measured approximately 17.0 m long by 6.9 m wide (55.77 x 22.64 feet). The long axis of the Feature 1 foundation was oriented southeast-northwest (169/349° True). Constructed of concrete and steel rebar, the T-19 Feature 1 foundation was recorded during the 1999 IARII survey. Located on the same terrain as T-19 Feature 2, a water trough that was also rectangular-shaped and measuring

approximately 6.1 m by 1.1 m and oriented southeast-northwest (079/259° True). Constructed of concrete brick and cement, the Feature 2 water trough was not singularly described, but rather previously described collectively as part of State Site 50-50-09-4801, due to its proximity to Feature 1. Cultural material observed during the current survey on the surface of T-19 was identified as plastic agriculture lines, basalt gravel, and sawn cow bones. Neither of the two features collectively described as T-19 were impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-20  
GPS Coordinates: East 765200/ North 2304052  
Previous Archaeological Recordation: Not singularly  
Features: 2  
Feature Types: Feed trough (Feature 1), water trough (Feature 2)  
Feature Function: Cattle nourishment (Feature 1) and rehydration station (Feature 2)  
Feature Structural Integrity: Excellent  
Feature Age Association: post-World War II (feed and water trough)  
Criterion Significance: D  
Recommendations: No further work

SCS Site T-20 consisted of two features: a rectangular-shaped feed trough (Feature 1) and a water trough (Feature 2). These features were interpreted as a cattle nourishment station and rehydration station respectively. Located on relatively level terrain amongst *kizwe*, golden crown beard, lion's ear, and dried grasses, the T-20 Feature 1 feed trough measured approximately 43.0 m long by 1.5 m wide (141.08 x 4.92 feet). The long axis of the Feature 1 feed trough was oriented southeast-northwest (002/182° True). Constructed of concrete, it is not known if the T-20 Feature 1 feed trough was singularly recorded; it was more likely described collectively as part of State Site 50-50-09-4801 during the 1999 IARII survey. Located on the same terrain as the T-20 Feature 2 water trough that was also rectangular shaped and measured approximately 6.1 m by 1.1 m (20.01 x 3.61 feet) and oriented southeast-northwest (092/272° True). Constructed of concrete brick and cement, it is not known if the Feature 2 water trough was singularly recorded; it was also likely described collectively as part of State Site 50-50-09-4801. Cultural material observed during the current survey on the surface of T-20 was identified as milled wood, ferrous metal, concrete, and cattle bones. Neither of the two features collectively described as T-20 were impacted by recent mechanical clearance of the proposed project area.

SCS Temporary Site: T-21  
 GPS Coordinates: East 765188/ North 2304018  
 Previous Archaeological Recordation: IARJI (Facility 144)  
 Features: 2  
 Feature Types: Concrete slab (Feature 1), feed trough (Feature 2)  
 Feature Function: Building foundation for military barracks (Feature 1); cattle nourishment station (Feature 2)  
 Feature Structural Integrity: Excellent  
 Feature Age Association: World War II (concrete slab); post-World War II (feed trough)  
 Criterion Significance: A and D  
 Recommendations: No further work

SCS Site T-21 consisted of a two features: a rectangular-shaped concrete slab interpreted as a building foundation (Feature 1) and second, a water trough (Feature 2) interpreted as a cattle rehydration station. Located on relatively level terrain amongst *kiawe*, lion's ear, golden crown beard, and dried grasses, the T-21 Feature 1 foundation measured approximately 22.7 m long by 8.9 m wide (74.48 x 29.2 feet). The long axis of the Feature 1 foundation was oriented northeast-southwest (20/200° True). Constructed of concrete and steel rebar, the T-21 Feature 1 foundation was recorded during the 1999 IARJI survey. Located on the same terrain is the T-21 Feature 2 feed trough, that was also rectangular-shaped and measured approximately 6.1 m by 1.1 m (20.01 x 3.61 feet) and oriented southeast-northwest (20/200° True). Constructed of concrete brick and cement, the Feature 2 feed trough was not singularly described; it was described collectively as part of State Site 50-50-09-4801. Cultural material observed during the current survey on the surface of T-19 was identified as milled wood, galvanized nails, and ferrous metal. Neither of these two features was impacted during recent mechanical clearance of the proposed project area.

#### DISCUSSION AND CONCLUSION

Scientific Consultant Services, Inc. conducted Archaeological Inventory Survey of an approximate 917 meter (3,007.8 feet) long alternate access road [TMK: (2) 3-8-008: por. 005 and 006] and 86.029 acres of land located in TMK: (2) 3-8-008:019. The SCS research followed an earlier Archaeological Inventory Survey conducted in 1999 by IARJI (Tomonari-Tuggle *et al.* 2001). During the IARJI survey, two archaeological sites, State Site 50-50-09-4164 (former World War II Naval Air Station Puunene) and State Site 50-50-09-4801 (post-World War II cattle ranching site), were identified and recorded.

The current SCS study relocated the two previously identified archaeological sites and provided supplemental information in the form of documentation for fifteen (15) newly identified surface features occurring within the former two site boundaries. Of the 15 features that were newly recorded, three features were located within the State Site 50-50-09-4801 post-war cattle ranching area. The remaining twelve (12) features were located in the State Site 50-50-09-4164 former Naval Air Station Puunene area (Housing Area A Southern Portion). The mechanical excavation of twenty (20) stratigraphic trenches revealed positive results in only one trench (ST-6), where subsurface architecture associated with Facility 25 (SCS Site T-25) was identified. The feature was originally used for military use, but had been re-used in more recent times for animal husbandry (pig farm). The fifteen features newly identified by SCS during the current study are being subsumed under the original two State site numbers originally designated by IARJI.

No pre-Contact archaeological sites were identified during the current study or during the previous investigation by IARJI (Tomonari-Tuggle *et al.* 2001). The synthesis of previous archaeological work in the intermediate or barren zone of the Kula District suggests the landscape may have contained a few scattered temporary or seasonal habitations and associated dryland agricultural sites. However, given the extent of historic and modern land use in the area, it is likely that any traditional/early historic sites that may have existed, albeit likely few in number, would have been severely impacted by use of the Naval Air Station and environs.

#### SIGNIFICANCE ASSESSMENTS AND RECOMMENDATIONS

The fifteen (15) newly identified features associated with State Site 50-50-09-4164 and State Site 50-50-09-4801 were assessed for their significance as outlined in Hawaii's Administrative Rules §13-275-6. To be assessed as significant a site must be characterized by one or more of the following five criteria:

- (A) It must be associated with events that have made a significant contribution to the broad patterns of our history, or be considered a traditional cultural property.
- (B) It must be associated with the lives of persons significant in the past.
- (C) It must embody distinctive characteristics of a type, period, or method of construction, or represent a significant and distinguishable entity whose components may lack individual distinction.

(D) It must have yielded or may be likely to yield, information important in prehistory or history.

(E) Have important value to native Hawaiian people or other ethnicities in the state, due to associations with cultural practices and traditional beliefs that were, or still are, carried out.

State Site 50-50-09-4164 and State Site 50-50-09-4801 were previously evaluated and found to be significant under Criterion D (Tomonari-Tuggle *et al.* (2001)). The 15 features newly identified by SCS have also been evaluated and found to be significant under Criterion D. In addition, State Site 50-50-09-4164 has also been found to be significant under Criterion A, due to the important information it has yielded in association with military history on Maui.

Given that two Inventory Survey projects have been conducted in the proposed project area, it seems likely that little new information would be gleaned from additional study of the area. As such, no further archaeological work is recommended for the larger portion of the proposed project area identified as TMK: (2) 3-8-008-019. However, since the 917 meter (3,007.8 feet) long alternate access road was only subjected to pedestrian survey and that archaeological features were documented near the east and west sides of the road during the 1999 IARI survey, Archaeological Monitoring is recommended for the alternate access road should physical alteration (*i.e.*, widening or excavation) be required as those features may be adversely impacted.

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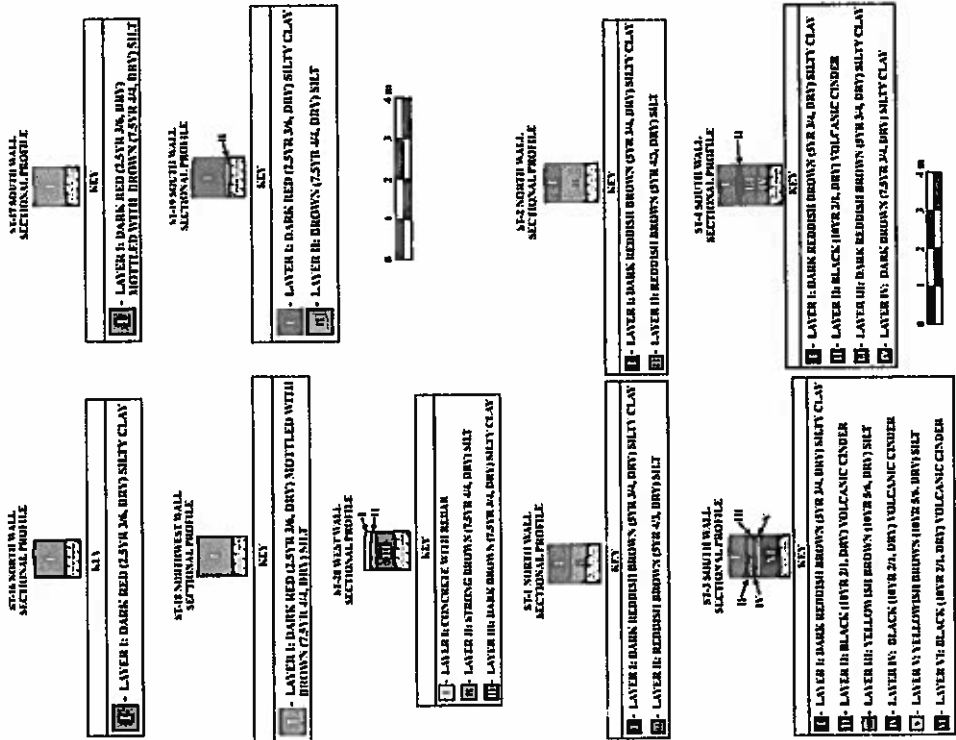
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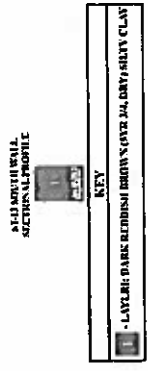
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**APPENDIX A: STRATIGRAPHIC TRENCH INFORMATION**

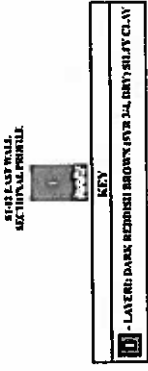




5'-0" NORTH WALL SECTIONAL PROFILE

KEY

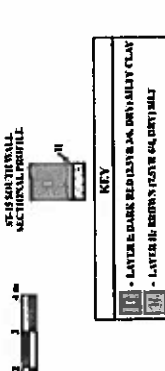
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5'-4" NORTH WALL SECTIONAL PROFILE

KEY

1 - LAYER: DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY



5'-10" NORTH WALL SECTIONAL PROFILE

KEY

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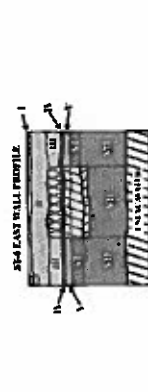
2 - LAYER: BROWN FLAK (6.5/1) SILTY CLAY



5'-4" NORTH WALL SECTIONAL PROFILE

KEY

1 - LAYER: DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY



5'-4" EAST WALL SECTIONAL PROFILE

KEY

1 - LAYER: SECONDARY CONCRETE SLAB

2 - LAYER: IN YELLOWISH RED (5YR 4.5/1) SILTY CLAY

3 - LAYER: IN LIGHT BROWN (7.5YR 6.5/1) CONCRETE WALL

4 - LAYER: IN BLACK (10YR 2.5/1) ASPHALT

5 - LAYER: IN BROWN (5YR 2.5/1) WITH ORGANIC CLAS CONTUR

6 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

7 - LAYER: IN DARK BROWN (5YR 2.5/1) SILTY CLAY

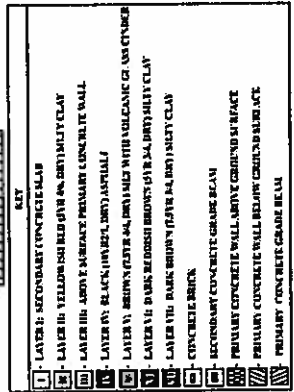
8 - CONCRETE BRICK

9 - SECONDARY CONCRETE CHARGE BEAN

10 - PRIMARY CONCRETE WALL ABOVE CORNER SI BEACT

11 - PRIMARY CONCRETE WALL BELOW CORNER SI BEACT

12 - PRIMARY CONCRETE GRADE BELOW



5'-0" NORTH WALL SECTIONAL PROFILE

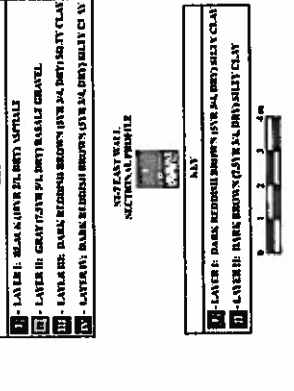
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1 - LAYER: BLACK (10YR 2.5/1) ASPHALT

2 - LAYER: IN GRAY (7.5YR 5/1) BASEAL CRAYEL

3 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

4 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

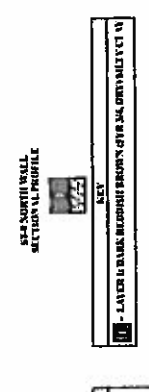


5'-0" NORTH WALL SECTIONAL PROFILE

KEY

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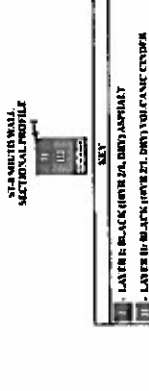
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5'-4" NORTH WALL SECTIONAL PROFILE

KEY

1 - LAYER: DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY



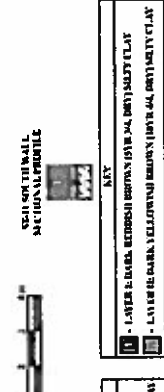
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KEY

1 - LAYER: BLACK (10YR 2.5/1) ASPHALT

2 - LAYER: IN BLACK (10YR 2.5/1) VOI CLAM CONDR

3 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY



5'-0" NORTH WALL SECTIONAL PROFILE

KEY

1 - LAYER: DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

2 - LAYER: IN DARK YELLOWSH BROWN (5YR 4.5/1) SILTY CLAY



5'-0" NORTH WALL SECTIONAL PROFILE

KEY

1 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

2 - LAYER: IN DARK YELLOWSH BROWN (5YR 4.5/1) SILTY CLAY

3 - LAYER: IN DARK REDDISH BROWN (5YR 2.5/1) SILTY CLAY

**APPENDIX B: ARTIFACT ANALYSIS**

SCS TEMPORARY SITE	DEPTH	COLLECTED ITEM IDENTIFICATION	MEASUREMENTS	COUNT	REMARKS
T-1	Surface	Copper Penny	Diameter: 1.9 cm Thickness: 0.1 cm Weight: 3.0 g	1	United States 1944 "S" wheat penny
T-2	Surface	Copper Penny	Diameter: 1.9 cm Thickness: 0.1 cm Weight: 3.0 g	1	United States 1944 "S" wheat penny
T-12	Surface	Glass Bead	Diameter: 1.2 cm Weight: 2.2 g	1	Light blue, round
T-17	Surface	Marine Shell Button	Diameter: 1.5 cm Thickness: 0.2 cm Weight: 0.6 g	1	Two hole button, obverse with elliptical depression, reverse flat
GENERAL PROJECT AREA	Surface	Ferrous Metal Square Nail	Length: 6.9 cm Weight: 13.9 g	1	Corroded, GPS coordinates: East 765005/ North 230327
GENERAL PROJECT AREA	Surface	Non-Ferrous Metal School Token	Diameter: 2.3 cm Thickness: 0.1 cm Weight: 1.3 g	1	Aluminum, Kihel School 5 cent cafeteria token, obverse dented



**SCS Project 1219 Artifacts**

1. United States 1944 "S" Copper Wheat Penny (Bag 1)
2. United States 1944 "S" Copper Wheat Penny (Bag 2)
3. Glass Bead (Bag 3)
4. Marine Shell Button (Bag 4)
5. Ferrous Metal Square Nail (Bag 5)
6. Aluminum Kihei School 5 Cent Cafeteria Token (Bag 6)

**APPENDIX I-1**  
SHPD Approval of  
Inventory Survey

NEIL ABERCROMBE  
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June 18, 2012

Robert L. Spear, Ph. D., Principal Investigator  
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LOG NO: 2011.2267  
DOC NO: 1206MD01  
Archaeology

Dear Dr. Spear:

Subject: **Chapter 6E-42 Historic Preservation Review**  
**Archaeological Inventory Survey of 86.029 Acres within the Puunene Naval Air Station**  
**Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui**  
**TMK: (2) 3-8-008:005 (por.), 006 (por.) and 019**

Thank you for submitting the subject report titled *Draft Archaeological Inventory Survey of an Approximate 91'7 meter (3,007.8 feet) Long Alternate Access Road and an 86.029-Acre Property in Puunene, Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-8-008: Por. 005, Por. 006, and 019]*, G. Tome and M. Deга September 2011. We received a draft dated October 7, 2011, and we apologize for the delay in completing this review.

This report documents the re-investigation of a project area that was included in a prior survey of a larger acreage (Tomonari-Tuggle, et al. 2001). The 2001 report documented two archaeological sites within the current project area: Housing Area A of the former Naval Air Station Puunene (SIHP Site 50-50-09-4164) and a post-war cattle ranching area (SIHP Site 4801). During the current study, twelve additional features were documented for Site 4164, and three new features were documented for Site 4801.

In addition to a full pedestrian survey, twenty (20) mechanical trenches were excavated during the survey. One trench uncovered structural remains (ST-6) related to Facility 177 (a feature of Site 4164). ST-6 consisted of a worn concrete slab interpreted as a building foundation; it was sufficiently recorded in this report.

Sites 4164 and 4018 were previously recommended as significant under HRHP Criterion "d" while Site 4164 was also recommended as significant under Criterion "a." This report does not recommend any changes to those findings and further recommends the newly documented features for no further work; we concur with those recommendations. However, given the lack of subsurface excavations in the area of the possible future site of an alternate access road, we agree that archaeological monitoring is recommended for work related to an alternate road. Should that alternate roadway be planned we recommend that an archaeological monitoring plan be submitted to SHPD for review and approval prior to the issuance of any permits related to ground-altering activity.

The report contains appropriate background information and documentation of the identified historic properties is adequate. The report is approved in accordance with Hawaii Administrative Rule §13-276. Please send one hardcopy of the document to both the Maui and Oahu offices marked FINAL, along with a copy of this review letter. Please send a text-searchable PDF file on CD to Kapolei with the hard copy. Please contact me at (808) 933-7653 or [Theresa.K.Donham@hawaii.gov](mailto:Theresa.K.Donham@hawaii.gov) if you have any questions about this letter.

Aloha,

Theresa K. Donham  
Archaeology Branch Chief

**APPENDIX J**  
Archaeological  
Monitoring Plan

**AN ARCHAEOLOGICAL MONITORING PLAN FOR  
A 917 METER (3,007 FEET) LONG ALTERNATE ACCESS ROAD AND  
AN 86.029-ACRE PROPERTY IN PUUNENE,  
PŪLEHU NUI AHUPUA`A, WAILUKU DISTRICT,  
ISLAND OF MAUI, HAWAII  
[TMK: (2) 3-8-008:005, 006, AND 019]**

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## INTRODUCTION

At the request of CMBY 2011 Investment, LLC., Scientific Consultant Services (SCS), Inc. prepared this Archaeological Monitoring Plan (AMP) for the proposed Puunene Heavy Industrial Subdivision Project on a 917 meter (3,0007 feet) long alternate access road and on 86,029-acres of land within Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawaii [TMK: (2) 3-8-008-005, 006, and 019] (Figures 1, 2, and 3). This varied Monitoring program follows an Archaeological Inventory Survey (AIS; Tome and Dega 2011) of the proposed project area in which features associated with two known historic-era sites were newly documented (see below).

Archaeological Monitoring "shall entail the archaeological observation of, and possibly intervention with, on-going activities which may adversely affect historic properties" (§13-279-4, HAR). Thus, Monitoring will also ensure that significant cultural resources, if identified in the proposed project area are documented through profiles and plan view maps, possibly sampled through excavation of exposed features, and evaluated for their historical significance. This Monitoring Plan will also ensure that if human remains are identified during subsurface work, appropriate and lawful protocol concerning the Inadvertent Discovery of Human Remains (pursuant to §13-300-40a, b, c, HAR) is followed. As will be made aware to the construction team, the archaeological Monitor has the authority to halt any ground disturbing activities during this project in the immediate area of a find in order to appropriately carry out the provisions of this plan.

This AMP is varied in that full-time Monitoring will be conducted if the alternate access road is improved. For the remainder of the project area, intermittent Monitoring is recommended as the area has undergone two Inventory Survey studies (see below), has been subject to intensive land alterations through time, and contains only minimal probability that subsurface deposits would be identified. This AMP will require the approval of the State Historic Preservation Division (SHPD) prior to any land altering activities on the parcel. The following text provides more detailed information on the reasons for monitoring, potential site types to be encountered during excavation, monitoring conventions and methodology for both field and laboratory work, and discusses curation and reporting of cultural material recovered.

## PROJECT AREA AND VICINITY

The project is located within Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawaii. According to the County of Maui Real Property Tax Division website, <http://www.mauipropertytax.com/>, the fee owner of the 86,029-acre parcel [TMK: (2) 3-8-008-019] is identified as CMBY 2011 Investment, LLC. The fee owner of TMK: (2) 3-8-

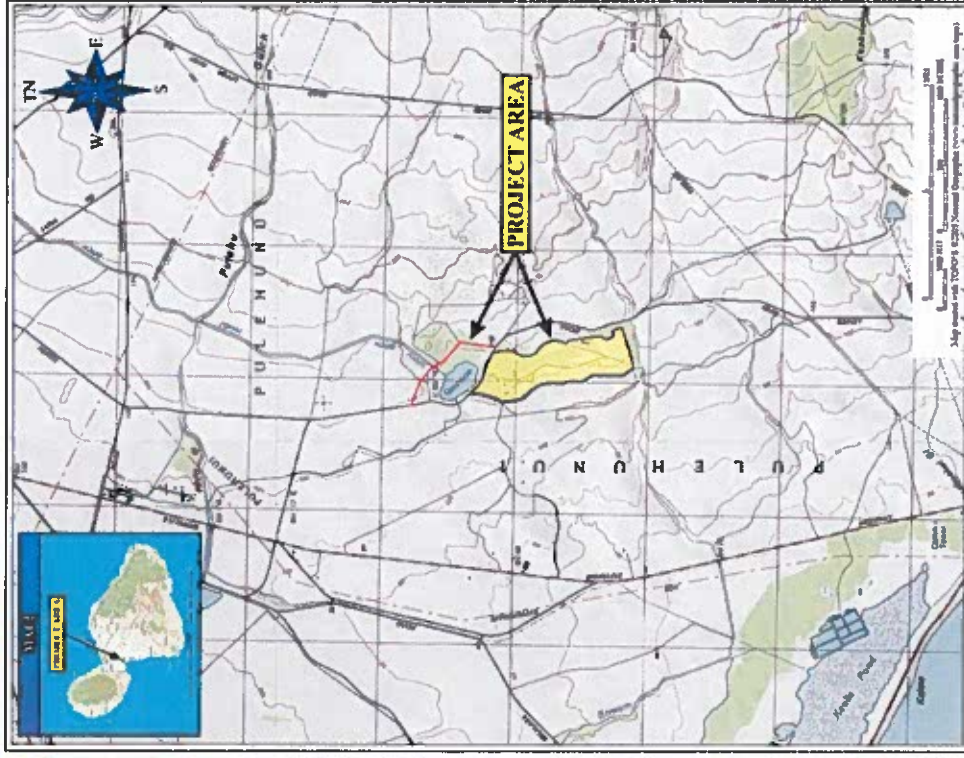


Figure 1: USGS (Pu'u O Kali Quadrangle) Map, Showing Project Area Location.

Figure 3: Plan View Map of Grading Plan for the Current Project Area.

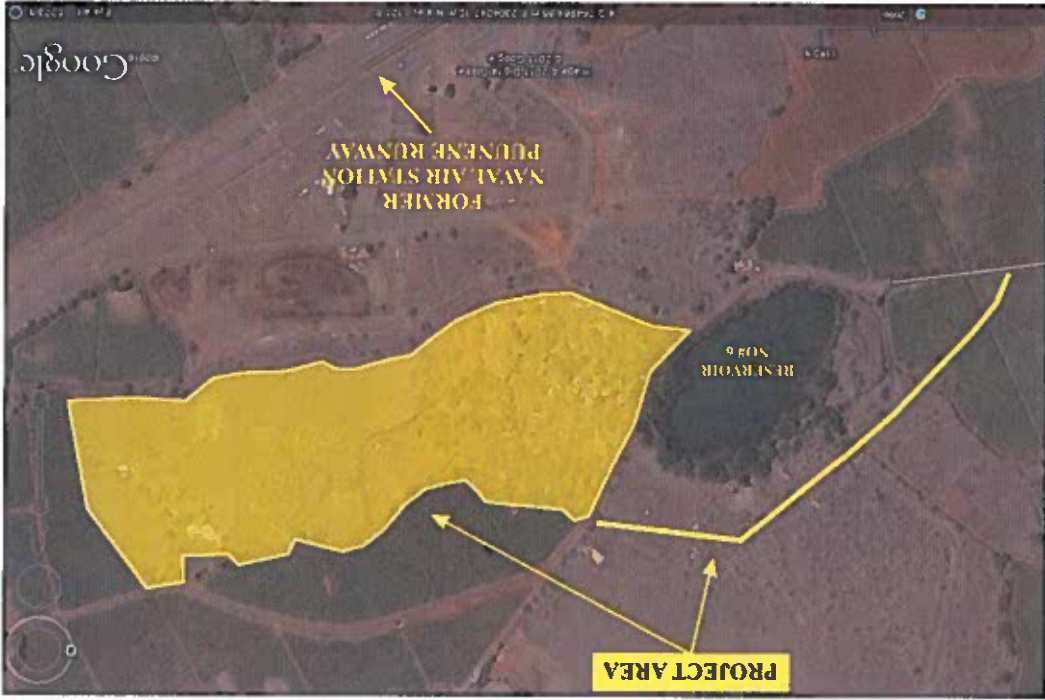
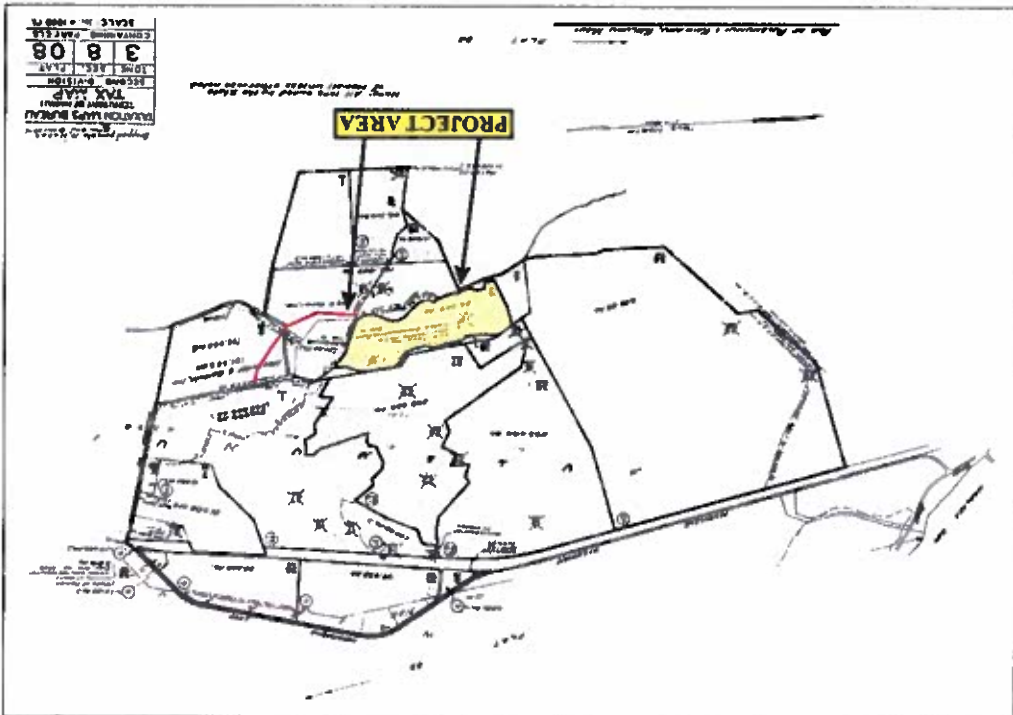


Figure 2: Tax Map Key [TRK] Showing Project Area.



008-005 and 006 on which the 917 meter (3,007 feet) long alternative access road is located, is identified as Alexander & Baldwin, Inc.

Although both portions of the project area are separated by an existing asphalt road, the alternative access road and 86-029-acre parcel are situated approximately 2.0 miles inland from the Kihiki coastline, between c. 80 to 120 feet (24 to 37 meters) above mean sea level (amsl), on the lower west slope of Haleakalā. The alternate access road is located in Tax Map Keys (2) 3-8-008-005 and 006 of which both are owned by Alexander & Baldwin. The north, east, and south flanks of the 86-029-acre portion of the project area are bordered by private land owned by Alexander & Baldwin [TMK: (2) 3-8-008-005]. The west side of the project area is bordered by private land owned by Alexander & Baldwin [TMK: (2) 3-8-008-030] and land owned by the State of Hawaii [TMK: (2) 3-8-008-037]. At the time of this writing, there were several asphalt paved roads that divided the larger portion of the project area into several unequal-sized sections.

Most of the project area contained undulating terrain. The larger portion was slightly undulated amongst patches of flat terrain. Trees on the project area had attained heights of approximately 30 feet tall. Approximately 30 percent of the project area had grown fallow since the departure of a pig farm and scrap metal storage site. Basalt boulders from the size of basketballs to the size of a 55-gallon drum littered the landscape and created physical obstacles.

The landscape condition of the project area's larger portion was varied. The northern portion of the project area was cleaned up within the recent past, according to Ken Nomura of Alexander & Baldwin. Mr. Nomura relayed to the field crew that following CMBY's purchase of the 86-029-acre property, Alexander & Baldwin had cleared the land of debris associated with a pig farm and scrap metal storage site that had previously utilized the property. The result was that various portions of the project area were mechanically altered, on the surface and in subsurface contexts (Figure 5). Visibility of the mechanically altered ground surface was excellent. The mechanical clearance of the debris was not applied to the entire project area. The areas that were not mechanically cleared were covered with dried, two to four feet tall grasses and vegetation. Nonetheless, man-made features were visible due to the mechanical clearance and the dried vegetation.

## REASON FOR MONITORING

Archaeological Monitoring will occur on a full-time basis if improvements are made to the alternative access road and on an intermittent basis during all other ground altering activities (*i.e.*, excavation). There is only a slight probability of identifying additional cultural resources in the overall proposed project area. Thus, intermittent monitoring is recommended. If the alternate access road is graded or widened, full-time Monitoring is recommended, given that the area was not previously subjected to inventory Survey-level testing. There still remains only a slight chance for encountering cultural resources along the alternate road corridor. Overall, Historic-period land use, and existing features left from the era of the Puunene Naval Air Field, remain in the proposed project area. Given the intensive historic use of the general area, Intermittent Monitoring will provide another opportunity to fully document and assess any additional cultural resources related to the two known historic sites (see below).

## GENERAL PROJECT AREA HISTORICAL BACKGROUND

### PROJECT AREA SOILS

Based on Foote *et al.* (1972: 126-127; Map 106), the project area is mainly situated within the Waiakoa very stony silty clay loam (WID2) series with a small section at the southern end of the project area containing Alae cobbly sandy loam (AcB) (*ibid.*: 26; Map 106). The Waiakoa extremely stony silty-clay loam which occurs on 3 to 25 percent slopes and is eroded, with medium runoff and severe erosional hazard. Stones cover approximately 3 to 15 percent of this soil surface. With the exception of sugarcane, this soil type has been utilized for pasture and wildlife. The Alae cobbly sandy loam has a slow runoff, is a slight erosional hazard, and is typically utilized for pastureland and sugarcane.

Subsurface testing of the WID2 and AcB soils on the southern portion of the project area revealed the presence of volcanic cinders strata that were interpreted during the current survey as natural strata. Naturally occurring rounded basalt cobbles and small boulders were also being exposed during the excavation of the project area matrices.

### PROJECT AREA VEGETATION

With the exception of few plant native species such as *'ihima* (*Sida fallax*) and *'uhaloa* (*Waltheria americana*), vegetation in the project area was generally composed of non-native introductions. Although decomposing grasses dominated the vegetation regime, larger vegetation common to arid regions such as *klawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), castor bean (*Ricinus communis*), lion's ear (*Leonotis nepetifolia*), spiny amaranth (*tukur*; *Amaranthus spinosus*), tomato (*Solanum* sp.), goosefoot (*Chenopodium* sp.), golden

crownbeard (*Verbesina encelioides*), kīu (*kalu*; *Acacia farnesiana*), balsam pear (*Momordica charantia*), *koali kua hulu* (*Morrenia aegyptia*), hairy abutilon (*ma o*; *Abutilon grandifolium*), and coat buttons (*Tridax procumbens*) were present.

#### CLIMATE

The project area lies near the dry, arid region of Maui's southwest coast. Rainfall indicators, according to Price (1983:62), show that the project area receives no more than five inches per year, with accumulations occurring mostly during the months of December and January. Unlike lower, coastal elevations, higher elevations of Pūlehu Nui Ahupua'a receive more precipitation due to fog drip and lower temperature climates. The frequency of the project area receiving upland wash is based on the amount of water accumulated upslope and the available water drainages created within or near the project area.

Given the lack of constant water resources within the project area. Traditional-type (i.e., pre-1778 A.D.) crops such as dryland sweet potato may have been the only feasible subsistence resource planted in the area prior to the advent of large-scale plantation-type irrigation systems. Of the twenty (20) stratigraphic trenches excavated during the current survey, only eight (8) suggest soils no more than a single soil layer. The windy conditions of the project area suggest soils within the project area may have been adversely affected. Upland, gravitational wash also may have contributed to soil movement through the project area environs during the Traditional-Period.

#### TRADITIONAL AND HISTORIC SETTING

Pūlehu Nui Ahupua'a is located on the southwestern side of Maui in the modern districts of both Waiuku and Makawao. Prior to being named the District of Makawao, the same district was traditionally known as Kula District. The project area would have been partially within the traditional District of Kula. As such, the project area's traditional and historic settings will be highlighted with events that occurred in the traditional District of Kula rather than in the modern District of Waiuku.

The project area is situated near the leeward coast that is located on the lower, western slope of Maui's largest volcano, Haleakala, the latter which rises to over 3,048 meters (10,000 ft) amsl. The coastal area, on which the project area lies, is currently referred to as "Kihai," which translates as "cape" or "cloak" in Hawaiian (Pukui *et al.* 1974:110).

#### TRADITIONAL TIMES

Oral documentation for pre-Contact activity exists for the district of Kula as a whole that document activities such as chiefly (*ali'i*) landings, battles, and catholic work practices such as fishing and planting (Sterling 1998). Documented oral accounts of pre-Contact activities and events occurring in the Kihai area, specifically naming Pūlehu Nui Ahupua'a, are limited to events that occurred on a single, given period rather than long terms events (e.g., area used as a place of worship for an extended period of time). A. Fomander, in Sterling (1998:253), reported that the area of Kihai-pukoua was the location "where peace was concluded and festive reunions took place of warlike encounters." The festive reunions took place once Alapaiui, once *Moi* of Maui, found out that his nephew Kamehamehanui succeeded him. A separate story dates to 1776 when Kalani'opu'u landed his warring faction at Kihai-puko'a between Kealia and Kapa'ahu thinking that "the *Alapa* were to drink of the waters of Waiuku. The *Alapa* were those who excelled at being warriors. Unfortunately for Kalani'opu'u, his warriors lost when battling with forces of Kahekili at Waiuku.

#### HISTORIC TIMES

Although some accounts informally mention the possibility that Spanish traders may have known about the Hawaiian Islands two hundred years prior to the "discovery" by Captain James Cook on the H.M.S. Resolution, Cook was the first known Westerner to have recorded the Hawaiian Islands (Speakman 1978:19). When Cook "discovered" Maui in November 1778, he anchored near Kahului. Although attempting to travel to Maui's western end, he never travelled to the leeward side of East Maui where the project area lies. The first Western explorer credited with landing on Maui is Admiral Jean Francois Galtap, Compté de la Prouse of France. La Prouse, the name most used to recognize the French explorer, set foot in the area known today as La Prouse Bay, an area south of Makemā.

From the early historic period, several industries became paramount in Kula: whaling, Irish potato cultivation, ranching, and sugar cane cultivation. Most of these endeavors transformed the upland landscape itself. The coastal areas were more impacted by commerce-related activities (e.g. businesses, hostels, stores). Kolb *et al.* (1997:68-69) state that Kalepolepo (i.e., Kihai) was an important provisioning area through the 1830s, when the area became "a hub of activity for all of Kula." From the 1840s to 1860s a whaling station was maintained in Kihai. According to Colin *et al.* (14:2000), in 1849 John Halstead constructed "The Koa House" at Kalepolepo in Kihai, one of several such buildings supporting the whaling industry in Kihai. The Koa House served as a store, a residence, and a gathering place for whalers.

For an in-depth look of LCA usage in upland areas of adjacent *ahupua`a*, please see Kolb *et al.* 1997.

Based on the information provided by the Tax Map Key, it appears that LCA 5230 is quite extensive and extends over a large portion of the *ahupua`a*. It further indicates that LCA 5230 is the largest LCA awarded in Pūlehu Nui Ahupua`a. Thus, it is difficult to ascertain where particular activities were conducted (e.g. *lo`i, kula, apama*) within the LCA.

In Sterling (1998:254-257) it was reported that the late Governor W. L. Moehonua was an "owner" of Pūlehu Nui Ahupua`a and the boundaries of the *ahupua`a* were somewhat vague. Through the information provided by the Māhele, it was acknowledged that Keaweamahi previously owned land within the *ahupua`a*. Oral testimonies from multiple sources contribute to somewhat more specific but general boundaries of the *ahupua`a* and conclusions were found in favor of the late governor.

From the mid-19<sup>th</sup> Century to the early 20<sup>th</sup> Century, coastal activity remained concentrated at Kalepolepo, but by the 1870s whaling diminished and the potato industry moved to the Ulupalakua area (Colin *et al.* 26:2000). Coastal Kula became somewhat of a dusty, "dirty place" (Wilcox 1921). As a result of industry movement out of the Kihai area (for a time) or the vast expanses of land available, Haleakala Ranch utilized many coastal portions of Kula in the later 1800s.

Like the rest of Hawai`i (and the world) during the 1940s, Kihai in Pūlehu Nui Ahupua`a was interrupted by the advent of World War II (WWII). The coast from Ma`alaea to Makana was used by United States military forces as training areas in preparation for amphibious assaults that were to be made in the Pacific war theater (Davis and Fortini 2004, Tome and Dega 2004). The main military service operating along the coastal region of the Waihuku and Makawao (Kula) Districts was the United States Marine Corps' 4<sup>th</sup> Marine Division, which used the coast during the latter part of 1944. The beautiful beaches of Kihai and Wailea were transformed with the construction of concrete military bunkers to simulate enemy positions expected during amphibious combat operations. A non-4<sup>th</sup> Marine Division military unit that also trained along the coastline was the underwater demolition teams, known as UDT. Comprised of Army and Navy personnel, these people were trained to rig and detonate explosives on various obstacles in the way of the U.S. amphibious assaults.

Following Contact, one of the greatest historic events impacting the population of the Hawaiian Islands was the Māhele of 1848. Thought to have been created under pressure from foreigners, Kamehameha III enacted the Māhele, which altered the system of land transactions and legal land ownership processes for the entire population of the Islands:

By mid-century, the fledgling [Hawaiian] Kingdom undertook the single most significant inducement to cultural change, the Great Māhele or division of lands between the king, chiefs, and government, establishing land ownership on a Western-style, fee-simple basis. From this single act, an entire restructuring of the ancient social, economic, and political order followed [Kirch 1985:309].

The Māhele statute paved the way for the private ownership of land [awarded claims were called Land Commission Awards]. The present project area does not contain Land Commission Awards (LCAs). However, LCA 5230 is the closest to the project area and is shown on TMK (2) 3-8-04 to exist north of the project area on the plains of Pūlehu Nui Ahupua`a (see Figure 2). LCA 5230 was awarded to Keaweamahi on September 28, 1853 with following Royal Patent numbers 8140 and 8252 being issued to the same individual on March 16, 1855 concluding a payment of \$5.00 (Burgett and Spear 1997:5). On this LCA Keaweamahi claimed 5 *apama* (land portions), 7 *lo`i* (wet taro) and 2 *kula* (pastures). Saltwater-associated geography (i.e., shore and dunes) was also claimed by Keaweamahi as part of LCA 5230.

Based on a map contained within Sterling (1998:242) in conjunction with the tax map keys, the *ahupua`a* of Pūlehu Nui is shown to continue northeast upslope on the northwest side of Haleakala. LCA 5230 also extends into the upper portion of Pūlehu Nui Ahupua`a. An overview of upland LCAs within the upland portion of Pūlehu Nui Ahupua`a reveal that land at the higher elevations were utilized for sweet and Irish potatoes (Wathona `Aina 2011). LCA 9019:3, claimed by Helehu, located just below the modern Kula Highway and between Holopuni and Pūlehu Roads, had pasture lands claimed. As a side note, Irish potatoes were also existent at the time of the claim (i.e., the year 1848) although to pinpoint the location of such is difficult due to insufficient map sources. Above the Kula Highway, LCA 4567:4 claimed by Wahine in 1848, stated that Irish potatoes were present on his land and that sweet potatoes were also grown on his land, although not on the same piece of land (*ibid.*). Supplemental ethnographic research concerning upland LCA usage includes Bartholomew and Bailey (195:1994) who relay that "Hawaiians in higher elevations.... traditionally grew sweet potatoes."

Following WWII, the Kihei coastline returned to its tranquil activities of ranching and the development of residential areas. During the 1960s, the Kihei stage was set for development of the area as a vacation haven for tourists and homebuyers which continues to the present day.

#### PREVIOUS ARCHAEOLOGY IN GENERAL AREA

Archaeological studies in the greater area began in the early 20<sup>th</sup> Century by T. Thum (1909), J. Stokes (1909-1916), and W. M. Walker (1931). These surveys included areas of leeward Maui and inventoried both coastal and upland sites of the Kula District. In the ahupua'a of Pūlehu Nui Walker listed two sites identified as Haleokane Heiau and Niniwivat Heiau (see Sterling 1998:253).

Archival research indicates few archaeological projects have been conducted near the current project area. Although these projects occurred some distance from the current parcel they are directly relevant. These studies provide background information to the current study area. The reader is referred to Tomonari-Tuggle *et al.* (2001:61-63) which provides a succinct summary of these studies.

Kennedy (1988) conducted a visual inspection of TMK: (2) 3-8-004:029 that did not identify archaeological sites. The absence of sites was attributed to prior development of the area for a construction baseyard with an installation of a large concrete culvert. In 1991 the Bishop Museum conducted an Archaeological Inventory Survey for the Kai Makani project that produced negative findings on the ground surface or subsurface contexts (Rotunno-Hazuka (1991)).

In 1992 Aki Sinoto Consulting conducted an Archaeological Inventory Survey of the proposed location for the Kihei Gateway Complex which led to the identification of State Site 50-50-09-31, a remnant, historic concrete bridge (crossing Waialoa Stream. It was suggested that the bridge was probably related to a narrow gauge cane railroad that operated through the area and may have serviced Kihei Camp 1 (Sinoto and Pantaleo 1992).

Between 1995 and 1999 Scientific Consultant Services, Inc. conducted an Inventory Survey (followed by two addendums) for the Puunene Bypass/ Mokulele Highway Improvements Corridor located in TMK: (2) 3-8-04, 05, 06, and 07; Burgett and Spear 1997; Charfee *et al.* 1999). No additional archaeological sites were identified. However, one previously recorded site was relocated and identified as the Naval Air Station Puunene Dump

Site (State Site 50-50-09-1164). Scientific Consultant Services, Inc. conducted an archaeological study on TMK: (2) 3-9-041:027, which included excavation of nine stratigraphic trenches. No new sites were identified (Pestana and Dega 2002).

In 2005 Scientific Consultant Services, Inc. conducted an Archaeological Inventory Survey, including limited subsurface testing, was conducted on a 9,289-acre property in North Kīhei, Maui, Hawai'i [TMK: (2) 3-8-004:028] (Tome and Dega 2005). This project area, located immediately adjacent and abutting the southern boundary of the Hale Pihani Park, had been partially modified by illegal dumping, utilization as an informal dirt bike course, and ranching activities. Two archaeological sites comprising four structural features were newly identified during this Inventory Survey. The sites were interpreted respectively as a World War II-related site (State Site No. 50-50-09-5801, WW II training site) and a traditional Hawaiian site (State Site No. 50-50-09-5802, pre-Contact agricultural/habitation complex). The two sites date utilization of the subject parcel from the pre-Contact Period (*i.e.*, pre-1778) to the United States Marine Corps' 4<sup>th</sup> U.S. Marine Division training during the closing years of World War II.

#### PREVIOUS ARCHAEOLOGY IN THE CURRENT PROJECT AREA

An Archaeological Inventory Survey, including limited subsurface testing, was conducted on an 86,029-acre property in Puunene, Island of Maui, Hawai'i [TMK: (2) 3-8-008:005, 006, and 019]. Fieldwork was conducted between June 27 and 30, 2011 by SCS archaeologists Ian Bassford, B.A. and Guerin Tome, B.A., under the direction of the Principal Investigator Michael Dega, Ph.D. (Tome and Dega 2011 *in prep.*).

The 917 meter (3,007 feet) long alternate access road was not subjected to excavation since most of the access route was already established (*i.e.*, there is a combination of a dirt and asphalt road), and the area that did not contain an established road contained active sugarcane cultivation. Although the 1999 IARI survey documented archaeological features close to the east and west sides of the alternate access road, no archaeological sites or features were observed in the alternate access road corridor. These features that were documented along the alternate access road were assigned to State Site 50-50-09-4801, interpreted as a post-World War II cattle ranching site.

As stated elsewhere in this report, the current project area was previously subject to an Archaeological Inventory Survey in 1999 by IARI (see Figures 4 and 5). The current project area, part of the larger former Naval Air Station Puunene, was designated by the air station as Housing Area A, Southern and Northeastern portions. Within the larger portion of the current



project area, the IARII survey identified two archaeological sites comprised of a section associated with the former Naval Air Station Puunene (State Site 50-50-09-4164), as well as a post-World War II cattle ranching site (State Site 50-50-09-4801). The current survey relocated the two historic sites, assessed the presence/absence of those features within two sites, and identified previously undocumented features within the two sites (Figure 8). The newly identified features have been subsumed under the previous State site number designations.

Most of the historic features within in the current project area were heavily impacted by modern mechanical clearing and ensuing debris removal. The majority of those mechanically impacted features belonged to the former Naval Air Station Puunene (Site -4164). Some of the historic features belonging to Site -4164 did appear to have been mechanically impacted but also abandoned and neglected prior to any mechanical alterations. Prior to the mechanical disturbance, the north half of the current project area had been utilized for a pig farm (Maui Hog) and a scrap metal storage site. The south half of the subject property remained fallow.

A total of fifteen (15) features, interpreted as either related to the NAS Puunene or post-war cattle ranching period, were identified by SCS but not previously recorded during the IARII survey (Tomonari-Tuggle *et al.* 2001). Of the 15 features that were not recorded, three (3) features were located in the State Site 50-50-09-4801 post-war cattle ranching area. The remaining twelve (12) features were located in the State Site 50-50-09-4164 former Naval Air Station Puunene area (Housing Area A).

The current project area [TMK: (2) 3-8-008:019] represents a portion of a larger project area previously subject to an Archaeological Inventory Survey in 1999 by International Archaeological Research Institute Inc. (IARII) (Tomonari-Tuggle *et al.* 2001) (Figures 6 and 7). In addition to surveying the current project area [TMK: (2) 3-8-008:019] as part of the initial survey, IARII also surveyed the remaining parcels in TMK: (2) 3-8-008. International Archaeological Research Institute Inc. (Tomonari-Tuggle *et al.* 2001) found that TMK: (2) 3-8-008 was utilized by multiple commercial businesses that included:

- agriculture [sugarcane; Hawaiian Commercial and Sugar Company (HC&S), Ltd.];
- rock quarrying [Hawaiian Cement, (Maui Concrete and Aggregate Division)];
- motorsports recreational areas (Maui Raceway Park);
- an animal shelter (Maui Humane Society);
- a pig farm (Maui Hog) and scrap metal storage site; and
- a crop dusting operation (Murray Air, Ltd.).

Spread amongst the commercial businesses were five (5) archaeological sites.

- Former Naval Air Station Puunene (State Site 50-50-09-4164; Feature Amount: 165)
- Sugarcane Plantation Features (State Site 50-50-09-4800; Feature Amount: 7)
- Post-World War II Ranching Features (State Site 50-50-09-4800; two complexes of corrals, fences, troughs)
- Old Kihnei Railroad Bed (State Site 50-50-09-4802; Feature Amount: 1)
- Haiku Ditch and Reservoir (State Site 50-50-09-4802; Feature Amount: 5)

IARII determined that at least two of these archaeological sites were used for multiple historic activities (Tomonari-Tuggle *et al.* 2001). For example, the crop dusting operation utilized the former Naval Air Station Puunene's airstrip as a runway for their planes. A few of the standing military structures located on the current project area [TMK: (2) 3-8-008:019] were converted from military features to holding facilities for pigs.

The archaeological sites located in the current project area [TMK: (2) 3-8-008:019] consist of the former Naval Air Station Puunene, which was recognized as a World War II archaeological site and designated as State Site 50-50-09-4164, and two post-World War II cattle ranching complexes that were consolidated and designated as State Site 50-50-09-4801. The current Archaeological Inventory Survey led to relocation of most of the previously identified sites, as well as several newly identified features. These new features have been incorporated into the existing State site numbers.

#### POTENTIAL SITE TYPES TO BE ENCOUNTERED

Archaeological and documentary evidence in and around the project area illustrates the types of sites that may be encountered during Archaeological Monitoring. The two Inventory Survey projects, noted above, showed the area to contain much historical information regarding the former Naval Station and cattle ranching complexes. No other time periods, beyond modern debris and land clearing, were identified. Potential sites to be encountered would thus include cultural deposits (historic metal, glass, etc. debris) and architecture (concrete foundations, rock walls, etc.) directly related to construction and use of the Naval Station and cattle complexes. There appears at present very little probability of identifying prehistoric cultural resources or burials.



## MONITORING CONVENTIONS AND METHODOLOGY

This AMP has been prepared in accordance with DLNR/SHPD administrative "Rules Governing Standards for Archaeological Monitoring Studies and Reports" (§ 13-279, DLNR-SHPD 2002). Archaeological Monitors will adhere to the following guidelines during monitoring:

1. A qualified archaeologist intimately familiar with the project area and the results of previous archaeological work conducted in the Puuene area will intermittently monitor subsurface construction activities in the proposed project area. Full-time Monitoring is only recommended should the alternate road access be created. During Monitoring, one archaeologist will be required per each piece of ground altering machinery in use. No land altering activities will occur on the parcel until this AMP has been accepted by SHPD.

If significant deposits or features are identified and additional field personnel are required, the archaeological consultants conducting the Monitoring will notify the contractor or representatives thereof before additional personnel are brought to the site.

2. If features or cultural deposits are identified during Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted. SHPD will be contacted to establish feature significance and potential mitigation procedures. Treatment activities primarily include documenting the feature/deposit through plotting its location on an overall site map, illustrating a plan view map of the feature/deposit, profiling the deposit in three dimensions, photographing the finds with the exception of human burials, artifact and soil sample collection, and triangulation of the finds. Construction work and/or back-filling of excavation pits or trenches will only continue in the sample location when all documentation has been completed.
3. Control stratigraphy in association with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant by SHPD and the contracting archaeologist, these deposits will be sampled, as determined by the same.
4. In the unlikely event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD island archaeologist and SHPD Cultural Historian will both be immediately identified as to the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Island Burial Council by the SHPD Maui staff or the

contracting archaeologist. A determination of minimum number of individuals (MNI), age(s), and ethnicity of the burial(s) will be ascertained in the field by the archaeological consultants conducting the Monitoring. Rules outlined in Chapter 6e, Section 43 shall be followed. Profiles, plan view maps, and illustrative documentation of skeletal parts will be recorded to document the burial(s). The burial location will be identified and marked. If a burial is disturbed during trench excavations, materials excavated from the vicinity of the burial(s) will be manually screened through 1/8" wire mesh screens to recover any displaced skeletal material. If the remains are to be removed, the work will be in compliance with HRS 6.E-43.6, Procedures Relating to Inadvertent Discoveries after approval from all parties (SHPD, Burial Council).

5. To ensure that contractors and the construction crew are aware of this Archaeological Monitoring Plan and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.
6. The archaeologist will provide all coordination with the contractor, SHPD, and any other groups involved in the project. The archaeologist will coordinate all Monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.
7. As necessary, verbal reports will be made to SHPD and any other agencies as requested.
8. Acceptance of this Archaeological Monitoring Plan will be done in writing by the SHPD within 45-days of receipt. If no written response is forwarded by the SHPD after 45-days, concurrence with this documented shall be accepted and work will proceed, pursuant to 6e-42 HRS, Chapter 13-284 HAR.

## LABORATORY ANALYSIS

All samples collected during the project, except human remains, will undergo analysis at the SCS Maui laboratory. In the event that human remains are identified and the SHPD-Maui/Lanai Island Burial Council authorizes their removal, they will be curated on Maui.

Photographs, illustrations, and all notes accumulated during the project will be curated at the laboratory of the archaeological consultants conducting the Monitoring. All retrieved artifact and midden samples will thoroughly cleaned, sorted, and analyzed. Significant artifacts will be photographically recorded, sketched, and classified (qualitative analysis). All metric attributes and weights will be recorded (quantitative analysis). These data will be presented in tabular form within the final monitoring report. Midden samples will be minimally identified to major "class" (e.g., bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). All data will be clearly recorded on standard laboratory forms that include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be prepared in the laboratory of the archaeological consultants conducting the Monitoring and submitted for specialized radiocarbon analysis. While primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other material such as marine shell or nonhuman bone materials. The archaeological consultants conducting the Monitoring will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. Representative plan view sketches showing the location and morphology of identified sites/features/deposits will be compiled and illustrated.

## CURATION

If requested by the landowner, archaeological consultants conducting the Monitoring will curate all recovered materials in the laboratory of the archaeological consultants conducting the Monitoring (except human remains) until a permanent, more suitable curation center is identified. The landowner may request to curate all recovered cultural materials once analysis has been completed. Human remains will be stored on-site in a secure location until a Burial Treatment Plan has been prepared and accepted.

## REPORTING

An Archaeological Monitoring report documenting the project findings and interpretation, following SHPD guidelines for Archaeological Monitoring reports, will be prepared and submitted within 180 days after the completion of fieldwork.

If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal Significance Criteria. The Archaeological Monitoring report will be in draft form until accepted by SHPD and will be submitted to both SHPD and the client.

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**APPENDIX J-1**  
SHPD Approval of  
Monitoring Plan

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



WILLIAM J. AJLA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

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INTERIM FIRST DEPUTY

WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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CONSERVATION AND COASTAL LANDS  
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HISTORIC PRESERVATION  
KAOHOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

**HISTORIC PRESERVATION DIVISION  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

601 Kamokila Boulevard, Suite 555  
Kapolei, HI 96806

August 24, 2012

Dr. Michael Dega  
Scientific Consultant Services, Inc (SCS)  
Via email: [mike@scshawaii.com](mailto:mike@scshawaii.com)

LOG NO: 2011.2740  
DOC NO: 1208JP18  
Archaeology

Aloha Dr. Dega:

**SUBJECT: Chapter 6E-42 Historic Preservation Review- Maui County  
Archaeological Monitoring Plan for a 917 Meter Access Road and 86.029 Acres  
Pulehu-Nui Ahupua'a, Wailuku District, Island of Maui  
TMK (2) 3-8-008:005, 006, and 019**

Thank you for the opportunity to review the draft plan titled *An Archaeological Monitoring Plan for A 917 Meter (3,007 feet) Long Alternate Access Road and an 86.029-Acre Property in Puunene, Pulehu Nui Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK: (2) 3-8-008:005, 006, and 019]* by Chaffee and Dega (October 2011). This document was received by our staff on October 11, 2011. We recently accepted an archaeological inventory survey report for the subject project (*Log. 2011.2267, Doc. 1206MD01*).

The archaeological inventory survey reported the re-investigation of two documented sites (SIHP 50-50-09-4164 and 4801) which were included in an earlier survey for the larger acreage (Tomanari-Tuggle, et al. 2001). Twelve additional features were added to Site 4164, the Puunene Naval Air Station, and three additional features were added to Site 4801, a post-war cattle ranching area. The existing access road was not subject to subsurface archaeological testing, so archaeological monitoring was recommended for any sub-surface construction work on the proposed alternate access road project. The plan outlines the proposed objectives and procedures that will be implemented to prevent damage to unknown sites, including the identification and documentation of any newly discovered archaeological and cultural features.

The plan meets the requirements of HAR 13-279 and is accepted by SHPD. However, we request that the following minor corrections be made for the Final submittal:

1. Change all of the references to the associated accepted SCS AIS report from the *pending* status.
2. Remove "see Inventory Survey Results Section below" on page 16 (no *AIS results Section* identified)

Please send one hardcopy of the final document including the requested minor revisions, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please contact Jenny Pickett at (808) 243-5169 or [Jenny.L.Pickett@Hawaii.gov](mailto:Jenny.L.Pickett@Hawaii.gov) if you have any questions regarding this letter.

Mahalo,

A handwritten signature in black ink, appearing to read "Theresa K. Donham".

Theresa K. Donham  
Archaeology Branch Chief

cc: County of Maui, Department of Planning via email: [planning@mauicounty.gov](mailto:planning@mauicounty.gov)  
County of Maui DSA via fax to: (808) 270-7972  
Ms. Blanca Lafolette, Project Coordinator 1300 N Holo pono Street, Suite 201 Kihei HI 96753

**APPENDIX K**  
Cultural Impact  
Assessment

**A CULTURAL IMPACT ASSESSMENT REPORT  
FOR APPROXIMATELY 86 ACRES, LAND OF  
PŪLEHU NUI, WAILUKU DISTRICT, MAUI, HAWAII  
[TMK: (2) 3-8-08:019]**

Prepared by:  
Leann McGerty, B.A.  
and  
Robert L. Spear, Ph.D.  
September 2011  
FINAL

Prepared for:  
Ms. Blanca Lafolette  
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INTRODUCTION

At the request of CMBY 2011 Investment, LCC (CMBY), Scientific Consultant Services (SCS), Inc., conducted a Cultural Impact Assessment (CIA) on approximately 86 acres in the lands of Pulehenui Nui, Wailuku District, Maui Island, Hawai'i [TMK: 3-8-01; (Figures 1 and 2)]. The CIA was conducted in preparation for the proposed Pu'unene Heavy Industrial Subdivision.

The Constitution of the State of Hawai'i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 (2000) requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua'a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778." In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikouali'ou) preserved the peoples' traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua'a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai'i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights...may extend beyond the *ahupua'a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Pele Defense Fund v. Pele Defense Fund, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawai'i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

...there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights...[H.B. NO. 2895].

Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of native Hawaiians as well as other ethnic groups. Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the "cultural practices of the community and State" as part of the HRS Chapter 343 (2001) environmental review process.

Figure 2: Tax Map Key (TMK) of Project Area.

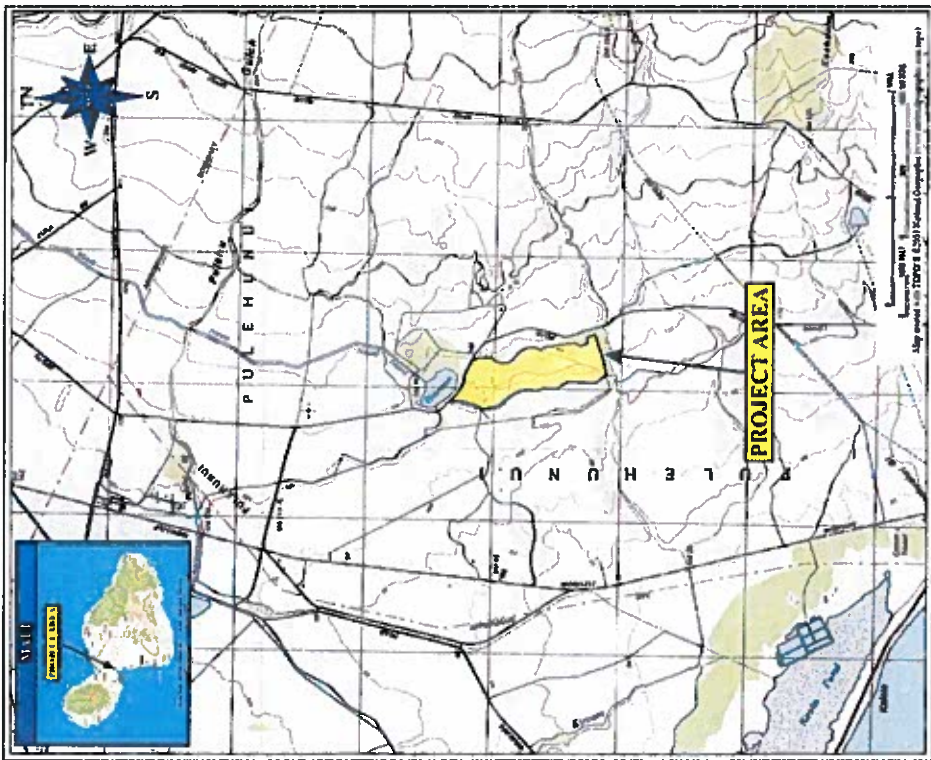
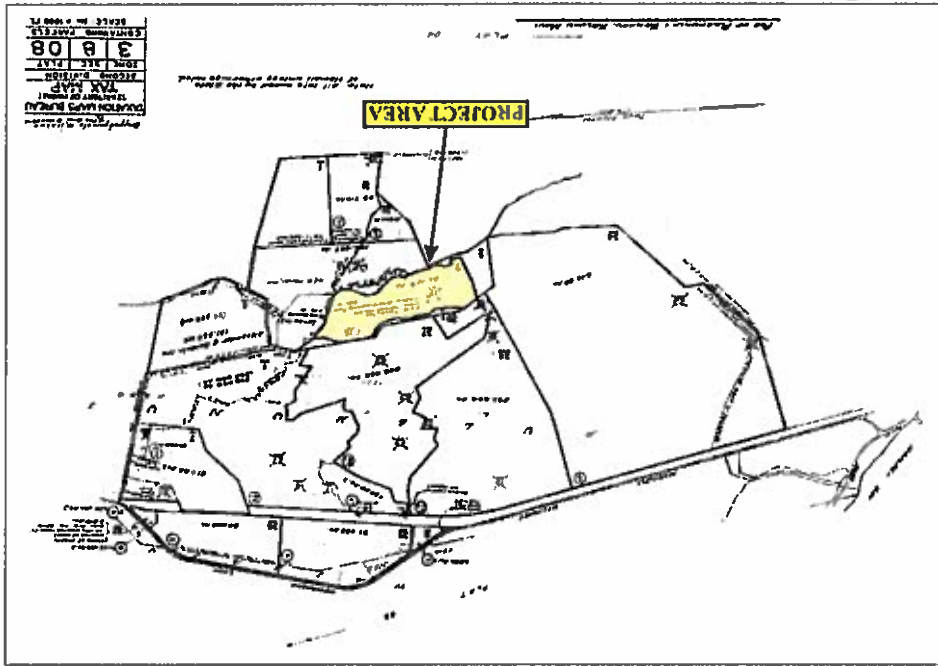


Figure 1: USGS Quadrangle Map Showing Project Area.

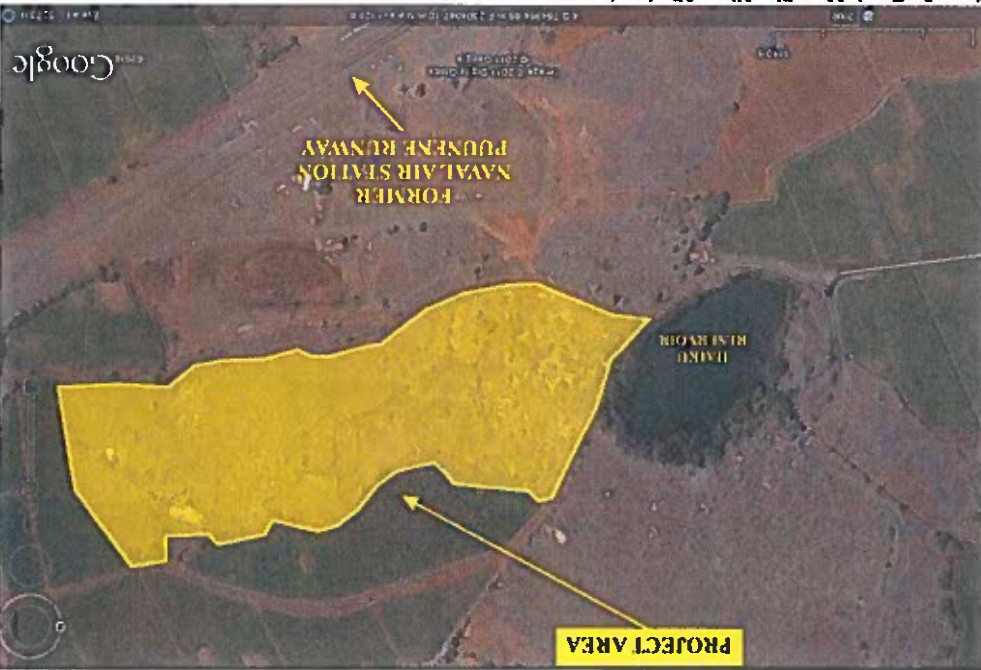


Figure 3: Google Maps Plan View of Project Area.

It also re-defined the definition of "significant effect" to include "the sum of effects on the quality of the environment including actions impact a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State's environmental policies . . . or adversely affect the economic welfare, social welfare or cultural practices of the community and State" (H.B. 2895, Act 50, 2000). Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires that an assessment of cultural practices and the possible impacts of a proposed action be included in Environmental Assessments and Environmental Impact Statements, and to be taken into consideration during the planning process. The concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua'a*" (OEQC 1997). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

Therefore, the purpose of a Cultural Impact Assessment is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, which support such cultural beliefs.

The meaning of "traditional" was explained in *National Register Bulletin*:

Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. . . . [Parker and King 1990:1]

#### METHODOLOGY

This Cultural Impact Assessment was prepared as much as possible in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 1997). In outlining the "Cultural Impact Assessment Methodology", the OEQC states that:

"...information may be obtained through scoping, community meetings, ethnographic interviews and oral histories..."

This report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. Copies of the letters of inquiry are presented below in Appendix A; copies of posted legal notices are presented in Appendix B; and copies of the second group of letters of inquiry are presented below in Appendix C. This Cultural Impact Assessment was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997), whenever possible. The assessment concerning cultural impacts may include, but not be limited to, the following matters:

- (1) if consultation is available, a discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained;
- (2) a description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken;

(3) if conducted, interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained;

(4) biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or being interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area;

(5) a discussion concerning historical and cultural source materials consulted, the institutions and repositories searched, and the level of effort undertaken, as well as the particular perspective of the authors, if appropriate, any opposing views, and any other relevant constraints, limitations or biases;

(6) a discussion concerning the cultural resources, practices and beliefs identified, and for the resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site;

(7) a discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area, affected directly or indirectly by the proposed project;

(8) an explanation of confidential information that has been withheld from public disclosure in the assessment;

(9) a discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs;

(10) an analysis of the potential effect of any proposed physical alteration on cultural resources, practices, or beliefs; the potential of the proposed action to isolate cultural resources, practices, or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place, and;

(11) the inclusion of bibliography of references, and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

## ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps, land records, such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological reports.

## INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws, and guidelines, when knowledgeable individuals are able to identify cultural practices in, or in close proximity to, the project area. If they have knowledge of traditional stories, practices and beliefs associated with a project area or if they know of historical properties within the project area, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview. It should be stressed again that this process does not include formal or in-depth ethnographic interviews or oral histories as described in the OEQ's *Guidelines for Assessing Cultural Impacts* (1997). The assessments are intended to identify potential impacts to on-going cultural practices, or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the interview available for this study. When telephone interviews occur, a summary of the information is usually sent for correction and approval, or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

Letters were sent to organizations whose jurisdiction included knowledge of the area. Consultation was sought from the History and Culture Branch Chief of the State Historic Preservation Division; Office of Hawaiian Affairs (OHA), O'ahu Branch; Central Maui Hawaiian Civic Club; Kimokeo Kapaunuleau; Maui SHPD, Cultural Branch; County of Maui, Department of Planning, Cultural Resources Commission; OHA Maui Branch; and Hale Mahaolu (Appendix A). In addition, a Cultural Impact Assessment Notice was published in *The Honolulu Star-Advertiser*, and *The Maui News*, on July 20, 21, and 24, as well as and the August issue of the OHA newspaper, *Ka I'wai Ola* (Appendix B). These notices requested information of cultural resources or activities in the area of the proposed project, stated the TMK number, and where to respond with pertinent information. Based on the responses, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

## PROJECT AREA AND VICINITY

The project area is located in the land of Pūlehu Nui Ahupua'a, about 1.4 miles east of Mokulele Highway and adjacent to the Old Pu'uhene Airport. Access from Mokulele Highway to the project area will be provided by a 56-ft wide access easement along Kama'aima Road, South Firebreak Road, and Lower Kiihei road. An alternate access route around the north and east side of an HC&S irrigation reservoir was also examined. Both access routes were assessed as part of the CIA. (see Figure 3).

## CULTURAL HISTORICAL CONTEXT

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. Pu'u Kukui, forming the west end of the island (1,215 m above mean sea level), is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The deep valleys of West Maui and their associated coastal regions have been witness to many battles in ancient times and were coveted productive landscapes. These are joined together by an isthmus containing dry, open country (*kauiā*), and the land of Pūlehu Nui, among others.

#### PAST POLITICAL BOUNDARIES

Traditionally, the division of Maui Island into districts (*mōka*) and sub-districts was performed by a *kahuna* (priest, expert) named Kalaiha ʻŌhia, during the time of the *aliʻi* Kaka ʻAlaneo (Beekwith 1940:383; Fomander places Kaka ʻAlaneo at the end of the 15<sup>th</sup> century or the beginning of the 16<sup>th</sup> century [Fomander 1919-20, Vol. 6:248]). Land was considered the property of the king or *aliʻi ʻai mōka* (the *aliʻi* who eats the island/district), which he held in trust for the gods. The title of *aliʻi ʻai mōka* ensured rights and responsibilities pertaining to the land, but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka ʻāinana* (commoners) worked the individual plots of land.

In general, several terms, such as *moku*, *ahupuaʻa*, *ʻiwi* or *ʻiwi ʻāina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupuaʻa*) which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupuaʻa* were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupuaʻa* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *ʻiwi ʻāina* or *ʻiwi* were smaller land divisions next to importance to the *ahupuaʻa* and were administered by the chief who controlled the *ahupuaʻa* in which it was located (*ibid*:33; Lucas 1995:40). The *mo ʻo ʻāina* were narrow strips of land within an *ʻiwi*. The land holding of a tenant or *hoʻa ʻāina* residing in a *ahupuaʻa* was called a *kuleana* (Lucas 1995:61). The project area is located in the lands of Pūlehu Nūi which translated literally means "large pilehu," but since *pūlehu* means "broiled", it might refer to the degree of broiling one could receive from the sun in this area (Pukui *et al.*:193).

#### TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupuaʻa*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultivars, such as *kō* (sugar cane, *Saccharum officinarum*) and *maʻi ʻa* (banana,

*Musa* sp.), were also grown and, where appropriate, such crops as *ʻuala* (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). It must be noted that Handy (1940:105 stated that, "... the bounds of cultivation... were strictly drawn by limitation of water for irrigation." The word "*kūla*" meant "open country, or plain", according to Handy and Handy, and was often used to differentiate between dry, or *kūla* land, and wet-*taro* land. The height and size of Halekālā to the east, prevents moisture from reaching its southern and western flanks, causing and desert-like conditions throughout the region (Handy and Handy 1972).

This is an essential characteristic of Kūla, the central plain of Maui which is practically devoid of streams. Kūla was always an arid region, throughout its long, low seashore, vast stony *kūla* lands, and broad uplands (*ibid*:510)

As to the occupation of this vast plain, Handy and Handy stated:

Both on the coast, where fishing was good, and on the lower westward slopes of Halekālā a considerable population existed. So far as we could learn Kūla supported no Hawaiian *taro*, and the fishermen in this section must have depended for vegetable food mainly on *pōʻi* brought from the wet lands of Waikapu and Wāihuku to westward across the plain to supplement their usual sweet-potato diet (*ibid*:511).

An early witness to its lack of productivity was George Vancouver. During his second visit to Hawaiʻi in 1793 as a Captain, he anchored in Māʻāleia Bay:

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, not was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the water side, and the inhabitants who came off to us, like those seen the day before, had little to dispose of [1984:852]

Not much had changed 24 years later (1817) when Peter Conroy sailed this way, bound for Oʻahu. He made special reference to Keālia Pond (now the Keālia Pond and Wildlife Refuge), a short distance southwest of the project area.

... Next morning we passed Morokene (Molokini), and made sail up Mackerrey (Mulaea) bay. . . This bay is very deep and wide, and nearly divides the island, there being but a narrow neck of land and very low, keeping the two parts of the island together. . . On this neck of land are their principal salt-pans, where they make most excellent salt [Corney 1965:70-71]

#### EARLY HISTORY

The Wailuku District was a center of political power often at war with its rival in Hana. Between 1775 to 1779, there was almost continual fighting between Kahakili, chief of Maui and Kalani'ōpu'u, Chief from Hawai'i Island, who was often in residence at Hana (Kamakau 1961). After several skirmishes in which Kalani'ōpu'u had been defeated by the warriors of Kahakili, Kalani'ōpu'u retired to Hawai'i Island. He spent the next year gathering men from each of the six districts on the island, forming six divisions of warriors. His prize troops consisted of chiefs from his own group of attendants, which were named the 'Ālapa and Pi'ipi'i. Leaving nothing to chance, Kalani'ōpu'u then built *heiau* for his war gods, assuring success, and when all was ready (1776), he and his men returned to Maui (*ibid.*).

Rather than landing at Hana on the east side, the warriors came around the southern coast of Maui. They first landed at Keone'o'io Bay and ravaged the country side giving Kahakili notice and time to prepare his fighting men (*ibid.*). Kalani'ōpu'u's men traveled up the coast by sea and landed at Kāheipuko'a at Keālia, confident that the victory was to be theirs (*ibid.*) The 800 'Ālapa and Pi'ipi'i warriors marched across the plain (in which is the project area) to Wailuku where Kahakili and his warriors were waiting. Kamakau said:

They slew the Ālapa on the sand hills at the southeast of Kala. There the dead lay in heaps strewn like *kaikū* branches; corpses lay heaped in death; they were slain like fish enclosed in a net... [*ibid.*:85-89].

An interesting anecdote is recounted by George W. Bates during his journey from Wailuku to Kahului in 1854:

Leaving Wai-lu-ku [town], and passing along toward the village Kahului, a distance of three miles, the traveler passes over the old battle-ground named after the village. It is distinctly marked by moving sand-hills, which owe their

formation to the action of the northeast trades. Here these winds blow almost with the violence of a sirocco, and clouds of sand are carried across the northern side of the isthmus to a height of several hundred feet. These sand-hills constitute a huge "Calgotha" for thousands of warriors who fell in ancient battles. In places laid bare by the action of the winds, there were human skeletons projecting, as if in the act of struggling for resurrection from their lurid sepulchers. In many portions of the plain who cart-loads were exposed in this way. Judging of the numbers of the dead, the contest of the old Hawaiians must have been exceedingly bloody. . . . [Sandwich Island Notes, 309]

The 1776 encounter between Kahakili and Kalani'ōpu'u resulted in a temporary truce which was broken in 1790 by the battle of Kepaniwai, when Kamehameha I consolidated his control over Maui Island.

#### THE GREAT MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame'elehiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. 1:145). The Great Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka'āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, 'ōkēpā (on O'ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame'elehiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16).

The *ahupua'a* of Pūlehu Nui extended across the Kula plain up through Makawao, to the edge of Halekālā and would have included fruitful sections, not just the arid plains (Figure 4). There were 13 *kāleana* claimed in the *ahupua'a* of Pūlehu Nui. LCA 05230, consisting of 982 acres and belonging to Keaweamahi, appears to contain the portion of

Pūlehu Nui where the project area is located. On this LCA Keaweamahi claimed 5 *apana* (land portions), 7 *ʻōʻi* (wet taro) and 2 *kāia* (pastures). Saltwater-associated geography (i.e., shore and dunes) was also claimed by Keaweamahi as part of LCA 5230 (Waihoia \*Aina Database 2011). However, of these 5 *apana* are listed in the project area.

**HISTORIC LAND USE**

**SUGAR YEARS**

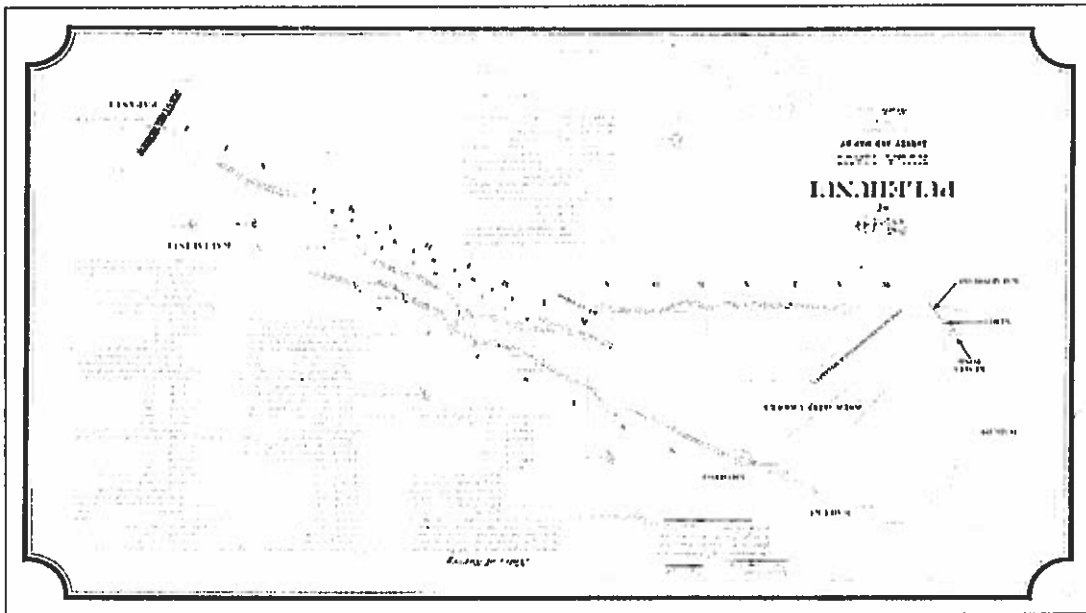
As the sugar industry developed in the mid-1800s, more and more land was leased or purchased for what had become an intensely profitable endeavor. Water was an issue, but in 1876, the Hamakua Ditch Company (Alexander and Baldwin) was formed and within two years was bringing water from the streams of Halekālā to four plantations in East Maui (Dorrance and Morgan 2000).

Also in 1876, the Reciprocity Treaty's ratification notice arrived by steamer, along with Claus Spreckles, California's sugar magnate, who viewed the sugar situation and decided two years later to turn the dry plains of Maui into a garden of cultivated cane (Van Dyke 2008). By various questionable means, he was able to acquire half interest in 16,000 acres of land in Waikapū commons and was able to lease 24,000 acres of Crown Lands on the Wailuku plains in central Maui for \$1,000 (*ibid.*). Figure 4 above, shows the survey line of the property extending across Pūlehu Nui, Claus Spreckles obtained from Henry Cornwell.

Having seen the success of the recently completed Hamakua Ditch now bringing mountain water to the otherwise dry, and unproductive East Maui fields, and having lost his battle to control this ditch water, Spreckles formed the Hawaiian Commercial Company and decided to construct a ditch system of his own on East Maui above the Hamakua Ditch, for his newly acquired land (Wilcox 1996). Spreckles' Haiku Ditch extended 30 miles, from Honomanu Stream to the Kīhei boundary and the water was used to irrigate his cane lands in the central Maui plains (*ibid.*). Presently, the Haiku Ditch ends at the Haiku reservoir abutting the project area to the north (see Figure 1).

In 1882, Spreckles reorganized his company into a California corporation, called Hawaiian Commercial and Sugar Company, or HC&S (Wilcox 1996). Later he constructed another water system known as the Waīhee Ditch in West Maui. It brought

Figure 4: Modified "Pūlehu Nui Kula Maui, Survey and Map By M.D. Monsarrat 1879", Showing *Akupua ʻa Meets* and Bounds and Boundary of Spreckles Kula land(State Survey Office, Reg. Map #1770)





water from 15 miles away, starting at an elevation of 435 feet, to Kula where it emptied into HC&S Waiale reservoir (*ibid.*).

The ensuing years brought trials and tribulations between Spreckles, his associates, and the Maui sugar planters, resulting finally in the 1898 sale of his HC&S stock, at an all time low, to James Castle in partnership with Alexander and Baldwin, and the departure of Claus Spreckles from Hawai'i (Dorrance and Morgan 2000; Wilcox 1996).

Henry Baldwin and Lorrin Thurston formed the Kihei Sugar Company in 1899, to grow cane on their ranch lands in south central Maui, which included the project area (Dorrance and Morgan 2000). It was sent to the mill at Pu'u'uēhē to be ground, but, although production was high, it was not enough to cover the costs (*ibid.*).

After the annexation in 1898, some of the planters on Maui, including Alexander and Baldwin, had decided to combine plantations to reap maximum profit. They formed the Maui Agricultural Company, a co-partnership that initially encompassed seven plantations and two mills. In 1904, five new plantations became part of the Maui Agricultural Company, as Kula Plantation Company, Makawao Plantation Company, Pūlehu Plantation Company, Kailua Plantation and Kaliauui Plantation Company were newly formed by carving up the unprofitable Kihei Plantation land (Dorrance and Morgan 2000). Figure 5 shows the lands in Kula, previously Kihei Plantation Company, which became the "five companies" of the Maui Agricultural Company surveyed in 1904 by Arthur Alexander. The newly formed Makawao Plantation included the section of Pūlehu Nui containing the project area (Figure 6). Maui Agricultural Company merged with HC&S in 1948 (Dorrance and Morgan 2000).

#### WORLD WAR II

A portion of the cane fields to the west of the project area was turned into a civil airfield for the Territory of Hawai'i in 1937, as the one located at Ma'alaia had become so small to accommodate ([www.airfields-freeman.com/HI/Airfields\\_HI\\_Maui.htm](http://www.airfields-freeman.com/HI/Airfields_HI_Maui.htm):201). Two years later, Inter-Island Airways began service to Maui, conveniently landing at Puunene Airport. As war loomed on the horizon (1940), the Navy began using the airport, along with a small Army Air Corps support base at the airfield (*ibid.*). At this time, the air station was being used to support Squadron VU-3, to tow targets and operate

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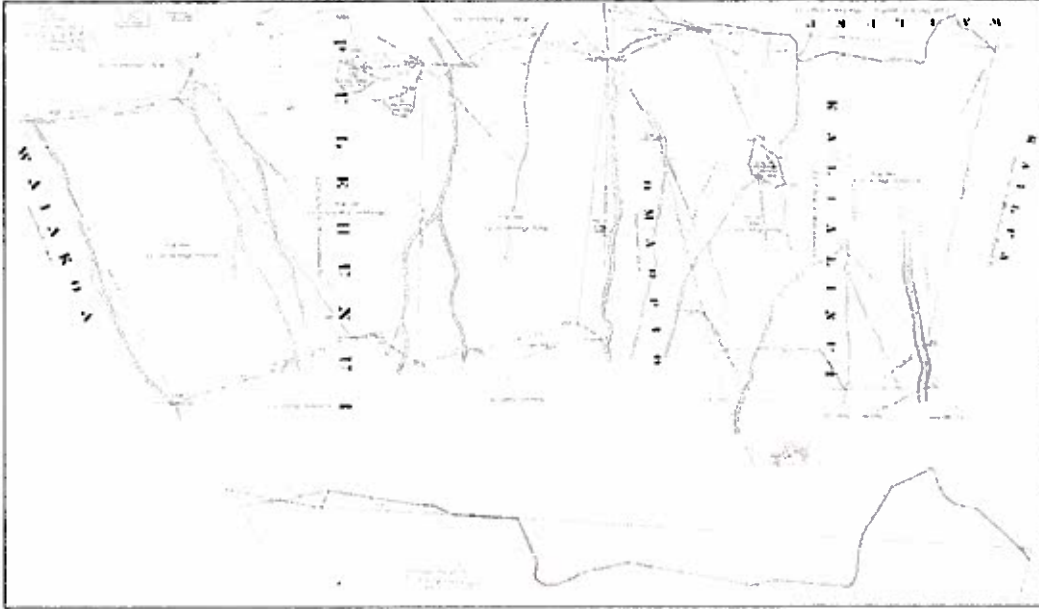


Figure 5: "Kihei Plantation Co. [crossed out], Map of Lands in Kula, Maui Belonging to the "Five Companies" of the Maui Ag. Co., July 1904" (State Survey Office, Reg. Map #1770).

planes for the fleet. Shortly after the United States entered WWII, land in the area of the airport was condemned (1942), including the project parcel listed as parcel 2-C in the Declaration of Taking filed with the District Court of the United States for the District of Hawaii (on file Bureau of Conveyances, Honolulu). The airport was expanded and commissioned as Naval Air Station Maui (NAS). The Figure 7 photo illustrates the military impact on the area and shows a portion of the Haiku reservoir and the project area. The Navy lengthened and widened the runways and added Link trainers, as well as changing its name to NAS Puunene. One hundred and six squadrons and carrier groups passed through the NAS during WWII ([www.airfield-freeman.com/HW/Airfields\\_HI\\_Maui.htm](http://www.airfield-freeman.com/HW/Airfields_HI_Maui.htm); 2011).

Figure 8 shows a 1944 map of the Naval Air Station, including the Haiku Reservoir and the project area, in 1943. By 1945, the base consisted of a total of 2,202 acres, supporting over 3,300 personnel, and 271 aircraft. There were two paved runways, taxiways, ramps, hangers, and auxiliary buildings (*ibid.*).

The airfield was released by the Navy back to the Territory of Hawai'i in 1947 and was apparently used as the official inter-island Airport until at least 1952 when the Kahului Airport was available for civil use (*ibid.*). However, the Maui/Pu'unenē airstrip, as it was known, serviced crop-dusters and other smaller aircraft and wasn't abandoned as a landing strip until sometime between 1961 and 1977 (*ibid.*). Over-grown military facilities were left in the area, including bunkers, revetments, and other bits and pieces. This is when the old airstrips were used for impromptu racing. All the land, except 222 acres, was sold back to HC&S by the State of Hawai'i. The 222 acres were deeded to the Maui County and the 2002 master plan for this land, included a raceway park, county fair grounds, Hawai'i National Guard, Maui Correctional Center and 3.5 (at the northeast end of the drag strip acres set aside for a naval memorial park at the northeast end of the drag strip (*ibid.*). Management is provided by the County Parks and Recreation Department and a portion of the airstrip is presently being used by the Maui Raceway Park Drag Strip, the Paradise Speedway Dirt Track, and the Maui Remote Airplane Club (*ibid.*).

Figure 6: Close-up of Makawao Plantation Lands in Polchu Nui Ahupua'a (State Survey Office, Reg. Map #1770).



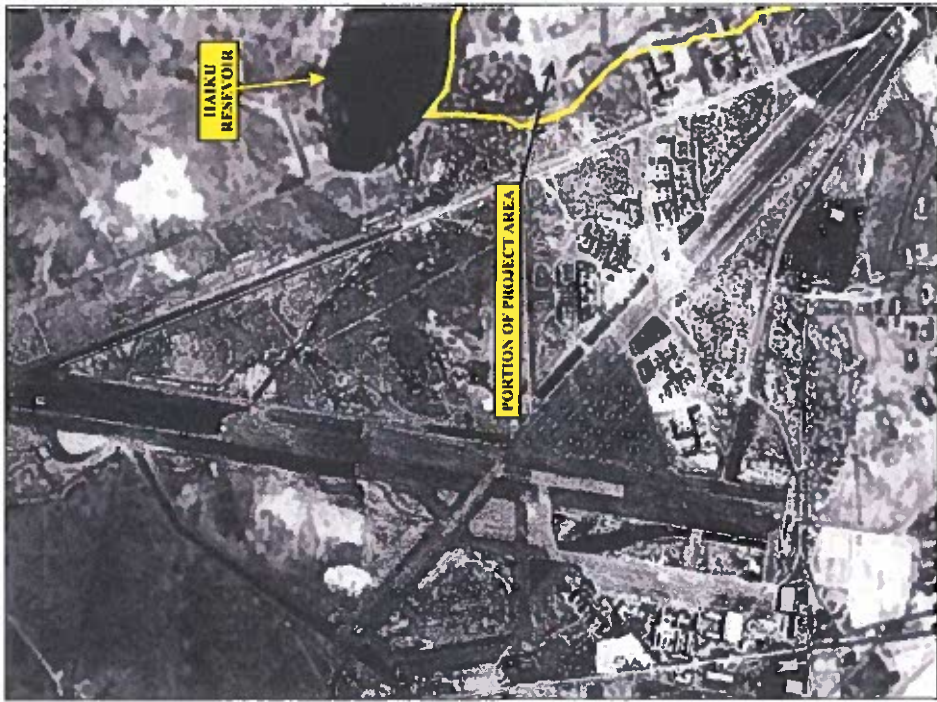


Figure 7: "1943 Aerial View of Puanene" (National Archives Photo).

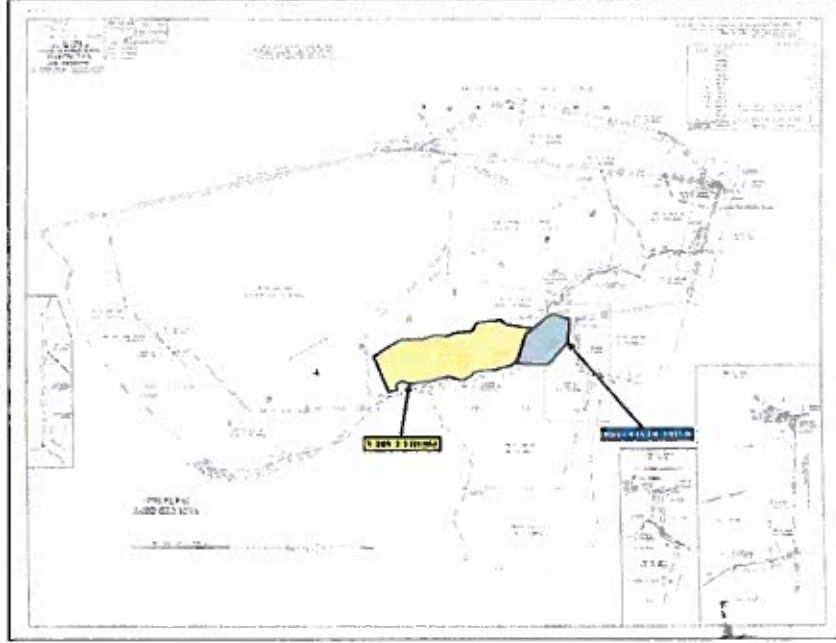


Figure 8: "Boundary Map NAS Puanene Polohuani and Waikapu Districts of Kula and Waiau Māui T.H. June 1944", Showing Project Area (14<sup>th</sup> Naval District, Pearl Harbor, T.H.; Courtesy of Hugh Starr).

In recent times, the northern half of the 86-acre parcel had been used for a pig farm and as a scrap-metal storage site, while the southern half of the property remained fallow.

#### SUMMARY

The "level of effort undertaken" to identify potential effect by a project to cultural resources, places or beliefs (OEQC 1997) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the present parcel, letters of inquiry were sent to organizations whose expertise would include the project area. Consultation was sought from the History and Culture Branch Chief of the State Historic Preservation Division; Office of Hawaiian Affairs (OHA), O'ahu Branch; Central Maui Hawaiian Civic Club; Kimoko Kapahuleui; Maui SHPD, Cultural Branch; County of Maui, Department of Planning, Cultural Resources Commission; OHA Maui Branch; and Hale Mahaolu. In addition, a Cultural Impact Assessment Notice was published in *The Honolulu Star-Advertiser*, and *The Maui News*, on July 20, 21, and 24, as well as and the August issue of the OHA newspaper, *Ka Wai Oia* (page 29).

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as I'i, Kamakau, Beckwith, Chinen, Kame'eiehiwa, Formander, Kuykendall, Kelly, Handy and Handy, Puku'i and Elbert, Thrum, Sterling, and Cordy have contributed, and continue to contribute to our knowledge and understanding of Hawai'i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona 'Aina 2007 Data base.

#### **ARCHAEOLOGY**

In depth archaeological information concerning the project area and vicinity can be found in the appropriate Archaeology section of the Environmental Impact Statement that covers the archaeological studies associated with this project. Individual reports can be found on file at the State Historic Preservation Division.

Briefly, International Archaeological Research Institute, Inc. (IARI) conducted Archaeological Inventory Survey in 1999 of a large area, part of which included the current the subject property (Tomamari-Tuggle *et al.* 2001). During the IARI survey, two archaeological sites, State Site 50-50-09-4164 (former World War Two Naval Air Station Puunene) and State Site 50-50-09-4801 (post-World War II cattle ranching site) were newly identified. IARI determined that at least two of these archaeological sites were used for multiple historic activities (Tomamari-Tuggle *et al.* 2001). For example, the crop dusting operation utilized the former Naval Air Station Puunene's airstrip as a runway for their planes. A few of the standing military structures located on the current project area [TMK: (2) 3-8-008:09] were converted form military features to holding facilities for pigs.

In 2011, SCS relocated these two archaeological sites and supplemented the initial study with the identification of additional, previously undocumented surface features within the two State sites identified by IARI (Tome and Dega 2011). Archival research indicated the northern half of the project area had been utilized for a pig farm and as a scrap-metal storage site, while the southern half of the subject property remained fallow. A total of fifteen (15) features, interpreted as either NAS Puunene-related or post-war cattle ranching-related features, had not been previously recorded. Of these 15 features recorded during this 2011 study, three features were located in the State Site 50-50-09-4801 post-war cattle ranching area. The remaining twelve (12) features were located in the State Site 50-50-09-4164 former Naval Air Station Pu'unenē area.

Archaeology deals with material remains, and although cultural beliefs are often reflected through some sort of architecture, like *heiau*, or *ko'a*, there are many examples of cultural associations still important to the community with no physical structures to mark their significance. One such place, *Uluakali O Lanikaula*, located on Moloka'i, is considered an extremely sacred spot. Another might be Kilauea and Halema'uma'u, home of Pele o Hawai'i Island. These places have become important sites supporting a traditional belief system still held by the many peoples of Hawai'i. They contain no

identified archaeological features, however they are highly meaningful "...because of [their] association with cultural practices or beliefs of a living community . . ." (King 2003:3).

#### CIA INQUIRY RESPONSE

As stated above, consultation was sought from the History and Culture Branch Chief of the State Historic Preservation Division; Office of Hawaiian Affairs (OHA), O'ahu Branch; Central Maui Hawaiian Civic Club; Kimokeo Kapaluleia; Maui SHPD, Cultural Branch; County of Maui, Department of Planning, Cultural Resources Commission; OHA Maui Branch; and Hale Mahaolu . In addition, a Cultural Impact Assessment Notice was published in *The Honolulu Star-Advertiser*, and *The Maui News*, on July 20, 21, and 24, as well as and the August issue of the OHA newspaper, *Ka Wai Ola* . In addition, contact was made with long time resident, Hugh Starr, who sent copies of reference documents and a map pertaining to the WWII use of the area. A letter was received from OHA, dated July 28, 2011, with no additional CIA referrals, but a number of suggestions concerning environmental aspects of the project that SCS passed on the client for their consideration (Appendix C).

No further comments, or information was received from the other letters of inquiry concerning the potential for cultural resources or cultural activities to occur in the project area (TMK 3-8-08:019), or with additional suggestions for further contacts.

#### CULTURAL ASSESSMENT

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is also a suggested guideline of the OEQC (No. 10, 1997). To our knowledge, the project area has not been used for traditional cultural purposes within recent times. Based on historical research and no additional suggestion for contacts, analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (No. 10, 1997). To our

knowledge, the project area has not been used for traditional cultural purposes within recent times.

Based on the above research, it is reasonable to conclude that, pursuant to Act 50, the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by development activities on a portion of Parcel 019. Because there were no cultural activities identified within the project area, there are no adverse effects. The visual impact of the project from surrounding vantage points, e.g. the highway, mountains, and coast is minimal.

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APPENDIX A: CIA CONSULTATION LETTERS - 1ST BATCH 8 JULY 2011

Phyllis Coeche Cayan  
History and Culture Branch Chief  
State Historic Preservation Division  
601 Kamohila Blvd. Room 555  
Kapolei, Hawaii 96707

July 8, 2011

Dear Ms. Cayan:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uone, Pūhāhonu Ahupua'a, Waiuku District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waiuku 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamahi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

We are asking you for any information that might assist us in gathering knowledge of traditional activities, or traditional rights that might be impacted by development of the property. The results of our assessments rely greatly on the assistance and response of individuals and organizations such as yours. Enclosed are maps showing the location of the proposed project area. Please contact me or Leann McGerty at our SCS Honolulu office at (808) 597-1182; with any information or recommendations concerning this Cultural Impact Assessment.

Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Waiuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230

Central Maui Hawaiian Civic Club  
P.O. Box 1493  
Waiuku, Hawaii 96793

August 24, 2011

Dear Members:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uone, Pūhāhonu Ahupua'a, Waiuku District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waiuku 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamahi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

We are asking you for any information that might assist us in gathering knowledge of traditional activities, or traditional rights that might be impacted by development of the property. The results of our assessments rely greatly on the assistance and response of individuals and organizations such as yours. Enclosed are maps showing the location of the proposed project area. Please contact me or Leann McGerty at our SCS Honolulu office at (808) 597-1182; with any information or recommendations concerning this Cultural Impact Assessment.

Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Waiuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230



County of Maui  
Department of Planning  
Cultural Resources Commission  
250 S. High Street  
Wailuku, Hawaii 96793

July 8, 2011

Dear Sir or Madam:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uene, Pūhānuū Ahupua'a, Wailuku District, Maui Island (TMK: (2)3-8-008:019) (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Wāhona 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamāhi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997): The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

We are asking you for any information that might assist us in gathering knowledge of traditional activities, or traditional rights that might be impacted by development of the property. The results of our assessments rely greatly on the assistance and response of individuals and organizations such as yours. Enclosed are maps showing the location of the proposed project area. Please contact me or Leann McGerty at our SCS Honolulu office at (808) 597-1182, with any information or recommendations concerning this Cultural Impact Assessment.

Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Wailuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key (TMK: (2)3-8-008) Showing Project Area Location.  
Land Commission Award 5230

3

Hale Mahalo  
11 Mahalo St.  
Kahului, Hawaii 96732

July 8, 2011

Dear Members:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uene, Pūhānuū Ahupua'a, Wailuku District, Maui Island (TMK: (2)3-8-008:019) (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Wāhona 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamāhi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

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We are asking you for any information that might assist us in gathering knowledge of traditional activities, or traditional rights that might be impacted by development of the property. The results of our assessments rely greatly on the assistance and response of individuals and organizations such as yours. Enclosed are maps showing the location of the proposed project area. Please contact me or Leann McGerty at our SCS Honolulu office at (808) 597-1182, with any information or recommendations concerning this Cultural Impact Assessment.

Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Wailuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key (TMK: (2)3-8-008) Showing Project Area Location.  
Land Commission Award 5230

4

Kimoeko Kapuhuluhua  
c/o 'Ao 'Ao O Nā Loko I 'a O Maui  
P.O. Box 1574  
Kihei, Hawai'i 96731

July 8, 2011

Dear Mr. Kapuhuluhua:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uene, Pūhāhāhā District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waiohona 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keawamāhī. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

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The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

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Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Daglier  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Wailuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230

5

Office of Hawaiian Affairs  
360 Papa Place, Suite 105  
Kahului, Hawai'i 96732-2464

July 8, 2011

Dear Sir or Madam:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uene, Pūhāhāhā District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waiohona 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keawamāhī. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

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The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs... The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

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Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Daglier  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

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Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230

6

Clyde Nānu o, Director  
City Office of Hawaiian Affairs  
711 Kapi'olani Blvd, Suite 500  
Honolulu, Hawaii 96813

July 8, 2011

Dear Mr. Nānu o:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uhene, Pūhāhāhā, Waiuku District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waihoana 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamāhi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

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Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

Attachments:

Figure 1: USGS Quadrangle (Waiuku) Map Showing Project Area Location.  
Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230

7

Hinano Rodrigues, Cultural Historian  
DLNR Maui Office Annex  
130 Mahalani Street  
Waiuku, Hawaii 96791

July 8, 2011

Dear Hinano:

Scientific Consultant Services, Inc. (SCS) has been contracted by Pacific Rim Land Inc., to conduct a Cultural Impact Assessment (CIA) of a land parcel in Pu'uhene, Pūhāhāhā, Waiuku District, Maui Island [TMK: (2) 3-8-008:019] (Figures 1 and 2). According to documents supplied by Pacific Rim Land Inc., the project area consists of approximately 86 acres, which Pacific Rim Land Inc. plans to develop into a heavy industrial subdivision. Scientific Consultant Services is in the process of conducting an Archaeological Inventory Survey of the subject property and is assessing the probability of impacting cultural values and rights within the project area and its vicinity. A search of the Waihoana 'Aina Database (2011) indicates Land Commission Award (LCA) 5230 was issued to one Keaweamāhi. According to the Tax Map Key (TMK), LCA 5230 appears to have included the current project area (see Figure 2).

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Thank you in advance for your comments and help. We look forward to hearing from you.

Sincerely,

Cathleen A. Dagher  
Senior Archaeologist  
Scientific Consultant Services, Inc.

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Figure 2: Tax Map Key [TMK: (2) 3-8-008] Showing Project Area Location.  
Land Commission Award 5230

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**APPENDIX B: NEWSPAPER NOTICES**

**CULTURAL IMPACT ASSESSMENT NOTICE:**  
Information requested by SCS of cultural resources or ongoing cultural activities on or near a land parcel in Pūanani, Pūhalaui Ahupuaʻa & Waihuku District, Nāhā, Hānui, (TNR: 72) 3-8-003019).  
Please respond within 30 days to SCS at (808) 597-1182

Ka Wai Ola  
Honolulu Advertiser  
Maui News

B

B



FAX: 808-597-1182

FAX: 808-597-1183

**FAX OR TRANSMITTAL MEMORANDUM**

To: SIVY ROSENBERG Date: 7/14/2011  
From: Legal Dept. Phone: 524-4344  
Address: Legals@StateAirlines.com Fax: 524-4824

The following is being sent to you By Fax \_\_\_\_\_ By Email \_\_\_\_\_ Under Separate Cover  
SCS Report(s) \_\_\_\_\_ Conc. dkt(s) \_\_\_\_\_ Bids \_\_\_\_\_ Other \_\_\_\_\_

SCS Project Number: 1221

RUN DATES 7/20/7/21/7/24

- For your files
- For your files
- For review and comments
- For your signature and return
- Submitting as "DRAFT"
- Submitting as "FINAL"
- For mandatory archival
- All required
- All per the contract

Comments:

Mary Thanks Scentrie

Date:

For SCS:

State Capital Exp. Mgmt. Policy Dept. Bldg. Maint. Underman

**CULTURAL IMPACT ASSESSMENT NOTICE:**  
Information requested by SCS of cultural resources or on-going cultural activities on or near a land parcel in Pu'uonohu, Pūhāhonu, Waiuku, Waiuku District, Maui, Island, Hawaii. (T.N.M.C. (2) 3-8-008.0194).  
Please respond within 30 days to SCS at (808) 597-1182

Ka Wai Ola  
Honolulu Advertiser  
Maui News

**AFFIDAVIT OF PUBLICATION**

STATE OF HAWAII, } ss.  
County of Maui }

Rhonda M. Kurohara being duly sworn deposes and says that she is in Advertising Sales of the Maui Publishing Co., Ltd., publishers of THE MAUI NEWS, a newspaper published in Wailuku, County of Maui, State of Hawaii; that the entered publication is to

**CULTURAL IMPACT ASSESSMENT NOTICE**

of which the assessed is a true and correct printed notice, was published 3 times in THE MAUI NEWS, addressed, commencing on the 20th day of July, 2011, and ending on the 24th day of July, 2011, (both days inclusive), to-wit: on July 20, 21, 24, 2011

and that affiant is not a party to or in any way interested in the above certified matter.

This 1 page Cultural Impact assessed July 20, 21, 24, 2011, was subscribed and sworn to before me this 25th day of July, 2011, in the Second Circuit of the State of Hawaii, by Rhonda M. Kurohara



Betty E. Jerns  
Notary Public, Second Judicial Circuit, State of Hawaii  
My Commission Expires 07/28/12

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**AFFIDAVIT OF PUBLICATION  
IN THE MATTER OF**

STATE OF HAWAII } ss.  
City and County of Honolulu }

Doc. Date: Jul 2, 2011 # Pages: 1  
Notary Name: Patricia K. Reese Pre-Judge Circuit  
Doc. Description: Affidavit of Publication  
Publication: [Signature]

Rec. Florida being duly sworn, deposes and says that she is a clerk, duly authorized to receive the affidavits of publication for the publication of the Honolulu newspaper on the State of Hawaii, and that she attached heretofore sworn to was published in the above mentioned newspaper as follows:

1. Subject: [Signature] 2. Issue: [Signature]  
0723 0723 07242011

1st week vol. 0 issue 00

1st of 1st

And that affiant is not a party to or in any way interested in the above certified matter.

Patricia K. Reese  
Subscribed to and sworn before me this 25th day of July, 2011, A.D. 2011, by  
Rhonda M. Kurohara  
Notary Public, Second Judicial Circuit, State of Hawaii  
My Commission Expires 07/28/12

AD # 000029663

**CULTURAL IMPACT ASSESSMENT NOTICE:**  
Information reported by 20% of all local residents on each island parcel is published in the Maui News, a newspaper published in Wailuku, Maui, Hawaii. The publication is required by the State of Hawaii, Department of Land and Natural Resources (DLNR) under the provisions of the Cultural Impact Assessment Act (Act 20, Session Laws of Hawaii, 2000).



07/15/2011 08:53

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PAGE 01/04

*CP*

**APPENDIX C: OHA'S RESPONSE**

Source: Classified Source 2-4  
CLASSIFIED BY: [redacted]  
148866 - Page 1 - Composite

**CULTURAL IMPACT ASSESSMENT NOTICE:**  
Information reported by SCS of cultural activities or religious cultural practices in or near a land parcel in the Hawaiian Islands, including the State of Hawaii, is subject to review by the State of Hawaii, Department of Land and Natural Resources, Office of Cultural Impact Assessment (OCIA).  
[PHONE: (808) 586-0189]  
Please report activities to OCIA at SCS at (808) 586-0189.  
OCIA: (808) 586-0189

*CP*

To: 549179  
From: [redacted]  
To: [redacted] Classified Desk  
PR: (808) 586-0189 Fax: (808) 586-0189  
Your aid proof. Please call or fax you.  
corrected/approval by: [redacted]

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PHONE (808) 334-1885  
FAX (808) 334-1883



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 HAPOLAHU BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

HRD11/5837R

July 28, 2011

Cathleen A. Dagher, Senior Archaeologist  
Scientific Consultant Services, Inc.  
711 Kapʻolani Boulevard, Suite 975  
Honolulu, Hawaii 96813

Re: Pre-Cultural Impact Assessment Consultation  
Pūmehua Heavy Industrial Subdivision  
Island of Maui

Alecia e Cathleen A. Dagher.

The Office of Hawaiian Affairs (OHA) is in receipt of your July 8, 2011 letter with enclosures, initiating consultation ahead of a cultural impact assessment (CIA) for the proposed development of a heavy industrial subdivision (project) on 86 acres in Kihun on the Island of Maui. OHA is consequently responding to a June 21, 2011 request for comments on this project from Chris Hart & Partner, Inc. who will be preparing a draft environmental assessment (DEA). It is our understanding your CIA will have a supporting document to certain determinations within the DEA.

Your letter indicates that your firm will be conducting an archaeological inventory survey (AIS) of the project area. We look forward to reviewing the results of the AIS. Your archival research indicates Land Commission Award 5239 to Keawemahi is within the project area. We appreciate that you have provided this information in your letter.

OHA suggests that your CIA comprehensively discuss how project infrastructure (wastewater and onsite drainage systems) intends to contain chemicals and materials and prevent them from entering adjacent irrigation water systems or adversely impact the overall quality of the South Maui watershed (watershed) and groundwater. As you know, in traditional thinking natural resources (such as water) and cultural resources are one and the same and necessary to perpetuate traditional cultural practices.

OHA notes that the Kealia Pond National Wildlife Refuge (NWR) serves as a "soaking basin" for the entire watershed and is subject to intermittent flooding during the winter months. It is possible that any chemicals or pollutants which enter the watershed end up in the NWR adversely impacting native species and near shore marine water quality.

Cathleen A. Dagher, Senior Archaeologist  
Scientific Consultant Services, Inc.  
July 28, 2011  
Page 2 of 2

We have no additional comments or referrals to individuals or organizations who may be interested in participating in consultation for this project in order to you at this time. Thank you for initiating consultation. We look forward to reviewing the CIA and providing additional comments at that time. Should you have any questions or concerns, please contact Kealia Linkley at 394-0244 or kealia@oha.org.

'O wau iho nō me ka 'āia 'i'o.

*Cathleen A. Dagher*

Cathleen A. Dagher  
Chief Executive Officer

C: OHA- Maui COC



**APPENDIX L**  
Phase I  
Environmental Site  
Assessment and  
Supplemental Data

***Phase I  
Environmental  
Site Assessment***

**PHASE I  
ENVIRONMENTAL SITE ASSESSMENT**  
Former Punalu'e Piggery Site  
South Fire Break Road  
Punalu'e, Maui, Hawaii 96784  
TMK (2) 3-8-008: Parcel 019

Prepared For:  
A&B Properties, Inc.  
822 Bishop Street  
Honolulu, Hawaii 96813

Prepared By:  
**ENVIROSERVICES & TRAINING CENTER, LLC**  
505 Ward Avenue, Suite 202  
Honolulu, Hawaii 96814  
tel: (808) 839-7222

ETC Project No. 11-1001

March 2011

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Former Punalu'e Piggery Site

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**1.0 EXECUTIVE SUMMARY**

This report presents the results of a Phase I Environmental Site Assessment (ESA) performed by EnviroServices & Training Center, LLC (ETC) in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E-1527-05. This Phase I ESA was completed for A&B Properties, Inc. (A&B) for the Subject Property located at South Fire Break Road, Puuene, Maui, Hawaii and identified as Tax Map Key (TMK) identification number (2)3-8-008; Parcel 019. Review of tax records revealed that the Subject Property is currently owned by A&B - Hawaii, Inc.

The Subject Property consists of an approximate 86-acre portion of land identified as land parcel 19. The Subject Property was most recently used as a piggery and an unpermitted solid waste management facility. In October 1998, the Subject Property was inspected by the Hawaii Department of Health (DOH) Solid Waste Section (SWS). As a result, on November 27, 1998, the DOH SWS issued Mr. Larry Poffenroth, operator of the Subject Property, a letter indicating several violations at the Subject Property. In addition, the letter ordered Mr. Poffenroth to cease and desist all salvaging operations, and stated that a formal Notice of Violation (NOV) would be issued if he did not respond within 15-days. The DOH SWS reportedly issued a second letter, dated December 23, 1998 regarding the closure of the illegal solid waste management operations at the Subject Property. Since no response was received for the November and December 1998 letters, the DOH SWS issued a "warning letter" on May 5, 1999 indicating that if closure of the facility is not completed as requested, the DOH may institute an administrative or civil action for the current and prior solid waste violations. No apparent further action was taken or pursued by the DOH SWS from May 1999 to June 2005, when an anonymous complaint was reported to the DOH SWS that Mr. Poffenroth was accepting white goods and baling white goods and cars at the piggery.

As a result of the anonymous complaint, the DOH SWS conducted a site inspection of the Subject Property in September 2005. The inspection report indicated that an accumulation of solid waste (i.e. scrap metal, green waste, construction and demolition waste, etc.) was observed on the Subject Property. Subsequently, the DOH SWS issued Mr. Poffenroth a "Letter of Interest," dated September 19, 2005, requesting that removal and proper disposal of the solid waste on the Subject Property be completed within one year. A&B subsequently initiated and completed cleanup activities, which were completed in February 2011. Clearance from the DOH SWS is currently pending. As part of the planned cleanup activities, A&B also agreed to conduct a "comprehensive site assessment" of the Subject Property. Specifically, A&B contracted ETC to prepare a site investigation work plan to investigate whether the surface soils at the Subject Property have been impacted by the former solid waste management activities. Site investigation activities were conducted concurrently with this Phase I ESA and will be reported under separate cover. Based on this information, ETC cannot dismiss the fact that Subject Property soils may have been impacted by the former solid waste management activities.

Historic maps and documents provided by the landowner indicated that the Subject Property was part of the former Puunene Naval Air Station (PNAS). Review indicated that a "machine gun range" was formerly located on or partially on the southernmost portion of the Subject Property. "Earth revegetations," presumably at the impact zone of the gun range, were formerly located near the current southern property line, and it is unclear whether these revegetations were within or just outside of the Subject Property boundaries. The remaining areas of the former PNAS on the Subject Property appeared to be used primarily for quarters, office space, and barracks. Past environmental investigations and cleanups have been conducted on areas of the base west of the Subject Property. Although no evidence of past investigations of the gunnery range was identified, residual heavy metals are common contaminants associated with former military firing ranges. As such, this finding is considered a historical recognized environmental condition (REC). While the "earth revegetations," are no longer present and there is evidence that soil in the presumed gunnery range impact zone has been excavated at some time in the past, based on information provided by the landowner coupled with ETC's telephone correspondence with DOH HEER Office personnel, ETC cannot dismiss the potential presence of residual contamination from this historical REC and as such the former "machine gun range" is considered a current REC for the Subject Property.

ETC performed a site reconnaissance on February 17, 2011 and March 1, 2011 in order to complete a visual survey to identify the use and/or storage of hazardous materials. With the exception of the radio tower and other appurtenant structures, no visible structures were observed on the Subject Property. Note that several apparent building foundations in the form of concrete slabs were observed on the Subject Property. ETC personnel observed a non-potable water well located on the central portion of the Subject Property. The southernmost portion of the Subject Property appeared to be used for current sugarcane cultivation activities. ETC observed limited quantities of cathode ray tubes (CRTs), batteries, and other wastes within a metal storage bin located on the northwest portion of the Subject Property. According to the landowner, these materials are being prepared for shipment and proper disposal. The bin is situated on an apparent concrete slab. No releases were observed in the vicinity of this bin. In addition, limited quantities of apparent metal debris were observed on the Subject Property. ETC understands that all remaining metal debris and wastes contained within the metal bin are planned for removal and disposal.

The Subject Property was not listed in any of the government databases by the contracted database search. The contracted database search identified one (1) Formerly Used Defense Site, and three (3) Orphan sites within the specified radii. Based on these findings, ETC reviewed select facility files and/or correspondence with personnel from the Hawaii Department of Health (DOH) Solid and Hazardous Waste Branch (SHWB) and DOH Hazard Evaluation and Emergency Response (HEER) Office. Findings indicate that a portion of the former *Mani Airport Military Reservation (also known as the PNAS)* was located on the Subject Property. Although not identified by the contracted database, information provided by the landowner coupled with the available online RCRA database information revealed that Subject Property was identified as a RCRA Large Quantity Generator (LQG). Specifically, the "Former Poffenroth Piggery" is listed as a RCRA LQG with no apparent RCRA violations.

In summary, ETC performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-05 on the Subject Property. This assessment has revealed no evidence of RECs in connection with the Subject Property except for the following:

- Potential presence of residual contaminants associated with former solid waste management activities on the Subject Property.
- Potential presence of residual contamination associated with historic usage of the southernmost portion of the Subject Property as a "machine gun range."

## 2.0 INTRODUCTION

EnviroServices & Training Center, LLC (ETC) was contracted by A&B Properties, Inc. (Client) to complete a Phase I Environmental Site Assessment (ESA) for the Subject Property located at South Fire Break Road, Puunene, Maui, Hawaii. The Subject Property is identified as Tax Map Key (TMK) identification number (2) 3-8-008 Parcel 019.

This Phase I ESA was performed in accordance with the ASTM International Standard E1527-05 entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (referred to herein as the ASTM Practice). The ASTM Practice is intended for use by parties who wish to assess the environmental condition of commercial real estate with respect to contaminants within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and petroleum products. As such, the ASTM Practice was designed to satisfy "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 United States Code (U.S.C.) §9601(35)(B).

### 2.1 Background

Under CERCLA, persons may be held liable for cleaning up hazardous substances at properties that they either currently own or operate, or owned or operated at the time of disposal. Strict liability in the context of CERCLA means that a potentially responsible party may be liable for environmental contamination based solely on property ownership and without regard to fault or negligence.

In 1986, the Superfund Amendments and Reauthorization Act (SARA) amended CERCLA by creating an "innocent landowner" defense to CERCLA liability for those persons who could successfully demonstrate, among other requirements, that they "did not know and had no reason to know" prior to purchasing the property that any hazardous substance that is the subject of a release or threatened release was disposed of on, in, or at the property. Such persons, to demonstrate that they had "no reason to know" must have undertaken, prior to, or on the date of acquisition of the property, "all appropriate inquiries" into the previous ownership and uses of the property consistent with good commercial or customary standards and practices.

The Small Business Liability Relief and Brownfields Revitalization Act (referred to as "the Brownfields Amendments") was enacted in January, 2002 to amend CERCLA. These amendments included providing funds to assess and clean up brownfields sites, clarifying CERCLA liability provisions for certain landowners, and providing funding to enhance state and tribal cleanup programs.

Subtitle B of Title II of the Brownfields Amendments revised CERCLA, clarifying the requirements necessary to establish the innocent landowner defense. The Brownfields Amendments also added protections from CERCLA liability for "bona fide prospective purchasers" and "contiguous property owners" who meet certain statutory requirements. Each of the CERCLA liability provisions for innocent landowners, bona fide prospective purchasers, and contiguous property owners (referred to collectively as "landowner liability protections," or LLPs) requires that, among other requirements, persons claiming the liability protections conduct all appropriate inquiries into prior ownership and use of a property prior to or on the date a person acquires a property.

A key provision of the Brownfields Amendments was to finalize regulations setting federal standards for the conduct of all appropriate inquiries. Such federal standards were promulgated in the *Standards and Practices for All-Appropriate Inquiries, Final Rule, 40 CFR Part 312*, referred to as the AAI Final Rule.

Section 312.11 of the AAI Final Rule indicates that the ASTM International Standard E1527-05, entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, may be used to comply with the requirements set forth in Sections 312.23 through 312.31 of the AAI Final Rule. Therefore, this Phase I ESA was performed in conformance with the ASTM International Standard E1527-05.

### 2.2 Purpose

The purpose and goal of this Phase I ESA is to conduct an inquiry designed to identify recognized environmental conditions in connection with the Subject Property, to the extent feasible pursuant to the process described in the ASTM Practice. The term recognized environmental condition (REC) is defined as:

"the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to 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. Conditions determined to be *de minimis* are not recognized environmental conditions."

## 2.3 Scope of Services

The scope of work included the following:

- Development of a site description for the Subject Property including site background, physical characteristics and historical site conditions;
- Evaluation of user provided information including but not limited to environmental liens, activity and use limitations, specialized knowledge, valuation reduction of environmental issues, and other information pertaining to the property;
- Evaluation of information in programs such as NPL, CERCLIS, FINDS, ERNS, RCRA notifiers, and other governmental information systems within specific radii of the property to identify sites that would have the potential to impact the property;
- Visual evaluation of current site conditions (as applicable) including compliance with appropriate regulations as they pertain to the presence of facility storage tanks, drums, and containers; and transformers and other electrical equipment potentially containing PCBs;
- Visual evaluation of the adjacent properties to identify high-risk neighbors and the potential for a chemical to migrate onto the property; and
- Interviews with owner(s), site manager(s), occupant(s), local government official(s), and/or other individuals with past and prior use history of the property.
- Evaluation of non-scope considerations pertaining to the solid and hazardous waste compliance status of the former Subject Property operations.

## 2.4 Significant Assumptions

This Phase I ESA is limited by the availability of information at the time of the assessment. Interviews were conducted and interviewee's responses were assumed to be provided in good faith, to the extent of his/her actual knowledge. In addition, since no hydrogeological data was available for the Subject Property, the groundwater was assumed to flow in the direction of the surface topography of the Subject Property and surrounding areas.

## 2.5 Conditions and Limitations

ETC has completed this Phase I ESA for the Subject Property in accordance with the scope and limitations of ASTM Practice E1527-05. ETC's findings and conclusions contained herein are professional opinions based solely upon visual observations, interviews, and interpretation of the historical information and documents available to ETC at the time this Phase I ESA was conducted. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

ETC has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended, unless otherwise specifically agreed to in writing by both ETC and ETC's Client.


## 2.6 User Reliance

This report is intended for the sole use of ETC's Client, exclusively for the project site indicated. ETC's Client may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of Client and/or said user, and ETC shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

## 2.7 Environmental Professional Certification

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312. We have 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.

Prepared by:

  
Sharla Nakashima  
Environmental Professional  
EnviroServices & Training Center, LLC

Date: March 16, 2011

### 3.0 SITE DESCRIPTION

#### 3.1 Location and Description

The Subject Property consists of an 86-acre portion of land parcel 19 located off of South Fire Break Road, Puuente, Maui, Hawaii, and situated on the central portion of the island of Maui. The site is located approximately 0.9 miles east of State Highway 311 (Mokulele Highway).

#### 3.2 Physical Setting

Groundcover at the Subject Property generally consists of bare soil and sparse to dense vegetation with limited areas of concrete (building foundation remnants) and asphalt (interior Subject Property roads).

#### 3.2.1 Site Topography

Topographic map coverage of the Subject Property vicinity is provided by the United States Geological Survey Island of Maui, Hawaii 7.5-minute Pau O Kali Quadrangle, 1983. The elevation of the Subject Property is approximately 110 to 140 feet above mean sea level (msl). Topography at the site is relatively flat with a very slight downward gradient to the west towards Mokulele Highway.

#### 3.2.2 Regional Geology

The island of Maui is the second largest of the Hawaiian Islands. Maui consists of two shield volcanoes with a connecting isthmus. The volcanic rocks of the West Maui Mountains (West Maui Volcano) are divided into three series. The oldest is the Wailuku Volcanic Series, followed by the Honolua and Lahaina Volcanic Series. The Wailuku Series built the major shield volcano comprised of basaltic lava flows and associated pyroclastic deposits. The Lahaina Series then covered the western slopes of the West Maui Volcano.

The Haleakala Volcano last erupted around 1790 and is presently dormant. The shield of the volcano is composed of a' a and pahoehoe lava flows of the olivine, tholeiitic olivine basalt, and oceanite known as the Honomanu Volcano Series. The Kula Volcanic Series overlies the Honomanu Series and is comprised of hawaiite, alkalie olivine basalt, and ankaramite. Lava flows from the Haleakala volcano formed the Maui Isthmus and are made up of permeable basalt and erosional deposits (Macdonald, et al., 1983).

#### 3.2.3 Site Geology

Soil at the Property is classified by the U.S. Department of Agriculture (USDA) Soil Conservation Service as Waiauou extremely stony silty clay loam, 3 to 25 percent slopes (WID2). As described by the USDA, WID2 soils consist of moderately deep, well drained soils from weathered rock. In a representative profile, the surface layer consists of extremely stony silty clay loam, the subsoil is a stony silty clay loam, and the substratum consists of bedrock. Annual rainfall amounts to 15 inches. WID2 soils are generally used for pasture and irrigated sugarcane (USDA, 1972).

#### 3.2.4 Regional Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. The portion of the island situated below sea level, except within rift zones of the volcanoes, is saturated with ocean salt water and thus forms a basal lens called the "Glyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

#### 3.2.5 Site Hydrogeology

The site is underlain by the Paia Aquifer System, which is part of the Central Aquifer Sector on the island of Maui. The aquifer is classified by Mink and Lau, 1990, with the system identification number 60302214 (33221). This system includes an unconfined, high-level aquifer in a perched layer. The aquifer is described as having no potential use and is neither a drinking water resource nor ecologically important. The groundwater is also described as containing groundwater with a low salinity (250 to 1,000 mg/l Cl<sup>-</sup>) and is considered replaceable with a high vulnerability to contamination (Mink and Lau, 1990).

The site is further underlain by a second aquifer of the same system. The aquifer is an unconfined basal aquifer underlain with basalt of the Honomanu volcanic series covered by andesitic rocks of the Kula volcanic series, and is classified with the system identification number 60302111 (11112). The aquifer is described as a currently used, drinking water source, containing groundwater with a fresh salinity (<250 mg/l Cl<sup>-</sup>). It is also described as irreplaceable with a moderate vulnerability to contamination (Mink and Lau, 1990). Groundwater is anticipated at approximately 120- foot bgs.

#### 3.2.6 Nearest Surface Water Bodies

The nearest surface water body is the Haiku Ditch Reservoir located on the northern adjoining property across Crusher Road. A gulch runs along the southern adjoining property flowing west-southwest toward the Kealia Pond National Wildlife Refuge and draining into the Pacific Ocean at Maalaea Bay.



#### **4.0 USER PROVIDED INFORMATION AND DOCUMENT REVIEW**

##### **4.1 Required Information**

This section is intended to provide information obtained from the user of this Phase I ESA that will help identify RECs associated with the Subject Property. The information provided does not require the user to have the technical expertise of an environmental professional and is generally not provided by the environmental professional performing the Phase I ESA.

In order to qualify for one of the LLPs offered by the Brownfields Amendments, the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Mr. Sean O'Keefe, Director of Environmental Affairs, Alexander & Baldwin, Inc. ("user"), provided ETC with the following information.

##### **4.1.1 Environmental Liens**

The user indicated that no environmental liens for the Subject Property, however there were at least four governmental notifications relating to past or recurrent violations of environmental laws with respect to the Subject Property. These letters are discussed further in Section 4.3.

##### **4.1.2 Activity and Use Limitations**

The user had no knowledge of any activity and land use limitations filed or recorded in a registry under federal, tribal, state or local law.

##### **4.1.3 Specialized Knowledge**

The user indicated that as a representative of the Subject Property owner, the user has specialized knowledge regarding the Subject Property and nearby properties. Specifically, the Subject Property owner either owns, leases, and/or occupies much of the surrounding areas.

##### **4.1.4 Valuation Reduction for Environmental Issues**

The user indicated that the purchase price of the Subject Property reflects the fair market value of the Subject Property.

##### **4.1.5 Commonly Known or Reasonably Ascertainable Information**

The user provided numerous documents and information pertaining to the past uses, storage practices, spills, and environmental cleanups of the Subject Property. This information is discussed in Section 4.3.

##### **3.3 Current Use of the Subject Property**

The southernmost portion of the Subject Property is currently used for sugarcane cultivation. There is fenced area consisting of a radio tower and other appurtenant structures (i.e. small building structure and shipping container). With the exception of the metal storage bin, all other areas of the Subject Property are currently vacant with no visible structures. All former structures have been demolished and/or removed; however, several concrete foundations and remnants of former building foundations are present on the Subject Property.

##### **3.4 Current Uses of the Adjoining Properties**

ETC visually inspected the neighboring properties and their operations from the Subject Property and publicly accessible areas. The Subject Property is bordered to the north by a roadway, beyond which is a reservoir; to the east by a roadway, beyond which is the Mauu Raceway Park; and to the east and south by sugarcane fields. Other land uses observed in the vicinity consisted of cement quarry and agricultural lands.

#### 4.1.6 Degree of Obviousness of Potential Contamination

With the exception of *de minimis* petroleum releases and any potential contamination related to the past operation of an unpermitted solid waste management facility, the user had no knowledge of any obvious indicators that point to the presence or likely presence of contamination at the property based on their knowledge and experience related to the Subject Property. An investigation of the potential impacts of the former solid waste management activities is currently on-going.

#### 4.2 Other Information Pertaining to the Subject Property

The user had no additional concerns regarding the Subject Property or any adjoining properties.

#### 4.2.1 Reason for Performing Phase I ESA

The Phase I ESA is being performed as part of the due diligence associated with the potential sale of the Subject Property.

#### 4.2.2 Title Records

The user did not provide any title records for the Subject Property. Note that an environmental lien search was conducted for the Subject Property and is discussed in Section 5.4.

#### 4.2.3 Owner, Property Manager, and Occupant Information

The Subject Property owner is A&B Properties, Inc. and the area is currently managed by Mr. Jason Kojca. Tel: 808-877-1645. The Subject Property is currently unoccupied.

#### 4.3 Document Review

ETC reviewed several due diligence documents, environmental reports, and correspondence for the Subject Property. These documents were either provided by A&B Properties, Inc. (A&B), or reviewed at the Hawaii Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office and/or DOH Solid Waste Section (SWS).

#### 4.3.1 Former Piggery and Solid Waste Management Activities

The Subject Property was most recently used as a piggery and an unpermitted solid waste management facility. The piggery operations span greater than 25 years, while the solid waste management activities were assumed to have started in 1995 when Mr. Larry Poffenroth took over piggery operations as part of an agreement with the former tenant. Mr. Poffenroth reportedly began conducting solid waste management activities without the knowledge or consent of the Subject Property landowner, A&B. From 1996 to 2007, A&B attempted to force Mr. Poffenroth to cease both the solid waste management activities and piggery operations and to vacate the site. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing; however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In addition, large amounts of food waste were brought to the Subject Property as pig feed, which resulted in discarded empty food packaging materials being spread throughout much of the north portion of the Subject Property.

In October 1998, the Subject Property was inspected by the DOH SWS. As a result, on November 27, 1998, the DOH SWS issued Mr. Larry Poffenroth, operator of the Subject Property, a letter indicating several violations at the Subject Property. In addition, the letter ordered Mr. Poffenroth to cease and desist all salvaging operations, and stated that a formal Notice of Violation (NOV) would be issued if he did not respond within 15-days.

The DOH SWS reportedly issued a second letter, dated December 23, 1998 regarding the closure of the illegal solid waste management operations at the Subject Property. Since no response was received for the November and December 1998 letters, the DOH SWS issued a "warning letter" on May 5, 1999 indicating that if closure of the facility is not completed as requested, the DOH may institute an administrative or civil action for the current and prior solid waste violations. No apparent further action was taken or pursued by the DOH SWS from May 1999 to June 2005, when an anonymous complaint was reported to the DOH SWS that Mr. Poffenroth was accepting white goods and baling white goods and cars at the piggery.

As a result of the anonymous complaint, the DOH SWS conducted a site inspection of the Subject Property in September 2005. The inspection report indicated that an accumulation of solid waste (i.e. scrap metal, green waste, construction and demolition waste, etc.) was observed on the Subject Property. Subsequently, the DOH SWS issued Mr. Poffenroth a "Letter of Interest," dated September 19, 2005, requesting that removal and proper disposal of the solid waste on the Subject Property be completed within one year.

In late 2007, A&B was able to evict Mr. Poffenroth and all the remaining pigs were subsequently removed from the Subject Property in 2008. Immediately following the eviction, A&B began solid waste cleanup activities at the Subject Property; however, these efforts were hindered by Mr. Poffenroth's bankruptcy filing and associated legal issues. Following the bankruptcy court orders allowing cleanup of scrap metal from the Subject Property, A&B requested a solid waste management permit exemption for the cleanup activities. Subsequently, the DOH SWS granted the exemption and cleanup activities commenced. ETC understands that solid waste cleanup activities were completed in February 2011.

As part of the planned cleanup activities, A&B proposed to conduct a "comprehensive site assessment" of the Subject Property. Specifically, A&B contracted ETC to prepare a site investigation work plan to investigate whether the surface soils at the Subject Property have been impacted by the former solid waste management activities. On February 28, 2011, the DOH SWS issued a letter to A&B indicating that sampling activities described in the work plan may proceed. Site investigation activities were conducted concurrently with this Phase I ESA and will be reported under separate cover.

#### 4.3.2 Former Puunene Naval Air Station

The Subject Property was reportedly part of the former Puunene Naval Air Station (PNAS) as the Maui Airport Military Reservation). The Puunene Naval Air Station (PNAS) was built from 1936 to 1939 and was used by the U.S. Navy from 1940 to 1946. The PNAS was used as a naval air station that also supported U.S. Army operations. The PNAS facilities historically included underground fuel storage tanks, a transformer building, and a former landfill, none of which were located on the Subject Property. Review indicated that a "machine gun range" was formerly located on or partially on the southernmost portion of the Subject Property. "Earth revetments," presumably at the impact zone of the gun range, were formerly located near the current southern Subject Property boundary, and it is unclear whether these revetments were within or just outside of the Subject Property boundaries. The remaining areas of the former PNAS on the Subject Property appeared to be used primarily for quarters, office space, and barracks.

Although the Subject Property portion of the former PNAS has not been officially investigated, other areas of the PNAS are currently being investigated or have been investigated and/or remediated. PCB contamination associated with a "transformer building" located west of the Subject Property was investigated and/or remediated. Ms. Maria Reyes and Mr. Steven Mow of the DOH Hazard Evaluation and Emergency response Office indicated that PCB cleanup activities have been completed and the facility is listed as a "no further action" site. Note that PNAS was listed as a Formerly Used Defense Site (FUDS) by the contracted database. Furthermore, investigation and/or remediation of other areas of the PNAS is currently ongoing.

## 5.0 RECORDS REVIEW

### 5.1 Standard Environmental Record Sources

To obtain information concerning recognized environmental conditions at or near the Subject Property, ETC contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search. EDR is a company that specializes in the review of public regulatory environmental databases. The regulatory agency report provided (Appendix IV) is based on an evaluation of the data collected and compiled by a contracted data research company. The report is a radius search report, which focuses on both the Subject Property and adjacent properties that may impact the Subject Property. Adjacent properties listed in governmental environmental records are identified within a specific search radius (Table 1). The search radius varies depending on the particular record being researched. The search is designed to meet the requirements of the current industry approach as described in ASTM Practice E1527-05. The information provided is assumed to be correct and complete, unless noted otherwise.

Table 1: ASTM Practice Environmental Record Sources and Recommended Search Distances

Environmental Database Sources	ASTM Practice Search Distances (miles)
Federal NPL Site List	1.0
Federal Designated NPL Site List	0.5
Federal CERCLIS List	0.5
Federal CERCLIS NERAP Site List	0.5
Federal RCRA CORRACTS Facilities List	1.0
Federal RCRA non-CORRACTS TSD Facilities List	0.5
Federal RCRA Generators List	Subject Property and adjoining properties
Federal Institutional Control/Engineering Control Registries	Subject Property only
Federal ERNS List	Subject Property only
State-Equivalent NPL	1.0
State-Equivalent CERCLIS	0.5
State Landfill and/or Solid Waste Disposal Site Lists	0.5
State Leaking UST List	0.5
State Institutional Control Registry	Subject Property and adjoining properties
State Voluntary Cleanup/Response (VCP/VRP) Sites	Subject Property only
State Brownfield Sites	0.5

### 5.1.1 Federal NPL and Delisted NPL

The National Priorities List (NPL) is the Environmental Protection Agency's (EPA) database of uncontrolled or abandoned hazardous waste properties, which are considered to pose an immediate threat to human health and the environment. These properties are identified for priority remedial response actions under the Superfund Program. The Subject Property was not identified as a NPL site or a delisted NPL site. The database did not identify any delisted NPL sites within a 0.5-mile radius of the Subject Property. In addition, the database did not identify any NPL sites within a 1-mile radius of the Subject Property.

### 5.1.2 Federal CERCLIS and CERCLIS NFRAP

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database contains information on various aspects of potentially uncontrolled or abandoned hazardous waste properties from initial screening and assessment phases to listing on the NPL. The Subject Property was not identified as an active CERCLIS site or a CERCLIS No Further Remedial Action Planned (NFRAP) site. The database did not identify any active CERCLIS sites or any CERCLIS NFRAP sites within a 0.5-mile radius of the Subject Property.

### 5.1.3 Federal RCRA CORRACTS

RCRA Corrective Action Sites (CORRACTS) database contains Resource Conservation Recovery Information System (RCRIS) sites with reported corrective action. The Subject Property was not identified as a CORRACTS facility. The database search did not identify any CORRACTS sites within a 1-mile radius of the Subject Property.

### 5.1.4 Federal RCRA (non-CORRACTS) TSD Facilities

The EPA's RCRA program identifies and tracks hazardous waste from the point of generation to the point of final disposal. The RCRA Treatment, Storage or Disposal (TSD) facility database compiles those reporting facilities that treat, store, or dispose of hazardous waste. The Subject Property was not identified as a RCRA TSD facility. The database search did not identify any RCRA TSD facilities within a 0.5-mile radius of the Subject Property.

### 5.1.5 Federal RCRA Generator

The RCRA Generator database is a compilation by EPA's RCRIS of regulated facilities that generate hazardous waste. The Subject Property was not identified as a RCRA Small Quantity Generator (SQG) or Large Quantity Generator (LQG). The database search did not identify any RCRA LQG or RCRA SQG sites located on potential adjoining/adjacent properties.

Although not identified by the contracted database, information provided by the landowner coupled with the available online RCRA database information revealed that Subject Property was identified as a RCRA Large Quantity Generator (LQG).

### 5.1.6 Federal Institutional Control/Engineering Control Registries

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. 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 a site. The EPA Institutional Control and Engineering Control registry maintains a listing of sites with Institutional or Engineering Controls in place. The Subject Property was not identified as having institutional or engineering controls in place.

### 5.1.7 Federal ERNS

The Emergency Response Notification System (ERNS) tracks the initial notification of reported oil and hazardous material spills. The database contains information regarding the discharge, release date, material, amount released, incident location and release action taken. The Subject Property was not identified as an ERNS facility.

### 5.1.8 State Equivalent NPL and CERCLIS

The CERCLIS List is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites. These sites either have been investigated or are currently under investigation by the EPA for the release, or threatened release, of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priorities List. The State of Hawaii does not have a formal "State Superfund" program; therefore, the State Hazardous Waste Sites (SHWS) are the State of Hawaii's equivalent to the federal EPA's CERCLIS database. Additionally, because this information is acquired from the Hawaii Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office, these sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup that use state funds (state equivalent superfund) are identified along with sites where cleanup is paid for by the potentially responsible parties. The Subject Property was not identified on the SHWS database. The database search did not identify any SHWS sites within a 1-mile radius of the Subject Property.

### 5.1.9 State Landfill and/or Solid Waste Disposal

The State of Hawaii has records of all facilities that have received a solid waste management permit, including solid waste landfills, transfer stations, and incinerators. The Subject Property was not identified as a Solid Waste Facility/Landfill (SWF/LF) facility. The database search did not identify any SWF/LF facilities within a 0.5-mile radius of the Subject Property.

#### **5.1.10 State Leaking Underground Storage Tanks**

The DOH Underground Storage Tank (UST) Program maintains a listing of all reported leaks and releases from USTs. The Subject Property was not identified as a leaking underground storage tank (LUST) facility. The database search did not identify any LUST facilities within a 0.5-mile radius of the Subject Property.

#### **5.1.11 State Registered Underground Storage Tanks**

The DOH Underground Storage Tank (UST) Program registration system tracks known and registered UST systems. The Subject Property was not identified as a UST facility. The database search did not identify any UST facilities located on potential adjacent/adjoining properties.

#### **5.1.12 State Institutional Control Registry**

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 a site. The State Institutional Control listing includes Voluntary Response Program and Brownfields sites with institutional controls in place. The Subject Property was not identified as having institutional controls in place.

#### **5.1.13 State Voluntary Cleanup/Response Sites**

The Hawai'i Voluntary Response Program (VRP) was created on July 7, 1997 by amendments made to Hawai'i's Environmental Response Law (ERL). 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. The VRP facilitates the cleanup process and, in certain situations, provides relief from the strict liability provisions of the Federal CERCLA and Hawai'i ERL. The Subject Property was not identified as a VRP site. The database search did not identify any VRP sites located within a 0.5-mile radius of the Subject Property.

#### **5.1.14 State Brownfields**

A Brownfields site is land which the expansion, redevelopment, or reuse of may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. The Subject Property was not identified as a Brownfields site. The database search did not identify any Brownfields sites located within a 0.5-mile radius of the Subject Property.

#### **5.1.15 Unmappable/Orphan Sites**

Three (3) unmappable sites were identified in the Orphan Summary of the EDR Report. Unmappable sites are not plotted due to poor or inadequate address information. Due to the inaccurate or incomplete information provided by the respective agency, these sites cannot be plotted with confidence. Review of the addresses and site names coupled with ETC site reconnaissance findings indicated that neither the Subject Property nor any adjacent or nearby properties were identified in the Orphan Summary of the database report.

#### **5.2 Additional Environmental Record Sources**

The EDR database also included a number of other regulatory databases that are not specified by the ASTM Practice. The EDR database identified one (1) Formerly Used Defense Site (FUDS) located on the Subject Property and adjoining properties.

In addition, the database search did not identify the Subject Property in any of the following databases.

Proposed NPL – Proposed National Priority List Sites

NPL LIENS – Federal Superfund Liens

NPL RECOVERY – Federal Superfund Liens

LIENS 2 – CERCLA Lien Information

DOD – Department of Defense Sites

HMIRS – Hazardous Materials Information Reporting System

US Brownfields – A Listing of Brownfields Sites

CONSENT – Superfund (CERCLA) Consent Decrees

ROD – Records of Decision

UMTRA – Uranium Mill Tailings Sites

ODI – Open Dump Inventory

TRIS – Toxic Chemical Release Inventory System

TSCA – Toxic Substances Control Act

FTTS – FIFRA/TSCA Tracking System

SSTS – Section 7 Tracking Systems

ICIS – Integrated Compliance Information System

LUCIS – Land Use Control Information System

CDL – Clandestine Drug Labs

RADINFO – Radiation Information Database

PADS – PCB Activity Database System

PCB Transformer – PCB Transformer Registration Database  
 MLTS – Material Licensing Tracking System  
 MINES – Mines Master Index File  
 FINDS – Facility Index System / Facility Registry System  
 RAATS – RCRA Administrative Action Tracking System  
 SPILLS – Release Notifications  
 UIC – Underground Injection Well Listing  
 DRYCLEANERS – Permitted Drycleaner Facility Listing  
 AIRS – List of Permitted Facilities  
 Manufactured Gas Plants – EDR Proprietary Manufactured Gas Plants

**5.3 Historical Use Information on the Subject and Adjoining Properties**

Historical uses of the Subject Property and adjoining properties were investigated through the review of documentation available from public land records and State of Hawaii archived information. In addition, available aerial photographs, plat maps, Sanborn maps, and building permits were reviewed.

**5.3.1 Aerial Photograph Review**

Aerial photographs from the EDR Aerial Photo Decade Package were reviewed. A total of three aerial photographs were found that included the Subject Property. These photographs were dated 1954, 1976, and 1992.

The Subject Property and adjacent areas were not clearly visible in the 1954 aerial photograph. Review indicated that the Subject Property and adjacent properties appeared to be improved with numerous structures. In addition, an apparent air strip or runway was visible west of the Subject Property. The Subject Property and adjacent properties were not clearly visible in the 1976 aerial photograph. Although site structures were not clearly visible, in general, the 1976 aerial photograph appeared similar to the 1954 aerial photograph with no significant changes. Review of the 1992 aerial photograph indicated that the Subject Property appeared developed with a few structures on the south and northwest portions. In addition, a suspect excavated area was observed along the south border of the Subject Property. This area appears to correspond to the former "machine gun range," which is suspected to have been located along the south border of the Subject Property. The remaining areas of the Subject Property appeared to be covered with vegetation.

**5.3.2 Fire Insurance Maps**

ETC contracted EDR to conduct a search of Sanborn fire insurance maps for the Subject Property. The search included an extensive review of the Library of Congress and University Publications of America map collections as well as the EDR Private Collection. EDR reported that there is no Sanborn map coverage for the Subject Property address.

**5.3.3 Property Tax Files and Land Title Records**

ETC conducted a limited title search of the Subject Property online at the County of Maui Property Tax office website. ETC is not a professional title search company and does not warrant the completeness or accuracy of the information provided, but considers the data useful in screening the Subject Property for environmentally suspect owners or lessees. The Subject Property is currently owned by A&B – Hawaii, Inc. Current or former lessees of the Subject Property include Maui Factors Inc., Rey Cel Broadcasting Inc., and LESEA Broadcasting Corporation.

**5.3.4 Building Permit Records**

ETC reviewed available building permits for the Subject Property recorded by County of Maui. Property records indicated that two "frame utility shed" structures, one "accessory dwelling" structure and three "metal warehouse" structures were built on the Subject Property in the 1960s. In addition, a building permit was issued to Valley Isle Broadcasting, Ltd. for the construction of a transmitter building on an adjacent property.

**5.4 Environmental LienSearch**

To obtain information concerning environmental liens and other activity use limitations (AULs), ETC contracted EDR to conduct an environmental lien search and AULs search. The EDR Environmental LienSearch Report provided (Appendix III) is based on an evaluation of public records of the Hawaii State Bureau of Conveyances. The search is designed to meet the requirements of the current industry approach as described in ASTM Practice E1527-05. The information provided is assumed to be correct and complete, unless noted otherwise. Review of the EDR Environmental LienSearch Report indicated that the no environmental liens or AULs were found in connection with the Subject Property.

## **6.0 SITE RECONNAISSANCE**

ETC performed a site reconnaissance on February 17, 2011 and March 1, 2011 in order to complete a visual survey to identify the use and/or storage of hazardous materials.

### **6.1 Methodology and Limiting Conditions**

ETC personnel performed the site reconnaissance by systematically inspecting all accessible areas of the Subject Property. With the exception of the interior areas of the radio tower structure and the heavily vegetated areas of the Subject Property, no areas of the Subject Property were restricted from ETC's visual observation.

### **6.2 General Site Setting**

The Subject Property primarily consisted of vacant land. A small shed-like structure and radio tower was observed on the northwest portion of the Subject Property. This structure was inaccessible at the time of ETC's site reconnaissance activities, however, no apparent releases or evidence of past releases were observed in the vicinity of the radio tower area. No other visible structures were observed on the Subject Property; however, several apparent building foundations in the form of concrete slabs were observed on the Subject Property.

ETC personnel also observed a non-potable water well located on the central portion of the Subject Property. A map of the Subject Property and the location of this well is included in Appendix I, Figure 2. Photographic documentation of ETC's site reconnaissance is included in Appendix II.

### **6.3 Observations**

Visual inspection of the exterior areas of the Subject Property indicated the groundcover primarily consisted of bare soil, interior dirt and asphalt paved roads and moderate to heavy vegetation. The southernmost portion of the Subject Property appeared to be used for current sugarcane cultivation activities. ETC observed limited quantities of cathode ray tubes (CRTs), batteries, and other wastes within a metal storage bin located on the northwest portion of the Subject Property. According to the landowner, these materials are being prepared for shipment and proper disposal. The bin is situated on an apparent concrete slab. No releases were observed in the vicinity of this bin. In addition, limited quantities of apparent metal debris were observed on the Subject Property. ETC understands that both the metal debris and metal bin are planned for removal and disposal or recycling.

ETC observed a radio tower and appurtenant structures (i.e. building and shipping container) located on the northwest portion of the Subject Property. Although the interior areas of the radio tower structure and shipping container were inaccessible, no apparent releases or evidence of past releases were observed in the vicinity of this area.

ETC observed several apparent sewer manhole covers indicating that a sewer system infrastructure may still be present on the Subject Property. These manholes are likely remnants associated with the former Puunene Naval Air Station.

No floor drains or sumps were observed on the Subject Property. A visual inspection for the presence of USTs and ASTs was also conducted. No evidence of USTs was observed on the Subject Property.

### **6.4 Dielectric Fluid Containing Equipment**

A visual inspection for hydraulic and electrical equipment or electrical components that use fluid that may contain PCBs was conducted. No suspect PCB-containing equipment was observed on the Subject Property.

## 7.0 INTERVIEWS

The objective of the interviews is to obtain information from past and present owners, operators, and occupants of the Subject Property to identify potential RECs in connection with the Subject Property.

### 7.1 Interview with Owner

#### Mr. Sean O'Keefe, A&B Properties, Inc.

Mr. O'Keefe provided ETC with the following information:

- The Subject Property was initially used as part of the Puuene Naval Air Station and later used as a plantation camp and for commercial sugarcane cultivation. The Subject Property was later used as a pig farm the 1960s. In addition to the pig farm activities beginning in the 1960's, a portion of the Subject Property was used for unpermitted solid waste management activities since approximately 1995.
- Aerial photographs indicate that the southern portion of the Subject Property appears to have been excavated. This excavated area corresponds to the approximate location of the former "machine gun range" associated with the PNAS. In addition, in or around 2004, Hawaiian Commercial & Sugar (HC&S) reportedly imported material onto this portion of the Subject Property to fill this "low spot" prior to resuming farming activities.
- Potable water on the Subject Property is provided by County of Maui. In addition, there is a non-potable water well located on the Subject Property.
- The recent structures were served by cesspools, which have been filled. In addition, during the military usage of the Subject Property there was a sewer system present, which apparently discharged into large septic tanks. Note that the sewer system piping and/or remnants are likely still in-place on the Subject Property.
- There are no floor drains or sumps on the Subject Property.
- There are no transformers located on the Subject Property. In addition, all electrical services provided by Maui Electric Company have been terminated.
- There are no current or historic USTs on the Subject Property. There were several ASTs and mobile tank trailers on the Subject Property, some of which were used to store petroleum products by Mr. Poffenroth. These items were subsequently properly emptied/cleaned and disposed.
- Various pesticides are/were used as part of the sugarcane cultivation activities and other agricultural operations. In addition, fertilizers are/were used as part of the sugarcane cultivation activities and other agricultural operations.
- Fluorescent light bulbs and ballast were removed from the former structures and disposed.

- Asbestos was present in the former Subject Property buildings. Asbestos is also present in the water system piping which formerly serviced the former military structures. This water piping is currently present on the Subject Property.
- Paints and waste oil were generated and/or stored on the Subject Property by the former tenant. In addition, scrap metal, green waste, food waste, construction and demolition waste, used light bulbs, used CRTs, miscellaneous hazardous wastes, etc. were generated or stored by the former tenant or were generated as part of the site cleanup.
- Rubbish associated with the feeding of the pigs was indiscriminately disposed on the surface around the Subject Property and in some cases was partially buried under rock piles. All areas of suspect buried waste were excavated and the waste properly removed and disposed.
- Dead pigs are known to have been burned and buried on the Subject Property.
- There are no current or past gas stations on the Subject Property; however, such facilities may have existed on the adjacent military base.
- The former tenant operated a maintenance shop on the Subject Property. Activities included repairs and maintenance of vehicles and heavy equipment.
- The Subject Property and adjoining properties are not currently used as motor repair facilities, printing facilities, dry cleaners, photo developing, laboratories, junkyard, landfill activity, waste TSDF, or recycling facilities.
- A written release report was filed for minor petroleum releases that had not been addressed by the former tenant and after the former tenant was evicted from the Subject Property. The Subject Property was not listed on the DOH HEER Office's currently available release and site lists. All visible petroleum releases have been addressed.
- During the recent cleanup activities of the Subject Property, various waste streams (i.e. waste batteries, paints, etc.) were removed and disposed. There are currently one drum of broken automotive batteries, one drum of paint waste, and numerous used CRTs in storage pending disposal.
- Waste lagoons were operated as part of the former piggery operations. These ponds received animal waste.
- The Subject Property does not discharge wastewater on or adjacent to the site other than stormwater.
- There are no known environmental liens or governmental notifications relating to past or recurrent violations of environmental laws with respect to the Subject Property.



## 8.0 FINDINGS AND OPINIONS

### 8.1 Site Description

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

### 8.2 User Provided Information and Document Review

Review of user and landowner provided information and other publicly accessible documents indicated that the Subject Property formerly operated as an unpermitted solid waste management facility. Subsequent cleanup activities were completed and are pending clearance from the DOH SWS. In addition, an investigation to assess whether the former solid waste management activities have impacted the surface soil at the Subject Property is currently ongoing and will be reported under separate cover. Based on this information, ETC cannot dismiss the fact that Subject Property soils may have been impacted by the former solid waste management activities. As such this finding is considered a REC.

The landowner also indicated that the Subject Property was formerly used for the commercial cultivation of sugarcane. In addition, site reconnaissance activities indicated that a portion of the Subject Property is still used for sugarcane cultivation. Activities commonly associated with commercial sugar cultivation include the use and application of fertilizers, pesticides, and/or herbicides. As such, this finding is considered a historical REC. Based on discussions with DOH HEER Office personnel, studies of former agricultural lands in Hawaii indicate that high levels of agricultural contaminants are not typically found in former field areas. Note that no known pesticide spills have been reported on the Subject Property. In addition, A&B confirmed that there have been no pesticide spills on the Subject Property and that pesticides are applied in accordance with the specific pesticide label and applicable regulations. In addition, all pesticides were mixed at a centralized pesticide mixing site located off-site. Based on ETC's findings this historical REC does not appear to pose an immediate threat to human health or the environment and would not likely be the subject of an enforcement action, therefore, ETC believes that this historical REC is considered a *de minimis* condition.

Historic maps and documents provided by the landowner indicated that the Subject Property was part of the former Puunene Naval Air Station (PNAS). Review indicated that a "machine gun range" was formerly located on or partially on the southernmost portion of the Subject Property. "Earth revetments," presumably at the impact zone of the gun range, were formerly located near the current southern property line, and it is unclear whether these revetments were within or just outside of the Subject Property boundaries. The remaining areas of the former PNAS on the Subject Property appeared to be used primarily for quarters, office space, and barracks. Past environmental investigations and cleanups have been conducted on areas of the base west of the Subject Property. Although no evidence of past investigations of the gunnery range was identified, residual heavy metals are common contaminants associated with former military firing ranges. In addition, DOH HEER Office personnel indicated that lead contamination is commonly found within the "earthen berms" (i.e. revetments) associated with gun ranges, and contaminants are not typically found in other areas of gun ranges.

Aerial photograph review also indicated that a suspect excavated area was observed along the south border of the Subject Property, which corresponds to the approximate location of the former "machine gun range." The suspect excavation also corresponds to information provided by the landowner indicating that material was imported onto the southern portion of the Subject Property in or around 2004 as fill prior to resuming farming of this area.

Based on ETC's review, this finding is considered a historical recognized environmental condition (REC). While the "earth revetments," are no longer present and there is evidence that soil in the presumed gunnery range impact zone has been excavated at some time in the past, based on information provided by the landowner coupled with ETC's telephone correspondence with DOH HEER Office personnel, ETC cannot dismiss the potential presence of residual contamination from this historical REC and as such the former "machine gun range" is considered a current REC for the Subject Property.

No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

### 8.3 Records Review

#### 8.3.1 Standard Environmental Record Sources

##### *Federal NPL and Delisted NPL*

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

##### *Federal CERCLIS and CERCLIS NFRAP*

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Federal RCRA CORRACTS**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Federal RCRA (non-CORRACTS) TSD Facilities**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Federal RCRA Generator**

Although not identified by the contracted database, information provided by the landowner coupled with the available online RCRA database information revealed that Subject Property was identified as a RCRA Large Quantity Generator (LQG). Specifically, the "Former Poffenroth Piggery" is listed as a RCRA LQG with the RCRA Facility ID: HIR000138545. No apparent RCRA violations were noted. In addition, with the exception of the 'hazmat' bin pending disposal, site reconnaissance findings indicated no other apparent hazardous waste storage and/or generation on the Subject Property. As such, no significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Federal Institutional Control/Engineering Control Registries**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Federal ERNS**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Equivalent NPL and CERCLIS**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Landfill and/or Solid Waste Disposal**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Leaking Underground Storage Tanks**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Registered Underground Storage Tanks**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Institutional Control Registry**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Voluntary Cleanup/Response Sites**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**State Brownfields**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Unmappable/Ophan Sites**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**8.3.2 Additional Environmental Record Sources**

Database review confirmed that Subject Property was formerly part of the PNAS, which was identified as a FUDS by the contracted database. The PNAS was discussed as part of Section 4.3.2 and 8.2 and therefore will not be repeated here. No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**8.3.3 Historical Use Information on the Subject and Adjoining Properties**

**Aerial Photograph Review**

Aerial photograph review indicated that the Subject Property was fully developed and may have been used as an air strip prior to 1954. The PNAS was discussed as part of Sections 4.3.2 and 8.2 and therefore will not be repeated here. No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Fire Insurance Maps**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Property Tax Files and Land Title Records**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

**Building Permits**

No significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

#### 8.4 Site Reconnaissance

Site reconnaissance activities confirmed that solid waste cleanup activities have been completed with the exception of a limited quantity of waste. ETC understands that the remaining waste (i.e. batteries, paint, CRTs, etc.) is scheduled for removal and disposal. The former solid waste activities associated with the Subject Property was discussed as part of Section 4.3.1 and 8.2 and therefore will not be repeated here. The former usage of the Subject Property for sugarcane cultivation was discussed as part of Section 8.2 and therefore will not be repeated here. No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

#### 8.5 Interviews

Interview findings indicate that a written release report was filed for the Subject Property for minor petroleum releases that had not been addressed by the former tenant. These releases were discovered after the former tenant was evicted from the Subject Property. The Subject Property was not listed on the DOH HEER Office's currently available release and site lists. Although not listed, the landowner confirmed that all visible petroleum releases have been addressed. In addition, no evidence of gross petroleum impacts were observed by ETC personnel during site reconnaissance activities. Based on this information, these minor petroleum releases are not considered an REC for the Subject Property.

The former uses of the Subject Property for sugar cultivation and an unpermitted solid waste management facility were discussed as part of Section 8.2 and therefore will not be repeated here. The presence of former PNAS facility on the Subject Property was discussed as part of Sections 4.3.2 and 8.2 and therefore will not be repeated here. No other significant findings to indicate suspect RECs, historical RECs, or *de minimis* conditions were identified.

#### 9.0 DATA GAPS

Data gaps, which are defined as the lack of or inability to obtain information required for this Phase I ESA despite good faith efforts by the environmental professional to gather such information were identified during this Phase I ESA. ETC identified the following data gaps:

- Historical records sources within five year intervals were not available for review. However, since all available historical records were reviewed (i.e. aerial photos, Sanborn Maps, etc.), ETC concludes that this "data failure" does not represent a significant data gap.
- ETC did not inspect all accessible areas of the Subject Property. Due to safety concerns, ETC's site reconnaissance activities excluded the densely vegetated areas of the Subject Property. In addition, structures associated with the radio tower area were also inaccessible at the time of ETC's site reconnaissance activities. These inaccessible areas were not expected to significantly impact the Subject Property. As such, this data gap is not considered significant.

## 10.0 CONCLUSIONS

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-05 of (2) 3-8-008; Parcel 19 (portion) located off of South Fire Break Road, Kihei, Maui, Hawaii (the Subject Property). Any exceptions to, or deletions from, the ASTM Practice E1527-05 are described in Section 11.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Subject Property except for the following:

- Potential presence of residual contaminants associated with former solid waste management activities on the Subject Property.
- Potential presence of residual contamination associated with historic usage of the southernmost portion of the Subject Property as a "machine gun firing" range

## 11.0 DEVIATIONS AND ADDITIONAL SERVICES

### 11.1 Deviations

No client imposed constraints or deletions were requested. As such, there were no deletions and/or deletions from the ASTM Practice E1527-05 upon completion of this Phase I ESA.

### 11.2 Additional Services

#### 11.2.1 Limited Surface Soil Investigation

At the request of the A&B, ETC concurrently conducted a "Limited Surface Soil Investigation" on the Subject Property. The results of these investigative activities were conducted concurrently and will be reported under separate cover.

#### 11.2.2 Solid Waste Clearance and Environmental Compliance

Solid waste activities and regulatory compliance issues pertaining to solid waste and hazardous substances are considered non-scope considerations for the Phase I ESA. As such, ETC was contacted by the landowner to complete a visual inspection of the Subject Property to determine whether such violations associated with hazardous substances and the former unpermitted solid waste management activities previously discussed in Section 4.3 have been adequately addressed.

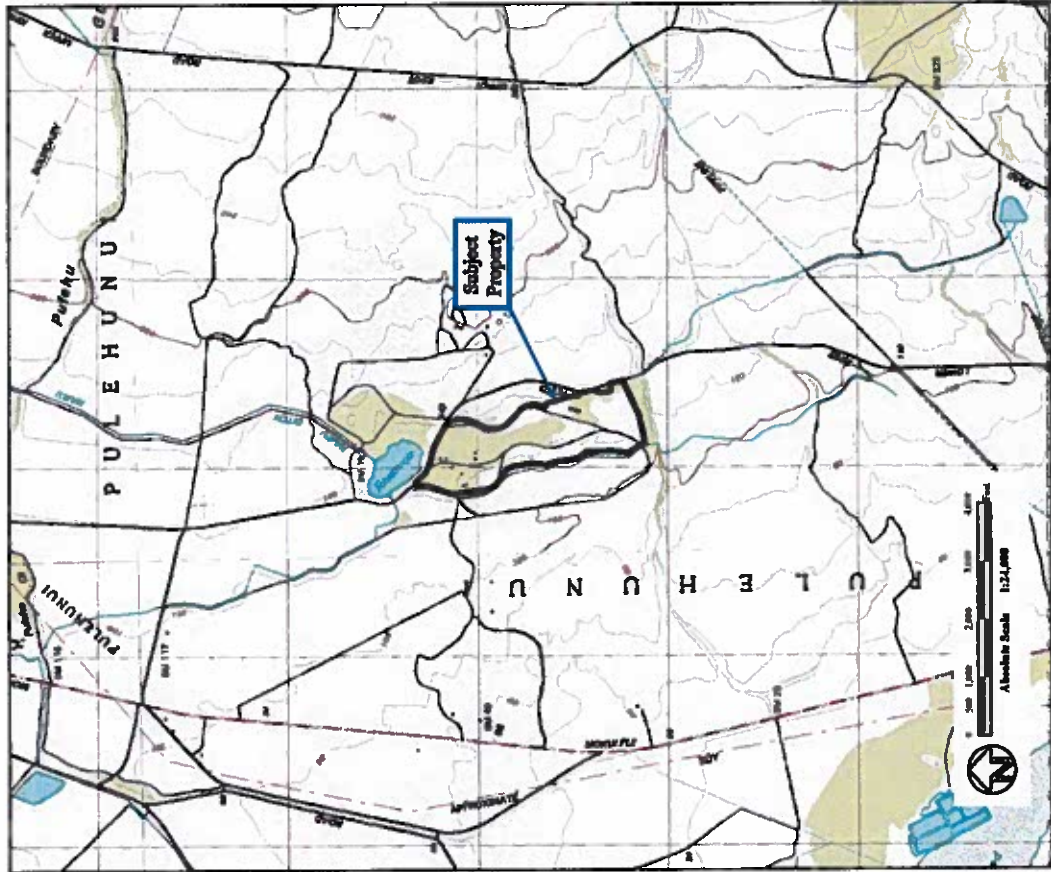
Pursuant to the landowner's request, the following opinions are based on ETC's visual inspection of the Subject Property conducted on February 18, 2011. Correspondence with Mr. Todd Nichols of the DOH SWS indicated that site clearance would be issued provided that the remaining solid waste and "plastic flagging material" had been removed from the Subject Property. During the visual inspection, no residual "plastic flagging" or substantial quantities of solid waste were observed on the Subject Property. In addition, with the exception of elevated total petroleum hydrocarbons as oil (TPH-O) and total lead concentrations identified in the surface soils at the Subject Property, no known violations or issues pertaining to hazardous substances were observed on the Subject Property.

Note that concrete foundations, slabs, and miscellaneous fencing, animal troughs, etc. were observed throughout the Subject Property. However, these items are not in a condition to be considered solid waste. In addition, apparent exploratory solid waste excavations were noted on the north portion of the Subject Property. Based on ETC's inspection of these excavations, no residual buried solid waste appears to be present in these excavated areas. Based on these visual findings, no additional solid waste cleanup appears necessary at this time. In addition, all formerly documented solid waste appears to have been adequately removed from the Subject Property. Furthermore, although the DOH has not issued a formal site clearance for the Subject Property, solid waste cleanup activities appear to have been completed and the Subject Property does not appear to be in violation of any applicable solid waste regulations. Except as noted above, following inspection of the Subject Property, the Subject Property, to the knowledge of ETC, was not then in violation of applicable law pertaining to hazardous substances.

## 12.0 REFERENCES

- ASTM International. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E1527-05.
- Environmental Data Resources, Inc., January 24, 2011. *The EDR Radius Map with GeoCheck*. Report Inquiry No. 2972944.2s.
- Environmental Data Resources, Inc., January 24, 2011. *Certified Sanborn® Map Report*. Order No. 2972944.3.
- Environmental Data Resources, Inc., January 24, 2011. *EDR Historical Topographic Map Report*. Order No. 2972944.4.
- Environmental Data Resources, Inc., January 25, 2011. *The EDR Aerial Photo Decade Package*. Order No. 2972944.5.
- Environmental Data Resources, Inc., January 25, 2011. *The EDR Environmental LienSearch Report*. Order No. 2972944.7.
- Macdonald, G.A., A.T. Abbot, and F.L. Peterson. 1983. *Volcanoes in the Sea*. University of Hawaii Press.
- Maui County Property Tax Office. Ownership and Building Permit records.
- Mink, John F. and Stephen L. Lau. March 1990. *Aquifer Identification and Classification for Maui: Groundwater Protection Strategy for Hawaii*.
- State of Hawaii Department of Health. Solid and Hazardous Waste Branch records.
- State of Hawaii Taxation Map Bureau. Tax Map Key (2) 3-8-008: Parcel 019.
- U.S. Department of Agriculture Soil Conservation Service. 1972. *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*.
- U.S. Department of Interior Geological Survey. 1992. Puu O Kali, Hawaii Quadrangle, 7.5 Minute Series (Topographic Map).

## APPENDIX I FIGURES

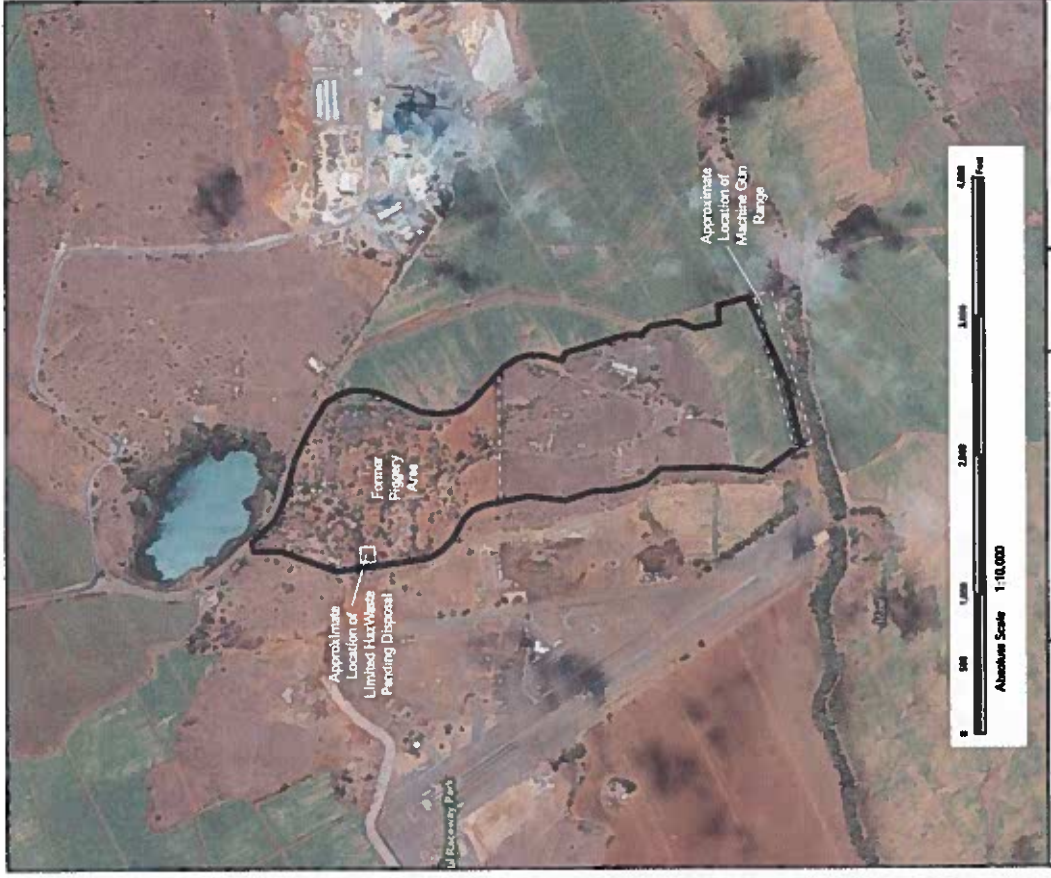


**Figure 1 - Site Location Map**  
 Former Puuone Piggery Site  
 South Fire Break Road  
 Kihui, Maui, Hawaii 96753  
 TMK (2) 3-8-008; Parcel 19

Project No.  
 11-1001

March 2011

**EnviroServices & Training Center, LLC**

**Figure 2 - Site Plan**  
 Former Puuone Piggery Site  
 South Fire Break Road  
 Kihui, Maui, Hawaii 96753  
 TMK (2) 3-8-008; Parcel 19

Project No.  
 11-1001

March 2011

**EnviroServices & Training Center, LLC**



APPENDIX II  
PHOTOGRAPHIC DOCUMENTATION



Photograph 1: View of 'hazmat' bin containing limited quantities of waste (i.e. CRTs, batteries, etc.) located on the northwest portion of the Subject Property.

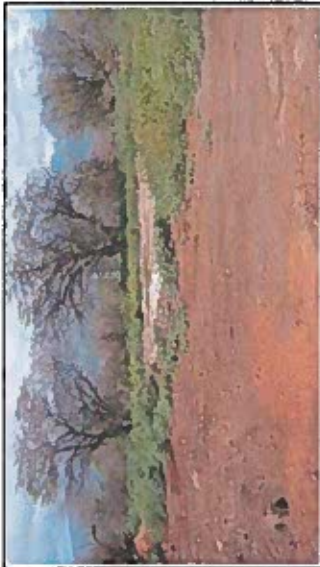


Photograph 2: View of the northwest portion of the Subject Property.



Photograph 3: View of concrete pad near the north entrance of the Subject Property.

 <b>EnviroServices 6</b> <b>Training</b> <b>Center, LLC</b>	Project No. 11-1021	<b>Photographic Documentation</b> Former Fluorine Piggy Site South Fire Break Road Kihui, Maui, Hawaii 96753 TMK (2) 3-4-000: Parcel 19
	March 2011	



Photograph 4: View of concrete pad located near the north entrance of the Subject Property.



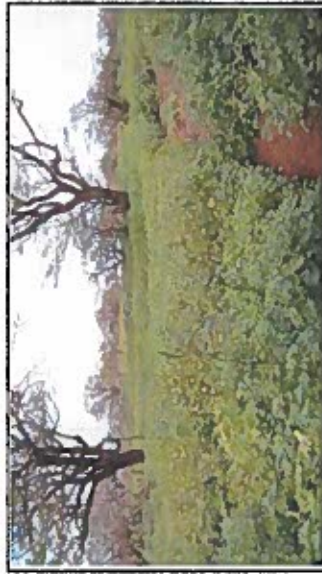
Photograph 5: View of the north portion of the Subject Property near the north front entrances.



Photograph 6: View of the northwest portion of the Subject Property.



Photograph 7: View of the northeast portion of the Subject Property.



Photograph 8: View of the northeast portion of the Subject Property.



Photograph 9: View of remnant fencing and pig troughs located on the northeast portion of the Subject Property.

	EnviroServices & Training Center, LLC	Project No. 11-1071	Photographic Documentation Former Puuone Piggy Site South Fire Break Road Kihei, Maui, Hawaii 96753 TMK (2) 3-8-008: Parcel 19
		March 2011	

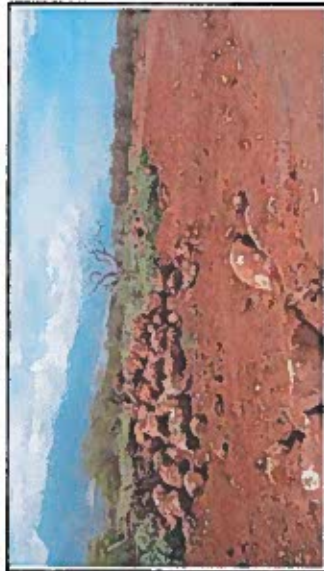
	EnviroServices & Training Center, LLC	Project No. 11-1071	Photographic Documentation Former Puuone Piggy Site South Fire Break Road Kihei, Maui, Hawaii 96753 TMK (2) 3-8-008: Parcel 19
		March 2011	



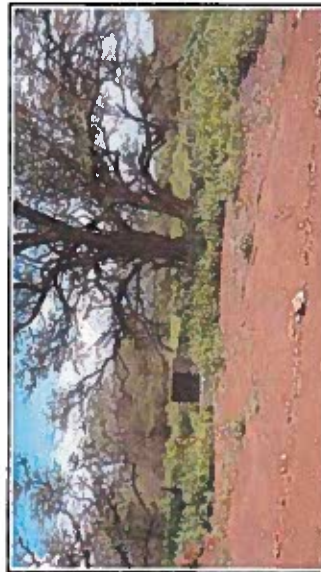
Photograph 10: View of the central portion of the Subject Property.



Photograph 11: View of the central portion of the Subject Property.



Photograph 12: View of the non-potable groundwater well located on the central portion of the Subject Property.



Photograph 13: View of the central portion of the Subject Property.



Photograph 14: View of the central portion of the Subject Property.



Photograph 15: View of the central portion of the Subject Property.



Photographic Documentation  
Former Puuone Piggery Site  
South Fire Break Road  
Kihei, Maui, Hawaii 96753  
TMK (2) 3-3-000; Parcel 19

Project No. 11-1001  
March 2011



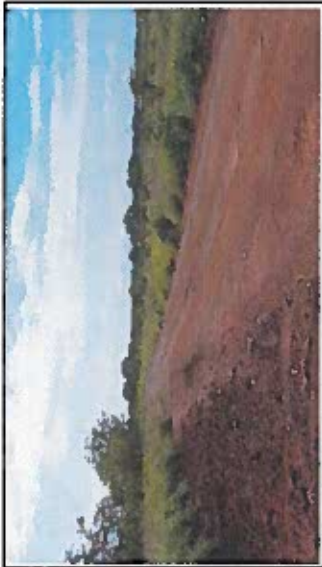
EnviroServices &  
Treating  
Center, LLC

Photographic Documentation  
Former Puuone Piggery Site  
South Fire Break Road  
Kihei, Maui, Hawaii 96753  
TMK (2) 3-3-000; Parcel 19

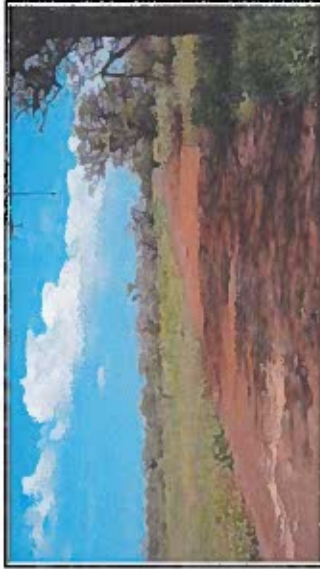
Project No. 11-1001  
March 2011



EnviroServices &  
Treating  
Center, LLC



Photograph 16: View of road located on the central portion of the Subject Property.



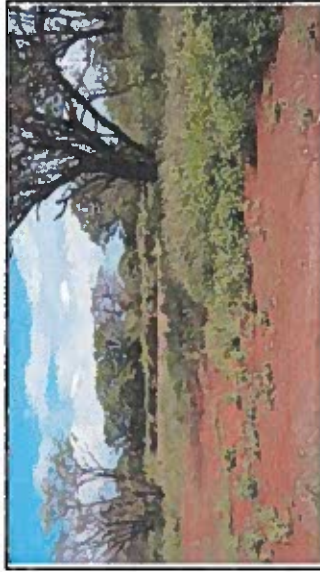
Photograph 17: View of the south portion of the Subject Property.



Photograph 18: View of the south portion of the Subject Property.



Photograph 19: View of the south portion of the Subject Property.



Photograph 20: View of concrete slab located on the southeast portion of the Subject Property.



Photograph 21: View of the south portion of the Subject Property.



EnviroServices & Training Center, LLC

Project No. 11-1001

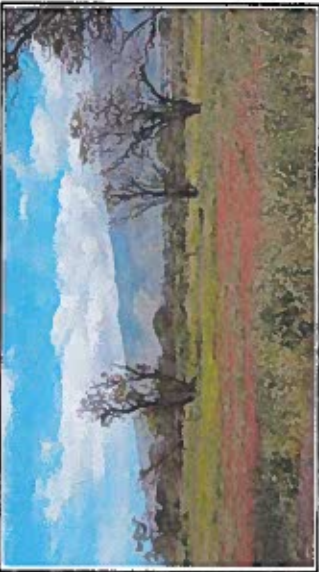
March 2011

Photographic Documentation  
Former Puuone Piggery Site  
South Fire Break Road  
Kihei, Maui, Hawaii 96753  
TMK (2) 3-B-008: Parcel 19

Project No. 11-1001

March 2011

Photographic Documentation  
Former Puuone Piggery Site  
South Fire Break Road  
Kihei, Maui, Hawaii 96753  
TMK (2) 3-B-008: Parcel 19



Photograph 22: View of the southwest portion of the Subject Property.



Photograph 23: View of the southwest portion of the Subject Property.



Photograph 24: View of the southwest portion of the Subject Property.



Photograph 25: View of the south portion of the Subject Property.




Photograph 26: View of the south portion of the Subject Property.



Photograph 27: View of the southernmost portion of the Subject Property.

 <b>EnviroServices 6</b> <b>Training</b> <b>Center, LLC</b>	Project No. 11-1001	Photographic Documentation Former Puuone Piggery Site South Fire Break Road Kihel, Maui, Hawaii 96753 TMK (2) 3-3-008; Parcel 19
	March 2011	

 <b>EnviroServices 6</b> <b>Training</b> <b>Center, LLC</b>	Project No. 11-1001	Photographic Documentation Former Puuone Piggery Site South Fire Break Road Kihel, Maui, Hawaii 96753 TMK (2) 3-3-008; Parcel 19
	March 2011	

**Former Puunene Piggery Site**  
South Fire Break Road  
Kihei, HI 96753

Inquiry Number: 2972944.3  
January 24, 2011

APPENDIX III  
HISTORICAL RESEARCH DOCUMENTATION

Certified Sanborn® Map Report

440 Wheelers Farm Road  
Middletown, CT 06461  
800.352.0050  
www.edrnet.com



## Certified Sanborn® Map Report

1/24/11

<b>Site Name:</b> Former Puunene Piggery Site South Fire Break Road Kiheti, HI 96753	<b>Client Name:</b> Enviro Svcs. and Trng. Center 505 Ward Avenue Honolulu, HI 96814
<b>EDR Inquiry #:</b> 2972944.3	<b>Contact:</b> Sharita Nakashima



The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Enviro Svcs. and Trng. Center were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn) and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

### Certified Sanborn Results:

**Site Name:** Former Puunene Piggery Site  
**Address:** South Fire Break Road  
**City, State, Zip:** Kiheti, HI 96753  
**Cross Street:**  
**P.O. #:** NA  
**Project:** 11-1001  
**Certification #:** 5450-4D9A-9EB7



Sanborn Library Search results  
Certification # 5450-4D9A-9EB7

### 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.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

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**Former Puunene Piggery Site**  
South Fire Break Road  
Kiheti, HI 96753

**Inquiry Number: 2972944.4**  
**January 24, 2011**

# EDR Historical Topographic Map Report



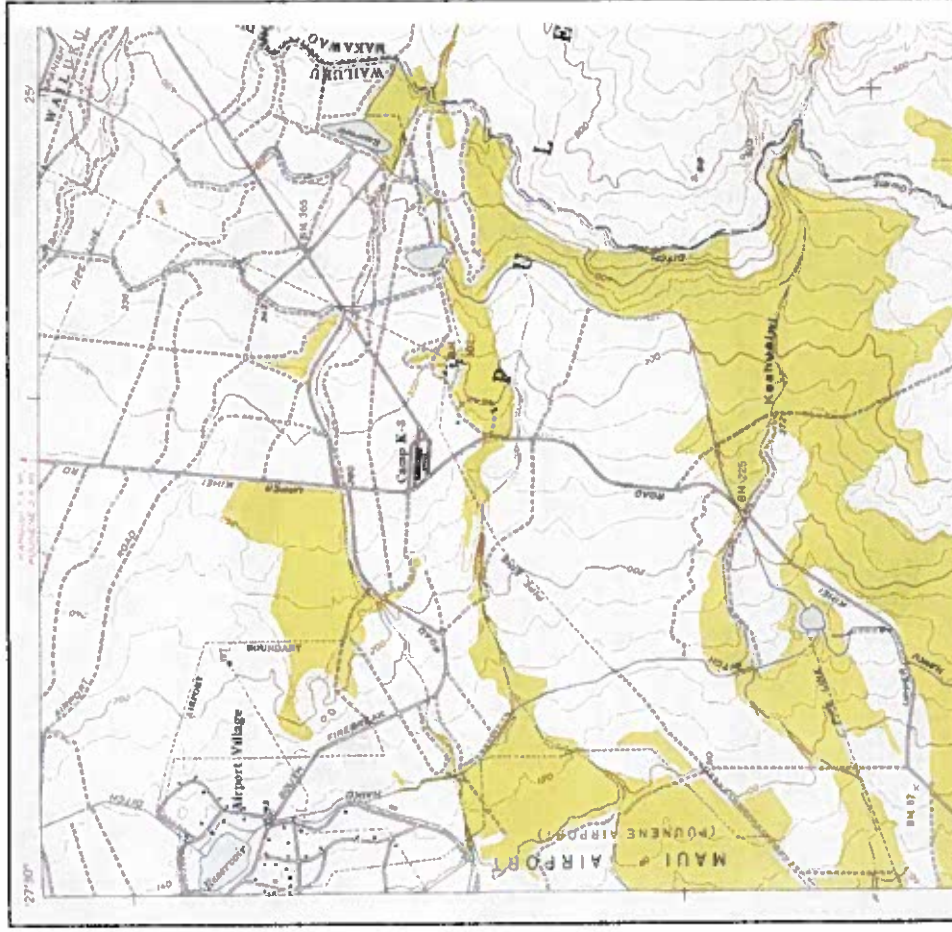
Environmental Data Resources Inc

4410 Wheelers Farms Road  
Millford, CT 06461  
800.352.0050  
[www.edrnet.com](http://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. EDR's Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

## Historical Topographic Map



<b>TARGET QUAD</b> NAME: Puu O Keii, HI MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24,000	<b>SITE NAME:</b> Former Punene Piggery Site ADDRESS: South Fire Break Road Kihel, HI 96753 LAT/LONG: 20.8154 / -156.4528	<b>CLIENT:</b> Enviro Svcs. and Trng. Center <b>CONTACT:</b> Shanda Nakashima <b>INQUIRY#:</b> 2972944.4 <b>RESEARCH DATE:</b> 01/24/2011
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**Thank you for your business.**  
 Please contact EDR at 1-800-352-0050  
 with any questions or comments.

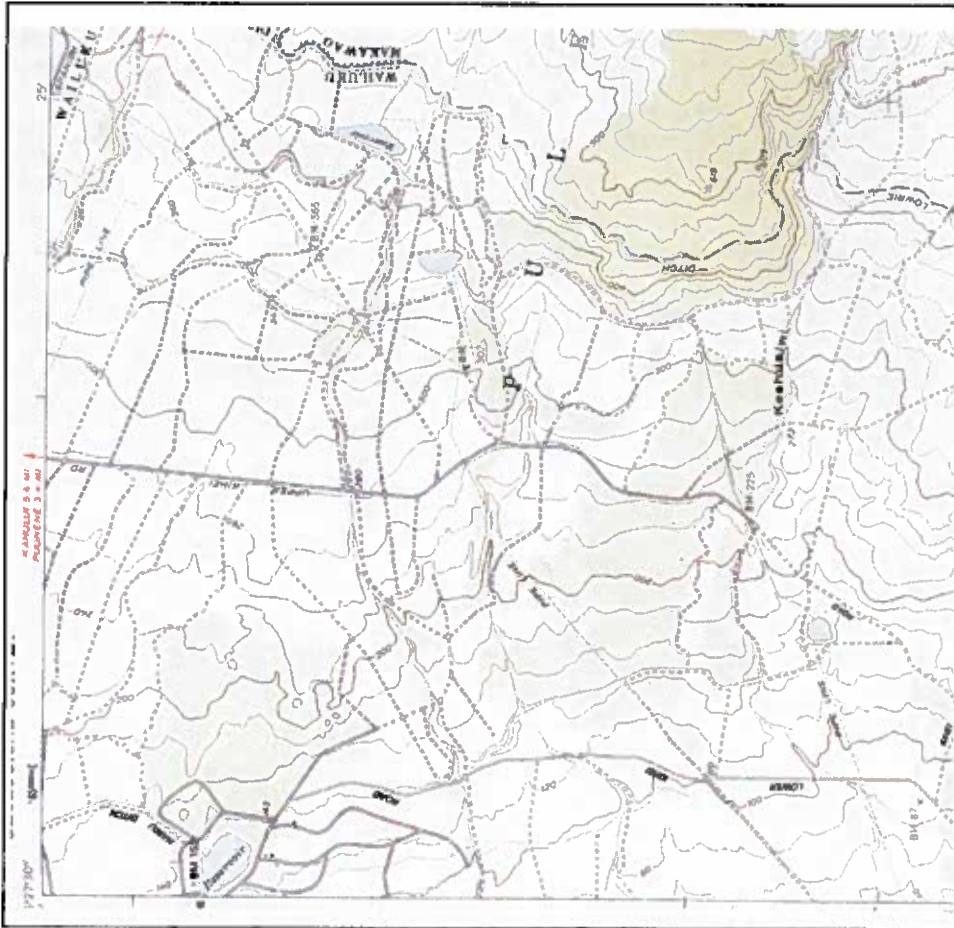
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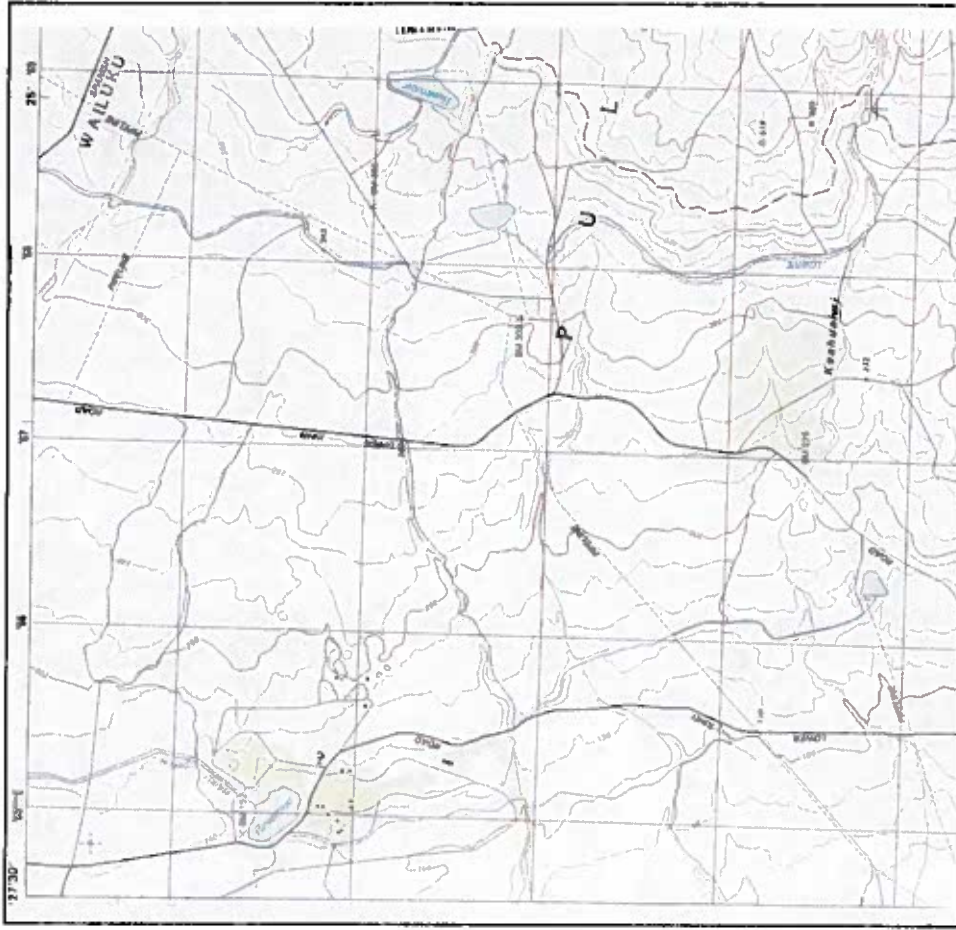
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Historical Topographic Map



<p>N ↑</p>	
<p><b>TARGET QUAD</b>  <b>NAME:</b> Puu O Ka'i, HI  <b>MAP YEAR:</b> 1983  <b>SERIES:</b> 7.5  <b>SCALE:</b> 1:24,000</p>	<p><b>SITE NAME:</b> Former Puuone Piggery Site  <b>ADDRESS:</b> South Fire Break Road                  Kihel, HI 96753  <b>LAT/LONG:</b> 20.8154 / -156.4528</p>
<p><b>CLIENT:</b> Enviro Svcs. and Tmg. Center  <b>CONTACT:</b> Shanta Nakasatima  <b>INQUIRY#:</b> 2972944.4  <b>RESEARCH DATE:</b> 01/24/2011</p>	<p><b>CLIENT:</b> Enviro Svcs. and Tmg. Center  <b>CONTACT:</b> Shanta Nakasatima  <b>INQUIRY#:</b> 2972944.4  <b>RESEARCH DATE:</b> 01/24/2011</p>

Historical Topographic Map



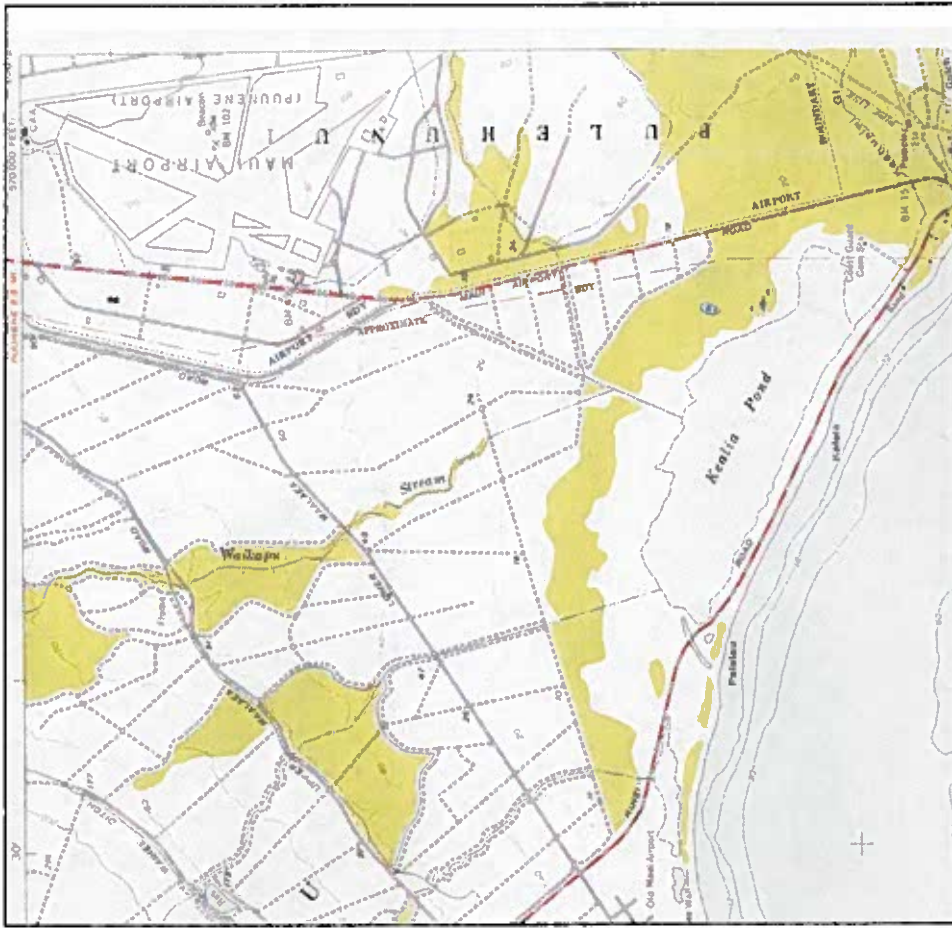
<p>N ↑</p>	
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<p><b>CLIENT:</b> Enviro Svcs. and Tmg. Center  <b>CONTACT:</b> Shanta Nakasatima  <b>INQUIRY#:</b> 2972944.4  <b>RESEARCH DATE:</b> 01/24/2011</p>	<p><b>CLIENT:</b> Enviro Svcs. and Tmg. Center  <b>CONTACT:</b> Shanta Nakasatima  <b>INQUIRY#:</b> 2972944.4  <b>RESEARCH DATE:</b> 01/24/2011</p>

Historical Topographic Map



<p>ADJOINING QUAD                  NAME: Maialaea, HI                  MAP YEAR: 1983                  SERIES: 7.5                  SCALE: 1:24,000</p>		<p>CLIENT: Enviro Svcs. and Trng. Center                  CONTACT: Shauna Nakasabina                  INQUIRY#: 2972944.4                  RESEARCH DATE: 01/24/2011</p>	
<p>SITE NAME: Former Puunene Piggery Site                  ADDRESS: South Fire Break Road                  Kāhala, HI 96753                  LAT/LONG: 20.8154 / -156.4528</p>		<p>CLIENT: Enviro Svcs. and Trng. Center                  CONTACT: Shauna Nakasabina                  INQUIRY#: 2972944.4                  RESEARCH DATE: 01/24/2011</p>	

Historical Topographic Map



<p>ADJOINING QUAD                  NAME: Maialaea, HI                  MAP YEAR: 1984                  SERIES: 7.5                  SCALE: 1:24,000</p>		<p>CLIENT: Enviro Svcs. and Trng. Center                  CONTACT: Shauna Nakasabina                  INQUIRY#: 2972944.4                  RESEARCH DATE: 01/24/2011</p>	
<p>SITE NAME: Former Puunene Piggery Site                  ADDRESS: South Fire Break Road                  Kāhala, HI 96753                  LAT/LONG: 20.8154 / -156.4528</p>		<p>CLIENT: Enviro Svcs. and Trng. Center                  CONTACT: Shauna Nakasabina                  INQUIRY#: 2972944.4                  RESEARCH DATE: 01/24/2011</p>	



## EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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*Thank you for your business.*  
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Former Puunene Piggery Site  
South Fire Break Road  
Kihei, HI 96753

Inquiry Number: 2972944.5  
January 25, 2011

## The EDR Aerial Photo Decade Package

440 Wheelers Farms Road  
Milledale, CT 06461  
800.352.0050  
www.edrnet.com

 Environmental Data Resources Inc

**Date EDR Searched Historical Sources:**

Aerial Photography January 25, 2011

**Target Property:**

South Fire Break Road  
Kihei, HI 96753

<b>Year</b>	<b>Scale</b>	<b>Details</b>	<b>Source</b>
1954	Aerial Photograph Scale: 1"=750'	Panel # 20156-G4, WAILUKU, HI/Flight Date: April 04, 1954	EDR
1976	Aerial Photograph Scale: 1"=1000'	Panel # 20156-G4, WAILUKU, HI/Flight Date: December 20, 1976	EDR
1992	Aerial Photograph Scale: 1"=1000'	Panel # 20156-G4, WAILUKU, HI/Flight Date: September 23, 1992	EDR





Former Puumene Piggery Site  
South Fire Break Road  
Kithui, HI 96752

Inquiry Number: 2972944.7  
January 25, 2011

## EDR Environmental LienSearch™ Report

The EDR Environmental Lien Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description,
- search for ownership information,
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registrars of deeds, county clerks' offices, etc.,
- access a copy of the deed,
- search for environmental encumbering instrument(s) associated with the deed,
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description), and
- provide a copy of the deed or title documents reviewed.

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## The EDR Environmental LienSearch™ Report



440 Whalers Farm Road  
Middletown, CT 06461  
800.352.0050  
www.edrdata.com

**EDR Environmental LienSearch™ Report**

**EDR Environmental LienSearch™ Report**

**TARGET PROPERTY INFORMATION**

**ADDRESS**  
**FORMER PULUENE PIGGERY SITE**  
**SOUTH FIRE BREAK ROAD**  
 Khei, HI 96753

**RESEARCH SOURCE**

Source 1: HI State Bureau of Conveyances  
 Source 2: N/A  
 Examiner's Note: Public records of HI State Bureau of Conveyances were searched from January 1, 1980 to January 17, 2011, and no other deeds resting title in the subject property were found of record during the period searched.

**PROPERTY DESCRIPTION**

Current Owner: A&B Hawaii Inc  
 Legal Description: See deed attached  
 Property Identifiers: APN: 3-5-008-019-0000  
 General Comments: N/A

**PROPERTY INFORMATION**

Deed 1:  
 Type of Deed: Sub-Sublease  
 Title is vested in: Lease Broadcasting Corp and Rey Cal Broadcasting Inc  
 Title received from: A&B Hawaii Inc  
 Date Executed: August 4, 1994  
 Date Recorded: October 10, 1994  
 Book:  
 Page:  
 Volume:  
 Instrument #: 94-171517  
 Docket:

**Land Record Comments:**

According to the crown, this property has been owned by A&B Hawaii Inc prior to our search period. This lease is the last recorded document of record.

**ENVIRONMENTAL LIEN**

Environmental Lien: Found  
 If found: Not Found X

1<sup>st</sup> Party:  
 2<sup>nd</sup> Party:  
 Dated:  
 Recorded:  
 Book:  
 Page:  
 Docket:  
 Volume:  
 Instrument:  
 Comments:  
 Miscellaneous:

**OTHER ACTIVITY AND USE LIMITATIONS (AULs)**

Other AUL's: Found Not Found X  
 If found:

1<sup>st</sup> Party:  
 2<sup>nd</sup> Party:  
 Dated:  
 Recorded:  
 Book:  
 Page:  
 Docket:  
 Volume:  
 Instrument:  
 Comments:

STATE OF MAINE  
RECORDS DEPARTMENT  
OCT 14, 1982 01:59 PM  
Doc No: 84-11511

MAINE REGISTER OF DEEDS  
(OFFICIALS TAX: \$105.00)

MAINE STATE

---

LAND COURT SYSTEM  
BOOKED BY: 11/1/82 PAGE 133 OF 141

CAROLINE MAE STORM  
1481 Willow Street  
Portland, Maine 04102

Attorney: Eric W. Jones, Esq.  
Telephone: 877-1234

DEED EXHIBIT

**SHORT TERM SUBLEASE**

This Short Term Sublease ("Short Term Lease"), made this 17th day of August, 1982, by and between LISA MARRAS and CAROLINE MAE STORM, both of legal age and single, residing in the State of Maine, whose principal place of business and post office address is 1700 Main Street, Portland, Maine 04102, and ERIC W. JONES, Esq., Attorney at Law, whose principal place of business and post office address is 230 Main Highway, Portland, Maine 04101 ("Mr. Jones").

**WITNESSETH**

That Lisa and Carol (together referred to as the "Sub-lessees") obtained from July 14, 1982 (the "Sub-lease") certain premises located in Portland, Maine, upon the terms, conditions and covenants set forth herein, that certain parts of such property described as follows:

A picture of that certain property situated at Ponce de Leon and County of Dade, State of Florida, consisting of the contents of the following description as shown on the plat identified as a portion of the plat for Mr. J. B. B. and more particularly described in that certain Sublease dated Sublease, and Lease, to Sublease, recorded in the Bureau of Conveyances, State of Florida, as Document No. 30-18735.

It is hereby ordered that the same for a term commencing upon June 21, 1941 and terminating upon December 31, 1941.

This Short Term Sub-Lease is executed for the purpose of giving notice of the existence of the Sub-Lease, recorded from time to time, for the full description of the rights and duties of Lease and Sub-Lease, and this Short Term Sub-Lease, and the interpretation of their rights and duties of Lease and Sub-Lease, the Sub-Lease.

IN WITNESS WHEREOF, the parties hereto have executed this Short Term Sub-Lease as of the date first above written.

BY: [Signature] LENA SINGHASTING COB

BY: [Signature] Mrs. Vera Merrill  
Mrs. Vera Merrill

"BY-CO" "Lease"

STATE OF FLORIDA  
COUNTY OF DADE

vs.

On this 14th day of August, 1941, before me personally appeared [Signature] being personally known, and acknowledged to me as the true and lawful owner of the property therein described, and having been duly authorized to execute such instrument in such capacity.

[Signature]  
Notary Public, State of Florida

L. S.

2.

STATE OF INDIANA  
COUNTY OF ST. JOHNS

vs.

On this 21st day of July, 1934, before me personally appeared Doris, known to me personally known, she, a woman of the county of St. Johns, Indiana, and she, a woman of the county of St. Johns, Indiana, in the presence of me, the undersigned, a Notary Public in and for the State of Indiana, being duly qualified to execute such instrument in such capacity.

L. A. ...  
Notary Public, State of Indiana

My commission expires: 12-31-35

APPENDIX IV  
REGULATORY RECORDS DOCUMENTATION (EDR Radius Map Report)



Former Puunene Piggery Site  
South Fire Break Road  
Kihei, HI 96753

Inquiry Number: 2972944.2s  
January 24, 2011

The EDR Radius Map™ Report with GeoCheck®



Environmental Data Resources, Inc.

440 Wheelers Farms Road  
Milford CT 06461  
Toll Free: 800.352.0050  
www.edr.net

FORM-EDR-1007

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). This report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Investigations (40 CFR Part 312), by ASTM Standard Practices for Environmental Site Assessments (E 1527-03) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

SOUTH FIRE BREAK ROAD  
KAPÉI, HI 96753

#### COORDINATES

Latitude (North): 20.815400 - 20° 48' 55.4"  
Longitude (West): 156.452800 - 156° 27' 10.1"  
Universal Transverse Mercator: Zone 4  
UTM X (Meters): 765121.8  
UTM Y (Meters): 2303676.8  
Elevation: 124 ft. above sea level

#### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 20156-G4 WALLUKU, HI  
Most Recent Revision: Not reported

#### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

#### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the search radius around the target property for the following databases:

#### STANDARD ENVIRONMENTAL RECORDS

##### *Federal NPL site list*

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

##### *Federal Delisted NPL site list*

Delisted NPL..... National Priority List Deletions

## EXECUTIVE SUMMARY

##### *Federal CERCLIS list*

CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System  
FEDERAL FACILITY..... Federal Facility Site Information listing

##### *Federal CERCLIS NFRAP site list*

CERC-NFRAP..... CERCLIS No Further Remedial Action Planned

##### *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-LOG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

##### *Federal institutional controls / engineering controls registries*

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls

##### *Federal ERMS list*

ERMS..... Emergency Response Notification System

##### *State- and tribal- equivalent CERCLIS*

SHWS..... Sites List

##### *State and tribal landfill and/or solid waste disposal site lists*

SWFLF..... Permitted Landfills in the State of Hawaii

##### *State and tribal leaking storage tank lists*

LUST..... Leaking Underground Storage Tank Database  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

##### *State and tribal registered storage tank lists*

UST..... Underground Storage Tank Database  
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

## EXECUTIVE SUMMARY

INST CONTROL..... Sites with Institutional Controls

*State and tribal voluntary cleanup sites*

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Response Program Sites

*State and tribal Brownfields sites*

BROWNFIELDS..... Brownfields Sites

**ADDITIONAL ENVIRONMENTAL RECORDS**

*Local Brownfield lists*

US BROWNFIELDS..... A Listing of Brownfields Sites

*Local Lists of Landfill / Solid Waste Disposal Sites*

DEBRIS REGION 9..... Texas Martinez Reservation Illegal Dump Site Locations

ODL..... Open Dump Inventory

INDIAN ODL..... 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

LUCIS..... Land Use Control Information System

*Records of Emergency Release Reports*

HMIRS..... Hazardous Materials Information Reporting System

SPLRS..... Release Notifications

*Other Ascertainable Records*

RCRA-NonGen..... RCRA - Non Generators

DOT OPS..... Incident and Accident Data

DD..... Department of Defense Sites

CONSENT..... Superfund (CERCLA) Consent Deceases

ROD..... Records of Decision

UMTRA..... Uranium Mill Tailings Sites

MINES..... Mining Header Heap File

TRIS..... Toxic Chemical Release Inventory System

TSCA..... Toxic Substances Control Act

FTTS..... FIFRA/TSCA Training 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

## EXECUTIVE SUMMARY

ICIS..... Integrated Compliance Information System

PAIDS..... PCB Activity Database System

MATS..... Material Licensing Tracking System

RADINFO..... Radiation Information Database

FINDIS..... Facility Index System/Facility Registry System

RCRA..... RCRA Administrative Action Tracking System

UIC..... Underground Injection Wells Listing

DRYCLEANERS..... Permitted Drycleaner Facility Listing

AKRS..... List of Permitted Facilities

INDIAN RESERV..... Indian Reservations

SCRD DRYCLEANERS..... State Condition for Remediation of Drycleaners Listing

COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List

COAL ASH DOE..... Steam-Electric Plant Operation Data

PCB TRANSFORMER..... PCB Transformer Registration Database

### EDR PROPRIETARY RECORDS

**EDR Proprietary Records**

Manufactured Gas Plants..... EDR Proprietary Manufactured Gas Plants

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and 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.

### ADDITIONAL ENVIRONMENTAL RECORDS

**Other Ascertainable Records**

FUDDS: 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.

A review of the FUDDS list, as provided by EDR, and dated 12/31/2009 has revealed that there is 1 FUDDS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAUI AIRPORT MILITARY RES		NW 1/4 - 1/2 (0.472 mi.)	1	7

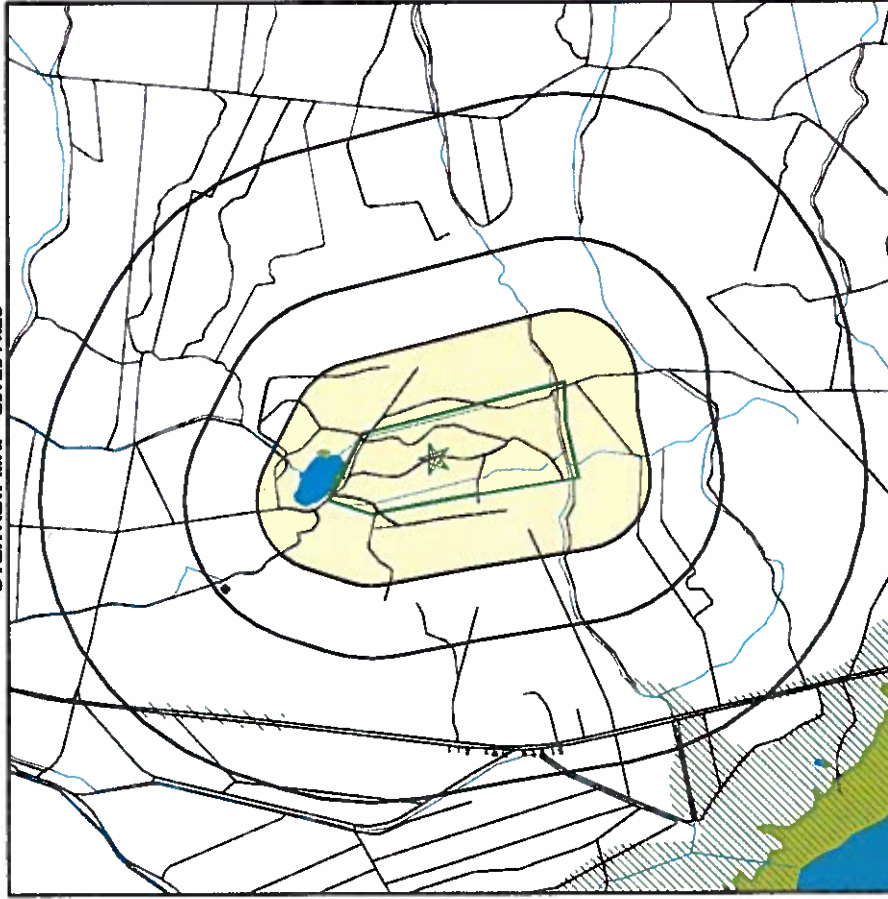
## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

Site Name: MECO GENERATING STATION MAALAEA  
 RIHEI WWTP  
 MONSANTO COMPANY

Database(s): SHWS, SPILLS  
 LUST, UST  
 RCRA-SQG

## OVERVIEW MAP - 2072044.2a

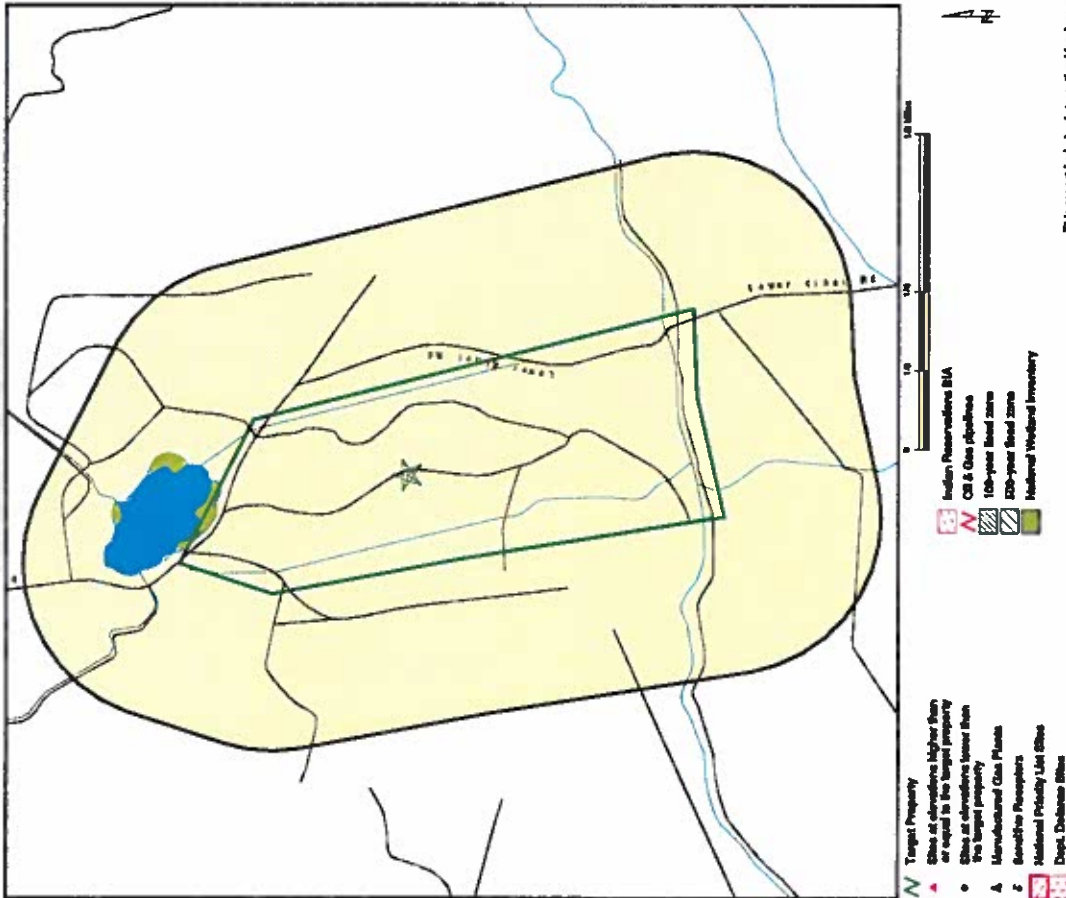


- Target Property
- Site at Address Higher than or equal to the target property
- Site at Address Lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservation BIA
- CE & Class Sublines
- 100-year Flood Zone
- 500-year Flood Zone
- 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: Former Puuone Piggy Site ADDRESS: South Fire Break Road KIHUHI 96783 LAT/LONG: 20.8164 / 156.4628	CLIENT: Erwin Svcs. and Trng. Center CONTACT: Sherie Nakashima INQUIRY #: 2072044.2a DATE: January 24, 2011 12:20 pm <small>Copyright © 2011 BSA, Inc. © 2009 Geo. Inc. All Rights Reserved.</small>
---	--

**DETAIL MAP - 2873844.25**



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those exact for the detail map view.

<p><b>SITE NAME:</b> Former Puanene Piggery Site  <b>ADDRESS:</b> South Fire Break Road          Kihali H 86753  <b>LAT/LONG:</b> 20.8154 / 155.4528</p>	<p><b>CLIENT:</b> Emlio Svcs. and Tmp. Center  <b>CONTACT:</b> Sheria Naboshima  <b>INQUIRY #:</b> 2873844.25  <b>DATE:</b> January 24, 2011 12:28 pm</p>
--	---

**MAP FINDINGS SUMMARY**

Database	Target Property	Search Distances (feet)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
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		1,000	0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP		0.500	0	0	0	NR	NR	0
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-LOG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
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
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS		1,000	0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWFLF		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST		0.500	0	0	0	NR	NR	0
INDIAN LUST		0.500	0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	Search Distance (Miles)					Total Plotted
			< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	
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		0.500	0	0	NR	NR	NR	0
INST CONTROL		0.500	0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites		0.500	0	0	NR	NR	NR	0
INDIAN VCP		0.500	0	0	NR	NR	NR	0
VCP		0.500	0	0	NR	NR	NR	0
State and tribal Brownfields sites		0.500	0	0	NR	NR	NR	0
BROWNFIELDS		0.500	0	0	NR	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
Local / Brownfield lists		0.500	0	0	NR	NR	NR	0
US BROWNFIELDS		0.500	0	0	NR	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites		0.500	0	0	NR	NR	NR	0
DEBRIS REGION 9		0.500	0	0	NR	NR	NR	0
ODI		0.500	0	0	NR	NR	NR	0
INDIAN ODI		0.500	0	0	NR	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites		0.500	0	0	NR	NR	NR	0
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		0.500	NR	NR	NR	NR	NR	0
LIENS 2		0.500	NR	NR	NR	NR	NR	0
LUCIS		0.500	NR	NR	NR	NR	NR	0
Records of Emergency Release Reports		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records		0.250	NR	NR	NR	NR	NR	0
RCRA-NonGen		TP	NR	NR	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
DOD		1,000	0	0	0	0	0	0
FUDS		1,000	0	0	1	0	NR	1
CONSERT		1,000	0	0	0	0	NR	0
ROD		1,000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	0	NR	0
MINES		0.250	0	0	NR	NR	NR	0
TRUS		TP	NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	Search Distance (Miles)					Total Plotted
			< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	
TSCA		TP	NR	NR	NR	NR	NR	0
FTS		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
MALTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	0	0	0	0
AIRS		TP	NR	NR	NR	NR	NR	0
INDIAN RESERV		1,000	0	0	0	0	0	0
SCRID DRYCLEANERS		0.500	0	0	0	0	0	0
COAL ASH EPA		0.500	0	0	0	0	0	0
COAL ASH DOE		TP	NR	NR	NR	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
<b>EDR PROPRIETARY RECORDS</b>								
EDR Proprietary Records		1,000	0	0	0	0	0	0
Manufactured Gas Plants		1,000	0	0	0	0	0	0

NOTES:

TP = Target Property  
 NR = Not Requested at this Search Distance  
 Sites may be listed in more than one database

Map ID: 1007212729  
 Direction: NW  
 Distance: 0.472 mi.  
 Elevation: 2483 ft.



Site: MAUI AIRPORT MILITARY RES  
 PUNJENE, HI

Database(s): FUDS  
 EDR ID Number: 1007212729  
 EPA ID Number: N/A

1  
 NW  
 0.472 mi.  
 2483 ft.

Relative: Lower  
 Actual: 120 ft.

FUDS: Federal Facility ID: H19795F3960  
 FUDS #: H09H00225  
 INST ID: 54616  
 Facility Name: MAUI AIRPORT MILITARY RES  
 City: PUNJENE  
 State: HI  
 EPA Region: 9  
 County: MAUI  
 Congressional District: 02  
 US Army District: Honolulu District (POH)  
 Fiscal Year: 2009  
 Telephone: 808-438-8317  
 NPL Status: Not Listed  
 RAB: Not reported  
 CTC: 13855.7189197592  
 Current Owner: STATE

FUDS Description Details:  
 The former Maui Airport Military Reservation consists of 1,875 acres and is located midway to Kahala on Mokuia Highway. The airport was known as Punjene Naval Air Station and was built from 1936-1939. The airport was used by the Navy from 1940 to 19 946 and was later returned for civilian use. After the military left the site, the area was used for agriculture, ranging from sugar cultivation to animal husbandry. The current owner is the State of Hawaii.

FUDS History Details:  
 The site was used as a naval air station that also supported Army operations. Radio-controlled drones were used to aid in the development of accuracy among anti-aircraft gunners. The site consisted of nine underground fuel storage tanks, a transformer building with a PCB transformer, and a former hangar that may need to be removed or remediated. Current use of the site includes a heliport, crop dusting airplane runway, and a drag strip. The County of Maui is proposing the area to be a county background.

FUDS Current Program Details:

FUDS Future Program Details:

City	EDR ID	Site Name	Site Address	Zip	Databases(s)
KIHEI	U00123805	KIHEI WWTP	480TH WELEKAYAO RD & PIIILANI	96753	LUST, UST
KIHEI	9106419074	MECO GENERATING STATION MAALAEA	N KIHIE RD	96753	SHWS, SPILLS
KIHEI	1010318486	MONSANTO COMFRAY	2111 PIIILANI HWY	96753	RCRA, SOG

ORPHAN SUMMARY

Count: 3 records

## 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 governmental agency made the information available to the public.

### STANDARD ENVIRONMENTAL RECORDS

#### Federal NPL site list

**NPL:** National Priority List  
 National Priority List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority clean-up 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: 07/02/2010  
 Date Data Arrived at EDR: 07/14/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 82  
 Source: EPA  
 Telephones: N/A  
 Last EDR Contact: 01/13/2011  
 Next Scheduled EDR Contact: 04/25/2011  
 Data Release Frequency: Quarterly

#### NPL Site Boundaries

Source: EPA

EPA's Environmental Photographic Interpretation Center (EPIC)  
 Telephones: 202-564-7333

EPA Region 1  
 Telephone: 617-918-1143

EPA Region 2  
 Telephone: 214-655-6659

EPA Region 3  
 Telephone: 215-814-5418

EPA Region 4  
 Telephone: 404-562-8033

EPA Region 5  
 Telephone: 312-889-6988

EPA Region 6  
 Telephone: 202-564-4387

EPA Region 7  
 Telephone: 915-551-7247

EPA Region 8  
 Telephone: 303-312-8774

EPA Region 9  
 Telephone: 415-947-4748

EPA Region 10  
 Telephone: 206-553-8665

#### Proposed NPL - Proposed National Priority List Sites

A site that has not 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: 07/02/2010  
 Date Data Arrived at EDR: 07/14/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 82  
 Source: EPA  
 Telephones: N/A  
 Last EDR Contact: 01/13/2011  
 Next Scheduled EDR Contact: 04/25/2011  
 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 complies a listing of filed notices of Superfund Liens.

Date of Government Version: 03/15/1991  
 Date Data Arrived at EDR: 02/02/1994  
 Date Made Active in Reports: 03/03/1994  
 Number of Days to Update: 35  
 Source: EPA  
 Telephones: 202-564-4387  
 Last EDR Contact: 11/22/2010  
 Next Scheduled EDR Contact: 02/26/2011  
 Data Release Frequency: No Update Planned

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

#### Federal Designated NPL site list

**DELISTED NPL:** National Priority List Delineations  
 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: 07/02/2010  
 Date Data Arrived at EDR: 07/14/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 82  
 Source: EPA  
 Telephones: N/A  
 Last EDR Contact: 01/13/2011  
 Next Scheduled EDR Contact: 04/25/2011  
 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: 01/09/2010  
 Date Data Arrived at EDR: 02/09/2010  
 Date Made Active in Reports: 04/12/2010  
 Number of Days to Update: 82  
 Source: EPA  
 Telephones: 703-412-8810  
 Last EDR Contact: 12/02/2010  
 Next Scheduled EDR Contact: 04/11/2011  
 Data Release Frequency: Quarterly

#### FEDERAL FACILITY: Federal Facility Site Information Listing

A listing of National Priority List (NPL) and Superfund sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA's 776 Federal Facilities Reassessment and Reuse Office is involved in cleanup activities.

Date of Government Version: 06/23/2009  
 Date Data Arrived at EDR: 01/15/2010  
 Date Made Active in Reports: 02/10/2010  
 Number of Days to Update: 26  
 Source: Environmental Protection Agency  
 Telephones: 703-603-8704  
 Last EDR Contact: 01/11/2011  
 Next Scheduled EDR Contact: 04/25/2011  
 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 of 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: 06/23/2009  
 Date Data Arrived at EDR: 06/22/2009  
 Date Made Active in Reports: 09/17/2009  
 Number of Days to Update: 19  
 Source: EPA  
 Telephones: 703-412-8810  
 Last EDR Contact: 12/01/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Quarterly

#### Federal RCRA CORRECTS Identifies list

**CORRECTS:** Corrective Action Report  
 CORRECTS identifies hazardous waste handlers with RCRA corrective action activity.



## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/25/2010  
 Date Data Arrived at EDR: 06/02/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 124  
 Source: EPA  
 Telephone: 800-424-9346  
 Last EDR Contact: 11/22/2010  
 Next Scheduled EDR Contact: 02/28/2011  
 Data Release Frequency: Quarterly

### Federal RCRA non-CORRACTS TSD facilities list

**RCRA-TSD:** 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. TSDs treat, store, or dispose of the waste.

Date of Government Version: 02/17/2010  
 Date Data Arrived at EDR: 02/19/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 87  
 Source: Environmental Protection Agency  
 Telephone: (415) 495-9895  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Quarterly

### Federal RCRA generators list

**RCRA-LOG:** 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 (LOGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/17/2010  
 Date Data Arrived at EDR: 02/19/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 87  
 Source: Environmental Protection Agency  
 Telephone: (415) 495-9895  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 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: 02/17/2010  
 Date Data Arrived at EDR: 02/19/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 87  
 Source: Environmental Protection Agency  
 Telephone: (415) 495-9895  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Quarterly

### RCRA-CESSQ: 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 (CESSQs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/17/2010  
 Date Data Arrived at EDR: 02/19/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 87  
 Source: Environmental Protection Agency  
 Telephone: (415) 495-9895  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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 affect human health.

Date of Government Version: 12/20/2009  
 Date Data Arrived at EDR: 01/20/2010  
 Date Made Active in Reports: 04/12/2010  
 Number of Days to Update: 82  
 Source: Environmental Protection Agency  
 Telephone: 703-603-0895  
 Last EDR Contact: 01/20/2010  
 Next Scheduled EDR Contact: 03/29/2011  
 Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/20/2009  
 Date Data Arrived at EDR: 01/20/2010  
 Date Made Active in Reports: 04/12/2010  
 Number of Days to Update: 82  
 Source: Environmental Protection Agency  
 Telephone: 703-603-0895  
 Last EDR Contact: 12/10/2010  
 Next Scheduled EDR Contact: 03/29/2011  
 Data Release Frequency: Varies

### Federal ERMS list

**ERMS:** Emergency Response Notification System  
 Emergency Response Notification System. ERMS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 07/09/2010  
 Date Data Arrived at EDR: 07/09/2010  
 Date Made Active in Reports: 06/17/2010  
 Number of Days to Update: 39  
 Source: National Response Center, United States Coast Guard  
 Telephone: 202-267-2180  
 Last EDR Contact: 01/07/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Annually

### State- and tribal landfill and/or solid waste disposal site lists

**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 12BD (includes CERCLIS sites).

Date of Government Version: 12/01/2009  
 Date Data Arrived at EDR: 12/07/2009  
 Date Made Active in Reports: 01/08/2010  
 Number of Days to Update: 32  
 Source: Department of Health  
 Telephone: 808-589-4249  
 Last EDR Contact: 12/06/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Semi-Annually

### State and tribal landfill and/or solid waste disposal site lists

**SWFLF:** Permitted Landfills in the State of Hawaii  
 Solid Waste Facilities Landfill Sites. SWFLF 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 B Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/01/2010  
 Date Data Arrived at EDR: 04/06/2010  
 Date Made Active in Reports: 05/19/2010  
 Number of Days to Update: 41  
 Source: Department of Health  
 Telephone: 808-589-4245  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/19/2011  
 Data Release Frequency: Varies

**GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING**

*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: 12/18/2009  
 Date Data Arrived at EDR: 02/19/2009  
 Date Made Active in Reports: 03/16/2009  
 Number of Days to Update: 38  
 Source: Department of Health  
 Telephone: 808-588-4728  
 Last Scheduled EDR Contact: 12/06/2010  
 Next Scheduled EDR Contact: 03/21/2011  
 Data Release Frequency: Semi-Annually

**INDIAN LUST RB:** Leaking Underground Storage Tanks on Indian Land  
 LUSTs on Indian land in New Mexico and Oklahoma

Date of Government Version: 08/05/2010  
 Date Data Arrived at EDR: 08/06/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 59  
 Source: EPA Region 8  
 Telephone: 214-665-6597  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Varies

**INDIAN LUST RB:** Leaking Underground Storage Tanks on Indian Land  
 LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/30/2010  
 Date Data Arrived at EDR: 06/30/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 35  
 Source: Environmental Protection Agency  
 Telephone: 415-972-3372  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Quarterly

**INDIAN LUST RB:** 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: 05/24/2010  
 Date Data Arrived at EDR: 05/27/2010  
 Date Made Active in Reports: 06/09/2010  
 Number of Days to Update: 74  
 Source: EPA Region 8  
 Telephone: 305-512-6271  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 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: 11/04/2009  
 Date Data Arrived at EDR: 05/04/2010  
 Date Made Active in Reports: 07/07/2010  
 Number of Days to Update: 84  
 Source: EPA Region 7  
 Telephone: 913-551-7003  
 Last Scheduled EDR Contact: 12/03/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Varies

**INDIAN LUST RB:** Leaking Underground Storage Tanks on Indian Land  
 LUSTs on Indian land in Florida, Mississippi and North Carolina

Date of Government Version: 08/27/2010  
 Date Data Arrived at EDR: 08/30/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 35  
 Source: EPA Region 4  
 Telephone: 404-502-8677  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Semi-Annually

**INDIAN LUST B1:** Leaking Underground Storage Tanks on Indian Land  
 A listing of leaking underground storage tank locations on Indian Land.

**GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING**

Date of Government Version: 02/19/2009  
 Date Data Arrived at EDR: 02/19/2009  
 Date Made Active in Reports: 03/16/2009  
 Number of Days to Update: 25  
 Source: EPA Region 1  
 Telephone: 817-918-1313  
 Last Scheduled EDR Contact: 11/02/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 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: 08/05/2010  
 Date Data Arrived at EDR: 08/06/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 59  
 Source: EPA Region 10  
 Telephone: 206-553-2857  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Quarterly

*State and tribal registered storage tank lists*

**LUST:** Underground Storage Tank Database  
 Registered Underground Storage Tanks. LUSTs 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 LUST program. Available information varies by state program.

Date of Government Version: 08/20/2010  
 Date Data Arrived at EDR: 09/20/2010  
 Date Made Active in Reports: 10/07/2010  
 Number of Days to Update: 17  
 Source: Department of Health  
 Telephone: 608-588-4728  
 Last Scheduled EDR Contact: 12/06/2010  
 Next Scheduled EDR Contact: 03/21/2011  
 Data Release Frequency: Semi-Annually

**INDIAN LUST RB:** Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (LUST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 08/20/2010  
 Date Data Arrived at EDR: 08/30/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 35  
 Source: EPA Region 9  
 Telephone: 415-972-3388  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Quarterly

**INDIAN LUST RB:** Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (LUST) 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: 05/24/2010  
 Date Data Arrived at EDR: 05/27/2010  
 Date Made Active in Reports: 06/09/2010  
 Number of Days to Update: 74  
 Source: EPA Region 8  
 Telephone: 305-512-6137  
 Last Scheduled EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Quarterly

**INDIAN LUST B1:** Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (LUST) 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: 02/19/2009  
 Date Data Arrived at EDR: 02/19/2009  
 Date Made Active in Reports: 03/16/2009  
 Number of Days to Update: 25  
 Source: EPA Region 1  
 Telephone: 817-918-1313  
 Last Scheduled EDR Contact: 11/02/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**INDIAN UST R7:** Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations)  
Date of Government Version: 04/01/2008  
Source: EPA Region 7  
Date Data Arrived at EDR: 12/09/2008  
Telephone: 913-551-7003  
Data Made Active in Reports: 03/18/2009  
Last EDR Contact: 11/06/2010  
Next Scheduled EDR Contact: 02/14/2011  
Number of Days to Update: 76  
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 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 85 Tribes).  
Date of Government Version: 06/03/2010  
Source: EPA Region 8  
Date Data Arrived at EDR: 06/04/2010  
Telephone: 214-885-7591  
Data Made Active in Reports: 10/04/2010  
Last EDR Contact: 11/01/2010  
Next Scheduled EDR Contact: 02/14/2011  
Number of Days to Update: 61  
Data Release Frequency: Semi-Annually

**INDIAN UST R9:** Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Michigan, Minnesota and Wisconsin and Tribal Nations).  
Date of Government Version: 02/11/2010  
Source: EPA Region 9  
Date Data Arrived at EDR: 02/11/2010  
Telephone: 312-866-6138  
Data Made Active in Reports: 10/04/2010  
Last EDR Contact: 11/01/2010  
Next Scheduled EDR Contact: 02/14/2011  
Number of Days to Update: 60  
Data Release Frequency: Varies

**INDIAN UST R10:** Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).  
Date of Government Version: 06/05/2010  
Source: EPA Region 10  
Date Data Arrived at EDR: 06/06/2010  
Telephone: 206-553-2857  
Data Made Active in Reports: 10/04/2010  
Last EDR Contact: 11/01/2010  
Next Scheduled EDR Contact: 02/14/2011  
Number of Days to Update: 59  
Data Release Frequency: Quarterly

**INDIAN UST R4:** Underground Storage Tanks on Indian Land  
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)  
Date of Government Version: 08/27/2010  
Source: EPA Region 4  
Date Data Arrived at EDR: 08/30/2010  
Telephone: 404-582-9424  
Data Made Active in Reports: 10/04/2010  
Last EDR Contact: 11/01/2010  
Next Scheduled EDR Contact: 02/14/2011  
Number of Days to Update: 35  
Data Release Frequency: Semi-Annually

**FEMA UST:** Underground Storage Tank Listing  
A listing of all FEMA owned underground storage tanks.  
Date of Government Version: 01/01/2010  
Source: FEMA  
Date Data Arrived at EDR: 02/18/2010  
Telephone: 202-646-5737  
Data Made Active in Reports: 04/12/2010  
Last EDR Contact: 01/17/2011  
Next Scheduled EDR Contact: 05/02/2011  
Number of Days to Update: 55  
Data Release Frequency: Varies

*State and tribal institutional control / engineering control registries*

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**EMG CONTROLS:** Engineering Control Sites  
A listing of sites with engineering controls in place.  
Date of Government Version: 12/01/2009  
Source: Department of Health  
Date Data Arrived at EDR: 12/07/2009  
Telephone: 404-588-4249  
Data Made Active in Reports: 01/06/2010  
Last EDR Contact: 03/14/2011  
Next Scheduled EDR Contact: 03/14/2011  
Number of Days to Update: 32  
Data Release Frequency: Varies

**INST CONTROL:** Sites with Institutional Controls  
Voluntary Remediation Program and Brownfields sites with institutional controls in place.  
Date of Government Version: 12/01/2009  
Source: Department of Health  
Date Data Arrived at EDR: 12/07/2009  
Telephone: 404-588-4249  
Data Made Active in Reports: 01/06/2010  
Last EDR Contact: 03/14/2011  
Next Scheduled EDR Contact: 03/14/2011  
Number of Days to Update: 32  
Data Release Frequency: Varies

*State and tribal voluntary cleanup sites*

**INDIAN VCP R1:** Voluntary Cleanup Priority Listing  
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.  
Date of Government Version: 04/02/2008  
Source: EPA Region 1  
Date Data Arrived at EDR: 04/22/2008  
Telephone: 817-918-1102  
Data Made Active in Reports: 05/19/2008  
Last EDR Contact: 01/05/2010  
Next Scheduled EDR Contact: 04/19/2011  
Number of Days to Update: 27  
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 very fast yet encourage prospective developers, lenders, and purchasers to voluntarily cleanup properties.  
Date of Government Version: 12/01/2009  
Source: Department of Health  
Date Data Arrived at EDR: 12/07/2009  
Telephone: 404-588-4249  
Data Made Active in Reports: 01/06/2010  
Last EDR Contact: 12/06/2010  
Next Scheduled EDR Contact: 03/14/2011  
Number of Days to Update: 32  
Data Release Frequency: Varies

**INDIAN VCP R7:** Voluntary Cleanup Priority Listing  
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.  
Date of Government Version: 03/20/2008  
Source: EPA Region 7  
Date Data Arrived at EDR: 04/22/2008  
Telephone: 913-551-7385  
Data Made Active in Reports: 05/19/2008  
Last EDR Contact: 04/29/2009  
Next Scheduled EDR Contact: 07/20/2009  
Number of Days to Update: 27  
Data Release Frequency: Varies

*State and tribal Brownfields sites*

**BROWNFIELDS:** Brownfields Sites  
With certain legal exclusions and additions, the term "brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.  
Date of Government Version: 12/01/2009  
Source: Department of Health  
Date Data Arrived at EDR: 12/07/2009  
Telephone: 404-588-4249  
Data Made Active in Reports: 01/06/2010  
Last EDR Contact: 12/06/2010  
Next Scheduled EDR Contact: 03/14/2011  
Number of Days to Update: 32  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### ADDITIONAL ENVIRONMENTAL RECORDS

#### Local Brownfields/ Bats

**US BROWNFIELDS:** A listing of Brownfields Sites included in the listing are brownfields properties addresses by Cooperative Agreement. Recipients and brownfields properties addressed by Targeted Brownfields Assessments, Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities—especially those without EPA Brownfields Assessment Demonstration Plans—minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients: States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/24/2010  
 Date Data Arrived at EDR: 06/25/2010  
 Date Made Active in Reports: 06/17/2010  
 Number of Days to Update: 53

Source: Environmental Protection Agency  
 Telephone: 202-566-2777  
 Last EDR Contact: 12/30/2010  
 Next Scheduled EDR Contact: 04/11/2011  
 Data Release Frequency: Semi-Annually

#### Local Lists of Landfills / Solid Waste Disposal Sites

**ODK:** 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: 06/20/1985  
 Date Data Arrived at EDR: 06/09/2004  
 Date Made Active in Reports: 06/17/2004  
 Number of Days to Update: 39

Source: Environmental Protection Agency  
 Telephone: 800-424-6348  
 Last EDR Contact: 06/09/2004  
 Next Scheduled EDR Contact: N/A  
 Data Release Frequency: No Update Planned

**DEBRIS REGION 9:** Torres Martinez Reservation Began Dump Site Locations  
 A listing of illegal dump sites located 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: 06/12/2009  
 Number of Days to Update: 137

Source: EPA, Region 9  
 Telephone: 415-947-4219  
 Last EDR Contact: 12/22/2010  
 Next Scheduled EDR Contact: 04/11/2011  
 Data Release Frequency: No Update Planned

#### INDIAN ODE: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.  
 Date of Government Version: 12/11/1998  
 Date Data Arrived at EDR: 12/02/2007  
 Date Made Active in Reports: 01/24/2008  
 Number of Days to Update: 32

Source: Environmental Protection Agency  
 Telephone: 703-308-8245  
 Last EDR Contact: 11/09/2010  
 Next Scheduled EDR Contact: 02/21/2011  
 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 department.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/07/2010  
 Date Data Arrived at EDR: 06/18/2010  
 Date Made Active in Reports: 06/17/2010  
 Number of Days to Update: 80

Source: Drug Enforcement Administration  
 Telephone: 202-307-1000  
 Last EDR Contact: 12/09/2010  
 Next Scheduled EDR Contact: 03/21/2011  
 Data Release Frequency: Quarterly

#### CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab site locations.  
 Date of Government Version: 06/04/2010  
 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: 800-398-4249  
 Last EDR Contact: 01/04/2011  
 Next Scheduled EDR Contact: 03/21/2011  
 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: 08/01/2007  
 Date Data Arrived at EDR: 11/19/2008  
 Date Made Active in Reports: 03/30/2009  
 Number of Days to Update: 131

Source: Drug Enforcement Administration  
 Telephone: 202-307-1000  
 Last EDR Contact: 03/23/2009  
 Next Scheduled EDR Contact: 06/22/2009  
 Data Release Frequency: No Update Planned

#### Local Land Records

##### UEHS 2: CERCLA Lien Information

A Federal CERCLA (Superfund) lien can exist by operation of law at any site or property all 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: 05/06/2010  
 Date Data Arrived at EDR: 05/11/2010  
 Date Made Active in Reports: 06/09/2010  
 Number of Days to Update: 90

Source: Environmental Protection Agency  
 Telephone: 202-594-5023  
 Last EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 Data Release Frequency: Varies

##### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005  
 Date Data Arrived at EDR: 12/11/2006  
 Date Made Active in Reports: 01/11/2007  
 Number of Days to Update: 31

Source: Department of the Navy  
 Telephone: 843-530-7328  
 Last EDR Contact: 11/22/2010  
 Next Scheduled EDR Contact: 03/07/2011  
 Data Release Frequency: Varies

#### Records of Emergency Release Reports

##### HMRS: Hazardous Materials Incident Reporting System

HMRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/06/2010  
 Date Data Arrived at EDR: 04/07/2010  
 Date Made Active in Reports: 05/27/2010  
 Number of Days to Update: 50

Source: U.S. Department of Transportation  
 Telephone: 202-368-4555  
 Last EDR Contact: 01/05/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Annually

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### SPILLS: Release Notifications

Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988

Date of Government Version: 03/10/2010  
 Date Data Arrived at EDR: 03/18/2010  
 Date Made Active in Reports: 04/13/2010  
 Number of Days to Update: 26

Source: Department of Health  
 Telephone: 808-589-4249  
 Last EDR Contact: 12/09/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Varies

### Other Ascertainsable Records

**RCRA-NonGen, RCRA - Non Generators**  
 RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/17/2010  
 Date Data Arrived at EDR: 02/19/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 87

Source: Environmental Protection Agency  
 Telephone: (415) 495-8885  
 Last EDR Contact: 01/06/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Varies

### DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/12/2010  
 Date Data Arrived at EDR: 02/09/2010  
 Date Made Active in Reports: 04/12/2010  
 Number of Days to Update: 62

Source: Department of Transportation, Office of Pipeline Safety  
 Telephone: 202-368-4595  
 Last EDR Contact: 1/03/2010  
 Next Scheduled EDR Contact: 02/21/2011  
 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: 11/10/2008  
 Date Made Active in Reports: 01/11/2007  
 Number of Days to Update: 82

Source: USGS  
 Telephone: 703-692-6801  
 Last EDR Contact: 01/21/2011  
 Next Scheduled EDR Contact: 05/02/2011  
 Data Release Frequency: Semi-Annually

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009  
 Date Data Arrived at EDR: 06/12/2010  
 Date Made Active in Reports: 12/02/2010  
 Number of Days to Update: 112

Source: U.S. Army Corps of Engineers  
 Telephone: 202-529-4285  
 Last EDR Contact: 12/13/2010  
 Next Scheduled EDR Contact: 03/29/2011  
 Data Release Frequency: Varies

### CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matter.

Date of Government Version: 07/01/2010  
 Date Data Arrived at EDR: 08/11/2010  
 Date Made Active in Reports: 12/02/2010  
 Number of Days to Update: 113

Source: Department of Justice, Consent Decree Library  
 Telephone: Varies  
 Last EDR Contact: 01/03/2011  
 Next Scheduled EDR Contact: 04/18/2011  
 Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### 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: 08/01/2010  
 Date Data Arrived at EDR: 06/16/2010  
 Date Made Active in Reports: 08/17/2010  
 Number of Days to Update: 62

Source: EPA  
 Telephone: 703-416-0223  
 Last EDR Contact: 12/10/2010  
 Next Scheduled EDR Contact: 03/28/2011  
 Data Release Frequency: Annually

### UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/14/2009  
 Date Data Arrived at EDR: 09/29/2010  
 Date Made Active in Reports: 10/04/2010  
 Number of Days to Update: 5

Source: Department of Energy  
 Telephone: 505-845-0011  
 Last EDR Contact: 11/29/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Varies

### MINES: Mines Master Index File

Consists of mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/04/2010  
 Date Data Arrived at EDR: 09/09/2010  
 Date Made Active in Reports: 12/02/2010  
 Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration  
 Telephone: 303-231-5959  
 Last EDR Contact: 09/09/2010  
 Next Scheduled EDR Contact: 03/21/2011  
 Data Release Frequency: Semi-Annually

### TRIS: Toxic Chemical 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: 12/31/2008  
 Date Data Arrived at EDR: 01/13/2010  
 Date Made Active in Reports: 02/18/2010  
 Number of Days to Update: 38

Source: EPA  
 Telephone: 202-586-0250  
 Last EDR Contact: 12/17/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Annually

### TSCA: 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: 12/31/2008  
 Date Data Arrived at EDR: 09/29/2010  
 Date Made Active in Reports: 12/02/2010  
 Number of Days to Update: 84

Source: EPA  
 Telephone: 202-260-5521  
 Last EDR Contact: 12/29/2010  
 Next Scheduled EDR Contact: 04/11/2011  
 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: 04/18/2009  
 Date Made Active in Reports: 05/11/2009  
 Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
 Telephone: 202-566-1687  
 Last EDR Contact: 11/20/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### FITTS INSP: FIFRA/TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act) and TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FITTS) inspections and enforcement.

Date of Government Version: 04/09/2008  
 Date Data Arrived at EDR: 04/10/2007  
 Date Made Active in Reports: 05/17/2009  
 Number of Days to Update: 25  
 Source: EPA  
 Telephone: 202-566-1887  
 Last EDR Contact: 11/29/2010  
 Next Scheduled EDR Contact: 03/14/2011  
 Data Release Frequency: Quarterly

### HIST FITTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FITTS) 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 FITTS database. It included records that may not be included in the newer FITTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2008  
 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: 202-594-2501  
 Last EDR Contact: 12/17/2007  
 Next Scheduled EDR Contact: 03/17/2008  
 Data Release Frequency: No Update Planned

### HIST FITTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FITTS) 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 FITTS database. It included records that may not be included in the newer FITTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2008  
 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: 202-594-2501  
 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. E2) 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: 12/31/2008  
 Date Data Arrived at EDR: 01/06/2010  
 Date Made Active in Reports: 02/10/2010  
 Number of Days to Update: 35  
 Source: EPA  
 Telephone: 202-594-4203  
 Last EDR Contact: 11/01/2010  
 Next Scheduled EDR Contact: 02/14/2011  
 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: 04/24/2010  
 Date Data Arrived at EDR: 04/29/2010  
 Date Made Active in Reports: 05/17/2010  
 Number of Days to Update: 18  
 Source: Environmental Protection Agency  
 Telephone: 202-594-5088  
 Last EDR Contact: 12/23/2010  
 Next Scheduled EDR Contact: 04/11/2011  
 Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### PAUS: PCB Activity Database System

PCB Activity Database. PAUS 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: 02/01/2010  
 Date Data Arrived at EDR: 04/22/2010  
 Date Made Active in Reports: 06/09/2010  
 Number of Days to Update: 109  
 Source: EPA  
 Telephone: 202-566-6500  
 Last EDR Contact: 01/02/2011  
 Next Scheduled EDR Contact: 05/02/2011  
 Data Release Frequency: Annually

### MULTS: Material Licensing Tracking System

MULTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 6,100 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: 03/18/2010  
 Date Data Arrived at EDR: 04/08/2010  
 Date Made Active in Reports: 05/27/2010  
 Number of Days to Update: 51  
 Source: Nuclear Regulatory Commission  
 Telephone: 301-415-7168  
 Last EDR Contact: 12/13/2010  
 Next Scheduled EDR Contact: 03/28/2011  
 Data Release Frequency: Quarterly

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radon and radioactivity.

Date of Government Version: 07/13/2010  
 Date Data Arrived at EDR: 07/14/2010  
 Date Made Active in Reports: 08/09/2010  
 Number of Days to Update: 28  
 Source: Environmental Protection Agency  
 Telephone: 202-343-8776  
 Last EDR Contact: 01/13/2011  
 Next Scheduled EDR Contact: 04/25/2011  
 Data Release Frequency: Quarterly

### FINDS: Facility Index System/Facility Registry System

Facility Index System: FINDS contains both facility information and 'joiners' 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 (Central Docket System used to track criminal enforcement actions for all environmental statutes), FRS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PAUS (PCB Activity Data System).

Date of Government Version: 04/14/2010  
 Date Data Arrived at EDR: 04/16/2010  
 Date Made Active in Reports: 05/27/2010  
 Number of Days to Update: 41  
 Source: EPA  
 Telephone: (415) 947-8000  
 Last EDR Contact: 12/10/2010  
 Next Scheduled EDR Contact: 03/28/2011  
 Data Release Frequency: Quarterly

### RAATS: RCRA Administrative Action Tracking System

RCRA Administrative 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 administrative 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: 202-564-1104  
 Last EDR Contact: 06/02/2008  
 Next Scheduled EDR Contact: 09/01/2008  
 Data Release Frequency: No Update Planned

### BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**Source:** EPA/NRIS  
**Telephone:** 800-424-9348  
**Last EDR Contact:** 11/30/2010  
**Next Scheduled EDR Contact:** 03/07/2011  
**Data Release Frequency:** Biennially

**UIC:** Underground Injection Wells Listing  
 A listing of underground injection well locations.

**Source:** Department of Health  
**Telephone:** 888-588-4268  
**Last EDR Contact:** 12/08/2010  
**Next Scheduled EDR Contact:** 03/21/2011  
**Data Release Frequency:** Varies

**DRYCLEANERS:** Permitted Drycleaner Facility Listing  
 A listing of permitted drycleaner facilities in the state

**Source:** Department of Health  
**Telephone:** 888-588-4200  
**Last EDR Contact:** 01/10/2011  
**Next Scheduled EDR Contact:** 04/25/2011  
**Data Release Frequency:** Varies

**AIRS:** List of Permitted Facilities  
 A listing of permitted facilities in the state

**Source:** Department of Health  
**Telephone:** 888-588-4200  
**Last EDR Contact:** 01/10/2011  
**Next Scheduled EDR Contact:** 04/25/2011  
**Data Release Frequency:** Varies

**INDIAN RESERVES:** Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

**Source:** USGS  
**Telephone:** 202-208-3710  
**Last EDR Contact:** 01/21/2011  
**Next Scheduled EDR Contact:** 05/02/2011  
**Data Release Frequency:** Semi-Annually

**SCRD DRYCLEANERS:** State Coalition for Remediation of Drycleaners Listing  
 The State Coalition for Remediation of Drycleaners was established in 1988, 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.

**Source:** Environmental Protection Agency  
**Telephone:** 815-532-8589  
**Last EDR Contact:** 12/13/2010  
**Next Scheduled EDR Contact:** 02/07/2011  
**Data Release Frequency:** Varies

**PCB TRANSFORMER:** PCB Transformer Registration Database  
 The database of PCB transformer registrations that includes all PCB registration submittals.

**Source:** Environmental Protection Agency  
**Telephone:** 202-568-0517  
**Last EDR Contact:** 11/10/2010  
**Next Scheduled EDR Contact:** 02/14/2011  
**Data Release Frequency:** Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**COAL ASH DOE:** Steam-Electric Plant Operation Data  
 A listing of power plants that store ash in surface ponds.  
**Source:** Department of Energy  
**Telephone:** 202-586-8719  
**Last EDR Contact:** 01/18/2011  
**Next Scheduled EDR Contact:** 05/02/2011  
**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.  
**Source:** Environmental Protection Agency  
**Telephone:** N/A  
**Last EDR Contact:** 12/21/2010  
**Next Scheduled EDR Contact:** 03/28/2011  
**Data Release Frequency:** Varies

**FEDLAND:** Federal and Indian Lands  
 Federally and Indian administered lands of the United States. Lands included are administered 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.  
**Source:** U.S. Geological Survey  
**Telephone:** 888-275-8747  
**Last EDR Contact:** 01/21/2011  
**Next Scheduled EDR Contact:** 05/02/2011  
**Data Release Frequency:** N/A

**EDR PROPRIETARY RECORDS**

**EDR Proprietary Records**

**Manufactured Gas Plants:** EDR Proprietary Manufactured Gas Plants  
 The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas plants 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 waste oil, trash, 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 (oil 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.

**Source:** EDR, Inc.  
**Telephone:** N/A  
**Last EDR Contact:** N/A  
**Next Scheduled EDR Contact:** N/A  
**Data Release Frequency:** No Update Planned

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the areas covered by the report.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**ORCAes Pipeline:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

### Electric Power Transmission Line Data

Source: Redat Strategies Corp.  
Telephone: (201) 783-7247

### U.S. Electric Transmission and Power Plants Systems Digital GIS Data

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

### AHA Hospitals

Source: American Hospital Association, Inc.

Telephone: 312-790-5991

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: 301-594-4248

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 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NMF: National Wetlands Inventory:** This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

### Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### STREET AND ADDRESS INFORMATION

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## GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

FORMER PUUNENE PIGGERY SITE  
SOUTH FIRE BREAK ROAD  
KIHEI, HI 96753

### TARGET PROPERTY COORDINATES

Latitude (North): 20° 48' 55.4"  
Longitude (West): 155° 45'28" - 156° 27' 10.1"  
Zone: 4  
Universal Transverse Mercator:  
UTM X (Meters): 765121.4  
UTM Y (Meters): 2303676.8  
Elevation:  
124 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property Map: 20156-C4 WAILUKU, HI  
Most Recent Revision: Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

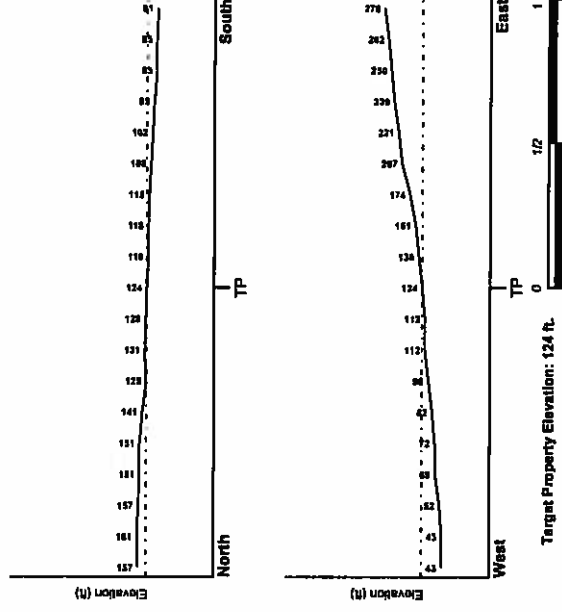
### TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

**GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

**HYDROLOGIC INFORMATION**

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

**FEMA FLOOD ZONE**

Target Property County: MAUI, HI  
 FEMA Flood Electronic Data YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 15000302558 - FEMA Q3 Flood data

Additional Panels in search area: Not Reported

**NATIONAL WETLAND INVENTORY**

NWI Quad at Target Property NOT AVAILABLE  
 NWI Electronic Data Coverage 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 data of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID: Not Reported      LOCATION: FROM TP      GENERAL DIRECTION: GROUNDWATER FLOW

**GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

**GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

**GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

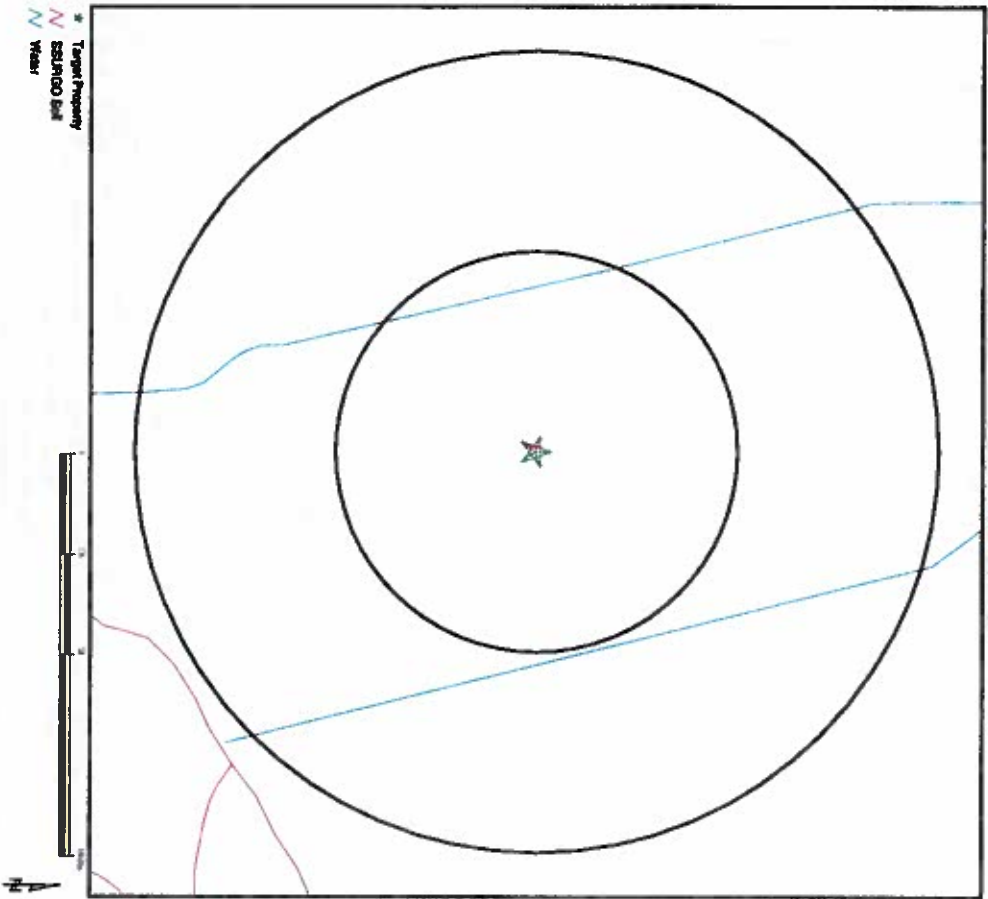
Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

Era: -      GEOLOGIC AGE IDENTIFICATION Category: -  
 System: -  
 Series: -  
 Code: N/A (decoded above as Era, System & Series)

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Continental 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 - 2972944.25**



**SITE NAME:** Former Pumaus Property Site  
**ADDRESS:** South Pine Brook Road  
**LAT/LONG:** 29.8154 / 158.4521

**CLIENT:** Endeo Bruns and Ting Center  
**CONTACT:** Sherie Nabeckem  
**INQUIRY #:** 2972944.25  
**DATE:** January 24, 2011 12:28 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:** Waukena

**Soil Surface Texture:** extremely stony silty clay loam

**Hydrologic Group:** Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

**Soil Drainage Class:** Well drained

**Hydic Status:** Not hydric

**Corrosion Potential:** Uncorrosive Steel Moderate

**Depth to Bedrock Min:** > 71 inches

**Depth to Waterable Mirr:** > 0 inches

Soil Layer Information							
Layer	Upper Boundary	Lower Boundary	Soil Texture Class	AASTHO Group	Unified Soil Classification	Saturated hydraulic conductivity (micrometers per second)	Soil Reaction (pH)
1	0 inches	0 inches	extremely stony silty clay loam	SR-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils	Not reported	Max: 0.42 Min: 0.02	Max: Min:
2	0 inches	20 inches	extremely stony silty clay loam	SR-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils	Not reported	Max: 0.42 Min: 0.02	Max: Min:
3	20 inches	27 inches	stony silty clay loam	SR-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils	Not reported	Max: 0.42 Min: 0.02	Max: Min:
4	27 inches	31 inches	bedrock	SR-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils	Not reported	Max: 0.42 Min: 0.02	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### LOCAL/REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<b>DATABASE</b>	<b>SEARCH DISTANCE (feet)</b>
Federal USGS	1,000
Federal FROGS PWS	Nearest PWS within 1 mile
State Database	1,000

### FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION
No Wells Found		FROM TWP

### FEDERAL FROGS PUBLIC WATER SUPPLY SYSTEM INFORMATION

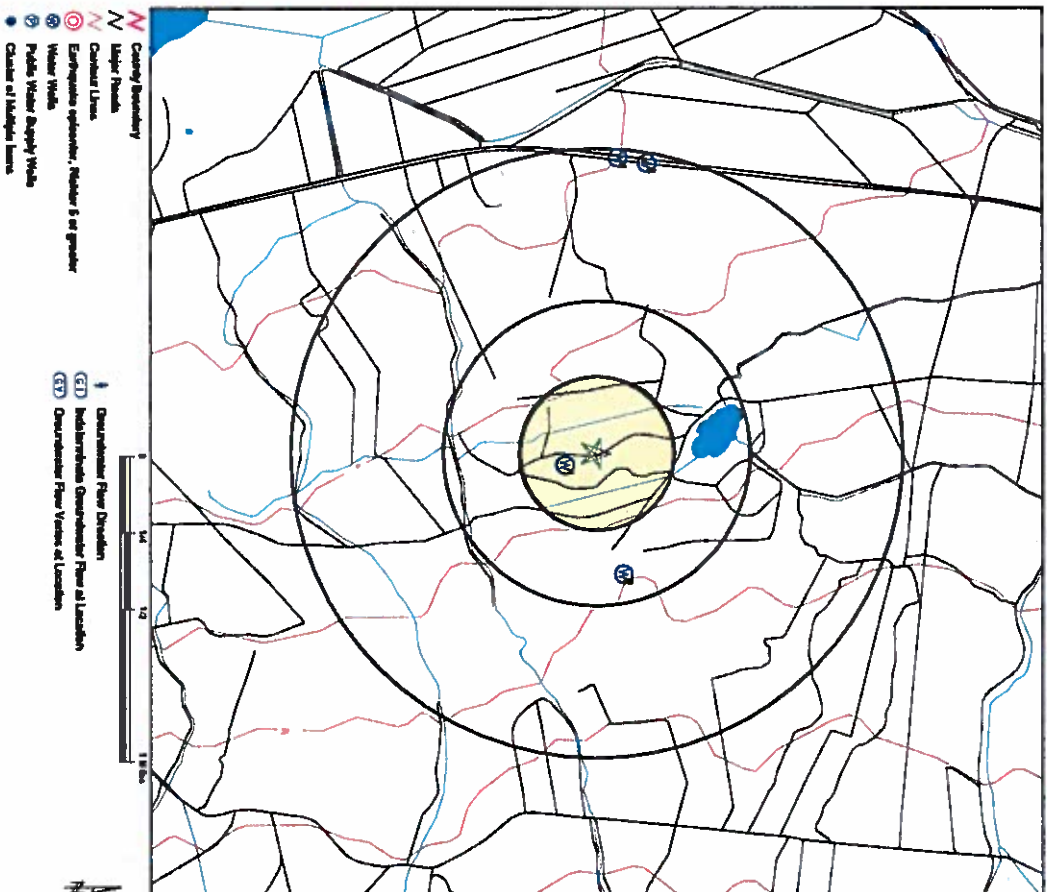
MAP ID	WELL ID	LOCATION
No PWS System Found		FROM TWP

Note: PWS System location is not always the same as well location

### STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION
1	HS500000001176	0 - 1/8 Mile SSE
2	HS500000001188	1/4 - 1/2 Mile ENE
3	HS500000001191	1/2 - 3/4 Mile West
4	HS500000001187	1/2 - 3/4 Mile West

## PHYSICAL SETTING SOURCE MAP - 2972944.2s



<b>SITE NAME:</b> Former Petroleum Refinery Site <b>ADDRESS:</b> South Fire Break Road <b>Latitude:</b> 30.8184 / 155.4528	<b>CLIENT:</b> Ennio Drac and Ting Center <b>CONTACT:</b> Shari Neuzilova <b>INQUIRY #:</b> 297294.2s <b>DATE:</b> January 24, 2011 12:28 pm
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**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS**

Map ID Direction Distance Elevation	Database	EDR ID Number
1 SSE 0 - 1/8 Mile Lower	HI WELLS	HIS000000001178
Wd	Island:	6
Well no:	Well name:	Trk 1-6-08
Old name:	Yr drilled:	Not Reported
Driller:	Quod map:	08
Longitude2:	Latitude27:	204912
Longitude8:	Latitude43:	1562708
Latitude30:	Latitude03:	20
Latitude34:	Longitude:	20
Latitude3m:	Longitude:	20.81989
Latitude3d:	Longitude:	-158.43222
Latitude:	Longitude:	20.81989
Owner user:	Owner user:	Maiamoa N
Well type:	Well type:	Not Reported
Ground el:	Ground el:	120
Solid case:	Solid case:	Not Reported
Use:	Use:	Other
Use year:	Use year:	71
Int well:	Int well:	Not Reported
Int head:	Int head:	0
Test dlla:	Test dlla:	Not Reported
Test dlat:	Test dlat:	Not Reported
Test dlong:	Test dlong:	Not Reported
Head feet:	Head feet:	Not Reported
Pump yr:	Pump yr:	Not Reported
Head yr:	Head yr:	Not Reported
March yr:	March yr:	Not Reported
Bot hole:	Bot hole:	0
Bot peef:	Bot peef:	Not Reported
Pump mgd:	Pump mgd:	Not Reported
Old acqu:	Old acqu:	Not Reported
Latstd ht:	Latstd ht:	Not Reported
Cur cf:	Cur cf:	60301
Pir:	Pir:	Not Reported
Surveyor:	Surveyor:	Not Reported
Pump elev:	Pump elev:	Not Reported
Site id:	Site id:	HIS000000001178
2 SSE 1/4 - 1/2 Mile Higher	HI WELLS	HIS000000001180
Wd	Island:	6
Well no:	Well name:	Trk 1-6-08
Old name:	Yr drilled:	Not Reported
Driller:	Quod map:	08
Longitude2:	Latitude27:	204912
Longitude8:	Latitude43:	1562708
Latitude30:	Latitude03:	20
Latitude34:	Longitude:	20
Latitude3m:	Longitude:	20.81989
Latitude3d:	Longitude:	-158.43222
Latitude:	Longitude:	20.81989
Owner user:	Owner user:	Maiamoa N
Well type:	Well type:	Not Reported
Ground el:	Ground el:	120
Solid case:	Solid case:	Not Reported
Use:	Use:	Other
Use year:	Use year:	71
Int well:	Int well:	Not Reported
Int head:	Int head:	0
Test dlla:	Test dlla:	Not Reported
Test dlat:	Test dlat:	Not Reported
Test dlong:	Test dlong:	Not Reported
Head feet:	Head feet:	Not Reported
Pump yr:	Pump yr:	Not Reported
Head yr:	Head yr:	Not Reported
March yr:	March yr:	Not Reported
Bot hole:	Bot hole:	0
Bot peef:	Bot peef:	Not Reported
Pump mgd:	Pump mgd:	Not Reported
Old acqu:	Old acqu:	Not Reported
Latstd ht:	Latstd ht:	Not Reported
Cur cf:	Cur cf:	60301
Pir:	Pir:	Not Reported
Surveyor:	Surveyor:	Not Reported
Pump elev:	Pump elev:	Not Reported
Site id:	Site id:	HIS000000001180

HI WELLS  
HIS000000001180

**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS**

Map ID Direction Distance Elevation	Database	EDR ID Number
3 SSE 1/2 - 1 Mile Lower	HI WELLS	HIS000000001191
Wd	Island:	6
Well no:	Well name:	4979-01
Old name:	Yr drilled:	1942
Driller:	Quod map:	08
Longitude2:	Latitude27:	204918
Longitude8:	Latitude43:	204904
Latitude30:	Latitude03:	48
Latitude34:	Longitude:	156
Latitude3m:	Longitude:	20.81778
Latitude3d:	Longitude:	20.81778
Latitude:	Longitude:	20.81778
Owner user:	Owner user:	Not Reported
Well type:	Well type:	Not Reported
Ground el:	Ground el:	177
Solid case:	Solid case:	178
Use:	Use:	UNU - Unused
Use year:	Use year:	07
Int well:	Int well:	Not Reported
Int head:	Int head:	2.85
Test dlla:	Test dlla:	Not Reported
Test dlat:	Test dlat:	68/2007
Test dlong:	Test dlong:	0.55
Head feet:	Head feet:	69.0
Pump yr:	Pump yr:	0.00000
Head yr:	Head yr:	2.85
March yr:	March yr:	Not Reported
Bot hole:	Bot hole:	Not Reported
Bot peef:	Bot peef:	Not Reported
Pump mgd:	Pump mgd:	TK
Old acqu:	Old acqu:	Not Reported
Latstd ht:	Latstd ht:	Not Reported
Cur cf:	Cur cf:	Not Reported
Pir:	Pir:	Not Reported
Surveyor:	Surveyor:	Not Reported
Pump elev:	Pump elev:	Not Reported
Site id:	Site id:	HIS000000001191
4 SSE 1/4 - 1/2 Mile Lower	HI WELLS	HIS000000001191
Wd	Island:	6
Well no:	Well name:	4979-01
Old name:	Yr drilled:	1942
Driller:	Quod map:	08
Longitude2:	Latitude27:	204918
Longitude8:	Latitude43:	204904
Latitude30:	Latitude03:	48
Latitude34:	Longitude:	156
Latitude3m:	Longitude:	20.81778
Latitude3d:	Longitude:	20.81778
Latitude:	Longitude:	20.81778
Owner user:	Owner user:	Not Reported
Well type:	Well type:	Not Reported
Ground el:	Ground el:	177
Solid case:	Solid case:	178
Use:	Use:	UNU - Unused
Use year:	Use year:	07
Int well:	Int well:	Not Reported
Int head:	Int head:	2.85
Test dlla:	Test dlla:	Not Reported
Test dlat:	Test dlat:	68/2007
Test dlong:	Test dlong:	0.55
Head feet:	Head feet:	69.0
Pump yr:	Pump yr:	0.00000
Head yr:	Head yr:	2.85
March yr:	March yr:	Not Reported
Bot hole:	Bot hole:	Not Reported
Bot peef:	Bot peef:	Not Reported
Pump mgd:	Pump mgd:	TK
Old acqu:	Old acqu:	Not Reported
Latstd ht:	Latstd ht:	Not Reported
Cur cf:	Cur cf:	Not Reported
Pir:	Pir:	Not Reported
Surveyor:	Surveyor:	Not Reported
Pump elev:	Pump elev:	Not Reported
Site id:	Site id:	HIS000000001191

HI WELLS  
HIS000000001191

GEOCHECK - PHYSICAL SETTING SOURCE MAP FINDINGS

Lon33dd: -158.4675  
 Long33dd: -158.4675  
 Lat33dd 1: 20.81778  
 Gps: 1  
 Owner user: State Dist-Airport  
 Well type: Not Reported  
 Ground ai: 70  
 Solid cause: Not Reported  
 Use: A8N - Sealed  
 Use year: 07  
 Int weller: 3.6  
 Int head: 3.6  
 Int chbr: Not Reported  
 Test date: Not Reported  
 Test ddbwn: Not Reported  
 Test temp: Not Reported  
 Pump gpm: 300.00000  
 Head feet: Not Reported  
 Min chbr: Not Reported  
 Pump yr: Not Reported  
 Head yr: Not Reported  
 Mench1 yr: 0  
 Mench2 yr: 0  
 Bot hole: Not Reported  
 Bot perf: Not Reported  
 Spec capac: Not Reported  
 Draft mgd: Not Reported  
 Trnk: Not Reported  
 Aqu code: 3-4-008-001  
 Cur head: 60301  
 Cur temp: Not Reported  
 Pz: Not Reported  
 T: Not Reported  
 Pump depth: Not Reported

HI WELLS HI5000000001187

4  
 Well name: Waiahi Falls  
 Lower  
 Wcd: 8-4928-002  
 Well no: 4928-02  
 Old name: Not Reported  
 Driller: U.S. NAVY  
 Longitude2: 1562814  
 Longitude1: 1562804  
 Lat33d: 20  
 Lat33s: 59  
 Lon33m: 28  
 Lon33d: 20.81639  
 Lon33dd: -158.46776  
 Lon33dd: -158.46776  
 Lon33dd 1: 20.81639  
 Gps: 1  
 Owner user: HC & S Co  
 Well type: Shaft  
 Ground ai: 50  
 Solid cause: Not Reported  
 Use: A8N - Sealed  
 Use year: 07  
 Int weller: 3.7

GEOCHECK - PHYSICAL SETTING SOURCE MAP FINDINGS

Int head: 3.7  
 Int chbr: Not Reported  
 Test date: Not Reported  
 Test ddbwn: Not Reported  
 Test temp: Not Reported  
 Pump gpm: 2000.00000  
 Head feet: 4.3  
 Min chbr: 298  
 Pump yr: Not Reported  
 Head yr: 70  
 Mench1 yr: 73  
 Mench2 yr: 73  
 Bot hole: Not Reported  
 Bot perf: Not Reported  
 Spec capac: Not Reported  
 Draft mgd: 1.3  
 Trnk: 3-8-008.001  
 Aqu code: 60301  
 Cur head: Not Reported  
 Cur temp: Not Reported  
 Pz: Not Reported  
 T: Not Reported  
 Pump depth: Not Reported

HI WELLS HI5000000001187

6  
 Well name: Puunene Airp Sha  
 Yr drilled: 1942  
 Quad map: 08  
 Longitude2: 204911  
 Longitude1: 204859  
 Lat33m: 48  
 Lat33d: 156  
 Lon33s: 04  
 Utm: 0  
 DM number: 34-SH  
 Casing dia: 72  
 Well depth: 53  
 Perf cause: Not Reported

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

### AREA RADON INFORMATION

Federal EPA Radon Zone for MAUI County: 3

Note: Zone 1 indoor average level > 4 pCi/L  
 Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L  
 Zone 3 indoor average level < 2 pCi/L

Federal Area Radon Information for Zip Code: 96753

Number of sites tested: 10

Area	Average Activity	% <= 4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.010 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

## 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 2008. 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. A 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NW1: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

### HYDROGEOLOGIC INFORMATION

AQUIFLOW<sup>®</sup> 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 agencies at select sites and has extracted the data 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. Arvid and W.J. Baswick. Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beaman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service  
 The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCS) and is responsible for collecting, storing, maintaining and disseminating 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 Service (NRCS)  
 Telephone: 800-672-6559  
 SSURGO is the most detailed level of mapping done by the National Resources Conservation Service, mapping scales generally range from 1:2,000 to 1:25,000. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the origin of soil survey maps. This level of mapping is designed for use by landowners, landrags 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: Department of Land and Natural Resources  
Telephone: 809-587-0714  
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

#### RAOON

#### 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 RCRA 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, 800-457-6556

#### Expansions:

World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### STREET AND ADDRESS INFORMATION

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DEPARTMENT OF HEALTH  
 SOLID AND HAZARDOUS WASTE BRANCH  
 OFFICE OF SOLID WASTE MANAGEMENT  
 919 ALA MOANA BOULEVARD, SUITE 310  
 HONOLULU, HAWAII 96814  
 TEL. NO. (808) 586-7300

COMPLAINT FORM

APPENDIX V  
 ADDITIONAL DOCUMENTATION

Complaint No.: 05-145

Referred by: \_\_\_\_\_  
 Date of Referral: \_\_\_\_\_

Complainant: \_\_\_\_\_  
 Address: \_\_\_\_\_

Complaint Date: 6/20/85  
 Address/Location: \_\_\_\_\_  
 of Incident: Early Birthdays

Type of \_\_\_\_\_  
 Rubbish \_\_\_\_\_ Used oil \_\_\_\_\_ Batteries \_\_\_\_\_ Tires \_\_\_\_\_ Appliances   
 Complaint: Junk vehicles  C&D \_\_\_\_\_ Compost \_\_\_\_\_ Soil \_\_\_\_\_ Others \_\_\_\_\_

Nature of \_\_\_\_\_  
 Complaint: Before junk cars (with seeds)  
Jack Frates allowed them seeds at this site

Recommended \_\_\_\_\_  
 Actions: \_\_\_\_\_

Action Taken: Refer to Planning Dept. 210-733-7100, 10/1/85

Received by: Jaw Assigned to: \_\_\_\_\_

\* Note: If field inspection is needed, attach page 2 of this form.

Poffenroth Piggery  
August 18, 2005  
Page 2 of 3

DEPARTMENT OF HEALTH  
SOLID AND HAZARDOUS WASTE BRANCH  
SOLID WASTE SECTION  
919 ALA MOANA BOULEVARD, ROOM 212  
HONOLULU, HAWAII 96814  
TEL. NO. 586-4228 FAX NO. 586-7508

INSPECTION REPORT

FACILITY NAME: Poffenroth Piggery  
INSPECTION DATE: August 18, 2005  
PERMIT NUMBER: NA  
ISSUED DATE: NA EXPIRATION DATE: NA  
MAILING ADDRESS: Mr. Larry Poffenroth  
P.O. Box 538  
Puunene, HI 96784  
Alexander & Baldwin, Inc. (property owner)  
P.O. Box 156  
Kahului, HI 96732  
LOCATION ADDRESS: Off Mokuleia Hwy  
Waikapu, Maui  
TMK: 38004001  
PERSON CONTACTED: Mr. Larry Poffenroth  
INSPECTOR AND TITLE: Todd Nichols, Environmental Health Specialist, SWS  
Janice Fujimoto, Environmental Engineer, SWS  
REPORT DATE: September 6, 2005

REASON FOR INSPECTION:

- ROUTINE
- COMPLIANCE SCHEDULE
- PERMIT REQUIREMENT
- VARIANCE CONDITION

- COMPLAINT EXPLAIN: complaint 05-105 accepting white goods, bailing cars and white goods
- OTHER EXPLAIN

Background: On 06/30/05 the SWS received a complaint that Larry Poffenroth was accepting white goods and bailing white goods and cars at his piggery.

OBSERVATIONS / FINDINGS:

On August 18, 2005, DOH inspected the site located off of Mokulele Highway, Waikapu, Maui, TMK: 38004001. Hawaii Department of Health inspectors Todd Nichols and Janice Fujimoto conducted the inspection. Mr. Larry Poffenroth accompanied the inspectors.

Poffenroth stated that he isn't bringing scrap metal onto the site and hasn't brought any metal onto the site in 2-3 yrs. Poffenroth showed the inspectors a number of things, such as portable pig pens, that he was building from old equipment. Poffenroth showed the inspectors a number of operational refrigerators that he was using to store food for pigs. Poffenroth showed the inspectors a large amount of canned food that was going to be fed to the pigs.

There was an approximately 500-1000 cubic yard pile of green waste at the site. Poffenroth stated that in the past he had allowed some people to bring in green waste to the site as the pigs would eat coconuts in the green waste and the left over green waste created soil. Poffenroth stated that he doesn't allow green waste to be brought on site anymore after some people dumped some loads of C & D under a load of green waste. Some building/demo material such as roofing material and plywood was visible in the green waste.

There were a number of scrap tires at the piggery. Poffenroth stated that he wasn't bringing scrap tires onto the site and that the tires were from his operation.

Poffenroth stated that he was in the process of cleaning up the site and disposing of old equipment and materials. A bailer was at the site along with a shipping container. Poffenroth estimated that he will need a year to clean up the site.

POTENTIAL VIOLATIONS:

- HAWAII REVISED STATUTES
- HAWAII ADMINISTRATIVE RULES TITLE 11 CHAPTER 58.1 - Gen. 1-1
- COMPLIANCE SCHEDULE
- PERMIT CONDITION
- VARIANCE CONDITION
- OTHER
- NONE

CAUSE OF POTENTIAL VIOLATIONS:

Roffenpith, Figgery  
August 18, 2009  
Page 3 of 3

FOLLOW-UP NEEDED: YES (x)      WHEN:      WHY: letter of interest  
NO ( )

LIST OF ATTACHMENTS:

Todd Nichols  
Environmental Health Specialist



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 2009  
HONOLULU, HAWAII 96820



November 27, 1998

S11302V8

CERTIFIED MAIL NO. Z 269 803 202  
RETURN RECEIPT REQUESTED

Mr. Larry Poffenroth  
P.O. Box 538  
Puuuene, Hawaii 96784

Dear Mr. Poffenroth:

Subject: Unpermitted solid waste management operation located at two sites:  
Central Metal Scrapyard, Puuene, Maui (auto salvage and scrap metals)  
Hog Farm (scrap tires and metals)

On October 30, 1998, a solid waste inspection was conducted at the subject locations by the representatives of the Department of Health (DOH). We met with you to observe the on-going operation at the sites. During the course of the investigation, information was gathered in accordance with section 342H-6 (Inspection of Premises) of the Hawaii Revised Statutes.

It has been determined that there is evidence of violations of Title 11, Chapter 68.1 of the Hawaii Administrative Rules and the Hawaii Revised Statutes 342H Solid Waste Pollution, and the Integrated solid waste management plan for the State of Hawaii:

1. The operation of a solid waste salvage facility without a permit, in violation of Section 11-68.1-4. This section states that it is unlawful for any person to establish, modify, or operate any solid waste management facility or a part thereof or any extension or addition thereto without a permit issued. According to our records, it appears that you have been in operation for at least a year since the closure of your operation at the Amata Place. Approximately 1200 tons of scrap metals were moved to this site for storage. A permit application was mailed out to you for this new site. However, no permit application was ever received by the Department.
2. The operation of a materials recovery facility, in violation of Sections 11-68.1-32 and 11-68.1-33. This section regulates the operations of automobile dismantlers, scrap metals, white goods, and junkyards.
3. The improper management of solid waste materials, in violation of Sections 11-68.1-61(a) and 11-68.1-61(b). You failed to remove accumulated solid

→ copy to Frank's OULoomis

Mr. Larry Poffenroth  
November 27, 1988  
Page 2

waste materials (e.g. used tires, used oil, white goods, and other scrap material) to an approved solid waste disposal facility.

In accordance with Title 11, Chapter 88.1 of Hawaii Administrative Rules, the Department hereby orders you to cease and desist all salvaging operations. If you wish to continue operations you must first apply for a permit from this office, and clear up any violations from previous operations.

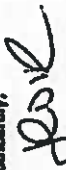
If we do not hear from you within 15 calendar days, we will initiate a formal Notice of Violation (NOV). Further operations will result in violations and such violations may be punishable by civil actions, including penalties of up to \$10,000 per day for each violation as provided by HRS section 342H-9.

Any deficiencies noted are not necessarily inclusive and any omissions in this letter shall not be construed as a determination of compliance with any applicable laws. Also, any omission to cite any other violations is not intended to nor shall be binding upon the DOH.

Your response to this letter, due within 15 days of your receipt of this letter, shall be mailed to:

Mr. John Harder, Coordinator  
Office of Solid Waste Management  
Solid and Hazardous Waste Branch  
Department of Health  
919 Ala Moana Boulevard, Room 210  
Honolulu, Hawaii 96814

Please use the permit application material given to you during the inspection. Should you have any questions, please contact Mr. Edgar Salvo of my staff at (808) 598-4240.

Sincerely,  
  
JOHN HARDER, Coordinator  
Office of Solid Waste Management

JH:EVS:mms  
cc: Kathleen Ho, Office of the Attorney General  
C. Earl Stoney, Jr., S&F Land Company, Inc., 323 Dairy Road, Kalaheo, Hawaii 96732  
David W. Blane, Planning Department, County of Maui  
Anny Hirose, Solid Waste Division, County of Maui  
Hans Stead, Solid Waste Division, County of Maui  
Philip Chin, District Land Agent/Maui District Land Management, DLNR  
Roland Toljano, Wastewater Branch, DOH-Hon



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
1110 KULANINIKU DRIVE  
HONOLULU, HAWAII 96813

May 5, 1989

CERTIFIED MAIL NO: Z 408 888 987  
RETURN RECEIPT REQUESTED

Mr. Larry Poffenroth  
P.O. Box 839  
Pauwahi, Hawaii 96784

Dear Mr. Poffenroth:

Subject: Closure of Two Solid Waste Management Sites:  
Central Maui Baseyard, Paunaea, Maui (auto salvage and scrap metals)  
Hog Farm (scrap tires and metals)

This is to follow up on our letters dated November 27, 1988, and December 23, 1988, regarding the closure of two illegal solid waste management operations at the above-referenced sites.

Except for the information and photographs of the Central Maui Baseyard provided by S&F Land Company, Inc., we have not received any response from you to indicate that the terms and conditions specified in our December 23, 1988, letter have been satisfied and completed. Under the authority of Chapter 342H of the Hawaii Revised Statutes and Chapter 88.1 of the Hawaii Administrative Rules:

1. An assessment of the site's present and future threat to public health and the environment due to contaminants generated during the illegal operation. The assessment may include soil sampling and testing within and adjacent to the property. A qualified environmental consultant shall conduct the site assessment. The site assessment report shall be submitted to the Department within thirty (30) calendar days of final site closure.
2. Solid waste disposal records (i.e. invoices, manifests) of material hauled from the subject sites to a permitted disposal facility. The records and/or receipts shall indicate the date, time, quantity, and type of materials delivered to the permitted disposal facility. A copy of disposal records shall be submitted to the Department within thirty (30) calendar days of final site closure.

If items 1 and 2 are not accomplished, the Department may institute an administrative or civil action in the name of the State of Hawaii for current and prior violations.

SO0602EVS

WARNING LETTER

SEP 22 2005

LANDS LABEL  
COUNTY OF MAUI



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3379  
HONOLULU, HAWAII 96811-3379

CYRILUS L. PUNAMA, M.D.  
DIRECTOR OF HEALTH

It may, please refer to  
this document

September 19, 2005

S0926TTN

CERTIFIED MAIL NO. 7005 1160 0003 8276 4707  
RETURN RECEIPT REQUESTED

LETTER OF INTEREST

Mr. Larry Poffenroth  
P.O. Box 538  
Puunene, Hawaii 96784

Dear Mr. Poffenroth:

SUBJECT: Accumulation of Solid Waste,  
TMK 38004001, Waikapu, Maui

On August 18, 2005, in response to a complaint, the Department of Health, Solid Waste Section (SWS), inspected your piggery located at the subject site and noted an accumulation of solid waste such as scrap metal, green waste, construction and demolition waste, and scrap tires. It is our understanding that the tires came from your vehicles or equipment, that the scrap metal was accumulated years ago, and that the construction waste was deposited at your piggery without your knowledge or consent. It is also our understanding that you are in the process of cleaning up the piggery and will need a year to complete the cleanup.

As the property owner and/or operator, you have the responsibility to properly manage and dispose of accumulated solid wastes. This responsibility is stated in the Hawaii Administrative Rules (HAR), Title 11, Chapter 58.1, which provides:

- (a) The aesthetic, nonhazardous, and sanitary storage of solid waste is the responsibility of the person owning, operating, or managing the property, premises, business establishment, or industry where the solid waste is accumulated
- (b) Any person owning, operating, or managing a property, premise, business establishment, or industry has the responsibility of removing accumulated solid waste to an approved solid waste disposal facility. Contractual or other arrangements for the removal of accumulated solid waste shall not relieve a person of this primary responsibility as stated above. Solid waste shall be removed to an approved solid waste disposal facility, prior to creating a nuisance condition or health or safety hazard.

Mr. Larry Poffenroth  
May 5, 1988  
Page 2

Your response to this letter, due to the DOI within thirty (30) calendar days of your receipt of this letter, shall be mailed to:

Mr. Steven Y.K. Chang, P.E., Chief  
Solid and Hazardous Waste Branch  
Department of Health  
919 Ala Moana Boulevard, Room 210  
Honolulu, Hawaii 96814

Should you have any questions, please contact Mr. Edger Sells at (808) 586-4240.

Sincerely,

STEVEN Y.K. CHANG, P.E., ~~CHIEF~~  
Solid and Hazardous Waste Branch

cc: Kristeen Ho, Office of the Attorney General  
C. Earl Stoner, Jr., S&F Land Company, Inc., 333 Dairy Road, Kahului, HI 96732  
Steve Haisala, A & B Properties, 33 Lane Avenue, Kahului, HI 96732  
David W. Stone, Planning Department, County of Maui  
Andy Niwasa, Solid Waste Division, County of Maui  
Hana Steel, Solid Waste Division, County of Maui  
Philip Ohta, District Land Agent/Maui District Land Management, DLNR  
Roland Tejano, Wastewater Branch, DOH-Maui

MAY 06 2010  
factory file  
DORIS L. FRANKS, M.D.  
DIRECTOR OF HEALTH



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 2071  
HONOLULU, HAWAII 96811-2071

Mr. Larry Poffenroth  
September 19, 2005  
Page 2

Therefore, the SWS is requesting that you complete the removal and property disposal of solid waste, including but not limited to scrap metal, construction waste, and scrap tires, within one year of your receipt of this letter.

Any deficiencies that may be noted in this letter are not necessarily inclusive and any omissions shall not be construed as a determination of compliance with any applicable laws. Also, any omission to cite other violations is not intended to nor shall be binding upon the DOH. Please mail a response within thirty (30) calendar days of your receipt of this letter to:

Steven Y.K. Chang, P.E., Chief  
Solid and Hazardous Waste Branch  
Department of Health  
819 Ala Moana Boulevard, Room 212  
Honolulu, Hawaii 96814

Should you have any questions regarding this letter, please call Mr. Todd Nichols of our Solid Waste Section at (808) 586-4226.

Sincerely,

STEVEN Y. K. CHANG, P. E., CHIEF  
Solid and Hazardous Waste Branch

c: Alexander & Baldwin, Inc.

May 6, 2010

S0504-JF

Mr. Sean M. O'Keefe  
Director, Environmental Affairs  
Alexander & Baldwin, Inc.  
P.O. Box 266  
Puuuene, Hawaii 96794

Dear Mr. O'Keefe:

**SUBJECT:** Solid Waste Management Permit Application, Exemption Request  
Cleanup of Former Poffenroth Piggery  
Located at: TMK No. (2) 3-8-008-019, Puuene, Maui, Hawaii

The Department of Health (DOH), Solid and Hazardous Waste Branch, Solid Waste Section received your solid waste management permit exemption request for the subject site, dated April 13, 2010. According to your request, we understand you obtained an order from the U.S. Bankruptcy Court, District of Hawaii to remove scrap metal from the premises formerly occupied by Mr. Poffenroth. We further understand your cleanup operations, to be completed by a contractor, will include the following:

1. Cleanup operations will include on-site processing of scrap metal, scrap vehicles, and other mobile equipment. The site contains approximately 150-200 scrap vehicles and equipment.
2. Processing will likely include the removal of tires, batteries, automotive fluids, oil filters, refrigerant, mercury switches, and other hazardous materials. Processed vehicles may be crushed/baled onsite.
3. The contractor will be required to adhere to Best Management Practices (BMPs) for processing, crushing, and handling of scrap metal and scrap vehicles/equipment. BMPs shall include: processing/crushing only in designated paved areas, providing and maintaining proper storage containers and secondary containment for fluids, batteries, and other hazardous materials, properly disposing of all materials removed during processing operations, and prompt corrective actions to address any spills and leaks.
4. Cleanup operations shall be completed within approximately four (4) months.

LINA LINGLE  
DIRECTOR OF HEALTH

Mr. Sean M. O'Keefe  
May 6, 2010  
Page 2

5. Alexander & Baldwin, Inc. plans to conduct a comprehensive site assessment and, if necessary, remediation to address any environmental impacts from the past solid waste-related operations.

Based on this understanding of your operation, the director has determined that your facility is a minor source under Hawaii Administrative Rules 11-58.1-04(b)(5), and exempt from solid waste management permitting requirements. The minor source exemption is granted based on your involvement as a property owner, rather than operator of the solid waste management facility, the limited duration of the cleanup, and the BMPs/oversight you intend to provide for the operations.

Please provide the DOH with written documentation within thirty (30) days of conclusion of your cleanup operations. Written documentation shall include a description of waste removed from the site, quantities, and recycling/disposal location. Waste shall only be transported to the DOH-permitted facilities allowed to accept such waste.

Please also submit the findings of your comprehensive site assessment, as well as any work plans and analytical reports associated with your study. If contamination is identified at unacceptable levels, you will be required to remediate the site and submit associated documentation to the DOH.

If you have any questions regarding this letter, please contact Ms. Janice Fujimoto of the Solid and Hazardous Waste Branch at (808) 586-4228.

Sincerely,

  
STEVEN Y.K. CHANG, P. E., ACTING CHIEF  
Environmental Management Division

### ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

DATE: MARCH 6, 2011

JOB NAME: PROCEED ENVIRONMENTAL SITE ASSESSMENT

FACILITY NAME & ADDRESS: FORMER POPPERBLOTH PROPERTY, PUNAHOU, MAUI, HAWAII

1. NAME/TITLE/PHONE NUMBER OF PERSON COMPLETING FORM: SEAN M. O'KEEFE, DIRECTOR, ENVIRONMENTAL AFFAIRS, ALEXANDER & BALDWIN, INC. (808) 677-2959
2. JOB DESCRIPTION/YEARS KNOWLEDGE OF SITE: RESPONSIBLE FOR ENVIRONMENTAL COMPLIANCE AND OTHER ENVIRONMENTAL ISSUES RELEVANT TO THE COMPANY'S OPERATIONS. FAMILIAR WITH THE SITE SINCE APPROXIMATELY 1995.
3. REASON FOR CONDUCTING PHASE I ESA: POSSIBLE SALE OF THE PROPERTY
4. HOW LONG HAS THE FACILITY BEEN THERE? THE PROPERTY WAS USED AS A PIG FARM SINCE THE 1960's, AND WAS ADDITIONALLY USED FOR UNPERMITTED SOLID WASTE MANAGEMENT ACTIVITIES SINCE APPROXIMATELY 1995.  
  
WHAT WAS THERE BEFORE? PRIOR TO THE PROPERTY USE, THE PROPERTY WAS PARTLY USED FOR CULTIVATION OF SUGARCANE AND ALSO AS A PLANTATION CAMP. PRIOR TO THAT USE, THE PROPERTY WAS PART OF THE PUNAHOU NAVAL AIR STATION.
5. ARE THERE ANY PERMITS FROM THE COUNTY, STATE, OR FEDERAL GOVERNMENT FOR OPERATION OF THE FACILITY? NONE KNOWN.
6. WHAT IS THE SOURCE OF WATER? (COUNTY / WELL / CATCHMENT) COUNTY WATER FOR DOMESTIC WATER. THERE IS ALSO A NON-POTABLE WATER WELL ON THE PROPERTY.  
  
WHAT TYPE OF SEWER SYSTEM IS PRESENT? (CESSPOOL / INJECTION WELL / COUNTY SYSTEM) BUILDINGS ON THE PROPERTY WERE MOST RECENTLY SERVED BY CESSPOOLS, WHICH HAVE BEEN FILLED IN. DURING MILITARY USE OF THE PROPERTY THERE WAS A SEWER SYSTEM WHICH APPARENTLY DISCHARGED INTO LARGE SEPTIC SYSTEMS.  
  
IS THE WATER TREATED? NO
8. ARE THERE ANY FLOOR DRAINS OR SINKS ON THE PROPERTY? NONE TO MY KNOWLEDGE.

CYANIDE WASTES: NONE KNOWN

WHAT DO THEY DEAL?

WHERE DO THEY DISCHARGE?

9. ARE THERE ANY ELECTRICAL TRANSFORMERS ON THE PROPERTY? (GROUNDING OR POLE-MOUNTED) NONE TO MY KNOWLEDGE; MECO SERVICES TO THE PROPERTY HAS BEEN TERMINATED.

WHO OWNS THE TRANSFORMERS, IF ANY?

HAVE THEY BEEN TESTED FOR PCBs?

10. ARE THERE ANY ABOVE GROUND AND/OR UNDERGROUND STORAGE TANKS? NONE TO MY KNOWLEDGE.

SIZE	CONTENT	AGE	REGISTERED WITH/DNR	HAVE THEY LEAKED?
------	---------	-----	---------------------	-------------------

11. DOES THE FACILITY USE OR HAS THE FACILITY USED ANY OF THE FOLLOWING MATERIALS?  
HOW MUCH DOES/DID THE FACILITY GENERATE?

PESTICIDES / HERBICIDES: HERBICIDES ARE USED IN THE CULTIVATION OF SUGARCANE ON THE PROPERTY. OTHER PESTICIDES ARE BELIEVED TO HAVE BEEN USED BY THE PAST AGRICULTURAL OPERATIONS, BASED ON PESTICIDE CONTAINERS FOUND ON THE PROPERTY WHEN THE FORMER TENANT VACATED.

FERTILIZERS: FERTILIZERS ARE USED IN THE CULTIVATION OF SUGARCANE ON THE PROPERTY AND MAY HAVE BEEN USED BY PAST AGRICULTURAL OPERATIONS.

PCBs: NONE KNOWN EXCEPT THAT FLUORESCENT LIGHT BALLASTS REMOVED FROM STRUCTURES AT THE SITE WERE PRESUMED TO CONTAIN PCBs IN CASES WHERE LABELS WERE MISSING OR ILLEGIBLE, OR DID NOT HAVE THE WORDS "NO PCBs"

HEAVY METALS: POTENTIAL CONTAMINANTS IN WASTES MANAGED ON THE PROPERTY (E.G., BATTERIES, LIGHT BULBS, USED CRTs).

ASBESTOS: ASBESTOS WAS PRESENT IN BUILDINGS FORMERLY LOCATED ON THE PROPERTY THAT HAVE BEEN DEMOLISHED. ASBESTOS IS ALSO PRESENT IN WATER SYSTEM PIPING FORMERLY SERVING THE MILITARY STRUCTURES AND APPARENTLY STILL IN PLACE ON THE PROPERTY.

ACID / BASES: ACIDS PRESENT IN BATTERIES STORED ON THE SITE BY THE FORMER TENANT.

SOLVENTS (CLEANSERS, DISOLVERS, PAINT THINNER, ETC.): PAINTS WERE FOUND ON THE SITE, SO PAINT THINNERS WERE LIKELY USED BY THE FORMER TENANT.

OILS / LUBRICANTS (WASTE OIL): WASTE OIL WAS GENERATED AND STORED BY THE FORMER TENANT.

ANY OTHER WASTE? SCRAP METAL, GREEN WASTE, FOOD WASTE, CONSTRUCTION AND DEMOLITION WASTE, POTTERY-RELATED WASTES, HAZARDOUS WASTES, USED LIGHT BULBS, USED CRTs WERE ALL GENERATED OR STORED ON THE SITE BY THE FORMER TENANT.

12. HAS ANY WASTE OR RUBBISH BEEN BURIED ON THE PROPERTY? IF SO, WHERE IS THE WASTE / RUBBISH BURIED AND WHAT KIND OF WASTE WAS DISPOSED OF? RUBBISH ASSOCIATED WITH FEEDING OF PIGS (PRIMARILY FOOD WRAPPERS AND CONTAINERS) WAS INDISTINGUISHABLY DISPOSED ON THE SURFACE AROUND THE SITE AND IN SOME CASES WAS PARTIALLY BURIED UNDER ROCK PILES AROUND THE SITE. ALL AREAS WHERE BURIED WASTE WAS KNOWN OR SUSPECTED TO BE PRESENT HAVE BEEN EXCAVATED AND THE WASTE PROPERLY DISPOSED OF.

13. HAS ANY WASTE OR RUBBISH BEEN BURIED ON THE PROPERTY? IF SO, WHAT KIND OF WASTE WAS BURIED AND WHERE WAS THE WASTE BURIED? DEAD PIGS ARE KNOWN TO HAVE BEEN BURIED ON THE PROPERTY.

14. ARE THERE ANY CLARIFIERS, PROCESSORS, OR DISTILLATION OR NEUTRALIZATION UNITS? WHAT SUBSTANCES ARE USED/PRODUCED BY THEM? NONE KNOWN

15. ARE THERE ANY GAS OR SERVICES STATIONS ON THE PROPERTY OR ANY ADJOINING PROPERTIES? NONE KNOWN, THOUGH THERE MAY HAVE BEEN SUCH FACILITIES ON THE ADJOINING MILITARY BASE AT ONE TIME.

16. IS THERE A MAINTENANCE SHOP ON THE PROPERTY? IS SO, WHAT KIND OF ACTIVITIES TAKE PLACE THERE? A MAINTENANCE SHOP WAS OPERATED ON THE PROPERTY BY THE FORMER TENANT. ACTIVITIES INCLUDED REPAIRS AND MAINTENANCE TO VEHICLES AND HEAVY EQUIPMENT.



17. ARE THERE ANY WASTE OR CHEMICAL PIPELINES ON THE PROPERTY? THE SEWAGE SYSTEM WHICH FORMERLY SERVED BUILDING ASSOCIATED WITH THE FORMER MILITARY BASED IS LIKELY STILL IN EXISTENCE. THERE ARE NO KNOWN CHEMICAL PIPELINES.
18. ARE YOU AWARE OF ANY CONTAMINATION OR WASTE DISPOSAL AREAS ON THE PROPERTY OR NEARBY PROPERTIES? THE PROPERTY WAS USED AS AN UNPERMITTED SOLID WASTE MANAGEMENT FACILITY BY THE FORMER OCCUPANT. CONTAMINATION MAY HAVE RESULTED FROM THESE ACTIVITIES AND IS BEING INVESTIGATED. THERE ARE KNOWN WASTE DISPOSAL AREAS AND AREAS OF CONTAMINATION ON ADJACENT PROPERTIES WHICH WERE FORMERLY PART OF THE MILITARY INSTALLATION.
19. IS THERE ANY RUNOFF FROM ADJACENT PROPERTIES ONTO THE PROPERTY? NONE TO MY KNOWLEDGE.
20. IS THE PROPERTY OR ANY ADJACENT PROPERTY USED FOR INDUSTRIAL USE? THE HAWAIIAN CEMENT QUARRY IS NEARBY, AS IS THE CENTRAL MAUI BATTERY. THE MAJORITY OF SURROUNDING LANDS ARE USED FOR SUGARCANE CULTIVATION.
21. HAS THE PROPERTY OR ANY ADJACENT PROPERTY BEEN USED FOR INDUSTRIAL USE IN THE PAST? THE PROPERTY WAS USED AS AN UNPERMITTED SOLID WASTE MANAGEMENT FACILITY BY THE FORMER TENANT.
22. IS THE PROPERTY OR ADJACENT PROPERTY USED AS A GASOLINE STATION, MOTOR REPAIR FACILITY, COMMERCIAL PRINTING FACILITY, DRY CLEANERS, PHOTO DEVELOPING, LABORATORY, RUNCYARD OR LANDFILL, OR AS A WASTE TREATMENT, STORAGE, DISPOSAL, PROCESSING, OR RECYCLING FACILITY? NO SUCH USES ARE KNOWN CURRENTLY.
23. IN THE PAST? THE PROPERTY WAS USED AS AN UNPERMITTED SOLID WASTE MANAGEMENT FACILITY BY THE FORMER TENANT. ACTIVITIES ON THE SITE INCLUDED REPAIR AND MAINTENANCE OF VEHICLES AND EQUIPMENT.
24. ARE THERE CURRENTLY, OR TO THE BEST OF YOUR KNOWLEDGE HAVE THERE BEEN PREVIOUSLY, ANY DAMAGED OR DISCARDED AUTOMOTIVE OR INDUSTRIAL BATTERIES, OR PESTICIDES, PAINTS, OR OTHER CHEMICALS IN INDIVIDUAL CONTAINERS OF GREATER THAN 5 GAL (19 L) IN VOLUME OR 50 GAL (190 L) IN THE AGGREGATE, STORED ON OR USED AT THE PROPERTY OR THE FACILITY? YES TO ALL. MOST SUCH MATERIALS HAVE ALREADY BEEN DISPOSED OF. SOME SUCH MATERIALS (ONE DRUM CONTAINING BROKEN AUTOMOTIVE BATTERIES, ONE DRUM CONTAINING WASTE PAINT) ARE CURRENTLY IN STORAGE PENDING DISPOSAL ARRANGEMENTS.
25. ARE THERE CURRENTLY, OR TO THE BEST OF YOUR KNOWLEDGE HAVE THERE BEEN PREVIOUSLY, ANY INDUSTRIAL DRUMS TYPICAL 55 GAL (208 L) OR BAGS OF CHEMICALS LOCATED ON THE PROPERTY OR THE FACILITY? YES. ALL SUCH MATERIALS HAVE BEEN PROPERLY DISPOSED OF EXCEPT AS NOTED ABOVE.
26. ARE THERE CURRENTLY, OR TO THE BEST OF YOUR KNOWLEDGE HAVE THERE BEEN PREVIOUSLY, ANY PITS POND, OR LAGOONS LOCATED ON THE PROPERTY IN CONNECTION WITH TREATMENT OR WASTE DISPOSAL? WASTE LAGOONS WERE OPERATED AS PART OF THE PROPERTY OPERATIONS. THESE RECEIVED ANIMAL WASTE.
27. TO THE BEST OF YOUR KNOWLEDGE HAVE THERE BEEN PREVIOUSLY, ANY REGISTERED STORAGE TANKS (ABOVE GROUND AND/OR UNDERGROUND) LOCATED ON THE PROPERTY? NONE KNOWN. UNREGISTERED AST-1 AND MOBULA TANK TRUCKS/TRAILERS WERE PRESENT DURING POPPERBOTH'S OCCUPANCY OF THE PROPERTY, SOME OF WHICH WERE USED FOR PETROLEUM STORAGE. THESE WERE ALL CLEANED AND/OR CONTAINED TO BE FREE OF PETROLEUM PRODUCTS AND COMBUSTIBLE VAPORS PRIOR TO DISPOSAL AS SCRAP METAL.
28. ARE THERE CURRENTLY, OR TO THE BEST OF YOUR KNOWLEDGE HAVE THERE BEEN PREVIOUSLY, ANY VENT PIPES, FILL PIPES PROTRUDING FROM THE GROUND ON THE PROPERTY OR ADJACENT TO ANY STRUCTURE ON THE PROPERTY? NONE KNOWN.
29. DOES THE PROPERTY DISCHARGE WASTEWATER ON OR ADJACENT TO THE PROPERTY OTHER THAN STORMWATER INTO A SANITARY SEWER SYSTEM? NO.

29. ARE YOU AWARE OF ANY ENVIRONMENTAL CLEANUP LIENS AGAINST THE PROPERTY THAT ARE FILED OR RECORDED UNDER FEDERAL, TRIBAL, STATE OR LOCAL LAW? No.

30. ARE TITLE RECORDS AVAILABLE? If so, please provide ETC with copies of these records. I believe these have already been provided.

31. CONTACT INFORMATION - PLEASE PROVIDE CONTACT INFORMATION (NAME, PHONE NUMBER, ETC.) FOR THE FOLLOWING INDIVIDUALS IF AVAILABLE.

SUBJECT PROPERTY MANAGER: JASON KODA, A&B PROPERTIES, INC. (808) 877-6645

SUBJECT PROPERTY OCCUPANT: None

SUBJECT PROPERTY OWNER: A&B PROPERTIES, INC. Use contact information above.

32. ARE YOU AWARE OF ANY ACTIVITY AND LAND USE LIMITATIONS (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? None to my knowledge.

33. AS THE USER OF THIS ENVIRONMENTAL SITE ASSESSMENT (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 ADJACENT PROPERTY SO THAT YOU WOULD HAVE SPECIALIZED KNOWLEDGE OF THE CHEMICALS AND PROCESSES BY THIS TYPE OF BUSINESS? AS A REPRESENTATIVE OF THE PROPERTY OWNER, I HAVE SPECIALIZED KNOWLEDGE REGARDING THIS PROPERTY AND NEARBY PROPERTIES, WHICH HAS BEEN CONVEYED TO THE ENVIRONMENTAL PROFESSIONAL IN THE QUESTIONNAIRE AND AT OTHER TIMES DURING AND PRECEDING THE ASSESSMENT.

34. DOES THE PURCHASE PRICE BEING PAID FOR THIS PROPERTY REASONABLY REFLECT THE FAIR MARKET VALUE OF THE PROPERTY? If you conclude that this a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? To the best of my knowledge, the purchase price for this property reflects the fair market value of the property.

35. AS 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 THE USER,

36. DO YOU KNOW THE PAST USES OF THE PROPERTY? Yes, as described above and previously described to the environmental professional.

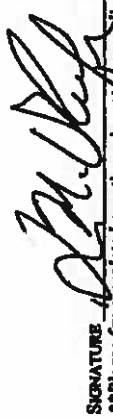
37. DO YOU KNOW OF SPECIFIC CHEMICALS THAT ARE PRESENT OR ONCE WERE PRESENT AT THE PROPERTY? Yes, as described above and previously described to the environmental professional.

38. DO YOU KNOW OF SPILLS OR OTHER CHEMICAL RELEASES THAT HAVE TAKEN PLACE AT THE PROPERTY? Yes, as previously described to the environmental professional.

39. DO YOU KNOW OF ANY ENVIRONMENTAL CLEANUPS THAT HAVE TAKEN PLACE AT THE PROPERTY? Yes, as previously described to the environmental professional.

40. 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? None to my knowledge with the exception of de minimis releases of petroleum and the potential for contaminants related to past operation of an unpermitted solid waste management facility. An investigation for such contamination is ongoing.

41. ANY ADDITIONAL CONCERNS REGARDING THE PROPERTY OR ANY ADJOINING PROPERTIES? NONE NOT PREVIOUSLY DISCLOSED.

SIGNATURE  DATE 3/11/11  
Please see completed questionnaire at prior earthwork conference re:  
Mr. Sherrin Nishizhima  
Banko Services & Training Center, LLC  
503 Ward Avenue, Suite 202, Honolulu, Hawaii  
tel: 808-7222 fax: 808-4453

APPENDIX VI  
QUALIFICATIONS OF THE ENVIRONMENTAL PROFESSIONAL

## PAST PROJECT EXPERIENCE

Sharla M. Nakashima

**Phase I Environmental Site Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai:** Environmental Professional. Ms. Nakashima has conducted numerous Phase I environmental site assessments throughout the State of Hawaii in accordance with generally accepted Phase I industry protocol as described in the ASTM E-1527 standard and to satisfy "all appropriate inquiry" as defined in 42 United States Code (U.S.C., §9601(35)(B)). Work sites included commercial, industrial, agricultural, condemned, and residential land ranging in size from small properties (less than 2.0 acres) to larger properties (greater than 300.0 acres).

**Phase II Environmental Site Assessments/Site Screening Assessments on the Islands of Oahu, Maui, Kauai, Hawaii, Lanai; Project Manager.** Ms. Nakashima has performed numerous Phase II environmental site assessments and site screening assessments throughout the State of Hawaii. Projects included surface soil investigation utilizing both multi-incremental and discrete sampling protocols and subsurface soil/groundwater investigations using hand tools, direct-push rig, and hollow-stem augering techniques. Contaminants investigated included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans

**Phase II Environmental Site Assessments/Site Screening Activities; GPS Team Leader.** Ms. Nakashima utilized Trimble Navigation Global Positioning System (GPS) instrumentation and Geographical Information Systems (GIS) applications for numerous projects to identify/locate pre-determined sample locations, document sample locations or site features, and/or identify property limits. GIS data obtained were incorporated in both the planning and reporting phases of applicable projects.

**Underground Storage Tank (UST) Closure and Release Response; Environmental Scientist.** Ms. Nakashima has closed numerous UST systems throughout the State of Hawaii. Closure and release response activities were performed in accordance with Hawaii Administrative Rules 11-281. Duties included coordination and management of various subcontractors, documentation of closure (both removal and close in place), release assessment sample collection, site remediation, waste profiling/packaging/disposal, communication with State regulators, and report preparation.

**Voluntary Response Program (VRP) Site Assessment and Remediation; Environmental Scientist/Project Manager.** Ms. Nakashima has served as both environmental scientist and project manager on several VRP projects on the Island of Oahu. Ms. Nakashima worked on all phases of the VRP, including project scoping, planning document preparation, field sampling, data assessment, contaminated media removal/remediation, confirmation sampling, and report preparation. Contaminants addressed included petroleum/petroleum-related compounds, heavy metals, pesticides/herbicides, PCBs, and dioxins/furans

**Industrial Wastewater Discharge Permitting (IWDPP); Environmental Scientist.** Ms. Nakashima acquired an IWDPP which authorized the facility to discharge industrial wastewater into the City and County of Honolulu's publicly owned treatment works (POTW) under Chapter 14 of the Revised Ordinances of Honolulu.

**Underground Injection Control (UIC) Permitting; Environmental Scientist.** Ms. Nakashima acquired a UIC permit for two dry wells located at a car rental facility in Kona, Hawaii. Work included investigation and application procedures required by the Hawaii Department of Health-Safe Drinking Water Branch.

**Hazardous Materials Inventory; Environmental Chemist.** Ms. Nakashima conducted a hazardous materials survey at over sixty (60) public intermediate and high schools on the islands of Oahu, Kauai, Maui, Molokai, Lanai and Hawaii. Work included identification and categorizing of over 30,000 hazardous materials, conducting photographic documentation, and determining NFPA labeling requirements for classroom storage areas potentially containing hazardous materials.

**Household Hazardous Waste (HHW) Collection; Environmental Scientist.** Ms. Nakashima assisted with the collection of HHW in Honolulu, Lahaina, Wailuku, Hilo, and Kona. Tasks included identification, packaging, labeling, transportation and disposition of HHW in accordance with OSHA, EPA, and DOT protocol.

## PROFESSIONAL QUALIFICATIONS

**Name:** Sharla M. Nakashima  
**Title:** Environmental Scientist  
**Education:** BS, Chemistry, University of Hawaii at Manoa, 2000  
**Training:** OSHA 40 Hour HAZWOPER  
DOT Hazardous Materials Handling  
**Experience:** EnviroServices & Training Center, LLC, Environmental Chemist, 2000 to Present.  
University of Hawaii, Chemistry Department, Graduate Research Assistant, 2000.

Ms. Nakashima's primary responsibilities are conducting Phase I and II environmental site assessments. She is also the lead person to conduct data QA/QC/validation/reduction. Ms. Nakashima possesses experience in operating global positioning system (GPS) instrumentation and conducting hazardous materials inventories/classification/segregations/compatibility determinations.

**Hazardous Waste Characterization and/or Disposal, Environmental Scientist.** Ms. Nakashima assisted in the disposal of various chemicals and hazardous wastes at an abandoned laboratory in Waimanalo, Oahu. Additional sites included several public intermediate and high schools. Tasks included identification, packaging, labeling, transportation and disposition of hazardous waste in accordance with OSHA, EPA, DOT, and local regulations.

**Asbestos Air-Monitoring, City and County - Department of Agriculture, Environmental Scientist.** Ms. Nakashima assisted and/or conducted air monitoring using low volume sampling pumps during asbestos abatement activities.

**Laboratory Studies, Research Assistant.** Ms. Nakashima conducted studies of protein conformational dynamics through photothermal methods and purified horse heart myoglobin within thin layered polymer slides and organic solvents. Lab experience also included utilization of Gas Chromatography (GC)-Mass Spectrometry (MS), High Performance Liquid Chromatography (HPLC), Nuclear Magnetic Resonance (NMR), Infrared (IR) spectrometry, and Ultraviolet/Visible (UV-VIS) Spectrometer.

***Site Investigation  
Report***

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**SITE INVESTIGATION REPORT**

Former Puunene Piggery  
 South Firebreak Road  
 Puunene, Maui, Hawaii  
 TMK (2) 3-8-8 Parcel 19

Prepared For:  
**A&B PROPERTIES, INC.**  
 P.O. Box 266  
 Puunene, Hawaii 96784

Prepared By:  
**ENVIROSERVICES & TRAINING CENTER, LLC**  
 505 Ward Avenue, Suite 202  
 Honolulu, Hawaii 96814  
 tel: (808) 839-7222

ETC Project No. 06-2048

October 2011

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1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center (ETC), LLC has completed this Site Investigation Report for the project site. ETC's findings and conclusions presented in this report are professional opinions based solely upon visual observations of the project site, government regulations, and upon interpretation of the laboratory data and field measurements gathered at the time and location of the study.

This report is intended for the sole use of ETC's Client, exclusively for the project site indicated. The scope of services performed in execution of this project may not be appropriate for satisfying the needs of other users, and any use or reuse of this report or the findings and conclusions presented herein is unauthorized and at the sole risk of said user.

ETC makes no guarantee or warranty, either expressed or implied, except that our services are consistent with good commercial or customary practices designed to conform to acceptable industry standards and governmental regulations. No warranty or representation, expressed or implied, is included or intended in its proposal, contracts, or reports. Opinions stated in this report apply only to the site as outlined and apply to the conditions present at the time of site sampling activities. Moreover, these opinions do not apply to site changes that occur after the site sampling activities.

Prepared By:

\_\_\_\_\_  
 Sharla Nakashima  
 Project Manager

Date:

October 2011



## 2.0 EXECUTIVE SUMMARY

EnviroServices & Training Center (ETC), LLC was contracted by A&B Properties, Inc. (A&B) to conduct a Site Investigation at the project site known as the former Puunene Piggery, identified as Tax Map Key (TMK) (2) 3-4-8: Parcel 19 (herein referred to as the "Property") and located along South Firebreak Road in Puunene, Hawaii. The data obtained during this investigation was used to determine whether additional investigation and/or corrective actions are warranted, based on the decision rules developed in ETC's February 2011 *Site Investigation Work Plan, Former Puunene Piggery* (SI-WP).

The Property was formerly used as a piggery for over 25 years. As part of an agreement with the former tenant, Mr. Larry Poffenroth occupied the property and took over the piggery operations in or around 1995; he is believed to have begun solid waste management activities at the property shortly thereafter. Poffenroth occupied the property, and commenced his solid waste management activities, without the knowledge or consent of the former Property landowner, A&B. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing, however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In addition, large amounts of food waste were brought to the Property as pig feed, which resulted in discarded empty food packaging materials being spread throughout much of the north portion of the Property. In late 2007, A&B was finally able to evict Mr. Poffenroth and all the remaining pigs were subsequently removed from the Property in 2008. Immediately following the eviction, A&B Properties began solid waste cleanup activities at the Property which were completed in February 2011. Based on the former usage of the Property, several specific potential sources of contamination were identified during previous site inspections.

The contaminants of potential concern (COPC) identified for the purposes of this site investigation were Resource Conservation and Recovery Act (RCRA) eight metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), total petroleum hydrocarbons (TPH) as diesel (D), TPH as oil (O), polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). The media targeted by this site investigation was surface soil.

In order to assess the impacts associated with the former solid waste operations on the Property, the following decision units (DU) were established based on source locations: The source locations were identified as the shop area (DU1), vehicle and drum storage area (DU2), scrap metal processing area (DU3), miscellaneous scrap metal and debris (DU4), scrap metal stockpiles and transformer storage area (DU5), vehicle/tanker/televisors/monitors storage area (DU6), miscellaneous hazardous materials storage area (DU7), miscellaneous scrap metal with open areas (DU8), battery storage area (DU9), miscellaneous scrap metal pile (DU10), and the scrap metal and CRT storage area (DU11).

In March 2011, a total of thirteen (13) multi-increment soil samples (eleven primary samples, two field replicate samples) were collected from the potential contaminant source locations. The samples were submitted to Torrent Laboratory, Inc. (TLI) in Milpitas, California for select COPC as described in ETC's February 2011 SI-WP.

Analytical results from ETC's March 2011 initial site investigation activities indicated that elevated concentrations of TPH-O were reported for DU6 and DU12 (replicate of DU3). Specifically, reported average concentration for DU6 (730 mg/kg) and the adjusted value (reported average concentration plus RSD) for DU12 (589 mg/kg) exceeded the Hawaii Department of Health (DOH) Environmental Action Level (EAL) of 500 mg/kg pertaining to gross contamination concerns associated with unrestricted land use. The adjusted value for DU6 (1,228 mg/kg) also exceeded the DOH EAL pertaining to leaching (1,000 mg/kg) concerns. Although the initial AL was exceeded, the DOH EAL pertaining to direct exposure (2,300 mg/kg) concerns associated with unrestricted land use was not exceeded. Furthermore, ETC understands that during the land sale of the property the "new" and current land owner agreed to accept a commercial/industrial land use limitation for the property. Therefore, gross contamination concerns associated with unrestricted land use would not be considered a significant environmental hazard for this and will be removed from consideration. An adjusted TPH-O value (1,228 mg/kg) was reported at a concentration exceeding the EAL pertaining to soil leaching EALs in DU6 only. A previous groundwater investigation indicated that none of the regulated drinking water contaminants were identified at levels of concern. In addition, the DOH HEER Office generally considers soil leaching EALs associated with petroleum-related constituents excessively conservative. For example, as noted in the DOH's Summer 2008 *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater* document (EHE Document), TPH-O is considered to be biodegradable and "can be expected to naturally degrade over time," however, it is not accounted for in the model. The model used is also based on a much higher rainfall than is received in Puunene, Hawaii. In addition, the leaching EAL does not consider drinking water utility status (i.e. drinking water vs. non-drinking water) and; as noted in the EHE Document, the leaching EAL is based on the California EPA Los Angeles Regional Water Board proposed action level of 1,000 mg/kg which in fact applies to drinking water aquifers in which the distance above groundwater is less than 20 feet (CRWQCB, 1996). Note that groundwater status of the Property is considered to be non-drinking water and is anticipated at a depth greater than 100 feet. Based on this information, soil leaching concerns associated with petroleum-related constituents do not appear to be a significant concern. Therefore, soil leaching would not be considered a significant environmental hazard for this site and will be removed from consideration.

In addition to the DU6 findings, analytical results indicated that soil collected from DU11 contained an average total lead concentration of 830 mg/kg, which exceeds the initial AL of 200 mg/kg. The detected total lead concentration also exceeded the DOH EAL of 800 mg/kg pertaining to direct exposure concerns associated with commercial/industrial land use. Based on these findings, ETC proposed additional surface soil sampling within DU11. As a result, ETC remobilized to the Property in August 2011 to collect a total of ten (10) multi-increment soil samples (eight primary samples, two field replicate samples) from DU11. The samples were submitted to TestAmerica - Honolulu (TA-H) in Aiea, Hawaii for analysis of total lead.

Analytical results for the additional investigation of DU11 indicated that average total lead concentrations for all eight DUs were well below the project defined AL of 200 mg/kg. Based on these findings, ETC suspects that the deviation of these results from initial DU11 findings may have been caused by nuggets or discrete pieces of lead within the soil. Therefore, based on the analytical results of the additional sampling activities, ETC suspects that the initial results for DU11 may not necessarily reflect the average lead concentrations that are likely to be encountered throughout DU11. In addition, given the future commercial/industrial land use of the Property coupled with the results of the additional sampling activities, potential plant uptake is not considered a concern. Therefore, based on the data, lead was removed from consideration as a contaminant of concern for the Property.

Based on review of the data obtained from this site investigation and comparison of COPC concentrations to applicable DOH EALs pertaining to commercial/industrial land use, there appear to be no retained environmental hazards for the site. As such, no further action appears necessary to address concerns associated with the former solid waste operations on the Property.

### 3.0 INTRODUCTION AND PURPOSE

EnviroServices & Training Center (ETC), LLC was contracted by A&B Properties, Inc. (A&B) to conduct a site investigation at the project site known as the former Puunene Piggery identified as Tax Map Key (TMK) (2) 3-8-8 Parcel 19 (herein referred to as the "Property") and located along South Firebreak Road in Puunene, Hawaii.

The overall objective of the site investigation was to determine whether contaminants of potential concern (COPC) concentrations exceed the project Action Levels (ALs). The COPC investigated were established based on former solid waste operations and cleanup activities on the Property.

This report presents ETC's findings during site investigation activities at the Property. The data obtained during the investigation will help determine whether additional investigation and/or corrective actions are warranted, based on the decision rules developed in ETC's February 2011 *Site Investigation Work Plan, Former Puunene Piggery*. The initial ALs for this project were identified as the default lowest Hawaii Department of Health (DOH) Environmental Action Levels (EALs) pertaining to unrestricted land use for areas where groundwater is not a potential drinking water source and where the nearest surface water body is less than 150 meters from the site.

Specifically, the following tasks were completed:

- Established eleven separate surface soil decision units based on ETC's February 2011 *Site Investigation Work Plan*.
- Collected one multi-increment surface soil sample, consisting of 50 increments, from each decision unit.
- Collected two field replicate multi-increment surface soil samples (50 increments) from one of the eleven decision units for use as batch quality control
- Submitted the multi-increment samples to Torrent Laboratory, Inc. (TLI) in Milpitas, California for incremental subsampling in accordance with the US EPA's November 2003 *Guidance for Obtaining Representative Laboratory Analytical Subsamples from Particulate Laboratory Samples* (EPA 600/R-03/027).
- Instructed TLI to analyze the samples on a 5 to 7 working day turn around time for the eight Resource Conservation and Recovery Act (RCRA) metals via EPA Method 6010B/7471, total petroleum hydrocarbons (TPH) as diesel (D) and TPH as oil (O) via EPA Method 8015 modified, polynuclear aromatic hydrocarbons (PAHs) via EPA Method 8270 SIM, and polychlorinated biphenyls (PCBs) via EPA Method 8082.
- Established an additional eight, 0.5-acre surface soil decision units within DU11 based on ETC's June 2011 *Addendum No. 2, February 2011 Site Investigation Work Plan*.
- Collected one multi-increment surface soil sample, consisting of 50 increments, from each of the eight additional decision units

- Collected two field replicate multi-increment surface soil samples (50 increments) from one of the eight additional decision units for use as batch quality control.
- Submitted the multi-increment samples to TestAmerica – Honolulu (TA-H) in Aiea, Hawaii for incremental subsampling in accordance with the US EPA's November 2003 *Guidance for Obtaining Representative Laboratory Analytical Subsamples from Particulate Laboratory Samples* (EPA 600/R-03/027).
- Instructed the TA-H to analyze the samples on a 10 to 15 working day turn around time for total lead via EPA Method 6010B/7471.
- Prepared this Site Investigation Report which includes the results of the investigations, summaries of analytical data with comparison to applicable action levels pertaining to commercial/industrial land use, and any recommendations for further investigation activities and/or corrective actions

#### 4.0 BACKGROUND

##### 4.1 Site Description and Land Area

The Property consists of approximately 86 acres of land located in Puunene, Maui, Hawaii and is identified as Tax Map Key (TMK) identification number (1) 3-8-8: Parcel 19. The Property was formerly owned by A&B – Hawaii, Inc. The Property is currently owned by CMBY 2011 Investment LLC.

The Property is relatively flat with a slight downward gradient to the west and is situated at an elevation of approximately 110 to 130 feet above mean sea level (msl). Areas adjacent to the Property consist of Maui Raceway Park and agricultural land.

##### 4.2 Site Geology

The island of Maui is the second largest of the Hawaiian Islands. Maui consists of two shield volcanoes with a connecting isthmus. The volcanic rocks of the West Maui Mountains (West Maui Volcano) are divided into three series. The oldest is the Waituku Volcanic Series, followed by the Honolua and Lahaina Volcanic Series. The Waituku Series built the major shield volcano comprised of basaltic lava flows and associated pyroclastic deposits. The Lahaina Series then covered the western slopes of the West Maui Volcano.

The Haleakala Volcano last erupted around 1790 and is presently dormant. The shield of the volcano is composed of a and pahoe-hoe lava flows of theolite, theoleitic olivine basalt, and oceanite known as the Honomahu Volcano Series. The Kula Volcanic Series overlies the Honomahu Series and is comprised of hawaiiite, alkalic olivine basalt, and ankaramite. Lava flows from the Haleakala volcano formed the Maui Isthmus and are made up of permeable basalt and erosional deposits (Macdonald, et al., 1983).

Soil at the Property is classified by the U.S. Department of Agriculture (USDA) Soil Conservation Service as Waikoa extremely stony silty clay loam, 3 to 25 percent slopes (WID2). As described by the USDA, WID2 soils consist of moderately deep, well drained soils from weathered rock. In a representative profile, the surface layer consists of extremely stony silty clay loam, the subsoil is a stony silty clay loam, and the substratum consists of bedrock. Annual rainfall amounts to 15 inches. WID2 soils are generally used for pasture and irrigated sugarcane (USDA, 1972).

##### 4.3 Site Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. The portion of the island situated below sea level is in contact with ocean salt water, except within rift zones of the volcanoes where fresh water forms a basal lens called the "Chyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (MacDonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

The Property is underlain by the Kahului Aquifer System, which is part of the Central Aquifer Sector on the island of Oahu. The aquifer is classified by Mink and Lau, 1990, with the system identification number 60301214 (33221). This system includes an unconfined high level perched aquifer. The groundwater in this aquifer is described as having no potential use and is neither a drinking water resource nor ecologically important. The groundwater has a low salinity (250 to 1,000 mg/L Cl<sup>-</sup>); and is considered replaceable with a high vulnerability to contamination (Mink and Lau, 1990).

The Property is further underlain by a confined aquifer of the same system. The aquifer is classified with the system identification number 60301111 (12212) and is a unconfined basal formation in flank compartments. The groundwater in this aquifer is described as currently being used, however, is neither a drinking water resource nor ecologically important. The groundwater also has low salinity (250 to 1,000 mg/l Cl<sup>-</sup>). It is described as irreplaceable with a moderate vulnerability to contamination (Mink and Lau, 1990).

The Property is located below the Underground Injection Control (UIC) line and the groundwater is not considered a drinking water resource. Therefore, the Hawaii Department of Health (DOH) Environmental Action Levels (EALs) for soil in areas where groundwater is not current or potential drinking water source and where the nearest surface water body is less than 150 meters from the site will be used as a reference. Groundwater is anticipated at a depth of approximately 110 to 120 feet below ground surface (bgs). In addition, there is an existing non-potable water well located on the north portion of the Property.

#### 4.4 Surface Water

The nearest surface water body appears to be an Hawaiian Commercial & Sugar (HC&S) irrigation reservoir located adjacent to the northern border of the Property. In addition, a normally dry, concrete lined irrigation ditch is located along the western boundary of the Property.

#### 4.5 Site Background

The Property was formerly used as a piggery for over 25 years. As part of an agreement with the former tenant, Mr. Larry Poffenroth occupied the property and took over the piggery operations in or around 1995; he is believed to have begun solid waste management activities at the property shortly thereafter. Poffenroth occupied the property, and commenced his solid waste management activities, without the knowledge or consent of the Property landowner, A&B Properties. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing, however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In addition, large amounts of food waste were brought to the Property as pig feed, which resulted in discarded empty food packaging materials being spread throughout much of the north portion of the Property. In late 2007, immediately following Mr. Poffenroth's eviction, A&B Properties began solid waste cleanup activities at the Property. Solid waste cleanup activities were completed in February 2011.

#### 4.6 Current and Future Land Use

Currently, the Property is a vacant open area. Approximately 10 to 15 acres of land at the southern end of the Property is used for sugarcane cultivation. This area was not utilized by Mr. Poffenroth and therefore is not included as part of this investigation. The project area is located on agricultural lands and the current land owner intends to develop the property for commercial or industrial use.

#### 4.7 Contaminants of Potential Concern

Prior to the start of this investigation there were no data regarding potential contaminants at the Property; currently, there are data. Based on previous land use and observations made during a site walk, the following contaminants of potential concern (COPC) were proposed for the purposes of this site investigation.

- Total petroleum hydrocarbons (TPH) as diesel-range organics (TPH-D)
- TPH as heavy oil-range organics (TPH-O)
- DOH polynuclear aromatic hydrocarbons (PAHs)
- Polychlorinated biphenyls (PCBs)
- Metals regulated under the Resource Conservation and Recovery Act (RCRA metals)

With the exception of limited surface staining, there is no evidence that the above contaminants exist in the site soils. Therefore, the aforementioned COPC were selected based on the observation of metal reclamation activities previously performed at the site, the former presence of painted and/or petroleum-containing equipment, and the former presence of miscellaneous solid waste throughout the Property. As noted in Section 4 of the Interim Final Technical Guidance Manual (TGM), Hawaii Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office, June 21, 2009, volatile constituents are typically not sampled in surface soils, therefore, TPH as gasoline and its associated volatile constituents (i.e. benzene, toluene, etc.) were not included as a COPC for this site investigation.

#### 4.8 Contaminant Source Areas

The Property was historically used to conduct various solid waste management activities, including but not limited to general storage and scrap metal processing, and surface soils at the Property may have been impacted by these activities. Several specific potential sources of contamination were identified during previous site inspections. Solid waste management activities were conducted primarily on the north portion of the Property and in isolated areas of the south portion of the property while Mr. Poffenroth's piggery operations were limited to the north portion of the Property. Much of the Property consists of open land covered with kiawe trees and other vegetation and was not used by either the piggery or solid waste operations. The north and south portions of the Property are separated by a fence.

Site inspection of the Property identified several contaminant source areas on the north portion of the Property. Specifically, ETC noted several large scrap metal stockpiles, a non-PCB transformer storage area, a vehicle and drum storage area, and an apparent shop area. As part of Poffenroth's operation and during the ongoing cleanup activities, scrap metal processing was conducted on and around a paved roadway located on the north portion of the Property. The COPC associated with these areas may include TPH-D, TPH-O, PAHs, PCBs and RCRA 8 Metals. The following contaminant source areas were identified and mapped out in Appendix I, Figure 2.

- Scrap Metal Stockpiles and Transformer Storage Area (Decision Unit 5)
- Vehicle and Drum Storage Area (Decision Unit 2)
- Shop Area (Decision Unit 1)
- Scrap Metal Processing Area (Decision Unit 3)
- Miscellaneous Scrap Metal and Debris (Decision Unit 4)

In addition, a temporary hazardous materials storage area (i.e. e-waste, etc.) was designated on a concrete pad located north of the scrap metal processing area. Scrap metal and other miscellaneous solid waste (i.e. scrap metal, rubbish, etc.) was stored within open areas. The COPC associated with these areas may include RCRA 8 Metals. The following contaminant source areas were identified and mapped out in Appendix I, Figure 2.

- Miscellaneous Hazardous Materials Storage Area (Decision Unit 7)
- Miscellaneous Scrap Metal within Open Areas (Decision Unit 8)

Note that the remaining areas of the north portion of the Property were reportedly heavily vegetated and not used for solid waste management activities. In addition, no visual evidence of any previous solid waste management activities was observed in these areas during ETC's site inspection activities.

Site inspection indicated that solid waste storage in the south portion of the Property was concentrated in four areas. The south portion of the Property was generally covered in moderate to heavy vegetation; therefore, solid waste storage was limited to areas along interior roads and in other paved areas in this part of the Property. Specifically, ETC personnel identified a battery storage area, a scrap metal and cathode ray tube televisions/monitors (CRT) storage area, and miscellaneous scrap metal pile. COPC associated with these areas may include RCRA 8 Metals. In addition, an area of abandoned vehicles, tankers, and CRT storage was observed on the south portion of the Property. COPC associated with this area include TPH-D, TPH-O, PAHs, PCBs and RCRA 8 Metals. The following contaminant source areas were identified and mapped out in Appendix I, Figure 2.

- Battery Storage Area (Decision Unit 9)
- Scrap Metal and CRT Storage Area (Decision Unit 11)
- Miscellaneous Scrap Metal Pile (Decision Unit 10)
- Vehicle/Tanker/CRT Storage Area (Decision Unit 6)

The remaining areas of the south portion of the Property were reportedly not used for solid waste management activities and consisted of moderate to heavy vegetation. In addition, no visual evidence of any previous solid waste management activities was observed in these areas during ETC's site inspection activities.

#### 4.9 Conceptual Site Model

A conceptual site model (CSM) provides a generalized framework regarding site-specific conditions relevant to potential contaminants, contaminant sources, migration pathways, routes of exposure, potential receptors, and environmental hazards (i.e., leaching to groundwater/discharge to surface waters, ecological toxicity) that may be affected by the contaminants. Establishment of this framework is essential for assessing environmental hazards associated with the contaminants, determining what receptors are at risk, determining appropriate remedial strategies, and addressing unacceptable hazards.

The following environmental hazards were initially considered:

- Direct exposure threats to human health.
- Leaching and subsequent threats to groundwater resources.
- Threats to terrestrial habitats; and
- Gross contamination and general resource degradation concerns.

#### 4.9.1 *Receptors of Concern*

When identifying potential receptors, plausible exposure under both current and future land-use should be evaluated. Accordingly, potential receptors are identified for both current and future use scenarios. For the purposes of this investigation, the following potential receptors were identified:

- Current and future property users
- Current and future off-site property users
- Future site construction workers
- Trespassers
- Terrestrial ecological receptors
- Aquatic ecological receptors

#### 4.9.2 *Exposure Pathways*

Exposure is defined as the contact of an organism with a chemical or physical agent. An exposure pathway is defined as "the course a chemical or physical agent takes from a source to an exposed organism." It describes "a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site (USEPA, 1989)." In order for an exposure pathway to be considered potentially complete, four elements must exist: 1) a source or release from a source; 2) a transport/exposure media; 3) an exposure point (point of contact with the contaminated medium); and 4) an exposure route. The exposure pathways that may be present at the Property are described below.

##### A. Soil Exposure Pathway

Direct contact with soil may result in incidental oral ingestion and/or dermal absorption of COPC. Although generally associated with surface soil, direct contact may also occur with subsurface soil during trenching and excavation work.

##### B. Air Exposure Pathway

Air exposure pathways become potential routes of exposure when COPC enter the air via volatilization or via adsorption to fugitive dust particles. Volatilization occurs when COPC partition to the air. Such volatilization may occur from surface soil, subsurface soil, and/or groundwater. When considering volatilization from subsurface soil or groundwater, the transport of COPC can occur through void spaces in unsaturated soils, asphalt, and concrete to the outdoor air or to future indoor air through foundation cracks. For this Property, volatilization is not a concern due to the suspect semi- to non-volatile nature of the COPC.

Generation of fugitive dust may occur through disturbance of affected soil, such as wind or construction activities. Dust particles may be inhaled, may settle on human skin and be ingested (hand to mouth), and/or may settle on vegetation that may be ingested by humans.

##### C. Groundwater Exposure Pathway

Groundwater beneath the site may have been impacted by surface spills through leaching from impacted soils. Receptors may be exposed to COPC in the groundwater by direct contact or by inhaling volatile COPC emitted from the groundwater to air. For this site, ingestion of the groundwater is not anticipated since the aquifer is not considered to be usable as a drinking water resource. In addition, a prospective purchaser of the Property completed an investigation of the on-site well and concluded that the water is in fact not suitable for drinking water use. The investigation also indicated that the water is suitable for non-potable uses (i.e. irrigation, etc.). As such although ingestion of the groundwater is unlikely, direct human contact may occur. Note that the groundwater investigation also indicated that none of the regulated drinking water contaminants were identified in the groundwater at levels of concern.

Inhalation of volatile COPC is not anticipated under current site conditions due to the suspected semi- to non-volatile nature of the COPC and the length of time any potential spills or releases may have been present at the site. Although direct ingestion of groundwater at the property is unlikely, the potential exists for contaminants to leach into the groundwater and to migrate or be drawn into downgradient wells.

Ecological receptors may also be affected in shallow marine environments within groundwater discharge zones. This is the primary concern associated with the groundwater exposure pathway. Note that site investigation results indicated that investigation of the groundwater at the Property is not warranted at this time.

##### D. Sediment Exposure Pathway

Receptors may be exposed to COPC in sediment from the Property as a result of surface runoff during storm events to nearby drainage ways, which may eventually discharge to the ocean. Sediment may accumulate in the marine environment and be available for contact with various receptors. Recreational users of the marine environment (swimmers, surfers, fishermen) may come into direct contact with sediment and be exposed through oral ingestion and/or dermal absorption. Ecological receptors may live directly in the impacted sediment and may be exposed to COPC through feeding within the sediment. As a secondary transport mechanism, COPC may accumulate in ecological receptors (i.e., fish, shellfish), then be ingested by human receptors.

4.10 Project Action Levels

The Initial Action Levels (ALs) that will be used to evaluate data obtained from this site investigation will be the Hawaii Department of Health (DOH), Environmental Action Levels (EALs) as described in the DOH's Summer 2008 *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater* document and the corresponding March 2009 update (referred to herein as the EHE document). The ALs noted below are based on the default lowest DOH EALs pertaining to unrestricted land use for areas where groundwater is not a potential drinking water source and where the nearest surface water body is less than 150 meters from the site. Table 1 presents the ALs proposed for the site investigation.

Table 1: Initial Action Levels

Constituent	Action Level
TPH-D	500
TPH-O	500
<b>PAHs</b>	
Acenaphthene	23
Acenaphthylene	13
Anthracene	2.5
Benzo(a)anthracene	1.5
Benzo(a)pyrene	0.15
Benzo(b)fluoranthene	1.5
Benzo(g,h,i)perylene	27
Benzo(k)fluoranthene	15
Chrysene	14
Dibenz(a,h)anthracene	0.15
Fluoranthene	40
Fluorene	7.3
Indene(1,2,3-cd)pyrene	1.5
Naphthalene	0.46
Phenanthrene	11
Pyrene	56
1-Methyl naphthalene	1.1
2-Methyl naphthalene	1.0
<b>PCBs</b>	
Metals	
Arsenic	20
Barium	750
Cadmium	12
Chromium	500
Lead	200
Mercury	4.7
Selenium	10
Silver	20

5.0 SUMMARY OF SITE HISTORY

The Property was most recently used as a piggery and an unpermitted solid waste management facility. The solid waste management activities were assumed to have started in 1995 when Mr. Larry Poffenroth took over piggery operations as part of an agreement with the former tenant. Mr. Poffenroth reportedly began conducting solid waste management activities without the knowledge or consent of the former Property landowner, A&B. From 1996 to 2007, A&B attempted to force Mr. Poffenroth to cease both the solid waste management activities and piggery operations and to vacate the site. Initially, Mr. Poffenroth's solid waste management activities were limited to scrap metal storage and processing; however, he subsequently expanded and began accepting green waste, construction/demolition waste, and other miscellaneous waste streams. In addition, large amounts of food waste were brought to the Property as pig feed, which resulted in discarded empty food packaging materials being spread throughout much of the north portion of the Property.

In October 1998, the Property was inspected by the DOH Solid Waste Section (SWS). As a result, on November 27, 1998, the DOH SWS issued Mr. Larry Poffenroth, operator of the Property, a letter indicating several violations at the Property. In addition, the letter ordered Mr. Poffenroth to cease and desist all salvaging operations, and stated that a formal Notice of Violation (NOV) would be issued if he did not respond within 15-days. The DOH SWS reportedly issued a second letter, dated December 23, 1998 regarding the closure of the illegal solid waste management operations at the Property. Since no response was received for the November and December 1998 letters, the DOH SWS issued a "warning letter" on May 5, 1999 indicating that if closure of the facility is not completed as requested, the DOH may institute an administrative or civil action for the current and prior solid waste violations. No apparent further action was taken or pursued by the DOH SWS from May 1999 to June 2005, when an anonymous complaint was reported to the DOH SWS that Mr. Poffenroth was accepting white goods and baling white goods and cars at the piggery.

As a result of the anonymous complaint, the DOH SWS conducted a site inspection of the Property in September 2005. The inspection report indicated that an accumulation of solid waste (i.e. scrap metal, green waste, construction and demolition waste, etc.) was observed on the Property. Subsequently, the DOH SWS issued Mr. Poffenroth a "Letter of Interest," dated September 19, 2005, requesting that removal and proper disposal of the solid waste on the Property be completed within one year.

In late 2007, A&B was able to evict Mr. Poffenroth and all the remaining pigs were subsequently removed from the Property in 2008. Immediately following the eviction, A&B began solid waste cleanup activities at the Property; however, these efforts were hindered by Mr. Poffenroth's bankruptcy filing and associated legal issues. Following the bankruptcy court orders allowing cleanup of scrap metal from the Property, A&B requested a solid waste management permit exemption for the cleanup activities. Subsequently, the DOH SWS granted the exemption and cleanup activities commenced. ETC understands that solid waste cleanup activities were completed in February 2011. As part of the planned cleanup activities, A&B proposed to conduct a "comprehensive site assessment" of the Subject Property. As such, ETC prepared a Site Investigation Work Plan (SI-WP), dated February 2011 to investigate whether the surface soils at the Property have been impacted by the former solid waste management activities. This report serves as documentation of the sampling activities described in ETC's February 2011 SI-WP.

## 6.0 SUMMARY OF DATA QUALITY OBJECTIVES

This investigation was driven by the former solid waste cleanup activities on the Property. The data quality objectives (DQO) process is typically described in a work plan prepared prior to site sampling activities to define the criteria for environmental data collection operations. The process includes stating the problem to be investigated, identifying the decisions that need to be made, identifying the inputs to the decision making process, defining the boundaries of the investigation, developing decision rules that will be applied, specifying tolerable limits on the decision errors, and optimizing the sampling design to be used in the investigation. The following is a brief description of the DQOs used for this investigation.

### 6.1 Problem Statement

Former operations at the Property include the staging of solid wastes and the processing of metal for subsequent reclamation. Currently, no environmental data exist for the Property therefore; surface soil sampling is needed to determine potential impacts associated with previous site operations. As such, for the purposes of the sampling activities described herein, the problem statement to be addressed in this site investigation is:

"In order to determine whether previous site usage has adversely impacted site soils and whether further evaluation and/or corrective action may be appropriate, initial data for COPC in surface soil is needed."

### 6.2 Decision Making

A decision statement was formulated for the Principal Study Question (PSQ). The decision statement links the alternative actions (AAs) with the (PSQ) and expresses a choice between AAs based on the outcome of the investigation. The decision statement for this project is as follows:

"Determine whether mean COPC concentrations in the surface soil of each decision unit at the Property exceed appropriate ALs and may require additional investigation and/or corrective actions to mitigate exposure pathways; if not, then no further action will be performed to address the COPC."

### 6.3 Decision Inputs

The inputs to the decision were identified as new data obtained through collection of surface soil samples submitted to a laboratory using standardized analytical methods (i.e., standard EPA analytical methods described in the Third Edition of *SOP-346 On-line Test Methods for Evaluating Solid Waste Physical Chemical Methods*) and through comparison to the risk-based project ALs.



#### 6.4 Investigation Boundaries

The population of interest was identified as surface soil (defined as the top 12-inch layer of soil) within accessible areas of the Property. Soil will be defined as any portion of the representative soil samples that pass through a 2-millimeter sieve. The usability of the data gathered during this investigation was not considered to be constrained by temporal boundaries since the COPC being investigated are relatively persistent in the environment and will not greatly vary in concentrations in the soil over relatively short time periods.

#### 6.5 Decision Rules

The decision rules were then formulated to govern the decision-making process. Using the information gathered in the previous steps of the DQO process, the following decision rules were formulated:

"If COPC concentrations in surface soil decision units at the Property exceed the ALs established for this project, *then* additional evaluation and/or corrective actions may be needed to mitigate exposure pathways. *If* COPC concentrations in surface soil decision units at the Property are below the ALs established for this project, *then* no further action will be warranted and the exposure pathways will be considered incomplete."

#### 6.6 Decision Error

Decision errors occur when sample data misleads the decision maker(s) into making a wrong decision and therefore taking the wrong response action. The possibility of a decision error exists since decisions are based on sample data that may be inaccurate due to random and systematic errors incurred at different stages of acquisition.

In order to control the various sources of decision error, a sampling methodology designed to minimize the sources of significant decision error was selected (multi-increment sampling). In addition, it was deemed prudent to incorporate a statistics-based bench mark for margin of error. As such, the relative standard deviation was identified as a means to evaluate the potential effect of error on the investigation process.

#### 6.7 Sampling Design

In order to minimize the occurrence of decision errors, a statistics-based sampling design was selected to generate data that provides an effective representation of existing mean COPC concentrations within the Property. The objective of the sampling design is to provide sufficient data to resolve the Decision Statement described in Section 6.2.

A multi-increment sampling approach for collection and analysis of soil samples was selected. Multi-increment sampling is a method employed to obtain representative samples that exhibit mean concentrations of the material being sampled and that account for the variability of concentrations within that particular material. Such a method was developed to provide accurate (closeness of the sample value to its actual value) and precise (closeness of repeated sample values, or repeatability) data. If data is considered sufficiently accurate and precise, then the data can be considered reliable estimates of the true concentrations.

Sampling accuracy is usually achieved by some type of random sampling. In random sampling, every unit in the population has a theoretically equal chance of being sampled and measured. Consequently, statistics generated by the sample (i.e., mean and standard deviation of the mean) are unbiased (accurate) estimators of true population parameters – in other words, the sample is representative of the population.

Sampling precision is commonly achieved by taking an appropriate amount of samples from the population. By looking at the equation for the standard deviation of the mean of a sample (standard error of the mean), precision increases (variability decreases) as the number of samples increase, although it is not a one-to-one relationship. Another method to increase the sampling precision is to increase the physical size (weight or volume) of the samples that are collected and analyzed. This technique has the effect of minimizing between-sample variation and decreasing the standard deviation of the mean of the sample. Increasing the number of samples collected and/or the size of the samples from a population not only increases sampling precision, it also has the secondary effect of increasing sampling accuracy.

The multi-increment sampling technique takes into account the need for sufficiently accurate and precise sample data. The technique includes requirements for: 1) collection of random samples; 2) collection of a larger number of samples; and 3) collection of a physically larger sample volume than standard discrete sampling techniques.

The multi-increment sampling approach will provide mean COPC concentrations for the specific decision unit that the sample is meant to represent. Therefore, defining the appropriate decision units is essential for meeting the project DQOs. For this project, eleven (11) decision units were defined for the Property based on the former usage and potential contaminant source.

## 7.0 FIELD INVESTIGATION ACTIVITIES

This section provides information regarding the selection of decision units and the specific field methods employed to perform sampling activities during this site investigation. The activities described herein were performed in general accordance with HEER TGM and the EHE Document.

### 7.1 Selection of Decision Units

As previously described in Section 6.7, eleven (11) decision units were identified for the project site. Each decision unit was limited to areas of the Property with accessible surface soil conditions (i.e., areas where there are no structures or pavements).

### 7.2 Soil Sampling Activities

Prior to commencing soil sample collection, ETC personnel utilized available Property maps and previously collected global positioning system (GPS) coordinates to demarcate the specific areas of interest. Based on the population of the interest, eleven (11) multi-increment surface soil decision units were established throughout the Property. On March 1, 2011, ETC personnel mobilized to the site to conduct the field sampling activities. Collection of incremental samples were performed in a stratified, random manner (i.e., collect incremental samples from random locations within each decision unit, but ensuring that each portion of the decision unit is represented) within each decision unit. ETC personnel conceptually subdivided each decision unit and collected a proportional amount of increments from each area.

The surface conditions throughout the Property primarily consisted of loose to very compact hard soil, therefore, hand picks were used to penetrate and loosen the surface soil at each increment location. ETC personnel used pre-cleaned stainless steel trowels to collect soil increments from 50 locations in each decision unit. Increments were placed into resealable plastic bags. Prior to handling any soil, ETC personnel donned a new pair of disposable gloves (latex/vinyl/nitrile). Gloves were interchanged prior to collection of each multi-increment sample.

All sample containers were labeled with the project name, sample identification number, date/time of sample collection, and sampler's initials. The samples were kept in a sample cooler with ice pending delivery to the contracted laboratory.

### 7.3 Decontamination and Investigation-Derived Waste

Re-usable sampling tools, such as stainless steel trowels and hand picks, were decontaminated by washing with a brush and potable water - Alconox™ solution, rinsing with potable water, then rinsing with distilled water. Decontamination fluids were left to evaporate on-site over relatively impermeable surfaces.

Any disposable sample collection equipment (i.e., used PPE) were containerized at the end of each work day and disposed as solid waste.

### 7.4 Summary of Environmental Samples

A total of thirteen (13) multi-increment soil samples (eleven primary samples, two field replicate samples) were collected from the site. The field replicate samples were collected from one decision unit were obtained and collected in the same manner as the primary sample – each consisted of 50 soil increments. The samples are described below:

- 2048.DU1 – Shop Area
- 2048.DU2 – Vehicle/Drum Storage
- 2048.DU3 – Processing Area
- 2048.DU4 – Misc. Scrap/Debris
- 2048.DU5 – Large Scrap Metal Stockpiles and Transformer Storage (No-PCBs)
- 2048.DU6 – Vehicle/Tanker/CRT Storage
- 2048.DU7 – Misc. HazMat Storage (e-waste, etc.)
- 2048.DU8 – Misc. Scrap Metal with Open Areas
- 2048.DU9 – Battery Storage Area
- 2048.DU10 – Misc. Scrap Metal Pile
- 2048.DU11 – Scrap Metal and CRT Storage Area
- 2048.DU12 – Field Replicate of 2048.DU3
- 2048.DU13 – Field Replicate of 2048.DU3

## 8.0 SAMPLE CONTROL PROCEDURES

This section provides information regarding specific control procedures utilized during site activities to maintain control over sample management.

### 8.1 Sample Identification

The sample identification, or sample naming, procedure describes the naming convention for samples collected and analyzed during this field investigation. The following format was used for multi-increment soil samples collected at the property.

2048.DUX where:

- 2017 = ETC project number
- X = Decision Unit Number

Field replicate samples were labeled in a similar manner as described above using fictitious decision unit number designations such that the samples were indistinguishable from primary samples.

The labeling method was used for all samples collected at the site. Each sample container (resealable plastic bag) was labeled with the sample ID, date/time of sampling, and sampler's initials using an indelible ink marker.

### 8.2 Sample Chain-of-Custody and Transportation

Chain of custody documentation was maintained to track possession of the samples. All samples collected during the investigation were recorded on chain of custody forms. Information on the chain of custody forms included:

- Sample ID number
- Matrix
- Date and time of collection
- Number and type of containers
- Analytical method to be performed
- Number of pages

An ETC representative and/or its shipping carrier retained custody of the samples at all times prior to hand delivery to Torrent Laboratory Inc. (TLI) in Milpitas, California. Upon delivery of the samples, ETC representatives signed the chain of custody form to indicate the date and time custody of the samples were relinquished and a TLI employee signed the form to indicate the change in custody. Copies of the completed chain of custody forms have been included with the laboratory data packages in Appendix III.

### 8.3 Sample Preservation and Handling Procedures

Sample handling and preservation were conducted in compliance with the respective method requirements. Table 2 below summarizes these requirements.

Table 2: Sample Handling and Preservation

Analyte	Analytical Method	Sample Container Size, Type	Preservation	Holding Time
TPH-D, TPH-O	EPA 8015 mod	1-gallon resealable polyethylene bag	Cool, 4° C	14 days
PAHs	EPA 8270C	1-gallon resealable polyethylene bag	Cool, 4° C	14 days
Metals	EPA 6010B/7471	1-gallon resealable polyethylene bag	none	6 months
PCBs	EPA 8082	1-gallon resealable polyethylene bag	Cool, 4° C	14 days

Note: Preservation and holding times in accordance with EPA SW-846 On-Line Revision 3: Test Methods for Evaluation Solid Wastes.

### 8.4 Laboratory Analytical Methods

ETC delivered a total of eleven primary multi-increment samples and two field replicate multi-increment samples to TLI in Milpitas, California with completed chain of custody documentation. TLI performed multi-increment subsampling in accordance with the US EPA's November 2003 *Guidance for Obtaining Representative Laboratory Analytical Subsamples From Particulate Laboratory Samples* (EPA 600/R-03/027), which included air-drying, sieving, and obtaining representative subsamples using either an appropriate mechanical splitter or through multi-increment sampling protocols. TLI was instructed to analyze the processed samples for TPH-D and TPH-O via EPA Method 8015 modified, PAHs via EPA Method 8270C, RCRA8 metals via EPA Method 6010B/7471, and PCBs via EPA Method 8082.

### 8.5 Laboratory Quality Control

Laboratory quality control procedures for soil analyses followed the specific US EPA methods as described in SW-846. Procedures included the measurement of surrogate standard recoveries, method blanks, laboratory control samples (LCS), matrix spike (MS) samples, and MS Duplicate (MSD) samples. Quality control data are initially reviewed by the laboratory project managers to ensure that data meets acceptable standards for use and reliability. In instances where potential problems were encountered during analyses (i.e., relative percent differences or percent recoveries exceed initially specified control limits, matrix interferences, etc.), the laboratory project manager evaluated the issue and made a determination on how such problems affect the data usability. In these instances, data qualifiers or flags are used to indicate which data may be affected by the issue.

Generally, ETC personnel evaluate the laboratory data packages as they become available. For this particular project, review of laboratory quality control data did not reveal any significant issues associated with data usage.

## 8.6 Field Quality Control

The data obtained through collection of multi-increment field replicate samples were used for field quality control purposes. ETC collected one primary multi-increment sample and two field replicate multi-increment samples (i.e., field triplicate samples) at a frequency of approximately one set of field triplicate samples for every ten primary multi-increment samples (10%) for quality control purposes. The primary sample and the two field replicate samples were collected in the same manner, as if three separate multi-increment samples were being collected from the same decision unit.

For this project, only one set of triplicate samples were collected. These samples were collected from DU3 and labeled 2048.DU12 and 2048.DU13. Table 2 presents the reported concentrations, means, standard deviations, and relative standard deviations for the triplicate samples.

## 9.0 FINDINGS AND DISCUSSION

Field investigation activities were performed to identify COPC concentrations in the surface soil. A total of thirteen multi-increment soil samples and two field replicate multi-increment soil samples were collected during the initial site investigation activities, and a total of eight multi-increment soil samples and two field replicate multi-increment soil samples were collected during additional field sampling activities of DU11. No deviations were made during ETC's field sampling activities.

### 9.1 Analytical Data

Surface soil samples collected during initial site investigation activities were submitted to TLI for multi-increment subsample processing and analyses. In order to account for potential sampling error (i.e., fundamental error due to compositional heterogeneity, grouping and segregation error due to distributional heterogeneity, etc.) and analytical error realized during multi-increment sampling/analysis activities, the results from the multi-increment field replicate samples were used to calculate relative standard deviations (RSDs) for each of the COPC analyzed. These RSDs, reported as percentages, were evaluated to quantify the uncertainty associated with total error (sampling error and analytical error). In instances where the reported COPC concentrations were close in value to their respective DOH EAL, the average RSDs for the COPC were used to evaluate whether uncertainty associated with total error was significant.

### 9.2 Data Quality Assessment

Since data from multi-increment samples theoretically provides estimates of the mean concentrations in the particular decision unit being assessed, a measure of the variation from the mean is needed to evaluate how that variation affects the decision making process. In an effort to account for variance in the data, the standard deviations were calculated from the triplicate samples collected during the investigation for each COPC (see Table 2 below). The standard deviations, coupled with the calculated means of the triplicate samples, were used to obtain relative standard deviations (RSDs) for each set of triplicate samples. The RSDs were then reviewed to determine the effects of total error on the data set. As shown in Tables 3 and 4, RSDs ranged from 0.0% to 116%. The elevated RSDs are likely due to the low detectable concentrations, non-detect values and estimated values. The calculated standard deviations shown in Tables 3 and 4 were added to the reported concentrations for each COPC and presented reviewed as "adjusted" concentrations. The adjusted concentrations were then used to make decisions regarding whether COPC concentrations present a specific environmental hazard for the decision unit. Evaluation of the adjusted values indicated that in addition to the reported concentrations, the adjusted value of 589 mg/kg for the TPH-O concentration of DU12 (replicate of DU3) exceeded the initial AL of 500 mg/kg. An overall review and evaluation of both laboratory quality control and field quality control information indicated that analytical data obtained during the site investigation can be relied upon to make decisions regarding site.

### 9.3 Initial Analytical Results and Discussion

Analytical results from ETC's March 2011 initial site investigation activities are presented in Table 3 below. The final laboratory report is included in Appendix II.



Table 4: Analytical Data – Additional Investigation of DU11

Sample ID	Lead
2048 DU14	37
2048 DU15	17
2048 DU16	30
2048 DU17	84
2048 DU18	23
2048 DU19	13
2048 DU20	12
2048 DU21	13
2048 DU22	36
2048 DU23	34
Mean	27.67
Standard Deviation	12.74
Relative Standard Deviation	46.05%
DOH EAL	200 (800 <sup>CI</sup> )

All results presented in mg/kg.  
 DOH EAL = March 2009 Default DOH EALs for soil in areas where a drinking water source is not threatened and the nearest surface water body is less than 150-meters from the site.  
 CI = Default DOH EAL for Lead of 800 mg/kg pertaining to direct exposure concerns associated with Commercial/Industrial Land Use.

Analytical data indicated that average lead concentrations for all eight DUs within DU11 were well below the project defined AL of 200 mg/kg.

10.0 ENVIRONMENTAL HAZARD EVALUATION

The environmental hazard evaluation (EHE) process was developed by the Hawaii DOH to serve as a link between site investigation activities and any proposed response activities to be undertaken and evaluated. The EHE is intended to identify potential environmental hazards associated with contaminant concentrations in site media through comparison with DOH EALs established for common environmental hazards.

10.1 Environmental Hazard Evaluation

Average concentrations for multi-increment soil samples were used to determine potential environmental hazards for identified COPC. As noted in Section 4.10, the soil ALs were defined as the default lowest EALs for unrestricted land use. In addition to the ALs for this project, environmental hazards associated with both residential (unrestricted) land use scenarios and commercial/industrial land use scenarios were evaluated and discussed below by decision unit area. This environmental hazard evaluation includes instances where a specific AL or EAL (i.e. direct exposure, gross contamination, leaching, etc.) was exceeded. As indicated, TPH-O and total lead were considered the COPC for this site based on data obtained during this site investigation. A summary of the current TPH-O and total lead DOH EALs (obtained from the DOH HEER Office's March 2009 EAL SURFER program) for soil in areas where a drinking water source is not threatened and where the nearest surface water body is located within 150 meters of the site is provided in Table 5 below.

Table 5: DOH EALs for Soil

Contaminant	Leaching Threat to Groundwater	Terrestrial Ecological Impacts	Residential (Unrestricted) Land Use		Commercial/Industrial Land Use	
			Direct Exposure	Gross Contamination	Direct Exposure	Gross Contamination
TPH-O	1,000	--	2,500	500	31,000	2,500
Lead	--	200	400	1,000	800	2,500

All values in milligrams per kilogram (mg/kg) unless otherwise noted.

The COPC concentrations in the soil samples collected during the site investigation were considered to be representative of the concentrations throughout each decision unit. The findings of the site investigation shown in Tables 3 through 4 above include the following:

- Adjusted average concentration of TPH-O in DU6 and DU12 (replicate of DU3) exceed default DOH EALs.
- Reported average concentration of total lead in DU11 exceed default DOH EALs.

The COPC listed above were associated with concentrations detected in the multi-increment soil samples that exceed the default DOH EALs. These default EALs are the lowest EALs assuming unrestricted land use, groundwater beneath the site is not a current or potential drinking water source, and the nearest surface water body is less than 150 meters from the site. A comparison of COPC concentrations that exceed default DOH EALs to all existing DOH EALs are presented in Table 6.

Table 6: Potential Environmental Hazards

Decision Unit/ Contaminant	Leaching Threat to Groundwater	Terrestrial Ecological Impacts	Residential (Unrestricted) Land Use		Commercial/Industrial Land Use	
			Direct Exposure	Gross Contamination	Direct Exposure	Gross Contamination
DU6						
TPH-O	X <sup>1</sup>			X		
DUI1						
Lead		X	X			X
DUI3 (replicate)						
TPH-O				X <sup>1</sup>		

<sup>1</sup> - Reported concentration plus MSD exceeds EAL.

The analytical data indicated that elevated concentrations of TPH-O were initially detected in the multi-increment soil samples collected from DU6 and DUI2 (replicate of DU3). Specifically, a reported average TPH-O concentration of 730 mg/kg was reported for the multi-incremental soil sample collected from DU6 and an adjusted value of 589 mg/kg was reported for DUI2. Reported average concentration for DU6 and the adjusted value (reported average concentration plus RSD) for DUI2 exceeded the DOH EAL of 500 mg/kg pertaining to gross contamination concerns associated with unrestricted land use. The adjusted value for DU6 (1,228 mg/kg) also exceeded the DOH EAL pertaining to leaching (1,000 mg/kg) concerns. Note that DOH EALs pertaining to direct exposure (2,300 mg/kg) concerns associated with unrestricted land use were not exceeded.

Analytical results indicated that soil collected from DUI1 contained an average total lead concentration of 830 mg/kg, which exceeds the initial AL of 200 mg/kg. The detected total lead concentration also exceeded the DOH EAL of 400 mg/kg and 800 mg/kg pertaining to direct exposure concerns associated with unrestricted and commercial/industrial land use, respectively. Based on these findings, ETC further subdivided DUI1 into eight approximate 0.5-acre DUs and collected a multi-increment surface soil sample from each of the eight DUs. Analytical results for the additional investigation of DUI1 indicated that average total lead concentrations for all eight DUs were well below the project defined AL of 200 mg/kg.

#### 10.2 Summary of Potential Environmental Hazards

Currently, the Property is undeveloped. However, ETC understands that during the recent land sale of the property, the "new" and "former" land owner agreed to accept a commercial/industrial land use limitation for the property. As such, there are no plans for residential development or development for use by sensitive receptors (i.e. daycare center, school for children, hospital, etc.). Therefore, gross contamination concerns associated with unrestricted land use would not be considered a significant environmental hazard for this Property and will be removed from consideration.

An adjusted TPH-O value (1,228 mg/kg) was reported at a concentration exceeding the EAL pertaining to soil leaching EALs in DU6. Although groundwater was not evaluated as part of this site investigation, a previous groundwater investigation indicated that none of the regulated drinking water contaminants were identified at levels of concern. In addition, the DOH HEER Office generally considers soil leaching EALs associated with petroleum-related constituents to be excessively conservative. For example, as noted in the EHE Document, TPH-O is considered to be biodegradable and "can be expected to naturally degrade over time." The model is also based on a much higher rainfall than is received in Puunene, Hawaii. In addition, the leaching EAL does not consider drinking water utility status (i.e. drinking water vs. non-drinking water) and, as noted in the EHE Document, the leaching EAL is based on the California EPA Los Angeles Regional Water Board's proposed action level of 1,000 mg/kg, which applies to drinking water aquifers in which the depth to groundwater is less than 20 feet (CRWQCB, 1996). Note that groundwater at the Property is considered to be non-drinking water and groundwater is anticipated at a depth greater than 100 feet. Based on this information, soil leaching concerns associated with petroleum-related constituents do not appear to be a significant concern. Therefore, soil leaching would not be considered a significant environmental hazard for this site and will be removed from consideration.

Initial site investigation results for DUI1 indicated an average total lead concentration of 830 mg/kg. Results for the additional investigation of DUI1 indicated that average total lead concentrations for all eight DUs situated within DUI1 were well below the project defined AL of 200 mg/kg. Based on these findings, ETC suspects that the deviation of these results from the initial DUI1 findings may have been caused by nuggets or discrete pieces of lead within the soil. Therefore, based on the analytical results of the additional sampling activities, ETC suspects that the initial results for DUI1 may not necessarily reflect the average lead concentrations that are likely to be encountered throughout DUI1. In addition, given the future commercial/industrial land use of the Property coupled with the results of the additional sampling activities, potential plant uptake is not considered a concern. Therefore, based on the data, lead was removed from consideration as a contaminant of concern for the Property.

## 11.0 CONCLUSIONS

The site investigation described herein was performed to assess the Property for contaminant impacts associated with the former solid waste operations and cleanup on the Property. The multi-increment samples collected from the site were intended to represent mean concentrations throughout the potential contaminant source areas. As such, the data obtained provides mean concentrations of COPC for use in evaluating potential environmental concerns.

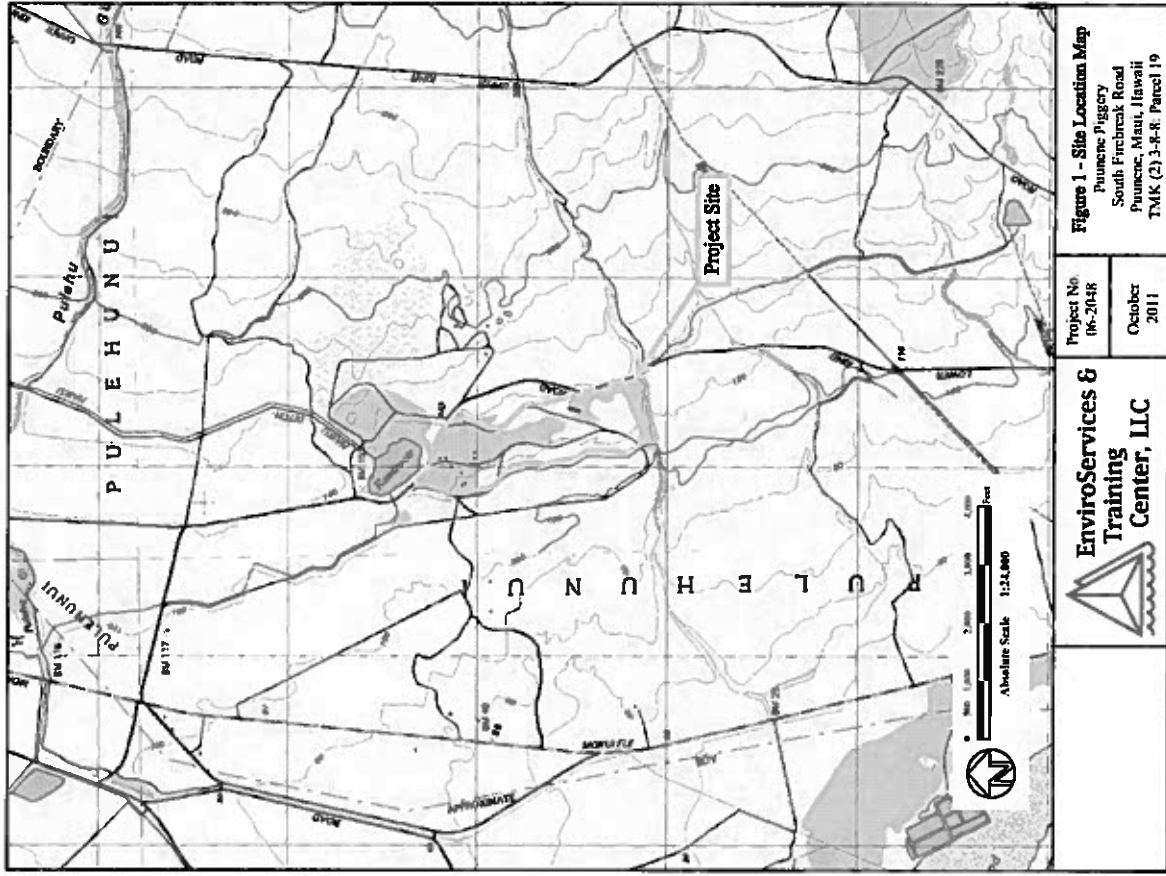
The analytical data indicated that TPH-O and lead were initially detected at concentrations exceeding default DOH EALs. These COPC were evaluated further considering the future commercial/industrial land use of the site. Based on review of the data obtained from this site investigation and comparison of COPC concentrations to applicable DOH EALs, there appear to be no retained environmental hazards for the site. As such, no further action appears necessary to address concerns associated with the former solid waste operations on the Property.

## 12.0 REFERENCES

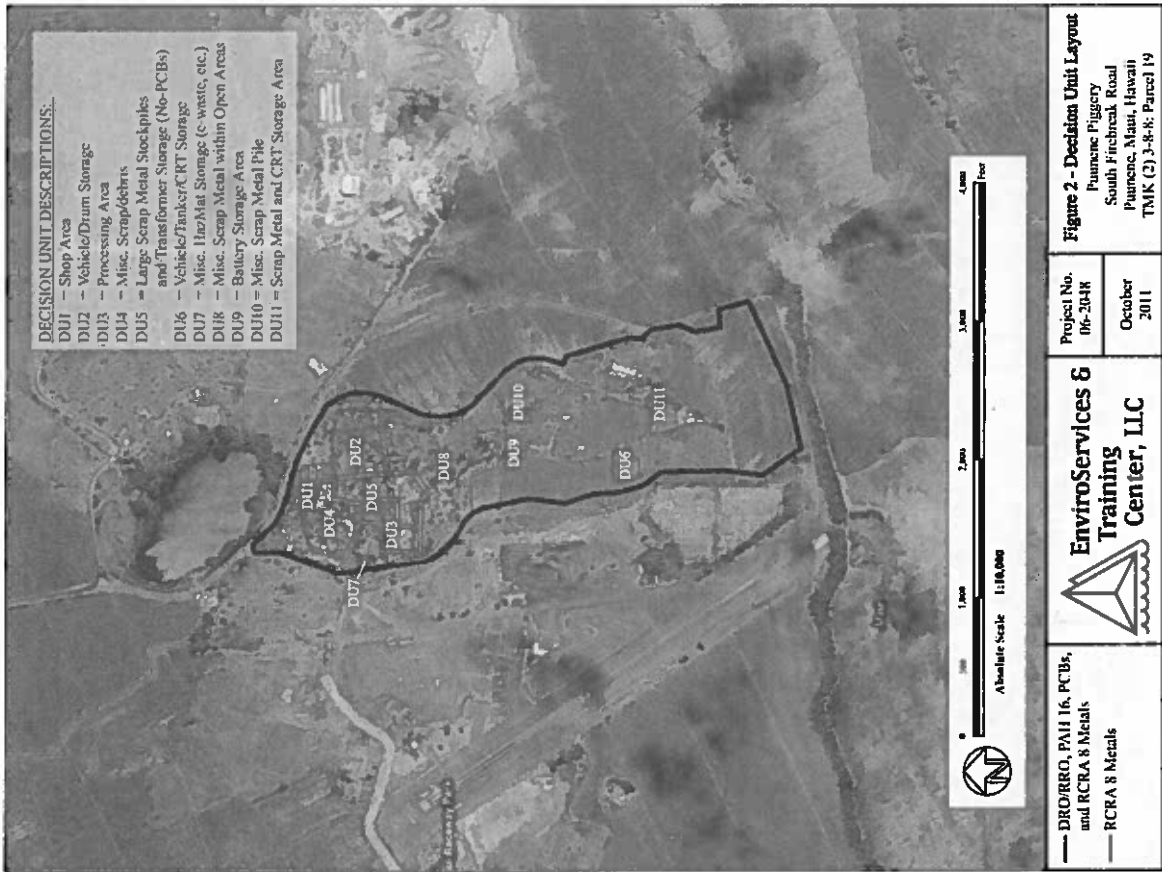
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APPENDIX I  
Figures



 <b>EnviroServices &amp; Training Center, LLC</b>	<b>Project No</b> 06-2048	<b>Figure 1 - Site Location Map</b> Puuuene, Piggogy South Firebreak Road Puuuene, Maui, Hawaii TMK (2)3-4-4, Parcel 19
	October 2011	





EnviroServices & Training Center (ETC)  
505 Ward Avenue  
Suite 202  
Honolulu, Hawaii 96814  
Tel: 808-839-7222  
Fax: 808-839-4455  
RE: 05-2048 Fuuene Piggary

Work Order No.: 1103019

**APPENDIX III  
Laboratory Reports**

Dear Sharla Nakashima:

Torrent Laboratory, Inc. received 13 sample(s) on March 03, 2011 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

Patti Sandrock

March 10, 2011  
Date



**Date:** 3/10/2011  
**Client:** EnviroServices & Training Center (ETC)  
**Project:** 06-2048 Puunene Figgery  
**Work Order:** 1103019

**CASE NARRATIVE**

No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.  
 Analytical Comments, General: For all samples -Note: Samples processed under Incremental Sampling Procedure SOP TCD106. Sample collection date and time is reflective of Hawaiian Standard Time (HST) while all analytical dates and times are reflective of Pacific Standard Time (PST).  
 Analytical Comments for Multi Incremental method S\_8270PAHSIM. ALL SAMPLES. Note: Per client request, whenever possible (where matrix interference does not preclude it), sample data is reported to the MDL. Results reported between the MDL and PQL are qualified with the appropriate "J" flag and should be considered as estimated values.

Analytical Comments for method S\_8082. QC Analytical Batch ID 404181. Note: Surrogate recovery for DCBP in the LCSID falls outside of the control limits (bias high). All affected samples are ND for the Aroclors associated with DCBP. No corrective action is required.



**Sample Result Summary**

**Report prepared for:** Shadia Nakashima  
**EnviroServices & Training Center (ETC)**  
**2048.DU1**  
**Date Received:** 03/03/11  
**Date Reported:** 03/10/11  
**1103019-001**

Parameter:	Analysis Method	DE	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	2.3	mg/Kg
Barium	SW6010B	1	0.0220	1.0	180	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	50	mg/Kg
Lead	SW6010B	1	0.0740	0.260	71	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	2.6	mg/Kg
Silver	SW6010B	1	0.0400	0.26	6.7	mg/Kg
TPH as Motor Oil	SW6015B(M)	3	4.95	12	190	mg/Kg
2-Methylnaphthalene	SW8270C	1	0.01049	0.0327	0.014	mg/Kg
Phenanthrene	SW8270C	1	0.01346	0.0327	0.020	mg/Kg
Fluoranthene	SW8270C	1	0.01824	0.0327	0.043	mg/Kg
Pyrene	SW8270C	1	0.01261	0.0327	0.023	mg/Kg
Chrysene	SW8270C	1	0.01168	0.0657	0.021	mg/Kg
Benzofluoranthene	SW8270C	1	0.01340	0.0327	0.025	mg/Kg

Parameter:	Analysis Method	DE	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	3.1	mg/Kg
Barium	SW6010B	1	0.0220	1.0	180	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	59	mg/Kg
Lead	SW6010B	1	0.0740	0.260	4.5	mg/Kg
Silver	SW6010B	1	0.0400	0.26	4.9	mg/Kg
2-Methylnaphthalene	SW8270C	1	0.01049	0.0327	0.016	mg/Kg
Phenanthrene	SW8270C	1	0.01346	0.0327	0.069	mg/Kg
TPH as Diesel	SW6015B(M)	1	0.759	2.0	4.0	mg/Kg
TPH as Motor Oil	SW6015B(M)	1	1.65	4.0	25	mg/Kg



Sample Result Summary

Report prepared for: Sharis Nakashima EnviroServices & Training Center (ETC) 2048.D13 Date Received: 03/03/11 Date Reported: 03/10/11 1103019-003

Table with columns: Parameters, Analysis Method, DE, MDL, PQL, Results, Unit. Rows include Arsenic, Barium, Chromium, Lead, Selenium, Silver.

Table with columns: Parameters, Analysis Method, DE, MDL, PQL, Results, Unit. Rows include 2-Methylnaphthalene, Phenanthrene, Fluoranthene, Pyrene, Chrysene, Benzo[b]fluoranthene, Dibenz[a,h]anthracene, TPH as Diesel, TPH as Motor Oil.



Sample Result Summary

Report prepared for: Sharis Nakashima EnviroServices & Training Center (ETC) 2048.D14 Date Received: 03/03/11 Date Reported: 03/10/11 1103019-004

Table with columns: Parameters, Analysis Method, DE, MDL, PQL, Results, Unit. Rows include Arsenic, Barium, Chromium, Lead, Selenium, Silver.

Table with columns: Parameters, Analysis Method, DE, MDL, PQL, Results, Unit. Rows include Naphthalene, 2-Methylnaphthalene, Fluoranthene, TPH as Diesel, TPH as Motor Oil.



Sample Result Summary

Report prepared for: Sharda Nakashima  
EnviroServices & Training Center (ETC)  
2048.DJ06  
Date Received: 03/03/11  
Date Reported: 03/10/11  
1103019-006

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	3.0	mg/Kg
Barium	SW6010B	1	0.0220	1.0	190	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	44	mg/Kg
Lead	SW6010B	1	0.0740	0.260	33	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	1.9	mg/Kg
Silver	SW6010B	1	0.0400	0.26	6.3	mg/Kg

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Naphthalene	SW8270C	1	0.01544	0.0327	0.021	mg/Kg
2-Methylnaphthalene	SW8270C	1	0.01049	0.0327	0.026	mg/Kg
Phenanthrene	SW8270C	1	0.01346	0.0327	0.067	mg/Kg
Benzofluoranthene	SW8270C	1	0.01973	0.0327	0.058	mg/Kg
Chrysene	SW8270C	1	0.01163	0.0637	0.059	mg/Kg
Benzofluoranthene	SW8270C	1	0.008846	0.0327	0.020	mg/Kg
Benzofluoranthene	SW8270C	1	0.01485	0.0327	0.015	mg/Kg
Benzofluoranthene	SW8270C	1	0.004950	0.0327	0.011	mg/Kg
TPH as Diesel	SW6015B(M)	10	7.59	20	130	mg/Kg
TPH as Motor Oil	SW6015B(M)	10	16.5	40	730	mg/Kg

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	3.4	mg/Kg
Barium	SW6010B	1	0.0220	1.0	250	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	65	mg/Kg
Lead	SW6010B	1	0.0740	0.260	110	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	1.4	mg/Kg
Silver	SW6010B	1	0.0400	0.26	6.0	mg/Kg



Sample Result Summary

Report prepared for: Sharda Nakashima  
EnviroServices & Training Center (ETC)  
2048.DJ09  
Date Received: 03/03/11  
Date Reported: 03/10/11  
1103019-009

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	4.5	mg/Kg
Barium	SW6010B	1	0.0220	1.0	210	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	56	mg/Kg
Lead	SW6010B	1	0.0740	0.260	11	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	2.6	mg/Kg
Silver	SW6010B	1	0.0400	0.26	6.9	mg/Kg

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	3.9	mg/Kg
Barium	SW6010B	1	0.0220	1.0	220	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	43	mg/Kg
Lead	SW6010B	1	0.0740	0.260	24	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	2.3	mg/Kg
Silver	SW6010B	1	0.0400	0.26	7.7	mg/Kg

Parameters:	Analytik Method	DE	MDL	EQI	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	3.8	mg/Kg
Barium	SW6010B	1	0.0220	1.0	210	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	49	mg/Kg
Lead	SW6010B	1	0.0740	0.260	18	mg/Kg
Selenium	SW6010B	1	0.0580	1.0	3.1	mg/Kg
Silver	SW6010B	1	0.0400	0.26	10	mg/Kg



Sample Result Summary

Report prepared for: Sharda Nakashima  
EnviroServices & Training Center (ETC)

Date Received: 03/03/11  
Date Reported: 03/10/11

2048.DU11 1103019-011

Parameter:	Analysis Method	DF	MDL	FDL	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	4.0	mg/Kg
Barium	SW6010B	1	0.0220	1.0	230	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	47	mg/Kg
Lead	SW6010B	1	0.0740	0.260	830	mg/Kg
Silver	SW6010B	1	0.0400	0.26	7.5	mg/Kg

2048.DU12

1103019-012

Parameter:	Analysis Method	DF	MDL	FDL	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	4.5	mg/Kg
Barium	SW6010B	1	0.0220	1.0	330	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	74	mg/Kg
Lead	SW6010B	1	0.0740	0.260	29	mg/Kg
Selenium	SW6010B	1	0.0560	1.0	1.6	mg/Kg
Silver	SW6010B	1	0.0400	0.26	6.3	mg/Kg

Naphthalene	SW6270C	1	0.01544	0.0327	0.033	mg/Kg
2-Methylnaphthalene	SW6270C	1	0.01049	0.0327	0.032	mg/Kg
1-Methylnaphthalene	SW6270C	1	0.01049	0.0327	0.014	mg/Kg
Fluorene	SW6270C	1	0.005544	0.0327	0.0084	mg/Kg
Phenanthrene	SW6270C	1	0.01348	0.0327	0.080	mg/Kg
Fluoranthene	SW6270C	1	0.01624	0.0327	0.14	mg/Kg
Pyrene	SW6270C	1	0.01281	0.0327	0.065	mg/Kg
Benzo[a]anthracene	SW6270C	1	0.01168	0.0637	0.064	mg/Kg
Benzo[b]fluoranthene	SW6270C	1	0.01340	0.0327	0.089	mg/Kg
Benzo[k]fluoranthene	SW6270C	1	0.006546	0.0327	0.063	mg/Kg
Benzo[e]pyrene	SW6270C	1	0.01485	0.0327	0.032	mg/Kg
Dibenz[a,h]anthracene	SW6270C	1	0.004488	0.0327	0.017	mg/Kg
Benzo[g,h,i]perylene	SW6270C	1	0.004850	0.0327	0.035	mg/Kg

TPH as Diesel  
TPH as Motor Oil



Sample Result Summary

Report prepared for: Sharda Nakashima  
EnviroServices & Training Center (ETC)

Date Received: 03/03/11  
Date Reported: 03/10/11

2048.DU13 1103019-013

Parameter:	Analysis Method	DF	MDL	FDL	Results	Unit
Arsenic	SW6010B	1	0.0560	0.34	2.4	mg/Kg
Barium	SW6010B	1	0.0220	1.0	310	mg/Kg
Chromium	SW6010B	1	0.0120	1.0	78	mg/Kg
Lead	SW6010B	1	0.0740	0.260	8.1	mg/Kg
Selenium	SW6010B	1	0.0560	1.0	3.0	mg/Kg
Silver	SW6010B	1	0.0400	0.26	7.7	mg/Kg

2-Methylnaphthalene	SW6270C	1	0.01049	0.0327	0.016	mg/Kg
Phenanthrene	SW6270C	1	0.01346	0.0327	0.041	mg/Kg
Fluoranthene	SW6270C	1	0.01624	0.0327	0.28	mg/Kg
Pyrene	SW6270C	1	0.01281	0.0327	0.20	mg/Kg
Benzo[a]anthracene	SW6270C	1	0.01973	0.0327	0.10	mg/Kg
Chrysene	SW6270C	1	0.01168	0.0657	0.12	mg/Kg
Benzo[b]fluoranthene	SW6270C	1	0.01340	0.0327	0.11	mg/Kg
Benzo[k]fluoranthene	SW6270C	1	0.006546	0.0327	0.037	mg/Kg
Benzo[e]pyrene	SW6270C	1	0.01485	0.0327	0.054	mg/Kg
Indeno[1,2,3-cd]pyrene	SW6270C	1	0.003316	0.0327	0.030	mg/Kg
Dibenz[a,h]anthracene	SW6270C	1	0.004488	0.0327	0.015	mg/Kg

SW6015B(M)  
SW6015B(M)

TPH as Diesel  
TPH as Motor Oil



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU1 Lab Sample ID: 1103019-001A Project Name/Location: 06-2048 Puunene Piggyery Sample Matrix: Soil Project Number: 03011119-15 Date/Time Sampled: 06-2048 Puunene Piggyery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Prep Batch. Row includes Mercury.

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Prep Batch. Rows include Aroclor 1018, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1254, Aroclor 1260, TCMX (S), DCBP (S).



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU1 Lab Sample ID: 1103019-001A Project Name/Location: 06-2048 Puunene Piggyery Sample Matrix: Soil Project Number: 03011119-15 Date/Time Sampled: 06-2048 Puunene Piggyery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Prep Batch. Rows include Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthylene, Fluorene, Acenaphthene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[e]pyrene, Indeno[1,2,3-cd]pyrene, Dibenz[a,h]anthracene, Benzo[a]h/jerylene, 2-Fluorobiphenyl (S), p-Terphenyl-4/4' (S).

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Prep Batch. Rows include TPH as Diesel, TPH as Motor Oil, Pentacosane (S).





SAMPLE RESULTS

Report prepared for: Shahta Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1103019-002A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DL2 Project Name/Location: 06-2048 Puunene Pigery Sample Matrix: Soil Project Number: 0300111 / 9-45 Date/Time Sampled: 06-2048 Puunene Pigery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists various metals and mercury with their respective analysis methods and results.



SAMPLE RESULTS

Report prepared for: Shahta Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1103019-002A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DL2 Project Name/Location: 06-2048 Puunene Pigery Sample Matrix: Soil Project Number: 0300111 / 9-45 Date/Time Sampled: 06-2048 Puunene Pigery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists various organic compounds like Naphthalene, PAHs, PCBs, etc.

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists TPH and Pentacosane (S) with their analysis results.

NOTE: x-Not typical of Diesel standard pattern (unknown discrete hydrocarbon peaks present).



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DJ3 Lab Sample ID: 1103019-003A Project Name/Location: 06-2048 Puente Piggery Sample Matrix: Soil Date/Time Sampled: 03/01/11 7:05 Tag Number: 06-2048 Puente Piggery

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Bismuth, Cadmium, Chromium, Lead, Selenium, Silver.

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Row: Mercury.

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, TCMX (S), DCBP (S).



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DJ3 Lab Sample ID: 1103019-003A Project Name/Location: 06-2048 Puente Piggery Sample Matrix: Soil Date/Time Sampled: 03/01/11 7:05 Tag Number: 06-2048 Puente Piggery

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthylene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzofluoranthene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzofluoranthene, 2-Fluorophenyl (S), p-Toluenyl-ol (S).

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include TPH as Diesel, TPH as Motor Oil, Pentacosane (S).

NOTE: \*Not typical of Diesel standard pattern (unknown discrete hydrocarbon peaks present).



SAMPLE RESULTS

Report prepared for: Sharda Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1100019-004A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.D04 Project Name/Location: 06-2048 Puunene Piggery Soil Sample Matrix: 1100019-004A Project Number: 03/01/11 / 10:30 Date/Time Sampled: 06-2048 Puunene Piggery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MIDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists various metals and mercury with their respective analysis results.



SAMPLE RESULTS

Report prepared for: Sharda Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1100019-004A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.D04 Project Name/Location: 06-2048 Puunene Piggery Soil Sample Matrix: 1100019-004A Project Number: 03/01/11 / 10:30 Date/Time Sampled: 06-2048 Puunene Piggery Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MIDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists various hydrocarbons and their analysis results.

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MIDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Lists TPH and Pentacosane with their analysis results.

NOTE: x-Hot typical of Diesel standard pattern (unknown discrete hydrocarbon peaks present).



SAMPLE RESULTS

Report prepared for: Sharda Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Data Reported: 03/10/11

Client Sample ID: 2048.DUS Lab Sample ID: 1103019-005A
Project Name/Location: 06-2048 Puente Piggery Sample Matrix: Soil
Project Number: 03/01/11 / 10.35
Data/Time Sampled: 06-2048 Puente Piggery
Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Analytical Batch, Prep Batch. Lists various metals and their detection results.



SAMPLE RESULTS

Report prepared for: Sharda Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Data Reported: 03/10/11

Client Sample ID: 2048.DUS Lab Sample ID: 1103019-005A
Project Name/Location: 06-2048 Puente Piggery Sample Matrix: Soil
Project Number: 03/01/11 / 10.35
Data/Time Sampled: 06-2048 Puente Piggery
Tag Number:

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Analytical Batch, Prep Batch. Lists various hydrocarbons and their detection results.



SAMPLE RESULTS

Report prepared for: Sharita Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1103019-006A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU6 Project Name/Location: 06-2048 Puunene Pigery Sample Matrix: Soil Prep Date: 3/7/11 Analysis Method: SW6270C Date Analyzed: 03/08/11 Results: 3.0 MDL: 0.0560 DF: 1 PQL: 0.34 Unit: mg/Kg Analytical Batch: 404180 Prep Batch: 2193

Table with 13 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Parameters: Mercury 7471B 3/6/11 03/08/11 1 0.05 0.10 MD mg/Kg 404179 2191

Table with 13 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, TCAP (S), DCBP (S).



SAMPLE RESULTS

Report prepared for: Sharita Nakashima EnviroServices & Training Center (ETC) Lab Sample ID: 1103019-006A Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU6 Project Name/Location: 06-2048 Puunene Pigery Sample Matrix: Soil Prep Date: 3/7/11 Analysis Method: SW6270C Date Analyzed: 03/08/11 Results: 0.021 MDL: 0.01544 DF: 1 PQL: 0.0327 Unit: mg/Kg Analytical Batch: 404201 Prep Batch: 2194

Parameters: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthylene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[e]pyrene, Indeno[1,2,3-cd]pyrene, Dibenz[a,h]anthracene, Benzo[a]pyrene, 2-Fluorobiphenyl (S), p-Terphenyl-d14 (S)

Table with 13 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include various PAHs and PCBs.

Parameters: TPH as Diesel, TPH as Motor Oil, Pentacosane (S) SW6015B(M) 3/6/11 03/08/11 10 7.59 20 130 mg/Kg 404191 2177

NOTE: Surrogate recoveries fall outside of the control limits due to matrix interference. x-Not typical of Diesel standard pattern. Diesel result is carry over from TPH as motor oil quantitation range.



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DJ7 Lab Sample ID: 1103019-007A Project Name/Location: 06-2048 Puunena Pigery Sample Matrix: Soil Project Number: 03/01/11:11:35 Date/Time Sampled: 06-2048 Puunena Pigery Tag Number:

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver, and Mercury.



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DJ8 Lab Sample ID: 1103019-008A Project Name/Location: 06-2048 Puunena Pigery Sample Matrix: Soil Project Number: 03/01/11:12:15 Date/Time Sampled: 06-2048 Puunena Pigery Tag Number:

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver, and Mercury.



SAMPLE RESULTS

Report prepared for: Sharid Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU8 Lab Sample ID: 1103019-009A
Project Name/Location: 06-2048 Puunene Pigery Soil
Sample Matrix:
Date/Time Sampled: 03/01/11 / 12:35
Tag Number: 06-2048 Puunene Pigery

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Summary table for Mercury: Analysis Method 7471B, Prep Date 3/6/11, Date Analyzed 03/09/11, DF 1, MDL 0.05, PQL 0.10, Results ND, Lab Qualifier, Unit mg/Kg, Analytical Batch 404179, Prep Batch 2191.



SAMPLE RESULTS

Report prepared for: Sharid Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU10 Lab Sample ID: 1103016-010A
Project Name/Location: 06-2048 Puunene Pigery Soil
Sample Matrix:
Date/Time Sampled: 03/01/11 / 15:00
Tag Number: 06-2048 Puunene Pigery

Table with 12 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Lab Qualifier, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Summary table for Mercury: Analysis Method 7471B, Prep Date 3/6/11, Date Analyzed 03/09/11, DF 1, MDL 0.05, PQL 0.10, Results ND, Lab Qualifier, Unit mg/Kg, Analytical Batch 404178, Prep Batch 2191.



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU11 Lab Sample ID: 1103019-011A Project Name/Location: 06-2048 Puunene Piggyery Sample Matrix: Soil Project Number: 030111/14.00 Date/Time Sampled: 06-2048 Puunene Piggyery Tag Number:

Table with 13 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Parameters: Mercury Analysis Method: 7471B Prep Date: 3/8/11 Date Analyzed: 03/08/11 DF: 1 MDL: 0.05 PQL: 0.10 Results: ND Unit: mg/Kg Lab Qualifier: Analytical Batch: 404179 Prep Batch: 2191



SAMPLE RESULTS

Report prepared for: Sharia Nakashima EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU12 Lab Sample ID: 1103019-012A Project Name/Location: 06-2048 Puunene Piggyery Sample Matrix: Soil Project Number: 030111/7.40 Date/Time Sampled: 06-2048 Puunene Piggyery Tag Number:

Table with 13 columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Lab Qualifier, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver.

Parameters: Mercury Analysis Method: 7471B Prep Date: 3/8/11 Date Analyzed: 03/08/11 DF: 1 MDL: 0.05 PQL: 0.10 Results: ND Unit: mg/Kg Lab Qualifier: Analytical Batch: 404179 Prep Batch: 2191





SAMPLE RESULTS

Report prepared for: Sharia Nakastama EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU13 Lab Sample ID: 1103019-012A Project Name/Location: 06-2048 Puentea Piggy Sample Matrix: Soil Project Number: 0301011/8-45 Date/Time Sampled: 03/01/11/7:45 Tag Number: 06-2048 Puentea Piggy

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Analytical Batch, Prep Batch. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver, Mercury.



SAMPLE RESULTS

Report prepared for: Sharia Nakastama EnviroServices & Training Center (ETC) Date Received: 03/03/11 Date Reported: 03/10/11

Client Sample ID: 2048.DU12 Lab Sample ID: 1103019-012A Project Name/Location: 06-2048 Puentea Piggy Sample Matrix: Soil Project Number: 0301011/7-40 Date/Time Sampled: 03/01/11/7:40 Tag Number: 06-2048 Puentea Piggy

Table with columns: Parameters, Analysis Method, Prep Date, Date Analyzed, DF, MDL, PQL, Results, Unit, Analytical Batch, Prep Batch. Rows include Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz[a]fluoranthene, Chrysenes, Benz[b]fluoranthene, Benzofluoranthene, Benzofluorene, Indeno[1,2,3-cd]pyrene, Dibenz[a,h]anthracene, Benzofluorene, 2-Fluorobiphenyl (S), p-Terphenyl-414 (S).

NOTE: x-Not typical of Diesel standard pattern (unknown discrete hydrocarbon peaks present).



SAMPLE RESULTS

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
<i>The results shown below are reported using their MDL.</i>											
Naphthalene	SW8270C	3/7/11	03/08/11	1	0.01544	0.0327	ND		mg/Kg	404201	2184
1-Methylanthracene	SW8270C	3/7/11	03/08/11	1	0.01049	0.0327	0.016	J	mg/Kg	404201	2184
2-Methylanthracene	SW8270C	3/7/11	03/08/11	1	0.01049	0.0327	ND		mg/Kg	404201	2184
Acenaphthylene	SW8270C	3/7/11	03/08/11	1	0.009334	0.0327	ND		mg/Kg	404201	2184
Acenaphthene	SW8270C	3/7/11	03/08/11	1	0.01082	0.0327	ND		mg/Kg	404201	2184
Fluorene	SW8270C	3/7/11	03/08/11	1	0.005544	0.0327	ND		mg/Kg	404201	2184
Phenanthrene	SW8270C	3/7/11	03/08/11	1	0.01348	0.0327	0.041		mg/Kg	404201	2184
Anthracene	SW8270C	3/7/11	03/08/11	1	0.01718	0.0327	ND		mg/Kg	404201	2184
Fluoranthene	SW8270C	3/7/11	03/08/11	1	0.01624	0.0327	0.28		mg/Kg	404201	2184
Pyrene	SW8270C	3/7/11	03/08/11	1	0.01261	0.0327	0.20		mg/Kg	404201	2184
Benzofluoranthene	SW8270C	3/7/11	03/08/11	1	0.01973	0.0327	0.10		mg/Kg	404201	2184
Chrysene	SW8270C	3/7/11	03/08/11	1	0.01168	0.0327	0.12		mg/Kg	404201	2184
Benzofluoranthene	SW8270C	3/7/11	03/08/11	1	0.01340	0.0327	0.11		mg/Kg	404201	2184
Benzofluoranthene	SW8270C	3/7/11	03/08/11	1	0.008648	0.0327	0.037		mg/Kg	404201	2184
Benzo[a]pyrene	SW8270C	3/7/11	03/08/11	1	0.01485	0.0327	0.054		mg/Kg	404201	2184
Indeno[1,2,3-cd]pyrene	SW8270C	3/7/11	03/08/11	1	0.008316	0.0327	0.030	J	mg/Kg	404201	2184
Dibenz[ah]anthracene	SW8270C	3/7/11	03/08/11	1	0.004485	0.0327	0.015	J	mg/Kg	404201	2184
Benz[ghi]perylene	SW8270C	3/7/11	03/08/11	1	0.004950	0.0327	ND		mg/Kg	404201	2184
2-Fluorobiphenyl (S)	SW8270C	3/7/11	03/08/11	1	25	81.5	64.7		%	404201	2184
p-Terphenyl-d14 (S)	SW8270C	3/7/11	03/08/11	1	24.3	129	93.7		%	404201	2184

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
TPH as Diesel	SW8015B(M)	3/6/11	03/08/11	2	1.52	4.0	7.6	X	mg/Kg	404191	2177
TPH as Motor Oil	SW8015B(M)	3/6/11	03/08/11	2	3.30	7.9	140		mg/Kg	404191	2177
Penacosane (S)	SW8015B(M)	3/6/11	03/08/11	2	59.7	129	86.0		mg/Kg	404191	2177

NOTE: x-Not typical of Diesel standard pattern (unknown diesel hydrocarbon peaks present).



MB Summary Report

Work Order:	1103019	Prep Method:	3545_TPH	Prep Date:	03/06/11	Prep Batch:	2177
Matrix:	Soil	Analytical Method:	SW8015B(M)	Analyzed Date:	03/06/11	Analytical Batch:	404182
Units:	mg/Kg						
Parameters:	MDL	PQL	Method Blank Conc.	Lab Qualifier			
TPH as Diesel	0.758	2.0	ND				
TPH as Motor Oil	1.78	4.0	3.4				
Penacosane (S)			107				
Work Order:	1103019	Prep Method:	3545_PCB	Prep Date:	03/06/11	Prep Batch:	2185
Matrix:	Soil	Analytical Method:	SW8062	Analyzed Date:	03/07/11	Analytical Batch:	404181
Units:	mg/Kg						
Parameters:	MDL	PQL	Method Blank Conc.	Lab Qualifier			
Aroclor1016	0.0230	0.10	ND				
Aroclor1221	0.0920	0.20	ND				
Aroclor1232	0.0480	0.10	ND				
Aroclor1242	0.0430	0.10	ND				
Aroclor1248	0.0360	0.10	ND				
Aroclor1254	0.0240	0.10	ND				
Aroclor1260	0.0270	0.10	ND				
TCMk (S)			121				
DCBP (S)			89.3				
Work Order:	1103019	Prep Method:	7471_M	Prep Date:	03/06/11	Prep Batch:	2191
Matrix:	Soil	Analytical Method:	7471B	Analyzed Date:	03/06/11	Analytical Batch:	404179
Units:	mg/Kg						
Parameters:	MDL	PQL	Method Blank Conc.	Lab Qualifier			
Mercury	0.005	0.10	ND				



### MB Summary Report

Work Order:	1103019	Prep Method:	3545_MJ	Prep Date:	03/07/11	Prep Batch:	2183
Matrix:	Soil	Analytical Method:	SW6109	Analyzed Date:	03/09/11	Analytical Batch:	404180
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Arsenic	0.0560	0.34	0.063	
Barium	0.0220	1.0	0.50	
Cadmium	0.0120	1.0	0.013	
Chromium	0.0120	1.0	0.091	
Lead	0.0740	0.260	0.21	
Selenium	0.0560	1.0	ND	
Silver	0.0400	1.0	ND	

Work Order:	1103019	Prep Method:	3545_PAHSIM	Prep Date:	03/07/11	Prep Batch:	2184
Matrix:	Soil	Analytical Method:	SW6270C	Analyzed Date:	03/09/11	Analytical Batch:	404201
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Naphthalene	0.01560	0.0332	ND	
2-Methylnaphthalene	0.01065	0.0332	ND	
1-Methylnaphthalene	0.01065	0.0332	ND	
Acenaphthylene	0.009683	0.0332	ND	
Acenaphthene	0.01059	0.0332	ND	
Fluorene	0.009628	0.0332	ND	
Phenanthrene	0.01367	0.0332	ND	
Anthracene	0.01742	0.0332	ND	
Fluoranthene	0.01848	0.0332	ND	
Pyrene	0.02093	0.0332	ND	
Benzo(a)anthracene	0.01186	0.0687	ND	
Chrysene	0.01360	0.0332	ND	
Benzo(b)fluoranthene	0.008777	0.0332	ND	
Benzo(k)fluoranthene	0.01508	0.0332	ND	
Indeno(1,2,3-cd)pyrene	0.008442	0.0332	ND	
Dibenz(a,h)anthracene	0.004556	0.0332	ND	
Benzo(g,h,i)perylene	0.005023	0.0332	ND	
2-Fluorobiphenyl (S)			79.3	
p-Terphenyl-d16 (S)			98.8	



### LCS/LCSD Summary Report

Raw values are used in quality control assessment!

Work Order:	1103019	Prep Method:	3545_TPH	Prep Date:	03/08/11	Prep Batch:	2177
Matrix:	Soil	Analytical Method:	SW6109(M)	Analyzed Date:	03/08/11	Analytical Batch:	404182
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	0.758	2	ND	33.33	95.3	95.9	0.638	52.7 - 115	30	
Pentacene (S)			3.4	100	106	106		59.7 - 129		

Work Order:	1103019	Prep Method:	3545_PCB	Prep Date:	03/08/11	Prep Batch:	2185
Matrix:	Soil	Analytical Method:	SW61082	Analyzed Date:	03/07/11	Analytical Batch:	404181
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	0.0230	0.10	ND	1	117	123	4.59	55.6 - 135	30	
Aroclor1260	0.0270	0.10	ND	0.5	118	124	5.06	65.6 - 132	30	
TCMX (S)			ND	0.25	92.9	101		68.9 - 123		
DCBP (S)			ND	0.250	114	125		69.5 - 119		.S

Work Order:	1103019	Prep Method:	7471_MJ	Prep Date:	03/09/11	Prep Batch:	2191
Matrix:	Soil	Analytical Method:	7471B	Analyzed Date:	03/09/11	Analytical Batch:	404179
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.05	0.10	ND	0.3	98.9	101	0.532	80.3 - 133	30	



### LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1103019	Prep Method:	3545_MI	Prep Date:	03/07/11	Prep Batch:	2193			
Matrix:	Soil	Analytical Method:	SW60108	Analyzed Date:	03/08/11	Analytical Batch:	404180			
Units:	mg/Kg									
Spilled Sample:	1103019-002A									
Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.056	0.34	0.063	10	98.97	101	2.2	75 - 125	30	
Ba 233.527 R	0.022	1	0.50	10	102.7	113	9.0	75 - 125	30	
Cadmium	0.012	1	0.013	10	97.02	106	8.8	75 - 125	30	
Chromium	0.012	1	0.091	10	103	113	9.3	75 - 125	30	
Lead	0.074	0.26	0.21	10	106.9	109	1.9	75 - 125	30	
Selenium	0.058	1	ND	10	94.85	97.4	2.6	75 - 125	30	
Silver	0.04	0.26	ND	10	100.1	108	7.3	75 - 125	30	
Work Order:	1103019	Prep Method:	3545_PAHSIM	Prep Date:	03/07/11	Prep Batch:	2194			
Matrix:	Soil	Analytical Method:	SW6270C	Analyzed Date:	03/08/11	Analytical Batch:	404201			
Units:	mg/Kg									
Spilled Sample:	1103019-002A									

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.01022	0.0327	ND	0.1667	82.0	68.5	17.9	11.9 - 106	30	
Pyrene	0.01281	0.0327	ND	0.1667	103	100	2.86	18.9 - 136	30	
2-Fluorophenyl (S)			ND	5	86.9	68.4		25 - 91.6		
p-Terphenyl-414 (S)			ND	5	97.8	83.1		24.3 - 129		



### MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1103019	Prep Method:	3545_PCB	Prep Date:	03/08/11	Prep Batch:	2195		
Matrix:	Soil	Analytical Method:	SW6082	Analyzed Date:	03/07/11	Analytical Batch:	404181		
Units:	mg/Kg								
Spilled Sample:	1103019-002A								
Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arochl 1016	0.0230	0.10	0.00926	1	82.2	88.9	7.67	55.6 - 135	30
Arochl 1260	0.0270	0.10	0.00154	0.5	76.2	85.4	1.4	68.6 - 132	30
TCMX (S)			0.25	80.8	87.7		50.4 - 136		
DCBP (S)			0.250	80.9	97.7		55.1 - 113		
Work Order:	1103019	Prep Method:	3545_TPH	Prep Date:	03/06/11	Prep Batch:	2177		
Matrix:	Soil	Analytical Method:	SW6015B(M)	Analyzed Date:	03/08/11	Analytical Batch:	404192		
Units:	mg/Kg								
Spilled Sample:	1103019-002A								

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	0.76	2.0	119.7218	33.33	72.0	77.0	5.83	50.3 - 125	30
Benzo(a)pyrene (S)			100	100	83.1	100		57.9 - 125	
Work Order:	1103019	Prep Method:	3545_PAHSIM	Prep Date:	03/07/11	Prep Batch:	2194		
Matrix:	Soil	Analytical Method:	SW6270C	Analyzed Date:	03/08/11	Analytical Batch:	404201		
Units:	mg/Kg								
Spilled Sample:	1103019-002A								

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.01022	0.0327	0.0283	0.1667	67.6	74.2	9.15	11.9 - 106	30
Pyrene	0.01281	0.0327	0	0.1667	99.4	106	6.83	18.9 - 136	30
2-Fluorophenyl (S)			5	5	72.9	82.4		25 - 91.6	
p-Terphenyl-414 (S)			5	5	84.3	101		24.3 - 129	



### Laboratory Qualifiers and Definitions

#### DEFINITIONS:

<b>Accuracy/Bias (% Recovery)</b> - The closeness of agreement between an observed value and an accepted reference value.
<b>Blank (Method/Preparation Blank) (M/PB)</b> - An analyte-free matrix in which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
<b>Duplicates</b> - A field sample and/or laboratory QC sample prepared in duplicates following all of the same processes and procedures used on the original sample (sample duplicate, LCS, MSD)
<b>Laboratory Control Sample (LCS and LCSB)</b> - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
<b>Matrix</b> - the component or substrate that contains the analyte of interest (e.g., groundwater, sediment, soil, waste water, etc)
<b>Matrix Spike (M/MSD)</b> - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
<b>Method Detection Limit (MDL)</b> - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
<b>Practical Quantitation Limit (PQL)</b> - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
<b>Precision (MRPD)</b> - The agreement among a set of replicates/duplicate measurements without regard to known value of the replicates
<b>Surrogate (S) or (Surr)</b> - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
<b>Temporarily Identified Compound (TIC)</b> - A compound not contained within the analytical calibration standards but present in the GC/MS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
<b>Units:</b> the unit of measure used to express the reported result - mg/L and mg/kg (equivalent to ppm - parts per million in liquid and solid), ug/L and ug/kg (equivalent to ppb - parts per billion in liquid and solid), ug/m <sup>3</sup> , ppb, and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Mpa (concentration found on the surface of a single wipe usually taken over a 100cm <sup>2</sup> surface)

#### LABORATORY QUALIFIERS:

<b>B</b> - Indicates when the analyte is found in the associated method or preparation blank
<b>D</b> - Surrogate is not recoverable due to the necessary dilution of the sample
<b>E</b> - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
<b>H</b> - Indicates that the recommended holding time for the analyte or compound has been exceeded
<b>J</b> - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather than the quantitative
<b>NA</b> - Not Analyzed
<b>N/A</b> - Not Applicable
<b>NR</b> - Not recoverable
<b>R</b> - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
<b>S</b> - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
<b>X</b> - Used to indicate that a value based on pattern identification is within the pattern range but not because of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.



### Sample Receipt Checklist

Client Name: **EnviroServices & Training Center (ETC)** Date and Time Received: **3/22/2011 12:20**  
 Project Name: **08-2046 Chemical Piggy** Received By: **NG**  
 Work Order No.: **1103019** Physically Logged By: **NG**  
 Checklist Completed By: **NG**

Carrier Name: **EadEx**

#### Chain of Custody (COC) Information

Chain of custody present? **Yes**  
 Chain of custody signed when relinquished and received? **Yes**  
 Chain of custody agrees with sample labels? **Yes**  
 Custody seals intact on sample bottles? **Not Present**

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? **Not Present**  
 Shipping Container/Cooler in Good Condition? **Yes**  
 Samples in proper container/bottle? **Yes**  
 Samples containers intact? **Yes**  
 Sufficient sample volume for indicated test? **Yes**

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? **Yes** Temperature: **4** °C  
 Container/Temp Blank temperature in compliance? **Yes**  
 Water-VOA vials have zero headspace? **No VOA vials submitted**  
 Water-pH acceptable upon receipt? **No VOA vials submitted**

pH Checked by:



Login Summary Report

Client ID: TL5417    EnviroServices & Training Center (ETC)    QC Level: 5+ day:0  
 Project Name: 06-2048 Puuene Piggery    TAT Requested: 5+ day:0  
 Project #:    Date Received: 3/3/2011  
 Report Due Date: 3/10/2011    Time Received: 12:20  
 Comments: 5 Day TAT!! (plus 1 day drying) - Results due to client no later than Friday, 3/11/11. 13 soils rec'd at 3°C. All samples require Hawaii DOH MI Subsampling! Report client specific PAH compound list! Report to Sharia (sharia@goabio.com).  
 Work Order #: 1103019

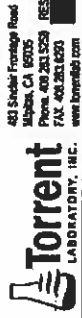
WO Sample ID	Client Sample ID	Matrix	Collection Date/Time	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1103019-001A	2048.DU1	Soil	03/01/11 9:15	08/30/11			S_60108MI S_7471HGMI S_8270PAHSIM S_8082PCB S_TPHDO	
<b>Sample Note:</b> All samples need to be air dried (minimum 24hr), sieved and subsampled per MI Sampling SOP. 10 gm MI digestion for metals, 30 gm MI extraction for all SVOCs! See client specific PAH compound list!								
1103019-002A	2048.DU2	Soil	03/01/11 9:45	08/30/11			S_60108MI S_7471HGMI S_8082PCB S_TPHDO	
1103019-003A	2048.DU3	Soil	03/01/11 7:05	08/30/11			S_60108MI S_8082PCB S_7471HGMI	
1103019-004A	2048.DU4	Soil	03/01/11 10:30	08/30/11			S_60108MI S_TPHDO S_8082PCB S_7471HGMI S_8270PAHSIM S_7471HGMI	
1103019-005A	2048.DU5	Soil	03/01/11 10:35	08/30/11			S_60108MI S_8082PCB S_TPHDO S_7471HGMI	
1103019-006A	2048.DU6	Soil	03/01/11 13:50	08/30/11			S_60108MI S_TPHDO S_8082PCB	



Login Summary Report

Client ID: TL5417    EnviroServices & Training Center (ETC)    QC Level: 5+ day:0  
 Project Name: 06-2048 Puuene Piggery    TAT Requested: 5+ day:0  
 Project #:    Date Received: 3/3/2011  
 Report Due Date: 3/10/2011    Time Received: 12:20  
 Comments: 5 Day TAT!! (plus 1 day drying) - Results due to client no later than Friday, 3/11/11. 13 soils rec'd at 3°C. All samples require Hawaii DOH MI Subsampling! Report client specific PAH compound list! Report to Sharia (sharia@goabio.com).  
 Work Order #: 1103019

WO Sample ID	Client Sample ID	Matrix	Collection Date/Time	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
1103019-007A	2048.DU7	Soil	03/01/11 11:35	08/30/11			S_8270PAHSIM S_7471HGMI	
1103019-008A	2048.DU8	Soil	03/01/11 12:15	08/30/11			S_60108MI S_7471HGMI	
1103019-009A	2048.DU9	Soil	03/01/11 12:35	08/30/11			S_60108MI S_7471HGMI	
1103019-010A	2048.DU10	Soil	03/01/11 15:00	08/30/11			S_60108MI S_7471HGMI	
1103019-011A	2048.DU11	Soil	03/01/11 14:00	08/30/11			S_60108MI S_7471HGMI	
1103019-012A	2048.DU12	Soil	03/01/11 7:40	08/30/11			S_60108MI S_7471HGMI S_8270PAHSIM S_8082PCB S_TPHDO	
1103019-013A	2048.DU13	Soil	03/01/11 8:45	08/30/11			S_60108MI S_8270PAHSIM S_TPHDO S_8082PCB S_7471HGMI	



483 Sinclair Frontage Road  
 Milpitas, CA 95035  
 Phone: 408.263.5293  
 FAX: 408.263.5293  
 www.torrentlab.com

**CHAIN OF CUSTODY**

LAB MOBILE ORDER NO: 1103 019

NOTE: SHADDED AREAS ARE FOR TORRENT LAB USE ONLY.

Company Name: EarthServices & Training Center, LLC  
 Address: 395 Ward Avenue, Suite 202  
 City: Fremont  
 State: Hawaii  
 Zip Code: 98114  
 Telephone: 808-437-7222  
 FAX: 808-439-4455  
 REPORT TO: Shari Nakashima  
 ANALYST: S. Nakashima/R. Lam  
 P.O. #: EMAIL: shari@pawest.com

Location of Sampling: 46-240 Pinnacle Piggy  
 Purpose:  
 Special Instructions / Comments: \*\* Please ONLY report the attached PAIR List

LAB ID	CLIENT'S SAMPLE ID	DATE/TIME SAMPLED	MATERIAL	REP. CONT. TYPE	REPORT FORMAT:		N1 Subsampling	NCRAs & Metals	PCBs (8082)	TPH-D (8015M)	TPH-Q (8015M)	TMS-SIM (8270C)	ANALYSES REQUESTED	REMARKS
					TOP CONT.	CONT. TYPE								
001A	204LDU01	3-1-11/193	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
002A	204LDU02	3-1-11/195	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
003A	204LDU03	3-1-11/195	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
004A	204LDU04	3-1-11/189	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
005A	204LDU05	3-1-11/183	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
006A	204LDU06	3-1-11/189	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
007A	204LDU07	3-1-11/133	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
008A	204LDU08	3-1-11/125	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
009A	204LDU09	3-1-11/125	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
010A	204LDU10	3-1-11/190	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		

DATE: 3/3/11 12:20 PM  
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 TITLE: [Title]

Log in by: [Name]  
 Log in Method by: [Method]

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**CHAIN OF CUSTODY**

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Company Name: EarthServices & Training Center, LLC  
 Address: 395 Ward Avenue, Suite 202  
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 State: Hawaii  
 Zip Code: 98114  
 Telephone: 808-437-7222  
 FAX: 808-439-4455  
 REPORT TO: Shari Nakashima  
 ANALYST: S. Nakashima/R. Lam  
 P.O. #: EMAIL: shari@pawest.com

Location of Sampling: 46-240 Pinnacle Piggy  
 Purpose:  
 Special Instructions / Comments: \*\* Please ONLY report the attached PAIR List

LAB ID	CLIENT'S SAMPLE ID	DATE/TIME SAMPLED	MATERIAL	REP. CONT. TYPE	REPORT FORMAT:		N1 Subsampling	NCRAs & Metals	PCBs (8082)	TPH-D (8015M)	TPH-Q (8015M)	TMS-SIM (8270C)	ANALYSES REQUESTED	REMARKS
					TOP CONT.	CONT. TYPE								
011A	204LDU11	3-1-11/180	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
012A	204LDU12	3-1-11/190	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		
013A	204LDU13	3-1-11/183	Soil	1	PL Bag	✓	✓	✓	✓	✓	✓	✓		

DATE: 3-3-11 12:23 PM  
 TIME: 3:34  
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 TITLE: [Title]

Log in by: [Name]  
 Log in Method by: [Method]

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Total Page Count: 41

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**ANALYTICAL REPORT**

TesAmerica Laboratories, Inc.  
TestAmerica Honolulu  
99-193 Aiea Heights Drive, Suite 121  
Aiea, HI 96701  
Tel: 808-486-5227

TestAmerica Job ID: HUI0005  
Client Project/Site: 06-2048  
Client Project Description: A&B Piggery

For:  
EnviroServices & Training Center  
505 Ward Avenue, Suite 202  
Honolulu, HI 96814

Attn: Shanta Nakashima



Authorized for release by:  
09/19/2011 03:16:40 PM  
Margie Pascua Thach  
Project Manager  
margie.pascua@testamericainc.com

Designee for  
Marvin D. Heskett III  
Laboratory Director  
marvin.heskett@testamericainc.com

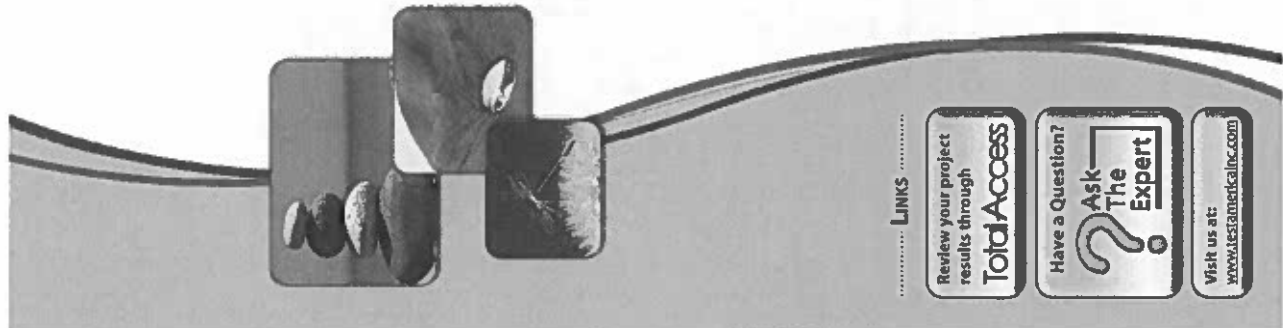
This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14



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**Definitions/Glossary**

**Case Narrative**

**Glossary**

**Case Narrative**

Abbreviation	These commonly used abbreviations may or may not be printed in this report.
DR, RA, RE, IN	Listed under the "D" column to designate that the result is reported on a dry weight basis
EDL	Estimated Detection Limit (Down)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Down)
ND	Not detected at the reporting limit (or method detection limit if shown)
POC	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Down)
TEQ	Toxicity Equivalent Quotient (Down)

**Job ID: HUI0005**  
**Laboratory: TestAmerica Honolulu**

**Narrative**

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory unless otherwise stated in the report. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample(s) analyzed.

The Chain(s) of Custody are included and are an integral part of this report. This entire report was reviewed and approved for release.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(808)485-5227

**LABORATORY REPORT**

At sample receipt, the cooler/sample was 1 degrees C.

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

Samples were prepared in accordance with the State of Hawai'i Department of Health Office of Hazard Evaluation and Emergency Response's Technical Guidance Manual for the Implementation of the Hawai'i State Contingency Plan 2009 edition Laboratory Preparation of Multi-Increment Samples.

### Sample Summary

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU10005

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
HU0005-01	2048.DU14	Solid/Sol	06/20/11 15:30	09/01/11 13:22
HU0005-02	2048.DU15	Solid/Sol	06/20/11 15:00	09/01/11 13:22
HU0005-03	2048.DU16	Solid/Sol	06/20/11 11:00	09/01/11 13:22
HU0005-04	2048.DU17	Solid/Sol	06/20/11 10:05	09/01/11 13:22
HU0005-05	2048.DU18	Solid/Sol	06/20/11 14:15	09/01/11 13:22
HU0005-06	2048.DU19	Solid/Sol	06/21/11 10:00	09/01/11 13:22
HU0005-07	2048.DU20	Solid/Sol	06/20/11 09:20	09/01/11 13:22
HU0005-08	2048.DU21	Solid/Sol	06/20/11 09:20	09/01/11 13:22
HU0005-09	2048.DU22	Solid/Sol	06/20/11 10:15	09/01/11 13:22
HU0005-10	2048.DU23	Solid/Sol	06/20/11 13:30	09/01/11 13:22

### Detection Summary

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU10005

Lab Sample ID: HU10005-01	Result	Qualifier	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	37		2.9		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU14								
Lab Sample ID: HU10005-02	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	17		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU15								
Lab Sample ID: HU10005-03	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	30		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU16								
Lab Sample ID: HU10005-04	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	34		2.9		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU17								
Lab Sample ID: HU10005-05	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	23		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU18								
Lab Sample ID: HU10005-06	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	13		2.8		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU19								
Lab Sample ID: HU10005-07	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	12		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU20								
Lab Sample ID: HU10005-08	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	130		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU21								
Lab Sample ID: HU10005-09	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	36		2.8		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU22								
Lab Sample ID: HU10005-10	Result	Qualifier <th>RL</th> <th>MDL</th> <th>Unit</th> <th>Off Fac</th> <th>D Method</th> <th>Prep Type</th>	RL	MDL	Unit	Off Fac	D Method	Prep Type
Analysis Lead	24		2.7		mg/Kg	10	60108 TUP	Total
Client Sample ID: 2048.DU23								

Client Sample Results

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HUJ0005

Client Sample ID: 2048.DU14  
Date Collected: 09/30/11 15:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-01  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 37  
Qualifier: D  
RL: 2.9  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:03

Client Sample ID: 2048.DU15  
Date Collected: 09/30/11 15:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-02  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 17  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:10

Client Sample ID: 2048.DU16  
Date Collected: 09/30/11 15:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-03  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 30  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:17

Client Sample ID: 2048.DU17  
Date Collected: 09/30/11 15:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-04  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 24  
Qualifier: D  
RL: 2.9  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:24

Client Sample ID: 2048.DU18  
Date Collected: 09/30/11 14:16  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-05  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 20  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:31

Client Sample ID: 2048.DU19  
Date Collected: 09/30/11 10:00  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-06  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 13  
Qualifier: D  
RL: 2.8  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:39

Client Sample Results

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HUJ0005

Client Sample ID: 2048.DU20  
Date Collected: 09/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-07  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 12  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:45

Client Sample ID: 2048.DU21  
Date Collected: 09/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-08  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 150  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 00:52

Client Sample ID: 2048.DU22  
Date Collected: 09/30/11 10:15  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-09  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 36  
Qualifier: D  
RL: 2.8  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 01:12

Client Sample ID: 2048.DU23  
Date Collected: 09/30/11 13:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HUJ0005-10  
Matrix: Solid/Soil

Method: 6010B TMP - Metals (ICP)  
Analysis: Lead  
Result: 34  
Qualifier: D  
RL: 2.7  
MDL Unit: mg/Kg  
DF Fac: 10  
Prepared: 09/15/11 13:11  
Analyzed: 09/16/11 01:19



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### Lab Chronicle

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU0005

Client Sample ID: 2048.DU20  
Date Collected: 08/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-07  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:45	TAL SEA

Client Sample ID: 2048.DU21  
Date Collected: 08/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-08  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:52	TAL SEA

Client Sample ID: 2048.DU22  
Date Collected: 08/30/11 10:15  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-09  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 01:12	TAL SEA

Client Sample ID: 2048.DU23  
Date Collected: 08/30/11 13:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-10  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 01:19	TAL SEA

Laboratory Reference:  
TAL SEA - TestAmerica, Service, 5755 6th Street East, Tacoma, WA 98424, TEL: (253) 922-2310

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### Lab Chronicle

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU0005

Client Sample ID: 2048.DU14  
Date Collected: 08/30/11 15:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-01  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:03	TAL SEA

Client Sample ID: 2048.DU15  
Date Collected: 08/30/11 16:00  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-02  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:10	TAL SEA

Client Sample ID: 2048.DU16  
Date Collected: 08/30/11 11:00  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-03  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:17	TAL SEA

Client Sample ID: 2048.DU17  
Date Collected: 08/30/11 10:05  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-04  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:24	TAL SEA

Client Sample ID: 2048.DU18  
Date Collected: 08/30/11 14:15  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-05  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:31	TAL SEA

Client Sample ID: 2048.DU19  
Date Collected: 08/30/11 10:00  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-06  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:30	TAL SEA

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### Lab Chronicle

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU0005

Client Sample ID: 2048.DU20  
Date Collected: 08/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-07  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:45	TAL SEA

Client Sample ID: 2048.DU21  
Date Collected: 08/30/11 09:20  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-08  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 00:52	TAL SEA

Client Sample ID: 2048.DU22  
Date Collected: 08/30/11 10:15  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-09  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 01:12	TAL SEA

Client Sample ID: 2048.DU23  
Date Collected: 08/30/11 13:30  
Date Received: 09/01/11 13:22  
Lab Sample ID: HU0005-10  
Matrix: Solid/Soil

Prep Type	Batch Type	Batch Method	Batch Number	Dilution Factor	Run	Analyst	Prepared Or Analyzed	Lab
Total	Prep	3050B	95447_P	10		SP	09/15/11 13:11	TAL SEA
Total	Analysis	6010B TMP	95447			SP	09/16/11 01:19	TAL SEA

Laboratory Reference:  
TAL SEA - TestAmerica, Service, 5755 6th Street East, Tacoma, WA 98424, TEL: (253) 922-2310

### Certification Summary

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU10005

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Honolulu	Florida	NELAC	4	EFT807
TestAmerica Honolulu	Hawaii	State Program	9	
TestAmerica Honolulu	L-A-B	DSD ELAP		
TestAmerica Honolulu	USDA	USDA		
TestAmerica Seattle	Alaska	Alaska UST	10	L2250
TestAmerica Seattle	Alaska	T4-Port Hedin Bubble Lab	10	HON-S-206
TestAmerica Seattle	California	NELAC	9	UST-023
TestAmerica Seattle	Florida	NELAC	4	1118CA
TestAmerica Seattle	L-A-B	DSD ELAP		EFT1074
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NELAC	8	L2236
TestAmerica Seattle	Montana	MT DEQ UST	8	09019
TestAmerica Seattle	Oregon	NELAC	10	N/A
TestAmerica Seattle	USDA	USDA		WA100007
TestAmerica Seattle	Washington	State Program	10	P330-11-00223
TestAmerica Seattle				C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

### Method Summary

Client: EnviroServices & Training Center  
Project/Site: 06-2048

TestAmerica Job ID: HU10005

Method	Method Description	Protocol	Laboratory
60108 TUP	Metals (CP)		TAL SEA

Protocol References:

Laboratory References:  
TAL SEA - TestAmerica Seattle, 3735 8th Street East, Tacoma, WA 98424, TEL (253) 622-2310

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc  
TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

TestAmerica Job ID: 580-28558-1  
Client Project/Site: HUI0005

For:

TestAmerica Laboratories, Inc  
99-193 Alea Heights Drive  
Suite 121  
Alea, Hawaii 96701

Attn: Marvin D Heskett III

*Pamela R Johnson*

Authorized for release by:  
09/16/2011 04:17:21 PM

Pam Johnson  
Project Manager I  
pamr.johnson@testamerica.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14

TestAmerica Job ID: 580-28558-1

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

## Table of Contents

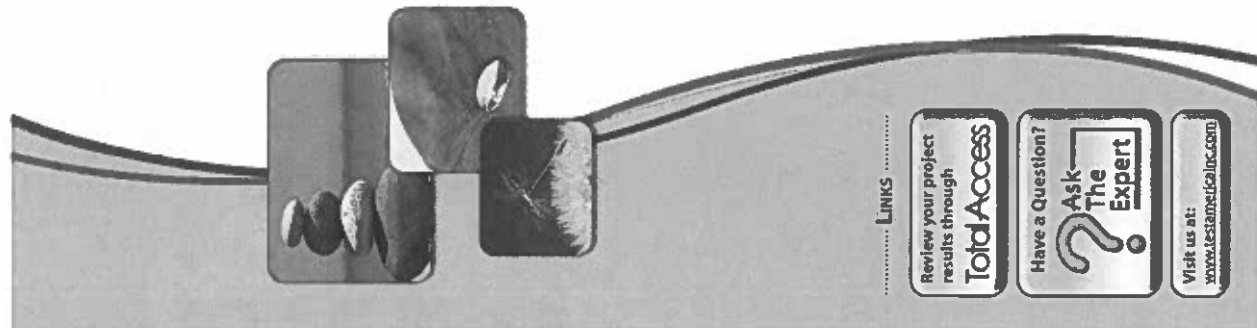
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### LINKS .....

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**Definitions/Glossary**

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 560-28558-1

**Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
3	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, REL, IN	Indicates a Dilution, Reanalysis, Re-acceptance, or additional field maintenance analysis of the sample
EDL	Estimated Detection Limit (Down)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Down)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantization Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Down)
TEQ	Toxicity Equivalent Quotient (Down)

**Client Sample Results**

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 560-28558-1

Client Sample ID: HUI0005-01  
Date Collected: 08/29/11 15:30  
Date Received: 09/02/11 10:00

Lab Sample ID: 560-28558-1  
Matrix: Solid

Method: 6010B - Metals (ICP)	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Off File
Lead	37		29		mg/Kg		08/15/11 13:11	08/16/11 09:03	

1 2 3 4 5 6 7 8 9 10 11 12 13 14

1 2 3 4 5 6 7 8 9 10 11 12 13 14



Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HU10005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HU10005-02  
Date Collected: 09/09/11 16:00  
Date Received: 09/09/11 16:00

Lab Sample ID: 580-28558-2  
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte  
Lead

Result: Quattro  
37

RL  
27

Prepared  
09/15/11 13:11

Analyzed  
09/15/11 08:19

DR Fac  
10

Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HU10005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HU10005-03  
Date Collected: 09/09/11 11:00  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-3  
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte  
Lead

Result: Quattro  
20

RL  
27

Prepared  
09/15/11 13:11

Analyzed  
09/15/11 08:17

DR Fac  
10

1 2 3 4 5 6 7 8 9 10 11 12 13 14

### Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-05  
Date Collected: 08/20/11 14:15  
Date Received: 08/09/11 10:00

Lab Sample ID: 580-28558-4  
Matrix: Solid

Method:	60108 - Metals (ICP)
Result	23
Qualifier	Z3
RL	27
MDL	Unit
Unit	mg/kg
D	08/15/11 13:11
Prepared	08/16/11 00:37
Analyzed	08/16/11 00:37
Diff Exp	10

1 2 3 4 5 6 7 8 9 10 11 12 13 14

### Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-04  
Date Collected: 08/20/11 10:05  
Date Received: 08/09/11 10:00

Lab Sample ID: 580-28558-4  
Matrix: Solid

Method:	60108 - Metals (ICP)
Result	24
Qualifier	
RL	29
MDL	Unit
Unit	mg/kg
D	08/15/11 13:11
Prepared	08/16/11 00:24
Analyzed	08/16/11 00:24
Diff Exp	10

Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-06  
Date Collected: 08/20/11 10:11  
Date Received: 09/09/11 10:30

Lab Sample ID: 580-28558-6  
Matrix: Solid

Method: 6010B - Metals (ICP)  
Analyte  
Lead

Method: 6010B - Metals (ICP)  
Analyte  
Lead

Result: 15

Result: 12

RL: 2.0

RL: 27

MDL:  $\mu\text{g}/\text{kg}$

MDL:  $\mu\text{g}/\text{kg}$

Unit:  $\mu\text{g}/\text{kg}$

Unit:  $\mu\text{g}/\text{kg}$

D: 08/25/11 12:11

D: 08/25/11 12:11

Prepared: 08/26/11 08:38

Prepared: 08/26/11 08:38

Analyzed: 08/26/11 08:38

Analyzed: 08/26/11 08:38

DL File: 10

DL File: 10

Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-07  
Date Collected: 08/20/11 09:20  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-7  
Matrix: Solid

Method: 6010B - Metals (ICP)  
Analyte  
Lead

Method: 6010B - Metals (ICP)  
Analyte  
Lead

Result: 12

Result: 12

RL: 27

RL: 27

MDL:  $\mu\text{g}/\text{kg}$

MDL:  $\mu\text{g}/\text{kg}$

Unit:  $\mu\text{g}/\text{kg}$

Unit:  $\mu\text{g}/\text{kg}$

D: 08/25/11 12:11

D: 08/25/11 12:11

Prepared: 08/26/11 08:45

Prepared: 08/26/11 08:45

Analyzed: 08/26/11 08:45

Analyzed: 08/26/11 08:45

DL File: 10

DL File: 10

Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-08  
Date Collected: 09/09/11 09:20  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-8  
Matrix: Solid

Method: Analyte Level	Result	Qualifier	RL	MQL	Unit	D	Prepared	Analyzed	Del File
60108 - Metals (ICP) Lead	130		2.7		mg/Kg		09/15/11 13:11	09/15/11 00:52	10

Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-09  
Date Collected: 09/09/11 10:15  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-9  
Matrix: Solid

Method: Analyte Level	Result	Qualifier	RL	MQL	Unit	D	Prepared	Analyzed	Del File
60108 - Metals (ICP) Lead	35		2.8		mg/Kg		09/15/11 13:11	09/15/11 01:12	10

### Client Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-10

Client Sample ID: HUI0005-10  
Date Collected: 09/09/11 13:30  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-10  
Matrix: Solid

Method: 6010B - Metals (ICP)	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DM Fac
Analyte Lead	34		2.7		mg/Kg		09/15/11 13:11	09/15/11 01:19	10

### QC Sample Results

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Method: 6010B - Metals (ICP)  
Lab Sample ID: MB 860-9544718-A  
Matrix: Solid  
Analysis Batch: 95517

Method: 6010B - Metals (ICP)	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DM Fac
Analyte Lead	ND		1.5		mg/Kg		09/15/11 13:13	09/15/11 22:49	1

Lab Sample ID: LCS 650-9544719-A  
Matrix: Solid  
Analysis Batch: 95517

Client Sample ID: Lab Control Sample	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DM Fac
Matrix: Solid	50.0		47.5		mg/Kg				
Analyte Lead									

Lab Sample ID: LCSD 650-9544720-A  
Matrix: Solid  
Analysis Batch: 95517

Client Sample ID: Lab Control Sample Dup	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DM Fac
Matrix: Solid	50.0		47.5		mg/Kg				
Analyte Lead									

Lab Sample ID: LCSSRM 650-9544721-A  
Matrix: Solid  
Analysis Batch: 95517

Client Sample ID: Lab Control Sample	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DM Fac
Matrix: Solid	152		158		mg/Kg				
Analyte Lead									

Lab Chronicle

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-01  
Date Collected: 08/30/11 15:30  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:03	SP	TAL SEA

Client Sample ID: HUI0005-02  
Date Collected: 08/30/11 15:00  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:10	SP	TAL SEA

Client Sample ID: HUI0005-03  
Date Collected: 08/30/11 11:00  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:17	SP	TAL SEA

Client Sample ID: HUI0005-04  
Date Collected: 08/30/11 10:05  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:24	SP	TAL SEA

Client Sample ID: HUI0005-05  
Date Collected: 08/30/11 14:15  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:31	SP	TAL SEA

Client Sample ID: HUI0005-06  
Date Collected: 08/30/11 10:11  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:38	SP	TAL SEA

Lab Chronicle

Client: TestAmerica Laboratories, Inc  
Project/Site: HUI0005

TestAmerica Job ID: 580-28558-1

Client Sample ID: HUI0005-07  
Date Collected: 08/30/11 09:20  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:45	SP	TAL SEA

Client Sample ID: HUI0005-08  
Date Collected: 08/30/11 09:20  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-8  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 00:52	SP	TAL SEA

Client Sample ID: HUI0005-09  
Date Collected: 08/30/11 10:16  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-9  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 01:12	SP	TAL SEA

Client Sample ID: HUI0005-10  
Date Collected: 08/30/11 13:30  
Date Received: 09/09/11 10:00

Lab Sample ID: 580-28558-10  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Dilution	Run	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B	10		95447	08/15/11 13:11	PAB	TAL SEA
Total/NA	Analysis	6010B			95517	09/15/11 01:19	SP	TAL SEA

Laboratory Reference:  
TAL SEA - TestAmerica Seattle, 5745 8th Street East, Tacoma, WA 98424 TEL: (253)822-2310

### Certification Summary

Client: TestAmerica Laboratories, Inc  
Project/Site: HIU0005

TestAmerica Job ID: 560-28558-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska	Alaska LIST	10	LIST-022
TestAmerica Seattle	Alaska	T-A-Port Haden Mobile Lab	10	LIST-093
TestAmerica Seattle	California	NEJAC	9	1115CA
TestAmerica Seattle	Florida	NEJAC	4	EB71074
TestAmerica Seattle	L-4-B	DSD FLAP		L2236
TestAmerica Seattle	L-4-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Louisiana	NEJAC	6	05016
TestAmerica Seattle	Montana	MT DEQ LIST	6	N/A
TestAmerica Seattle	Oregon	NEJAC	10	WA 100097
TestAmerica Seattle	USDA	USDA		PS30-14-0222
TestAmerica Seattle	Washington	State Program	10	CS33

Accreditation may not be offered or required for all methods and analytes reported in the package. Please contact your project manager for the laboratory's current list of certified methods and analytes

### Sample Summary

Client: TestAmerica Laboratories, Inc  
Project/Site: HIU0005

TestAmerica Job ID: 560-28558-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-28558-1	HLK0005-01	Solid	08/30/11 13:30	09/09/11 10:00
560-28558-2	HLK0005-02	Solid	08/30/11 15:00	09/09/11 10:00
560-28558-3	HLK0005-03	Solid	08/30/11 11:00	09/09/11 10:00
560-28558-4	HLK0005-04	Solid	08/30/11 10:05	09/09/11 10:00
560-28558-5	HLK0005-05	Solid	08/30/11 14:15	09/09/11 10:00
560-28558-6	HLK0005-06	Solid	08/30/11 10:11	09/09/11 10:00
560-28558-7	HLK0005-07	Solid	08/30/11 09:20	09/09/11 10:00
560-28558-8	HLK0005-08	Solid	08/30/11 09:20	09/09/11 10:00
560-28558-9	HLK0005-09	Solid	08/30/11 10:15	09/09/11 10:00
560-28558-10	HLK0005-10	Solid	08/30/11 13:30	09/09/11 10:00

# Subcontract Order - TestAmerica Honolulu (HUI0005)

28558

Please enter the following code into the Job PO Number field for automated UIDZ transfer files: Sub HON HUI0005

### SENDING LABORATORY:

TestAmerica Honolulu  
 66-163 Alca Heights Drive, Suite 121  
 Ala, HI 96701  
 Phone: 808-486-5227  
 Fax: 808-486-2456  
 Project Manager: Marvin D. Heskett, III  
 Client: EnviroServices & Training Center

### RECEIVING LABORATORY:

TestAmerica Seattle  
 5755 8th Street East  
 Tacoma, WA 98424  
 Phone: (253) 922-2310  
 Fax: 253  
 Project Location: Hawaii  
 Receipt Temperature: °C    Ice: Y / N

Copy from HUI0004.

Analysis	Units	Due	Expires	Inside Price	Surch	Comments
Sample ID: HUI0005-01 (2048.DU14 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 15:30	08/30/11 15:30	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-02 (2048.DU16 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 15:00	08/30/11 15:00	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-03 (2048.DU16 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 11:00	08/30/11 11:00	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-04 (2048.DU17 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 10:05	08/30/11 10:05	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received By *Paty Conch* 9/16/11 11:00 Date/Time \_\_\_\_\_  
 Released By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

# Subcontract Order - TestAmerica Honolulu (HUI0005)

28558

Please enter the following code into the Job PO Number field for automated UIDZ transfer files: Sub HON HUI0005

### SENDING LABORATORY:

TestAmerica Honolulu  
 66-163 Alca Heights Drive, Suite 121  
 Ala, HI 96701  
 Phone: 808-486-5227  
 Fax: 808-486-2456  
 Project Manager: Marvin D. Heskett, III  
 Client: EnviroServices & Training Center

### RECEIVING LABORATORY:

TestAmerica Seattle  
 5755 8th Street East  
 Tacoma, WA 98424  
 Phone: (253) 922-2310  
 Fax: 253  
 Project Location: Hawaii  
 Receipt Temperature: °C    Ice: Y / N

Copy from HUI0004.

Analysis	Units	Due	Expires	Inside Price	Surch	Comments
Sample ID: HUI0005-05 (2048.DU18 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 14:15	08/30/11 14:15	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-06 (2048.DU19 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/27/12 10:00	08/31/11 10:00	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-07 (2048.DU20 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 09:20	08/30/11 09:20	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-08 (2048.DU21 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 09:20	08/30/11 09:20	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-09 (2048.DU22 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 10:15	08/30/11 10:15	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						
Sample ID: HUI0005-10 (2048.DU23 - Soilds/Soil)						
Lead 10g Total SW 60108	mg/kg	09/16/11	02/26/12 13:30	08/30/11 13:30	\$22.50	0%
Containers Supplied:						
Incremental						
Sub-sample (analyze entire content) (A)						

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Released By \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received By \_\_\_\_\_ Date/Time \_\_\_\_\_





INTERNAL RECORD OF COMMUNICATION FORM

TODAYS DATE: 09/07/11 TIME: 1620  
PROJECT MANAGER: Steven Garcia

PROJECT STATUS:	COMMUNICATION VIA:
<input checked="" type="checkbox"/> upcoming	<input type="checkbox"/> telephonic
<input type="checkbox"/> received today	<input type="checkbox"/> facsimile
<input type="checkbox"/> in progress	<input type="checkbox"/> e-mail
<input type="checkbox"/> completed	<input type="checkbox"/> COC form
<input type="checkbox"/> on hold	<input type="checkbox"/> other
<input type="checkbox"/> other	

CLIENT: TA-Hardulu  
CONTACT: Marvin Heskett  
WORK ORDER NUMBER: IUI0005 / IUI0005  
PROJECT ID: Enviro Services Training center  
MESSAGE: Please find 10 samples (2 jars) to TA- ~~Denver~~ Seattle

Thank you.  
Steven

All  
Go to ITB up IR card 1 unc. 24  
Cooler Disc @ Lab  
WetPackets Packing bubble  
via Fed. ex. P.O.

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Garcia, Steven  
From: Heskett, Marvin  
Sent: Wednesday, September 07, 2011 5:00 PM  
To: Garcia, Steven  
Cc: Johnson, Pam R.  
Subject: RE: IUI0005 / IUI0475  
Steven,

Please forward these to Seattle. Pam. This was a MI job that went to Irvine by mistake. 10 samples for lead only, standard TAT.

Thank You,  
Marvin

From: Garcia, Steven  
Sent: Wednesday, September 07, 2011 1:31 PM  
To: Heskett, Marvin  
Subject: IUI0005 / IUI0475

We are forwarding on these samples, but Dave mentioned Denver. Is that right? Or should they go to Seattle?

Thank you,

STEVEN A. GARCIA  
Project Manager

TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING  
17461 Derian Sulle #100  
Irvine CA 92614  
Tel 949 261 1022 X274 Fax 949 261 3297

Log In Sample Receipt Checklist

Client: TestAmerica Laboratories, Inc

Job Number: 590-25558-1

List Source: TestAmerica Seattle

Log In Number: 25558

Creator: Gamble, Cathy

Question Answer Comment

Radiocactivity either was not measured or, if measured, is at or below background

True

The cooler's custody seal, if present, is intact.

True

The cooler or samples do not appear to have been compromised or tampered with.

True

Samples were received on ice.

True

Cooler Temperature is acceptable.

True

Cooler Temperature is recorded.

True

CDC is present.

True

CDC is filled out in ink and legible.

True

CDC is filled out with all pertinent information.

True

Is the Field Sampler's name present on CDC?

True

There are no discrepancies between the sample IDs on the containers and the CDC.

True

Samples are received within Holding Time.

True

Sample containers have legible labels.

True

Containers are not broken or leaking.

True

Sample collection date/times are provided.

True

Appropriate sample containers are used.

True

Sample bottles are completely filled.

True

Sample Preservation Verified.

N/A

There is sufficient vol. for all requested analyses, incl. any requested MSMASDs

True

VDA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.

True

Multiphasic samples are not present.

True

Samples do not require splitting or compositing.

True

Residual Chlorine Checked.

N/A

Received project as a subcontract.

1 2 3 4 5 6 7 8 9 10 11 12 13 14

LABORATORY USE ONLY

LAB JOB NO. H11005

LOCATION H11005

CONTAINERS

Honolulu  
 99-193 Ala Heights Drive Suite 121 • Ala, HI 96701-3900  
 808-486-2458 • Fax 808-486-2458



Chain of Custody / Analysis Request Form

Project Identification: SHARNA NAKASHIMA  
ENVIRONMENTAL SERVICES & TRAINING CENTER, LLC  
PO BOX 2048  
Ward Avenue, Suite 202  
Honolulu, HI 96814  
808-839-1222  
808-839-1455  
Charla  
Photocam  
STAT

Client sample ID: 2048.D14

Received by (Date / Time): 11/11/10 11:00 AM

Delivery method: Hand

Received by (Date / Time): 11/11/10 11:00 AM

Company / Agency: U. Yoshida

Site / Location: M. West / M. E.

Condition noted: Good / Intact

Remarks: Multi-Incremental subsampling to 2 mm soil particle size.

Lot No.	Client sample ID	Received by (Date / Time)	Delivery method	Company / Agency	Site / Location	Condition noted
1	2048.D14	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
2	2048.D15	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
3	2048.D16	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
4	2048.D17	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
5	2048.D18	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
6	2048.D19	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
7	2048.D20	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
8	2048.D21	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
9	2048.D22	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact
10	2048.D23	11/11/10 11:00 AM	Hand	U. Yoshida	M. West / M. E.	Good / Intact

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14



Rush TAT Confirmation (Initial/Date) W/A

**Sample Receipt Checklist**

Client Name: ETC Date/Time Received: 9/1/11 13:22

Received By: Mason Horko Carrier: Head Altitude: \_\_\_\_\_

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Chain of Custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of Custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of Custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Type: <u>Wet</u>
Sample containers on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA Vials have Zero Headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials present: <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Checked: <input type="checkbox"/>
			Final pH: _____
Encores / MI-VOC / SO3S Vials Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Location: _____
Sample Filtration Needed?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Filtered in Field: <input type="checkbox"/>
Dry Weight Corrected Result?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Take Action: <input type="checkbox"/>
DODISM / OAPP Project?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Type: _____

Temperature Blank Present? Yes  No   
 Sample Container Temperature:      °C

**Comments/ Sampling Handling Notes:**

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***Environmental  
Document Review***



# MALAMAMA Environmental

November 16, 2011

Blanca Lafolette  
CMBY 2011 Investments, LLC  
P.O. Box 220  
Kāhala, Hawaii 96753

Subject: **Environmental Document Review – Site Investigation Report by ETC, LLC October 2011 & Draft Limited Phase II Environmental Site Assessment by ETC, LLC October 2011**  
86 acres off Mokulele Highway and South Firebreak Road – TMK (2) 3-8-008:19

Dear Ms. Lafolette:

Malamama Environmental (MEV) was commissioned by CMBY 2011 Investments, LLC in December 2010 to conduct project monitoring and review of environmental documentation by the property owner's environmental consulting agency, EnviroServices & Training Center, LLC (ETC). MEV's scope of work consisted of the following:

- Review of environmental documents compiled by ETC, including field work plans, sampling plans, Site Investigation Report and limited Phase II Report by ETC;
- Review of field sample procedures by ETC;
- Conduct field sampling monitoring of ETC personnel;
- Review of sample preparations and chain of custody for the chosen laboratory;
- Review of the laboratory qualifications, analytical methods chosen, and quality assurance/quality controls;
- Review of conclusions by ETC.

MEV on behalf of CMBY 2011 Investments, LLC, hereby submits this Environmental Document Review for the report and site referenced above. The data obtained during the recent site investigation was used by ETC to determine whether additional surface and/or subsurface soil investigation or remediation actions were necessary based on laboratory results from sampling conducted on contaminants of potential concern (COPC) previously identified on the subject property. It should be noted that the *Site Investigation Report*, October 2011 addresses many of the environmental contaminants of potential concern (COPC) on the subject site that were identified during initial site investigations. Most of these have already been commented on by MEV.

This environmental document review of the *Site Investigation Report* specifically addresses the subsequent surface soil sampling of DU11 and the review of the *Limited Phase II ESA* addresses the field monitoring of the surface and subsurface sampling conducted at the former gunnery along the southern property boundary of Parcel 19.

#### Background

Historically, the site was originally used as a military installation beginning in the 1940s to support the nearby Puunene Naval Air Station. Military operations likely ceased in the late 1940s, and thereafter the subject site was used for sugarcane cultivation and as a plantation camp. The property owner, Alexander and Baldwin, Inc. (A&B), leased the site to a farmer who operated a pig farm beginning in the 1960s. A new tenant, Mr. Larry Poffenroth took over pigery operations in 1995. Mr. Poffenroth began an unpermitted solid waste management facility. The property owner removed the tenant from the subject site in 2007-2008 and began

solid waste cleanup activities for eventual sale of the property. This activity was complete by March 2011, however based on the former property usage; several specific potential sources of contamination were identified during previous site inspections.

#### Former Solid Waste Operations Site

ETC's *Site Investigation Work Plan*, February 2011 proposed surface soil sampling from eleven (11) decision units (DUs) in select areas on the property where the unpermitted solid waste facility actions occurred. According to laboratory results, it was determined that the initial sampling showed elevated levels that elevated levels of totally petroleum hydrocarbons as oil (TPH-O) for DU6 and DU12. Although the levels exceeded the Hawaii Department of Health (DOH) Environmental Action Levels (EALs) for unrestricted land use, they are within range for commercial/industrial land use. The new property owner, CMBY intends to use the property for commercial and industrial purposes.

In addition to the findings noted above, analytical results indicated that soil collected from DU11 contained slightly elevated levels of total lead concentration for commercial/industrial land use. Based on this finding, ETC proposed additional sampling and subdivision of DU11 to further characterize the contamination. MEV reviewed and agreed with the proposed sampling plan for this, and the work was conducted in August 2011.

#### Former Military Gunnery Site

The Phase I Environmental Site Assessment, March 2011 prepared for the subject site identified a recognized environmental condition as a potential presence of residual contamination associated with historic usage of the southernmost portion of the subject site as a machine gun range. The former gunnery was noted on maps of the Puunene Naval Air Station and in historical aerial photos. Although the approximate location of the gunnery is known, it was unclear as to whether this facility was actually located within the property boundary. The COPC for military machine gun range is total lead concentration from spent metal bullets. MEV's concern included the possibility of on-site soil fill material from adjacent property where the gunnery was located, causing that to be a source for stormwater migration of lead or perhaps a source of transported fill for level grading the parcel boundary area.

Due to the close proximity of the former gunnery to the southern property boundary, the property owner opted to conduct a limited Phase II site investigation for potential surface and subsurface lead contamination. It was determined in the ETC sampling plan that 50 multi-incremental sampling (MIS) surface samples would be collected from a single DU along the perimeter of the southern boundary from the top 6-inches of the soil. It was also concluded that 10 subsurface soil samples would be collected by a direct-push drill rig at a depth of 4-10 feet. This sampling was conducted by ETC under the observation of MEV in August 2011.

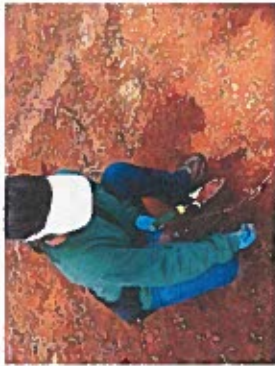
#### Field Investigation

On August 30<sup>th</sup>, 2011, MEV personnel Mr. John Vuich and Ms. Amy Mathis monitored the surface sampling for total lead concentration on the subdivided DU11 and the surface and subsurface sampling for total lead concentration at the former gunnery site. This allowed for MEV to witness the sampling process, photo document the event and interview ETC field technicians.

#### Additional Investigation of DU11

ETC subdivided DU11 into eight separate DUs (DU14 through DU 23) with the use of a GPS unit. The boundaries of the new DUs were flagged and marked. ETC collected 50 MIS from a depth of 4-6 inches below the surface with pre-cleaned hand trowels from each new DU. ETC also collected

two field replicate MIS from one of the eight DU1s for use as a batch quality control. MEV confirms that the samples were collected in an appropriate manner according to *Interim Final Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan (TGM)* and the DOH's Summer 2008 (Updated March 2009) *Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater*, referred to as the EHE Document. The samples were delivered to TestAmerica – Honolulu with completed chain of custody forms. The lab was instructed to conduct analysis for total lead via EPA Method 6010. MEV concludes that the field sampling conducted by ETC was done according to protocol.



ETC personnel conducting surface sampling for total lead concentration at the subdivided DU11.

The laboratory results for the subdivided DU11 are shown below:

Sample ID	Lead
2048.DU14	37
2048.DU15	17
2048.DU16	30
2048.DU17	84
2048.DU18	23
2048.DU19	13
2048.DU20	12
2048.DU21	13
2048.DU22	36
2048.DU23	34
Mean	27.67
Standard Deviation	12.74
Relative Standard Deviation	46.05%
DOH EAL	200 (800 <sup>CT</sup> )

All results presented in mg/kg.  
 DOH EAL = March 2009 Defiant DOH EAL. For soil in areas where drinking water wells is not threatened and the nearest surface water body is less than 150-meters from the site.  
 CT = Defiant DOH EAL for Lead of 800 mg/kg pertaining to direct exposure concerns associated with Commercial, Industrial Lead Use.

According to the laboratory results from the additional total lead concentration investigation of DU11, it was determined that the average total lead concentration for all subdivided DU1s were well below the EALs of 200 milligrams/kilograms (mg/kg) for unrestricted land use within the EHE manual requirement to sample the partic fraction that is less than 2 millimeters. This fraction of the soil is considered to be the dust and silt portion most available for uptake by human beings. ETC concluded that the previous elevated lead results were due to discrete pieces of lead within the soil from former solid waste storage activities. ETC stated that the initial results for DU11 may not necessarily reflect the average lead concentrations that are likely to be encountered throughout DU11. In addition, given the future commercial/industrial land use of the Property coupled with the results of the additional sampling activities, potential plant uptake is not considered a concern. Therefore, based on the data, lead within the soil fraction less than 2 millimeters in size was removed from consideration as a contaminant of concern for the Property. Furthermore, ETC concluded that based on review of the data obtained from the site investigation and comparison of COPC concentrations to applicable DOH EALs, there appear to be no retained environmental hazards for the site. As such, no further action appears necessary to address concerns associated with the former solid waste operations on the Property. MEV concurs with this concluding statement for the particle fraction of the soil that is less than 2 millimeters.

#### Former Military Gunnery

The secondary portion of the sampling conducted by ETC consisted of the surface and subsurface soil sampling for lead at the former military gunnery located along the southern property boundary. On August 30<sup>th</sup>, 2011, ETC collected one multi-increment surface soil sample in triplicate; and twenty-one discrete subsurface soil samples from ten boring locations. (One primary multi-increment sample for laboratory analysis and the two field replicate multi-increment samples were collected for quality control purposes.) Due to the size of the single DU, ETC opted to collect one hundred (100) multi-incremental surface soil samples in a stratified, random manner (i.e., collect incremental samples from random locations, ensuring that each portion of the decision unit is represented) within the defined approximate 30 foot wide decision unit located along the south border of the property. MEV confirms that this method follows the DOH TGM and the EHE Document.

Collection of subsurface soil samples was performed using a Geoprobe 66DT system operated by GeoTek Hawaii, Inc. The Geoprobe 66DT is a track mounted, soil probing (i.e. direct push) machine that uses a small amount of static weight combined with percussion as the energy for the advancement of the push rod. According to A&B, approximately 10 feet of fill material was placed on the property several decades ago for agricultural use. It was decided to use a track drill rig using the direct push method with a macro-core to collect bore soil samples from the surface to about 10 feet in an attempt to discern fill and native soil. MEV was present for several of the initial boreholes. The first bore hole was taken from surface to 7 feet. The drill rig was operated by geologist and owner of ETC. Upon inspection it was obvious that several soil horizons were present. Both of these drill cores were taken on the dirt road adjacent to the ditch at the SE corner of the property.

The laboratory results for the former gunnery are shown below:

**Table 1: Analytical Data – Multi-Incremental Surface Soil Samples**

Sample ID	2048.SS1	2048.SS2	2048.SS3	DOH EAL
Total Lead (mg/kg)	< 9.9	< 10	< 10	200 (800 <sup>ci</sup> )
Magna Total Lead	8.75			
Standard Deviation	0.068			
Relative Standard Deviation	0.78%			

*Note:* Analyte = Not detected above method detection limit (MDL): MDL listed.  
 DOH EAL = Default DOH Environmental Action Level for unrestricted land use.  
 CI = Default DOH EAL pertaining to Commercial/Industrial Land Use.  
 For Lead, the DOH EAL of 800 mg/kg pertains to direct exposure concerns.

**Table 2: Analytical Data – Discrete Subsurface Soil Samples**

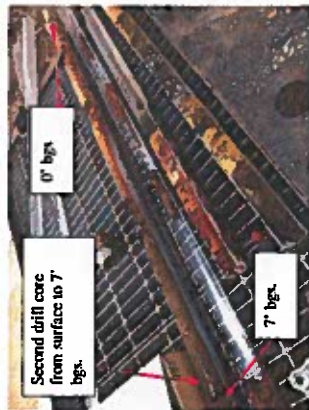
Sample ID	Sample Depth (ft)	Total Lead
2048.B1.60	4.5 - 5.0	< 10
2048.B1a.108	8.5 - 9.0	< 9.9
2048.B2.60	4.5 - 5.0	< 10
2048.B2.90	7.0 - 7.5	< 9.9
2048.B3.48	3.5 - 4.0	< 9.9
2048.B3.120	9.5 - 10	< 9.9
2048.B4.36	2.5 - 3.0	< 10
2048.B4.84	4.5 - 5.0	< 9.9
2048.B5.60	4.5 - 5.0	4.4
2048.B5.102	8.0 - 8.5	< 9.9
2048.B6.60	4.5 - 5.0	< 9.9
2048.B6.96	7.5 - 8.0	< 9.9
2048.B7.48	3.5 - 4.0	< 10
2048.B7.84	6.5 - 7.0	4.6
2048.B8.48	3.5 - 4.0	< 10
2048.B8.96	7.5 - 8.0	< 9.9
2048.B9.60	4.5 - 5.0	< 9.9
2048.B9.108	8.5 - 9.0	< 10
2048.B10.48	3.5 - 4.0	< 10
2048.B10.84	6.5 - 7.0	< 10
DOH EAL		200 (800 <sup>ci</sup> )

*Note:* Analyte = Not detected above method detection limit (MDL): MDL listed.  
 DOH EAL = Default DOH Environmental Action Level for unrestricted land use.  
 CI = Default DOH EAL pertaining to Commercial/Industrial Land Use.  
 For Lead, the DOH EAL of 800 mg/kg pertains to direct exposure concerns.

Total lead concentrations were determined to be either below the laboratory reporting limit and/or below the default DOH EAL for unrestricted land use. Based on these findings, ETC concluded that no further action would apply to the southernmost portion of the project site in regards to the



ETC personnel beginning the subsurface sample collection with the track drill rig



Example of drill core subsurface soil material from the surface to 7 feet below ground surface (bgs)

Upon inspection, it appeared that the fill material lies in the top 2-4 feet of the soil horizon. The parent material is likely basalt with a red clay that formed above it. The red clay is likely the zone of accumulation for oxides. Above this is the yellow/tan silt which appears to be more leached of nutrients. It is evident from examining the first two core samples that the soil horizons change from the first drill sample to the second one. Maybe this occurs due to the samples being taken so close to a drainage area and historic fluctuations in water content have caused localized shifts in horizons. It may also be from historic soil horizon disruptions due to ground tilling for agricultural purposes. It was due to soil horizon fluctuations and varying changes in soil consistency, texture and structure throughout the studied depth of 0-10 feet bgs, that induced ETC to collect samples from varying depths throughout the DU. It was expected by following these horizon changes, ETC could more fully characterize the soil at this location.

potential, small-fraction lead impacts associated with the former "machine gun range." MEV felt that the work conducted by ETC was done according to protocol and in a professional and knowledgeable manner and agrees with this statement.


#### Conclusions

The document *Site Investigation Report*, Former Puuone Piggery, by ETC October 2011 will be submitted to the DOH requesting a "no further action" statement and final closure for this project from the State Department of Health's Solid and Hazardous Waste Branch (SHWB). Based on MEV's site reconnaissance and review of ETC documentation, the former unpermitted solid waste requires no further sampling or environmental investigation for industrial/commercial land use. MEV concurs with this conclusion.


The *Draft Phase II Limited Environmental Site Assessment* at the former gunnery will not be submitted to the DOH. This investigation was meant to satisfy the former property owner, A & B, that no contamination was present along the southern boundary of the subject site. It was conducted as a Phase II Environmental Site investigation for property transaction to assess whether the property had been impacted by the former military gunnery and was considered a recognized environmental condition. It should be noted that if the surface and subsurface soil samples in the location of the former gunnery were determined to be lead contaminated, ETC would have been instructed to involve the Hazard Evaluation and Emergency Response (HEER) Office with the DOH and coordinate further investigation and remediation in order to request a "no further action" from them.

It is evident that the former machine gunnery has not caused any adverse environmental impacts to the subject site within the recommended soil fraction size of less than 2 millimeters and requires no further action or submission to the DOH.

Respectfully yours,

  
Amy H. Mathis, B.S. Geology,  
Project Coordinator  
➤ Environmental Scientist

Date 11/16/11

  
John S. Yutch, M.S. Geological Engineering,  
Project Supervisor  
➤ Registered Environmental Assessor  
➤ Registration No. 1433 (State of California)  
➤ Professional Geologist (California)  
➤ Certified Environmental Manager (Nevada)

Date 11/16/11



***Dept. of Health  
"No Further  
Action" Letter***



**STATE OF HAWAII**  
DEPARTMENT OF HEALTH  
ENVIRONMENTAL MANAGEMENT DIVISION  
SOLID AND HAZARDOUS WASTE BRANCH  
119 ALA MOANA BOULEVARD, 712  
HONOLULU, HAWAII 96814

LORRETTA J. FIDDO, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

In reply, please refer to:  
END020903

Mr. Sean O'Keefe  
January 9, 2012  
Page 2

former solid waste activities that occurred at the subject site at this time. However, should additional information become available, additional activities may be necessary.


Should you have any questions regarding this letter, please call Mr. Todd Nichols of our Solid Waste Section at (808) 586-4226.

January 9, 2012

SO105TN

Sincerely,

Mr. Sean O'Keefe  
A&B Properties, Inc.  
P.O. Box 266  
Puunene, Hawaii 96784

  
STEVEN YIK-CHANG P.E. CHIRK  
Solid and Hazardous Waste Branch

Dear Mr. O'Keefe:

**SUBJECT:** No Further Action, Former Puunene Piggery  
TMK 2-3-8-8:19  
Puunene, Maui

The Department of Health (DOH), Solid Waste Section (SWS) is in receipt of your email dated December 22, 2011, informing us that our No Further Action letter dated December 14, 2011, contained an error in the TMK number. Therefore, the SWS is issuing this letter which contains the correct TMK number.

The SWS is in receipt of the October 2011, *Site Investigation Report for the Former Puunene Piggery*, as well as the June 27, 2011, report documenting the removal of solid waste from the subject site. In addition, the DOH inspected the site on July 8, 2011, and noted a minimal amount of visible solid waste. It is our understanding that use of the property will be limited to commercial/industrial land use and that soil will not be removed from the property.

The SWS concurs with your consultant's conclusion that the TPH-O level (730 mg/kg) in DU6 does not appear to be a significant concern due to the biodegradability of TPH-O, the non-potable use of the groundwater beneath the property, and the greater than one hundred (100) foot depth to groundwater.

Based on the information provided, our inspection, and our aforementioned understanding, it appears that you have completed the removal of solid waste from the subject site and have adequately addressed impacts from solid waste activities that occurred at the site. Therefore, the SWS is requiring no further action regarding the

**APPENDIX M**  
**Market Study**



August 11, 2011

11-9079A

CMBY 2011 Investment, LLC  
c/o Ms. Blanca Lafollette, Project Coordinator  
Pacific Rim Land, Inc.  
1300 North Halapona Street, Suite 201  
P.O. Box 220  
Kihai, Hawaii 96753

Re: Market Study, Economic Impact Analysis and Public Costs/Benefits Assessment for the proposed Puunene Heavy Industrial Subdivision in Wailuku, Island and County of Maui

Tax Map Key: (2) 3-8-08-019

Dear Ms. Lafollette:

In accordance with your request, we have inspected the above-referenced property in order to provide a defined scope market study, economic impact analysis and public costs/benefits assessment for the proposed Puunene Heavy Industrial Subdivision ("Proposed Project") in Wailuku, Island and County of Maui. This counseling report and the conclusions herein are based on the on-site inspection of the property, a study of current political and economic conditions, and a historical review of the real estate market in Central Maui and on Maui overall. The effective date of this report is July 1, 2011.

The subject parcel, which consists of approximately 86,030 acres of land, has a State Land Use designation of Agricultural and is zoned for Agricultural District uses by the County of Maui. Although situated within the District of Wailuku, the subject parcel is classified for Agriculture (AG) by the Kihai-Makena Community Plan. As presently envisioned, the Proposed Project, which is still in its preliminary planning stage, will consist of 28 heavy industrial lots east of Mokuale Highway, in an area that currently contains primarily agricultural uses, specifically sugar cane production.

The Maui Raceway Park is located to the west of the subject parcel, within Project District 10. The park provides a wide variety of recreational uses including: drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing. Additional nearby uses include a quarry for Hawaiian Cement and the Maui Consolidated Facility for the Hawaii Army National Guard.

The assignment included the following:

- Market Analysis – The Consultant has provided a market analysis for this proposed project by (1) defining and delineating the market area; (2) identifying and analyzing the current

PREPARED FOR: CMBY 2011 INVESTMENT, LLC

C/O MS. BLANCA LAFOLETTE  
Project Coordinator  
Pacific Rim Land, Inc.  
1300 North Halapona Street, Suite 201  
P.O. Box 220  
Kihai, Hawaii 96753

EFFECTIVE DATE: July 1, 2011

A COUNSELING REPORT FOR THE PROPOSED PUUNENE HEAVY INDUSTRIAL SUBDIVISION, WAILUKU, ISLAND OF MAUI, HAWAII




supply and demand conditions that comprise the specific real estate market segment; (3) identify/ing, measuring and forecasting the effect of anticipated developments or other changes on future supply of each market segment.


**Economic Impact Analysis and Public Costs/Benefits Assessment** – The Consultant has provided an economic impact analysis and public costs/benefits assessment estimating the general and specific economic effects arising from the development of the proposed subdivision. This report has addressed estimated construction costs for the land, the sale of individual lots, and costs for building construction, employment creation, and ongoing business operation. It has also identified and analyzed potential public costs/benefits with regard to the project.

The following report presents a narrative review of the study and our analysis of data along with other pertinent materials on which this report is predicated. It contains data and exhibits gathered in our investigations, and will include a description of the analytical process and our conclusions, as of July 1, 2011.

Thank you for allowing us the opportunity to work on this interesting assignment.

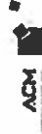
Respectfully submitted,  
 ACM Consultants, Inc.

  
 Glenn K. Kunitaka, MAI, CRE  
 Certified General Appraiser,  
 State of Hawaii, CGA-039  
 Expiration: December 31, 2011

  
 Shane M. Fukuda  
 Certified General Appraiser,  
 State of Hawaii, CGA-810  
 Expiration: December 31, 2011

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**PART I – INTRODUCTION****A. EXECUTIVE SUMMARY****Background**

The proposed Puunene Heavy Industrial Subdivision ("Proposed Project") is envisioned as a 28-lot heavy industrial subdivision to be developed on approximately 86,030 acres east of Makulele Highway, District of Waialuku, Island and County of Maui. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Waialuku, Island and County of Maui. As of the effective date, the subject site is designated for agricultural uses by State Land Use Law, County of Maui zoning and the Kihel-Makena Community Plan. The subject parcel also lies within the proposed Urban Growth Boundary set forth by the (draft) Maui Island Plan (December 2010).

The heavy industrial zoning district provides for a minimum lot size of 10,000 square feet. The sizes of lots in the proposed heavy industrial subdivision shall be determined by the types of uses proposed and the market demand projected approximately six months before the application for subdivision approval is filed with the Development Services Administration, County of Maui. Currently, the plan is to provide ten (10) lots ranging in size from one-half (0.5) acre to one (1) acre; five (5) lots ranging from over one (1) acre to two (2) acres and the balance ranging from over two (2) acres to twenty (20) acres for a total of twenty eight (28) lots. The Proposed Project will feature interior roads as well as drainage facilities consistent with County requirements.

**Study Objectives**

ACM Consultants, Inc. has been retained by CMBY 2011 Investment, LLC to analyze the Central Maui heavy industrial market as it relates to this proposed project. In particular, we studied economic trends and demographics, and supply and demand factors for industrial property. In the process, we have gathered as much information as possible on heavy industrial real estate sales on Maui and, more specifically, in the Waialuku-Kahului region. Specific attention has been paid to industrial land ownership, the availability of vacant parcels, and the future supply of additional heavy industrial land.

The objectives of our study were as follows: (1) to define and delineate the market area; (2) to identify and analyze the current supply and demand conditions specific to the subject's market; (3) identify, measure and forecast the effect of anticipated developments or other factors on future supply; and (4) forecast the effect of anticipated economic or other factors on future demand.

**Key Supply Factors**

The following points summarize the supply for heavy industrial real estate in the Central Maui region at this time:

- ❑ When compared to the light industrial market segment, there is very little developable heavy industrial land in Central Maui;
- ❑ Available vacant land is located in areas that are not conducive to heavy industrial use, due to the proximity of residential and commercial developments;
- ❑ Supply has diminished because of continued conversion to higher-order commercial retail/office uses allowed by the M-2 Heavy Industrial District's "stacked" zoning;
- ❑ Other than the Proposed Project, there are no other heavy industrial projects planned for Central Maui.

**Key Demand Factors**

The following points summarize the demand for heavy industrial real estate in the Central Maui region at this time:

- ❑ The growth of Maui's population has led to a greater need for light industrial goods and services providers; however, there has not been a coinciding creation of heavy industrial facilities to support light industrial users;
- ❑ Mortgage interest rates continue to be at all-time lows, which typically makes real estate more affordable; however, there are few choices currently available within the heavy industrial market;
- ❑ The pent-up demand from heavy industrial users is expected to generate good interest for the proposed product;
- ❑ Potential businesses within the Proposed Project are expected to be those that fabricate, process and manufacture materials needed by light industrial users and the general populace.

**B. PURPOSE OF THE REPORT**

The purpose of this report, as of July 1, 2011, is to generate a market study, economic impact analysis and public costs/benefits assessment in support of land use entitlement requests for the Proposed Project.

**C. INTENDED USE OF THE REPORT**

The intended use or function of this report is to provide real property information and real estate market data in support of an Environmental Assessment, a State Land Use District Boundary Amendment (Agricultural to Urban), Community Plan Amendment

**D. INTENDED USER OF THE REPORT**

The intended users of this report are CMBY 2011 Investment, LLC and the appropriate State and County agencies involved in the proposed land use changes.

**E. SCOPE OF THE REPORT**

The Consultant has provided a current market study of this project by (1) defining and delineating the market area; (2) identifying and analyzing the current supply and demand conditions that make up the specific real estate market; (3) identifying, measuring and forecasting the effect of anticipated developments or other changes on future supply; and (4) to the extent possible, forecasting the effect of anticipated economic or other changes on future demand. The market study was developed and prepared in conformity with, and subject to, the requirements of the Code of Professional Ethics and the Standards of Appraisal Practice of the Appraisal Institute, and the Uniform Standards of Professional Appraisal Practice.

Furthermore, the Consultant provided an economic impact analysis and public costs/benefits assessment estimating the general and specific economic effects arising from the development of the proposed subdivision.

**F. STATEMENT OF COMPETENCY**

ACM Consultants, Inc. has been actively involved in the real estate appraisal research and consulting business since 1982. Our business emphasis has focused mainly on the counseling and valuation of residential and commercial properties located within the State of Hawaii. The company considers itself competent to conduct a market study for a proposed heavy industrial project in Waialua, Island and County of Maui.

**G. EXTRAORDINARY ASSUMPTIONS AND HYPOTHETICAL CONDITIONS**

1. As of July 1, 2011, the Proposed Project was still in the preliminary stages of planning. A Proposed Land Development Plan, prepared by Otomo Engineering, Inc., was provided by the client and offered a visual indication of the proposed layout of the development. The consultant is not liable for any changes in the project plan past this date, nor

2. The Consultant has no control over economic conditions and other international events that could have an effect upon Hawaii's economy and the Maui real estate market. As a result, this report has not made any assumptions regarding potential conflicts with other nations, or external factors affecting economic conditions here.
3. The counseling report is also subject to standard "Limiting and Contingent Conditions" located in the Addenda.

**H. CONFIDENTIALITY PROVISION**

The contents of this market study, economic impact analysis, and public costs/benefits assessment are confidential. Release of this counseling report by ACM Consultants, Inc. is limited to you for the intended uses stated above. Any further release of this report, or portions herein, is strictly prohibited and you shall accept the risk and liability for any such release without the previous written consent of ACM Consultants, Inc. Further, you shall indemnify and defend ACM Consultants, Inc., and its individual consultants/appraisers, from any claims arising out of any such unauthorized disclosure.

**I. CERTIFICATION**


The undersigned does hereby certify that except as otherwise noted in this consulting report:

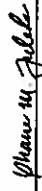
1. The Consultant's compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
2. The Consultant has no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the parties involved. Any "Estimate(s) of Market Value" in the consulting report is not based in whole or in part upon the race, color, or national origin of the prospective owners or occupants of the properties in the vicinity of the property appraised.
3. The Consultant has personally inspected the property, and is a signatory of this Certification.
4. To the best of the Consultant's knowledge and belief, all statements of fact and information in this report are true and correct, and the Consultant(s) have not knowingly withheld any significant information.
5. No one provided significant professional assistance to the person(s) signing this report.
6. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and the Consultant's personal unbiased professional analyses, opinions and conclusions.
7. All analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Appraisal Practice.
8. This counseling report is subject to and in conformance with the Code of Professional Ethics and Standards of Professional Conduct of the Appraisal Institute. The analyses, opinions and conclusions of this consulting report have been made in conformity with, and are subject to, the requirements of the Uniform Standards of Professional Appraisal Practice (USPAP).
9. This counseling report is to be used only in its entirety and no part is to be used without the whole report. All conclusions and

opinions concerning the real estate are set forth in the counseling report were prepared by the Consultant(s) whose signature(s) appears on the counseling report. No change of any item in the counseling report shall be made by anyone other than the Consultant, and the Consultant shall have no responsibility for any such unauthorized change.

10. The Appraisal Institute, of which this Consultant is a member, has a legal right to review this report.
11. The qualifications of this Consultant, including completed educational requirements of his/her candidacy are located in the Addendum to this report. Any member signing the report has completed the requirements of the Appraisal Institute's continuing education program.
12. The Consultant has performed a previous appraisal of the subject property within the three years prior to this assignment.

ACM Consultants, Inc.

  
Glenn K. Kujala, MAI, CRE  
Certified General Appraiser,  
State of Hawaii, CGA-039  
Expiration: December 31, 2011

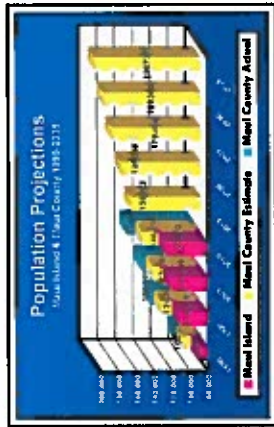
  
Shane M. Fukuda  
Certified General Appraiser,  
State of Hawaii, CGA-810  
Expiration: December 31, 2011



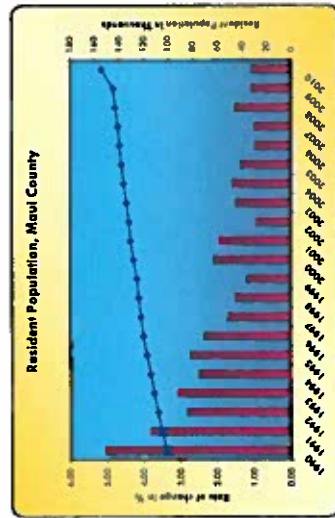
**PART II – FACTUAL DATA**

**A. REGIONAL DATA - MAUI COUNTY**

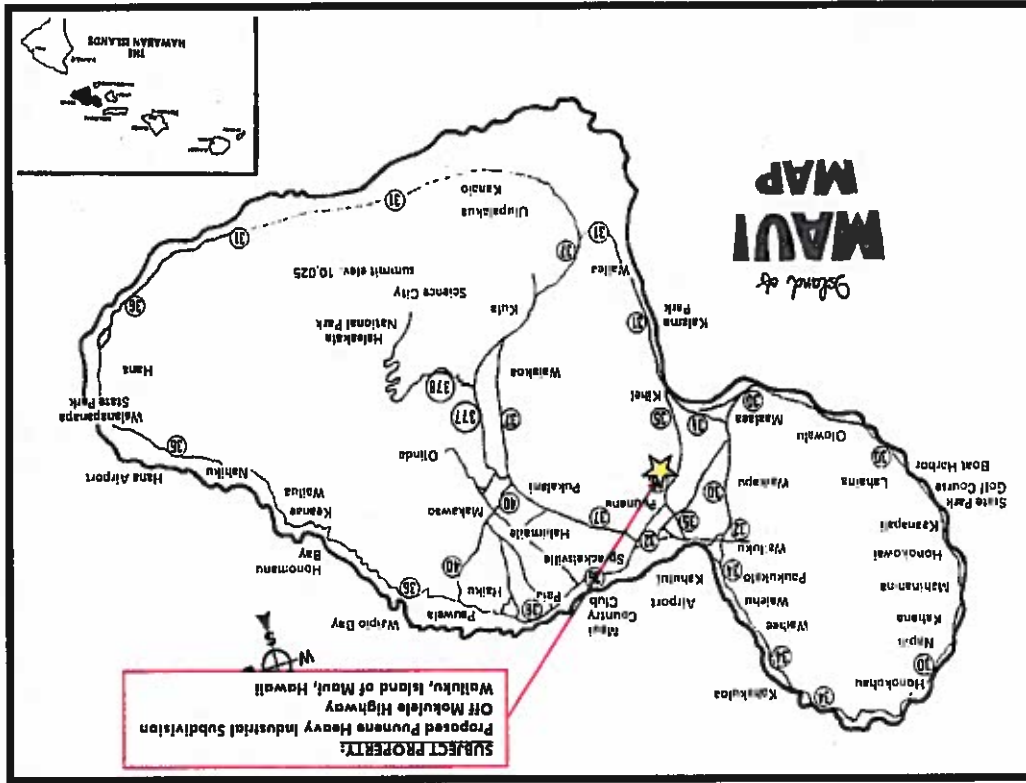
Maui County is the third most populous of the four counties of Hawaii, with a total resident population of 154,834 (2010 Census); a change of 20.12 percent from 2000 and 52.23 percent since 1990. Maui County consists of the islands of Maui, Molokai, Lanai, and Kahoolawe. Ninety percent (90%) of County residents live on Maui Island. The island of Maui consists of a total of 734.5 square miles, or 470,080 acres. Population projections for Maui County and the island Maui are illustrated on the table below.



The following graph illustrates the resident population change in Maui County from 1990 through 2010. The graph indicates that although Maui's population has been steadily growing, it now appears to be rising at a decreasing rate.



Source: UHNERO Economic Information Service



Like all the Hawaiian Islands, Maui, Molokai and Lanai are blessed by warm air temperatures year-round, and ocean waters that range from 72-77°F in winter to 77-81°F in summer. The islands' distance from other continents, the moderating effects of the surrounding water and the tropical location combine to create this pleasant climate. Hawaii's topography, particularly the mountains and valleys and location of each island, contributes to the great variety of microclimates within very small areas. On Maui, the West Maui Mountains and Haleakala are the primary geological features affecting the weather. Due in part to the above geographical factors, Maui, for sixteen out of the last seventeen years, was selected "Best Island in the World" by readers of Condé Nast Traveler magazine.

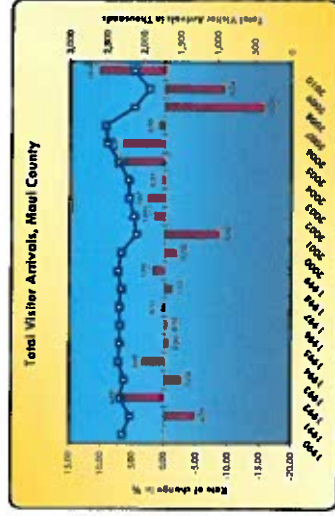
#### Visitor Industry

Historically, Maui hotel occupancies typically exceeded any area in the state with the exception of Waikiki. Its high rating is due to a number of factors. First, Maui receives the good fortune of location and climate. Second, Maui has the infrastructure in place to move tourists to a diverse variety of activities with a minimum of inconvenience and down time. The accommodations on Maui are another reason. Maui resort hotels have consistently ranked above other Hawaii resort destinations. In the Condé Nast Traveler magazine, nine of the "Top 20 Hawaii Resorts" for 2010 were Maui County resorts. The Four Seasons Resort Maui at Wailea topped the list, while other Maui County resorts garnering honors included: Hotel Hana Maui and Honua Spa (2<sup>nd</sup>); Four Seasons Resort Lanai at Manele Bay (4<sup>th</sup>); Four Seasons Resort Lanai, The Lodge at Koele (5<sup>th</sup>); Fairmont Kea Lani (9<sup>th</sup>); Grand Wailea (11<sup>th</sup>); Ritz-Carlton Kapalua (tied 15<sup>th</sup>); Hyatt Regency Maui Resort & Spa (tied 15<sup>th</sup>); and Westin Maui Resort & Spa (tied 20<sup>th</sup>).

With the possible exception of Kauai, Maui is more dependent on tourism than any of Hawaii's four counties. That sector is not treating Maui very well today. For years, Maui has worked very hard at cultivating a worldwide image as a premier, upscale tropical island destination. In fact, it is the only county government in Hawaii that spends money to support tourism. In the wake of the current financial crisis, Maui's tourism counts and hotel occupancy have fallen significantly. Even the upscale and affluent markets, it appears, have curtailed their spending on trips to the Valley Isle.

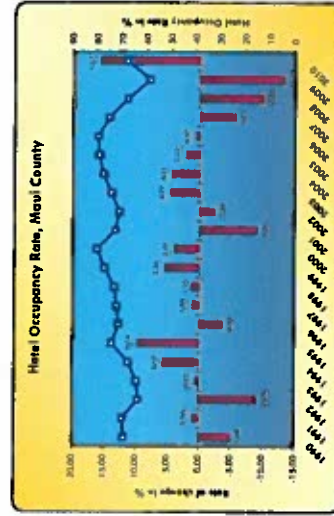
Tracking the tourism counts during this decade begins with the effects of the September 11, 2001 terrorist attacks on this country which had a drastic impact on the tourism industry. The final Maui visitor count for 2001 was 2,104,480. In 2002, the visitor count rebounded slightly to 2,139,427 as the visitors slowly returned during the mid to latter part of the year. Visitor totals from 2003 to 2007 indicate positive increases. As a result of the dismal economic conditions in 2008 and 2009, total visitor arrivals declined by 15.58 percent (2,129,040) and 9.24 percent (1,932,360), respectively, in those

years. The lowest visitor arrival in Hawaii and many other visitor destinations worldwide were severely impacted by the national and global economic recession. However, in 2010 the visitor count rebounded with a 10.38 percent jump to 2,132,860, as the economic conditions began to show signs of stability.



Source: UHSEO Economic Information Service

In 2010, Maui County had the second highest occupancy rate of all the Hawaii counties at just 68.2 percent, behind Oahu at 78.25 percent. Meanwhile, Kauai showed occupancy of 59.11 percent and Big Island at 56.44 percent. Maui's occupancy rate increased by 15.71 percent from 2009 to 2010; the first increase witnessed in several years. The hotel occupancy rate generally follows the trend of total visitor arrivals.



Source: UHSEO Economic Information Service

Visitor shopping opportunities have increased in recent years with the opening of The Maui Marketplace, a 275,000 square foot shopping complex, modeled after Oahu's successful Waikole Center. The Maui Marketplace is now home to such retail superstores like Lowe's Hardware, Pier One Imports, Sports Authority, Starbucks Coffee, and Office Max, as well as many small local retailers and restaurants. Also opening in the same Kahului area were Home Depot, Wal-Mart, Big K and Costco. In addition, the Shops at Wailea opened in December 2000 and added approximately 150,000 square feet of high-end retail space in the Wailea Resort. At about the same time, the 150,000 square foot Pillani Shopping Center opened in Kihei with Safeway as its anchor tenant. The latest entry into the retail sector is the Lahaina Gateway, which opened in 2007. Dubbed a "lifestyle center", Lahaina Gateway, offers almost 1.37 million square feet of gross leasable area. Tenants include Barnes and Noble, Foodland Farms, Office Max, Outback Steakhouse, Melling Pot, Central Pacific Bank and many other smaller retail shops.

Maui offers more than any other Neighbor Island in the way of proven vacation experiences. It has a larger tourism activities industry relative to the size of its economy than any other county. Such activities include ocean recreation, helicopter tours, biking down Haleakala, zip lining, and golfing, among numerous other activities. Maui's well-developed ocean recreation industry ranges from windsurfing to snorkeling, scuba diving and sailing cruises which leave regularly from Lahaina and Ma'alaea Harbors.

Maui also has theme destinations, such as the Maui Tropical Plantation, Maui Nui Botanical Gardens, Alii Kula Lavender Farm, and Surfing Goat Dairy. But the premier theme destination on the island is the Maui Ocean Center. This center, featuring the marine environment of the Hawaiian Islands, is modeled after five other aquarium parks developed elsewhere in the world by Coral World International. This ocean center is located just behind the Maalaea Boat Harbor, and is easily accessible from Kahului/Waialuku, and the resort areas of Lahaina/Kaanapali and Kihei/Wailea. The Maui Ocean Center anchors the 18-acre Maalaea Harbor Village, which also includes a retail strip shopping center, restaurants and other services.

When the United States and the world in general recover from the current economic crisis, it is anticipated that Maui will continue to be a strongly favored destination for Mainland tourists. The island has a large share of condominiums available for families and groups on a budget. The California recovery in the early 2000's fueled higher demand for condominium rentals and this may possibly happen again in the next decade.

Hotels have not been adding much in the way of jobs, in fact, many hotel and other tourism-related industries have cut back their work

force. Even when tourism numbers were growing steadily, job creation in the visitor industry was not matching that growth. Today, with tourism waning, the work force is noticeably decreasing. While tourism still dominates the labor force, the profitability problems of the large resorts have led managers to refine their operations.

## Real Estate

Residential real estate can be divided into three broad categories (single-family homes, condominiums and residential lots) and four important geographic regions. With a variety of property types in each of the regions, the market has proven capable of moving up and down with relatively little correlation amongst regions.

All of the neighborhoods have single-family housing and residential lots. However, several neighborhoods such as Kapalua, Kaanapali, and Wailea are virtually comprised solely of luxury housing. Areas such as Kahului have no luxury housing and Waialuku has very little. All other areas have a mix.

With respect to condominium units, Upcountry and East Maui have virtually no condominium properties. All other areas have condominium units. When looking at leasehold versus fee simple projects, South Maui and Central Maui have very few leasehold condominiums. Only West Maui has a mixture of both types.

Areas such as Upcountry and East Maui are made up primarily of agricultural and rural properties. All other areas are limited in this property type.

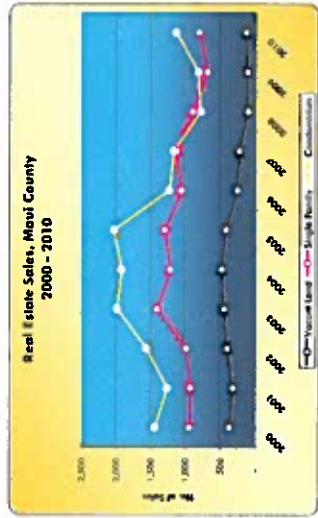
Owner-occupied housing on Maui runs about 56 percent of all occupied housing units. The total housing stock has been growing at a rate of about 1,000 units a year in the 1980's. The total accelerated to 1,500-2,000 new units in the late 1980's, well short of demand. The Maui population has expanded tremendously for the past 10 to 12 years, but housing was not being built at the same pace as the 1980's. As a result, demand for housing during that period outpaced supply and home prices and rents rose dramatically. The median single-family home price on Maui averaged \$462,821 in 2010, which is a drop of 7.2 percent from 2009's average of \$498,708. Median sales price for a single family home was \$574,760 in 2008, \$627,887 in 2007, \$697,450 in 2006, and \$678,321 in 2005. Years 2005, 2006, and 2007 are considered the height of the real estate market.

Since then, the real estate market has changed direction, with a less stable economy and more stringent lending practices. In 2010, interest rates averaged 4.69 percent, down from the previous year's average of 5.04 percent. Average annual interest rates have been on a steady decline since 2006 when the average interest rate was 6.41 percent. The 2010 average interest rate represented the lowest

annual average since 1971. While interest rates remain relatively stable, the current economic recession and tightened lending continues to stifle Maui real estate.

The following summarizes a sales volume history for Maui County from 1990 to 2010, which includes resales and new project sales.

Year	Vacant Land	Single Family	Condominium
1990	298	560	1,459
1991	116	430	593
1992	120	382	496
1993	121	361	461
1994	148	404	592
1995	118	331	495
1996	126	451	577
1997	182	507	812
1998	276	641	999
1999	408	965	1,348
2000	372	951	1,456
2001	318	938	1,274
2002	402	997	1,578
2003	447	1,420	2,001
2004	477	1,228	1,935
2005	421	1,311	2,041
2006	255	1,066	1,247
2007	226	1,138	1,179
2008	97	907	788
2009	110	693	826
2010	127	814	1,147



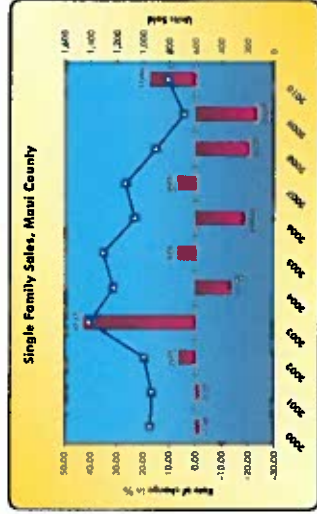
Source: Realtors Association of Maui

The real estate market increased significantly between 2002 and 2006. Single-family sales saw noteworthy increases in 2003, where the number of single-family sales leaped upwards of 42 percent.

There was a 13 percent dip in 2004, followed by a rebound of almost 7 percent in 2005. For 2006, there was a decrease of 18 percent, with a subsequent upward bounce of almost 7 percent in 2007. Then, with the eroding economic conditions and financial crisis in 2008 and 2009, Maui County experienced a 20 and 23 percent drop in sales in each of the respective years. This was the biggest decline in sales since 1991, when sales of single-family homes dropped by 25 percent.

In 2010, however, there was a significant increase in the number of single family sales. This is attributed to the low property prices which have attracted market participants. The market for single family homes has experienced a price depreciation of about 30 percent since the peak of the market in 2006 and 2007.

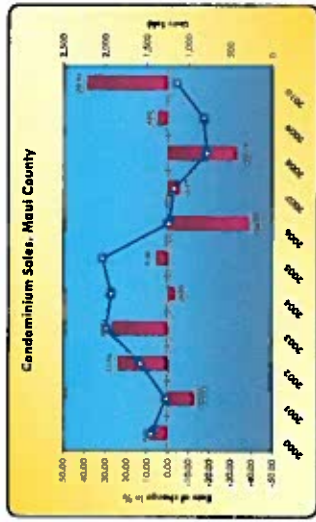
The following graph further illustrates the single-family sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Similarly, condominium sales had experienced significant increases since 1999 in terms of units sold, achieving a new high in 2002 and a slight decrease in 2003. In 1999, 1,348 condominium units were sold, registering a 3.4 percent increase from the prior year. In 2001, the number of sales fell slightly, but rebounded significantly in 2002. In 2003, however, total condominium sales skyrocketed to 2,001, fell slightly to 1,935 units in 2004 and then jumped to 2,041 units in 2005. It appears that 2006 was the turning point for sales volume, as condominium sales plunged over 38 percent, followed by another 5 percent fall in 2007. For 2008, sales volume dipped 33 percent. This was however off set by a 38 percent increase in 2010. Again, this is due to the falling unit prices which have attracted market participants.

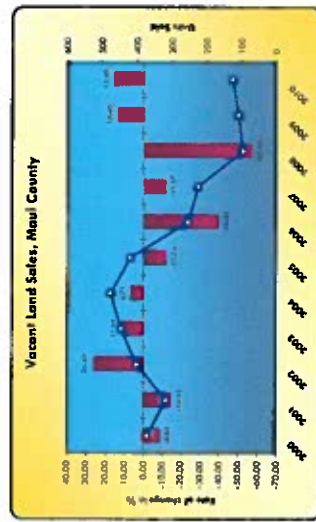
The following graph further illustrates the condominium sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Land sales increased steadily between 2001 and 2004, but dropped 11 percent in 2005 with only 421 sales, then another 39 percent to 255 sales in 2006. This trend continued in 2007, with an 11 percent slide to 226 sales, surpassed by a huge 57 percent plunge in 2008. The first increase in four years was witnessed in 2009, as vacant land sales volume increased by 13 percent and again increased in 2010 by 15 percent. Many developers, realtors and lenders consider the passage of the Workforce Housing Ordinance (December 2006; revised 2010) and the Water Availability Ordinance (December 2007; revised 2011) to have had a significant contribution to the severe decline of sales of vacant land.

The following graph further illustrates the vacant land sales volume history for Maui County from 2000 to 2010.



Source: Realtors Association of Maui

Median prices continued to rise until 2006 for all categories of real estate. The average monthly median prices in 2006, for land parcels,

single-family homes and condominium units, increased 29 percent, 2 percent and 33 percent, respectively. In 2007, average monthly median prices for land and single-family property decreased 19 percent and 10 percent, respectively, while the average median price for a condominium increased 6 percent. It should be noted that the average condominium median prices were heavily influenced upward by December closings in Honua Kai, a luxury oceanfront property. For 2008, the average monthly median prices for single-family homes retreated by approximately 8 percent. Vacant land saw a gain of about 4 percent over 2007, while condominiums decreased by 6 percent. In 2009, vacant land median prices again increased by little over 3 percent. However, single-family and condominium properties decreased by 13 and 12 percent, respectively. As the economic recession continued into 2010, the median sales price for all property types declined. Vacant land showed the largest drop of 33 percent from 2009 levels, and single family and condominium properties decreased by 7 and 16 percent, respectively.

**Construction and Development**

The construction industry, in the mid part of this decade, benefited from a robust economy and building climate.

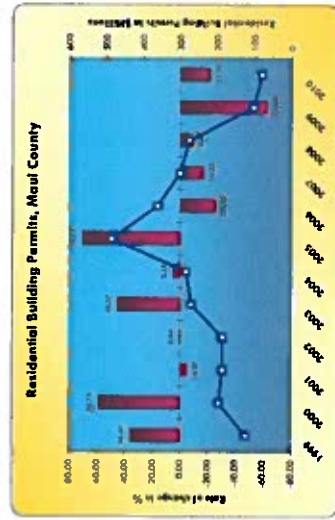
Three new commercial centers were built in 2000. The Wailea Shopping Village had been demolished and was replaced with The Shops at Wailea, which includes 150,000 square feet of upscale retail and restaurant space. Also, the 150,000 square foot Pillar Village shopping center was built at the same time and is anchored by a 55,000 square foot Safeway store, one of the largest Safeway in the state. The Ma'alaea Harbor Village shopping complex, where the premier Maui Ocean Center presently stands, was also built during the same period; however, since then, no other project has been attempted and the majority of the lots in this commercial subdivision sit vacant. As previously discussed, the Lahaina Gateway was completed in 2008 and injected an additional 137,000 square feet of retail space.

The effects of the late-2008 financial crisis and subsequent economic recession are still clearly visible across the island, as many new commercial and industrial projects completed during this period remain empty, or are having difficulty selling off or leasing units.

Construction of single-family and condominium properties has fallen significantly, as developers have curtailed building to meet their anticipated sales levels. As mentioned earlier, the single-family and condominium real estate markets have softened, with median prices decreasing as well as an increase in marketing days. Although the economic recession has played a big part in the decrease of construction of residential properties, the enactment of two ordinances—the Workforce Housing Ordinance (2006; revised 2010)

and the Water Availability Ordinance (2007; revised 2011), which have forced stringent requirements on developers, has also greatly affected construction on Maui.

The following graph illustrates the trend of residential building permits (in dollars) in Maui County from 1999 through 2010. As shown in the following graph, residential permits peaked in 2005 at the height of the real estate market. As previously discussed, many feel that the passage of County ordinances relating to development in 2006 and 2007, coupled with increased construction costs and poor economic conditions, have severely lessened the ability to feasibly create new housing projects.



Source: UNIBED Economic Information Service

In Central Maui, the majority of the residential construction is within the Kealahani and Maui Lani project districts, which are being developed with several new subdivisions and condominium projects. Situated in the Kealahani district are Koa, which offers both house lots and single-family homes; Villas at Kealahani and Mito Court, which are townhouse packages; Villas at Kealahani and Cottages, both consisting of house and lot condominium developments. Presently, there are four ongoing projects at Maui Lani. They include Na Hoku and Traditions (single-family homes), Sand Hills Estates (house lots), and Parkways (both house lots and single-family homes).

The demand for housing in the Central Maui area had been extremely strong up to mid-2006, with projects usually sold out prior to completion of construction. Due to the more recent downward trend of the economy and residential real estate market, developers are now finding themselves holding inventory and most new construction has ceased.

Meanwhile, Spencer Homes completed construction of a 410-unit affordable project in 2008, called Waikapu Gardens. Approximately half of the houses met County affordable housing pricing requirements. This project was welcomed by the community as "affordable" prices were stated to be below \$300,000. This project gained approval by the Maui Nui Affordable Housing Taskforce which was set up in response to the growing need for affordable housing on Maui.

Up to 2006, Kihel had also seen an upswing in residential development brought upon by ongoing residential projects including Ke Aii'i Ocean Villas (townhouse condominiums) and Moana Estates (single-family homes) by Towne Development, Kamali'Alayna (single-family homes) by Besill Brothers, Inc., and Signature Homes' Haikalani Golf Villas (residential condominiums). Other current South Maui projects are Kihohana Waena (house lots) and Kai Ani (townhouse condominiums). Similar to Central Maui, the developers of ongoing projects have slowed construction while continuing to market their units; whereas, previous Kihel developments were often sold out prior to construction completion.

In Wailea, the Shops at Wailea and Wailea Town Center are the only established commercial developments. Both centers target the high-end residents of this resort community and Wailea's upscale visitors. Phase I of Wailea Town Center was completed in 2006 while Phase II was completed in 2007. It contains neighborhood services which include retail and office owner-occupants. The second phase included more commercial condominium units and residential units on the second floor. Current condo owners in this project include Coldwell Banker and First Hawaiian Bank. This development was met with high demand as all of the units have already sold and some have even resold. Another commercial retail/office project, Wailea Gateway Center, was completed in 2009.

Retailing

In retail, the most significant addition to Maui is the Lahaina Gateway situated along Honoapiilani Highway across from the Lahaina Cannery Mall. It was dubbed as a "lifestyle center" with specialty retail shops, services and restaurants. Opened in late 2007, this 1.37,000 square foot center includes anchor tenants such as Office Max, Barnes & Noble, Outback Steakhouse, The Melling Pot, and Lahaina Farms, a supermarket owned by Foodland's Sullivan family.

Prior to Lahaina Gateway, Maui Marketplace on Dairy Road was the last large retail development to be built, at 275,000 square feet. This center contains the likes of Lowe's Hardware, Office Max, Sports Authority, Old Navy, Petco, Pier One Imports, Burger King and Starbucks Coffee.

Wal-Mart and Home Depot are also located on Dairy Road, immediately west of the Maui Marketplace. These outlets joined earlier arrivals Costco and Kmart, as well as Alexander & Baldwin's neighboring Triangle Square, in carving up the Maui retail pie. However, the local malls are answering the challenge with more food and entertainment, and retailers that can compete in their niche. Maui's largest mall, Queen Kaahumanu Center in Kahului, has been challenged by the presence of these large box retailers and vacancies are very noticeable.

In Kaanapali, Whalers Village has taken a turn toward the luxury market popular with the Japanese. After completing a \$3 million renovation and a change in its tenant mix, this oceanfront center now aims far both westbound and eastbound visitors. Japanese visitors are targeted with Duty Free Shoppers, Louis Vuitton, Prada, Loewe and other high-end shops.

The 150,000-square foot Shops at Wailea opened in 2000, offering upscale shopping in its high-end retail shops. Tenants include Louis Vuitton, Coach, Bally, Fendi, Tiffany & Co., Banana Republic, and Georgiou. Restaurants in this mall include Ruth Chris Steak House, Tommy Bahama Café and Emporium, and Longhi's. Other retailers include Crazy Shirts, Hot Topic, Gap, Wolf Camera, and Whalers General Store.

#### Agriculture

Agriculture on Maui is dominated by larger operations like HalliMalile Pineapple Company and Alexander & Baldwin's Hawaii Commercial and Sugar (HC&S).

Pineapple now confronts more foreign competition from places like Thailand. In 2007, Maui Land & Pineapple Company shut down the conning portion of its operation to rely solely on the more profitable fresh fruit segment. Downsizing of the plantation occurred in 2008, which resulted in a reduction of over 200 employees. In December 2009, Maui Land & Pineapple Company announced that it would be shutting down its agricultural arm, citing continued annual losses. However, a new company, HalliMalile Pineapple Company, was formed the following week and was able to take over a portion of the pineapple operations.

HC&S survives as Hawaii's only remaining sugar operation due in part to its economies of scale, its land configuration (a relatively compact and contiguous area in the isthmus of the Valley Isle), and its commitment and ability over the years to reinvest and upgrade plant and equipment. But the last active sugar plantation in the state is facing other hardships, namely water. There had been drought conditions on Maui between 2007 and 2009, contributing to low yields. According to HC&S, future viability is heavily dependent on continued stream diversion; however, there have been opposition to

this continued practice. HC&S continues to re-evaluate its operations to remain viable, including consideration of potential biofuels and other energy alternatives.

Another of Maui's sugar operation casualties, Pioneer Mill in West Maui, is missed visibly. For years, proponents of maintaining and sustaining Hawaii's sugar industry argued that growing sugarcane imparted to this economy an important, if underestimated, non-pecuniary benefit; sugar kept the land green and attractive, for tourists and locals alike, and its cultivation contributed to the recharge of groundwater resources. Economists call this situation an "externality," an activity that affects others for better or worse, without those others paying or being compensated for activity.

Anyone who doubts that logic now has only to drive the West Maui coast from Olawalu to Kaanapali and look mauka, at an entire mountain side of dry brush and unused fields. As with many cases where sugar plantations have shut down, most diversified agriculture crops are just not land intensive enough to utilize all the vacant land. Coffee and seed corn operations are possibilities, but they make only a small dent.

In addition to sugar and pineapple cultivation, Maui also offers rich opportunities for agricultural diversification by small farmers and large agribusinesses. Top among new agricultural products are: papaya, cut flowers, coffee, Kula onions and strawberries, and Chinese cabbage from Kula. Molokai offers its sweet potatoes, lettuce and alfalfa, as well as taro.

#### High-Tech

Maui's contribution to Hawaii's fledgling high-tech industry remains pre-eminent in the state. It also represents genuine diversification of the economy. The Maui Research and Technology Park in Kihali has all of its infrastructure in place, and has completed three major building projects. Most important, it houses one of the country's most powerful supercomputers. The park now hosts over 30 companies and over 300 employees on 41.5 acres.

With access to one of the most powerful supercomputers in the world, funded by the U.S. Air Force, the Maui Research and Technology Park is continuing its efforts to diversify the Maui economy into something fundamentally different from what exists in the county or anywhere else in the state.

An office building was developed by the Maui Economic Development Board in 2006, and contains approximately 31,500 square feet of rentable area on a 2.8-acre site. Another completed project is Park Plaza, a 26-unit commercial office condominium building developed by Goodfellow Brothers and Beistill Brothers. Since its completion in 2008, sales have been very sluggish.

The Park is sticking to its long-run strategic plan to capitalize on its location at the center of the Pacific Basin. Its extensive fiber-optic network to the U.S. Mainland makes it one of the most fiber-rich environments in the world, greater than many facilities actually located on the Mainland.

#### County Government

Maui County is unique in having several inhabited islands in its jurisdiction: Maui, Molokai, as well as Lanai, and the uninhabited island of Kahoolawe.

Maui County has an elected Mayor and County Council, and the Liquor Control Commission is semi-autonomous with appointed directors. Although all courts are conducted by the State, the County is responsible for prosecution and the Mayor appoints the prosecutor. The council has nine members, each residing in one of nine districts; however, voters cast ballots for all nine seats. Unlike other states, Hawaii has only two layers of government: State and County. The State is responsible for many functions that elsewhere come under the jurisdiction of municipalities, such as schools, hospitals, and airports. Also, unlike other states, Hawaii has statewide zoning implemented by the State Land Use Commission. The County has zoning authority within the boundaries established by the commission.

The lack of affordable housing continues to be a concern within the County of Maui. Maui is one of the most expensive counties for single-family home buyers. A record high median price of \$780,000 was set in July 2006 for a single-family home. Since then, the median single-family price has continued to fall, with an average monthly median sales price of \$462,821 in 2010, down from \$498,708 in 2009, \$574,760 in 2008 and \$627,137 in 2007. According to the latest State of Hawaii Data Book, 8 percent of the houses are overcrowded on Maui and 41.4 percent of the households pay more than the recommended limit of 30 percent of their income on housing. In fact, 27.1 percent pay more than 40 percent on housing.

This heightened effort by the County resulted in the passage of Ordinance 3418 on December 5, 2006, under which all proposed developments are subject to review if they are to contain five or more units or lots. Under this ordinance, if the average sales price is projected to be less than \$600,000, 40 percent of the total units must be priced to meet the various affordable categories. If the average sales price in the project is \$600,000 or more, then 50 percent of the units must be affordably priced. An alternative to providing the affordable units is to pay an in-lieu fee equal to 30 percent of the average projected sales price of the market rate units multiplied by the number of affordable units required in the development. Or, the owner may elect to provide land which is equal in value to the in-lieu fee. This ordinance has had a profound effect on residential development since its passage. The subsequent reduction in proposed

projects had many in the building and real estate industries questioning whether the ordinance created too much of an obstacle for developers.

In an effort to stimulate residential construction, the ordinance was revised by the County Council as Ordinance No. 3719, effective February 26, 2010, reducing the amount of required affordable housing units built on site to 25 percent, provided the average sales price of the market units is projected to be less than \$600,000. If the average sales price in the project is \$600,000 or more, then 50 percent of the units must be affordably priced. The new law also clarified the calculation of required affordable units built off site; based on 50 percent of the total number of on-site market units, regardless of their projected average sales price.

The water availability ordinance is another law that has made an impact on the development community. On December 14, 2007, the County of Maui passed into law Ordinance 3502. As a result, the Department of Water Supply (DWS) is presently restricting the issuance of meters for all uses in the central and south Maui service areas and this bill restricts issuance of any building permits until the DWS can issue a meter consistent with the provisions of the bill. In order to do so, the DWS director needs to provide verifiable, long-term supply of water to the property. Landowners and professionals in the development community have been openly critical of the ordinance, some calling it a de facto moratorium on housing. Not surprisingly, sales of vacant development lands have been impacted.

The ordinance was revised by the County Council as Ordinance No. 3816, effective April 5, 2011, exempting infill development (10 residential dwellings or less) within areas already developed and having consistent land use; residential workforce housing units built by a qualified housing provider; residential development projects with 100 percent affordable units; and public or quasi-public development projects. The exemptions are only applicable within areas serviced by the Water Department's Central or West Maui water systems. Time will tell if the latest versions of both ordinances will help to achieve their intended goals.



## B. NEIGHBORHOOD DESCRIPTION

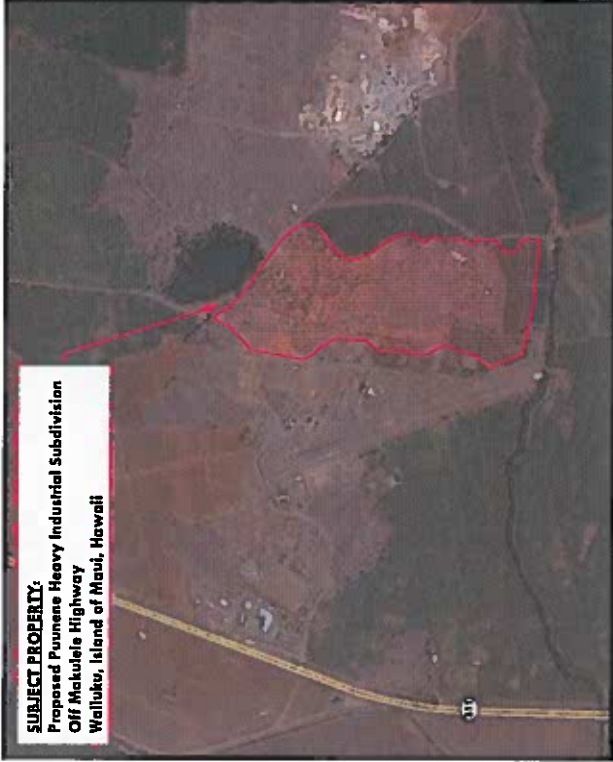
The Proposed Project is designated by the Khei-Makenu Community Plan, but is considered to be in the Waialuku District by the State of Hawaii. Furthermore, its primary industrial market is expected to originate from Central Maui. As such, the following neighborhood description describes the Central Maui Region.

Since real estate is fixed in location, its marketability and rentability are strongly influenced by economic and social trends in its immediate environment. The continuing attractiveness of this neighborhood environment to potential users and tenants, and its competitive relation to those of substitute properties, must therefore be evaluated and forecast by the consultant. In particular, perceived neighborhood trends affect both the quality and quantity of the revenues the subject property can reasonably be expected to generate.

A neighborhood of income-producing properties is a geographic area characterized by similarity of uses and/or users, within which any change has a direct and immediate effect on the subject property and its value.

The geographic area surrounding the subject property is defined by physical and man-made boundaries, and encompasses an area known as Waialuku-Kahului. This region is located on the north shore of the island of Maui and encompasses the civic and business centers of Waialuku and Kahului. The island's major seaport and primary airport are also contained within the boundaries of this region. The surrounding agricultural land of Central Maui, and the eastern half of the West Maui Mountains, is also within the Waialuku-Kahului neighborhood. The boundaries of the Waialuku-Kahului region are the northern shoreline from Poelua Bay to Baldwin Park on the north, Kailua Gulch and Lowrie Ditch on the east, Spanish Road to Waikapu Road to Hanopilihi Highway to Pohakaea Gulch on the south, and the Waialuku Judicial District boundary on the west.

Population is concentrated in the urban centers of the region. Waialuku has maintained its role as the civic-financial-cultural center while Kahului has strengthened its role in recent years as the business and industrial center. In addition to the urban centers of Waialuku-Kahului, the region also includes the more rural settlements of Wahee to the north and Waikapu and Puunene to the southeast. Agricultural lands are adjacent on the lower slopes of the West Maui Mountains and in the central plain south and east of Kahului. This green border is a significant part of the settlement pattern because of its open space and economic value. Kahului Harbor and Airport are major land users along the Kahului shoreline. As major ports of entry for people and goods, they serve as an important center of jobs and economic activity.



Not to Scale... For Illustrative Purposes Only!

## NEIGHBORHOOD MAP

The major thoroughfares through Kahului and Waialua are Kaahumanu Avenue which begins in Kahului and provides primary access to Waialua as well as Lahaina and Kihiti; Hana Highway, which is actually a continuation of Kaahumanu Avenue, leads from Kahului to the eastern or "upcountry" portions of the island; and Puunene Avenue which provides access to all major areas in Kahului and ultimately leads to Kula Highway which provides by-pass access to Lahaina and Kihiti. The Kaahumanu Avenue also runs into Main Street, and via secondary access, runs into Waiehu Beach Road and Lower Main Street.

Kahului, adjacent to Waialua, is situated on the northwest portion of the island of Maui, and is the central commercial, industrial and residential area of Maui. Kahului Town contains Maui's major shopping centers, centralized industrial areas, financial institutions, medical office facilities and business offices. Additionally, the Kahului Airport and Kahului Harbor are located in Kahului proper and houses the majority of firms providing various goods and services throughout the island, as well as to Lanai and Molokai. Consistent with its central location, post office facilities, community library, parks, schools (elementary, intermediate, high school and a community college), churches of various denominations, entertainment facilities, food outlets and a fire station are located in Kahului.

Waialua, at one time, was the heart of Maui's business activities. Decentralization of business to nearby Kahului and lack of maintenance and modernization of buildings to keep up with the new shopping habits brought about a gradual decline. However, since the creation of the municipal parking area in Waialua, several new buildings have been built or renovated and a rejuvenation of the Waialua Town is being experienced. The current Community Plan envisions Waialua as the "governmental, cultural and professional center of Maui". Located in Waialua are the various government agencies, courts, hospital, major recreational facilities and police station.

Waialua's Fire Station sits in the heart of Waialua Town, and until the opening of the Kahului Fire Station, was the only one in Central Maui. Kahului Fire Station is a 21,300 square foot facility that includes two main buildings and is situated on Dairy Road.

The Maui Memorial Medical Center, which is Maui's primary facility of medical and emergency service, is located between the connecting boundaries of Kahului and Waialua. In 2006, work was completed on a new wing for the hospital. The Police Station is also conveniently located nearby.

Numerous preschools, elementary, intermediate and high schools are located throughout Kahului and Waialua, with the University of Hawaii Maui College also located on Kaahumanu Avenue, in Kahului.

In order to fully understand and appreciate Kahului and Waialua's potential for expansion, as well as factors that could limit the growth of this region, a brief summary of recent or proposed developments in these Central Maui districts along with a few important issues facing future development are in order.

## RESIDENTIAL

The residential districts surrounding these two centers are significantly different in character. Waialua Town is comprised of older residential areas, intermixed with business uses, varying lot sizes, and a more haphazard street pattern representative of older subdivisions. Surrounding Waialua Town are more modern residential subdivisions, primarily within the Keolu Project District. The residential areas in Kahului are also varied. The older projects feature wide curvilinear streets and larger lots; where as the newer subdivisions, primarily within the Maui Lani Project District, feature smaller lots, narrow roadways, and some zero lot line development. There are also several gated communities with golf-course frontage.

### Kahului

In Kahului, the major residential area is represented by Alexander & Baldwin, Inc.'s Kahului Town Development. This subdivision consists of 14 increments that were built between 1951 and 1981. There are a total of 3,400 lots within the 14 increments. Kahului Town is distinguished as the first planned "new town" in Hawaii to provide quality housing at affordable prices.

Today, Kahului Town is a bustling residential community. The ongoing Maui Lani Project District development will include up to 3,000 new residential units, ranging from executive golf homes to affordable units and span 1,000 acres on the south side of Kahului and east side of Waialua. In addition to single-family and multi-family residential units, the Maui Lani development includes a golf course, churches, a school and a recreational center. Already, several phases have been constructed and sold over the past several years including The Greens, The Grand Fairways, The Bluffs, The Islands, Sandhills Estates, Legends, Phase I and II and Na Hoku. New developments in Maui Lani include Traditions, a 153 house-and-lot single-family subdivision and the proposed Parkways at Maui Lani, a 210-lot single-family subdivision.

### Waialua

In Waialua, the older residential homes are mixed with small businesses throughout central Waialua Town. There are three primary residential subdivisions on the outskirts of the town including Waialua Heights, Waiehu Terrace, Waiehu Heights and Leisure Estates.

The older Waialuku Heights area was extended by two exclusive and prestigious phases. The first extension offers 270 lots while the second phase offers an additional 130 lots to the subdivision. Once verdant pastureland, Waialuku Heights is nestled in the West Maui Mountains and offers underground utilities, scenic views and a landscaped park.

Directly below the Waialuku Heights neighborhood is the Kehalani Project District. Single-family residential developments in this area include the Oha and Maunaloa subdivisions. These projects, by Towne Development and Stanford Carr Development, were sold strictly as house-and-lot packages. Kehalani Gardens and Ilihi at Kehalani, both condominium projects, were also built by the same developers and were completed shortly after in 2005.

Two other single-family projects were then constructed in Kehalani 2006 and 2007. These included Koa at Kehalani (72 residential lots) and Akolea at Kehalani (97-unit house and lot subdivision), developed by Towne Development. In 2008, Stanford Carr Development developed the Cottages at Kehalani (114-unit house and lot subdivision).

More recent construction in the Kehalani Project District included Milo Court, a 97-unit duplex-style condominium developed by Towne Development, and the Villas at Kehalani a 103-unit townhouse condominium developed by Stanford Carr Development.

In addition to construction in the Kehalani Project District, residential development spread southerly to the Waikapu a small community in Waialuku proper. Jesse Spencer completed the last home in Waikapu Gardens at the end of 2008, a 410-unit affordable housing project. In 2007, two house lot subdivisions also came to market in Waikapu, Waialani Pitake (37 lots) by KSD Hawaii and Waialani Mauka (105 lots) by Scott Nunokawa. Another unique subdivision that was constructed in the Waialuku area is the Waialuku Country Estates Subdivision, which consisted of 184 agriculture lots located near the Puuohala Camp neighborhood just north of Waialuku Town.

## COMMERCIAL

Commercial development in Kahului is concentrated along the major thoroughfares in strip fashion, while Waialuku's main commercial activity is concentrated in the central core of the town. Due to the central location of these communities, there has historically been strong demand for commercial space in Central Maui, and vacancies within established projects in this region tended to be very low. However, the recent downturn has resulted in less demand for commercial spaces and higher vacancies, as well as reduced rental rates.

### Kahului

There are four major shopping centers in Kahului. Maui Mall, opened in late 1971 contains a gross leasable area of 181,500 square feet on a 25-acre site. It is anchored by tenants such as Longs Drug Store, and the Maui Mall Megaplex, by Wallace Theater Corporation. Star Market closed its doors in March 2008, but was replaced by a Whole Foods supermarket in 2010. The largest center, Queen Kaohumanu Center, opened in 1973 and had 300,000 square feet of gross leasable area. Extensive renovations were completed in 1995, which included a two-level shopping wing, a six-screen movie theater, expanding the major stores, renovating the existing mall and adding a parking structure and access road. The project expanded the center to 500,000 square feet. It is currently anchored by Macy's and Sears. The Maui Marketplace on Dairy Road is home to a number of big-box retailers including Lowes Hardware, Sports Authority, Office Max, Petco, Pier One Imports, Starbucks Coffee, Jamba Juice, Bank of Hawaii and Burger King. Lastly, Kahului Shopping Center, the oldest major shopping center which opened in 1951, was partially destroyed by fire in 2005 and plans are underway to redevelop the entire block into the Kahului Town Center. This development will consist of retail, office and condominium living.

In addition to these centers, Kahului is home to other large retailers including Costco, Kimari Home Depot, and Wal-Mart. All of the major financial institutions and the large automobile dealerships are also located in Kahului. The Maui Arts and Cultural Center was built in 1993 and includes a 1,200-seat theater, a 250-seat studio theater, an art gallery, meeting rooms, dance studios, an event lawn, administrative offices and a restaurant/gift shop. In 2011, the original stage that serviced the 5,000 person grass amphitheater was replaced by the \$13 million-dollar, state-of-the-art, Yokauchi Pavilion. The Maui Arts and Cultural Center sits on 12-acres at Keopulani Park, which is located between the University of Hawaii Maui College and the Maui Botanical Garden.

### Waialuku

The hub of commercial activity in Waialuku is concentrated in an area along Market Street and Main Street. Known as Old Waialuku Town, this neighborhood is characterized by older, low-rise buildings consisting of small, individual shops and offices. Civic uses surrounding this area of Waialuku include the State office building, the County office buildings, and the judicial building.

The town is home to numerous professionals in the fields of architecture, engineering, law, financial management, real estate and banking. All of the major financial institutions have branches in Waialuku Town. Notable office buildings in Waialuku include One Main Plaza, Waialuku Executive Center, Maui Realty Suites, the Trask Building, and Wells Professional Plaza. Waialuku's office market is

also feeling the effects of the economic slowdown with evidence of higher vacancies and decreasing rents.

## INDUSTRIAL

Vacant industrial land has typically been difficult to acquire due to the lack of inventory in the market. Much of the vacant land in Central Maui's industrial parks is being held by business owners, some of whom are waiting for more ideal conditions to build new facilities. Others may be looking for a turn around in the real estate market before putting their property up for sale. However, the same economic downturn that has significantly impacted demand for commercial space in Central Maui has taken its toll on industrial space. Vacancies have increased, while at the same time warehouse rents and land prices have declined.

### Kahului

There are several industrial parks in Kahului, but the largest and most established of them all is the Maui (Kahului) Industrial Park, which is bordered by Hono Highway, Puunene Avenue, Dairy Road and Kamehameha Avenue. It includes low-rise warehouse and commercial uses and is occupied with a mixture of industrial, retail and office tenants.

Maui Business Park, Phases I-A and I-B (7.6 acres), has also attracted commercial, office and industrial users along Dairy Road and Hookele Street. Phase II of Maui Business Park is currently in design and will ultimately add approximately 179 acres of light industrial land surrounding the first phase.

Other existing industrial subdivisions include the Airport Triangle on about 13 acres, the 40-lot Kamehameha Parkway No. 2, and the Central Maui Baseyard on Mokualea Highway.

### Waialuku

Existing industrial subdivisions in Waialuku include Waialuku Industrial Park, The Millyard, Waialo Baseyard and Consolidated Baseyard. The oldest of which is the Waialuku Industrial Park, an improved light industrial subdivision with 74, fee simple lots off of Lower Main Street in Waialuku. Lots range from 10,106 square feet to a parcel 3,089 acres in size. This subdivision is approximately 95 percent developed and includes the Waialuku Town Center anchored by Sack 'n Save.

The Millyard was developed in 1985 as an improved light industrial subdivision located at the old Waialuku Sugar Mill site. This industrial subdivision contains 57 lots, and is home to the Waialuku Post Office which opened there during the late-1990s. Approximately 84 percent of this subdivision has been developed with a mixture of commercial and light industrial uses. The Millyard Plaza is one of the largest complexes in this subdivision. Also, several dentists and veterinarians have seen fit to build their own free-standing facilities in

The Millyard, which has developed into more of an office park than an industrial center.

Completed in 2006, the Waialo Baseyard in Waikapu consists of 19 lots on approximately 15 acres of land. This subdivision was immediately sold prior to subdivision completion. Consolidated Baseyards, also in Waikapu, was completed in 2007. Built on about 23 acres of land, the 35 lots in this light industrial park saw very strong interest and were sold quickly. The majority of purchasers within both subdivisions were local business owners who intended to relocate their operations. These subdivisions were geared toward true industrial users.

The most recent development in the Waialuku area is the Maui Lani Village Center. This project completed construction in 2009 and features 78 lots zoned Village-Mixed Use Commercial/Residential. This zoning allows for a mixture of commercial, industrial, and residential use on each property. Businesses that intend to occupy this subdivision include Paradise Beverage, Ace Hardware, Menchune Water, 76 Gas Station, Oceanic Time Warner Cable, Times Supermarket, Walgreens, etc. However, only a handful of transactions have actually closed to date. Absorption in this project is moving at a slow pace, which is directly attributed to the economic recession.

## CONCLUSION

All public utilities including electricity, water, telephone, and sewer service are available in Kahului and Waialuku, as is police, fire and ambulance services. Propane gas is not a public utility, however, is available. All charges for public services are standardized for the Island of Maui.

With the increase of public transportation now available on Maui, Kahului and Waialuku are easily accessible from most parts of the island. This and the fact that it is central to airport and harbor facilities, commercial and industrial establishments, properties located in this area are ideal.

Due to this region being the center of County, State and Federal offices, as well as community services, properties in these areas are anticipated to be in greater demand in the years ahead. Based on the desirability of this area and forecasted demand here, property values are expected to continue their appreciation in the long-term.

**C. PROJECT DATA**

**ENVIRONS**

The Puunene Heavy Industrial Subdivision (the "Proposed Project") is a proposed heavy industrial subdivision with up to 28 lots, situated east of Mokuale Highway, District of Waialuku, Island and County of Maui.

Mokuale Highway is the primary roadway connecting Kahului to Kihei and runs in a generally north-south direction. It is an asphalt-paved four-lane thoroughfare with two lanes in each direction, divided by a median. Mokuale Highway has street lights, as well as overhead and underground utilities. A dedicated bicycle and pedestrian path is situated along the eastern side of the roadway.

Puunene is primarily an agricultural area between the Central Maui and South Maui regions. The majority of the surrounding land is being utilized for commercial sugar cane production. Maui Raceway Park, the Hawaiian Cement quarry, the Maui Army National Guard Armory, and the Maui Humane Society are located nearby. Central Maui Baseyard, a light/heavy industrial yard storage development, is situated approximately one mile to the north. Although the immediate area is unpopulated, the Proposed Project will be conveniently located with respect to its many supporting facilities, such as shopping, schools, employment, residential and recreational areas in both Central Maui and South Maui.

**DESCRIPTION OF THE REAL ESTATE:**

**Property Data:**

**Legal Description:** A title report was not available for review by the Consultant. The following legal description was excerpted from a copy of a "Limited Warranty Deed with Reservation of Easements, Covenants, Reservations and Restrictions" recorded with the Bureau of Conveyances on March 17, 2011:

All of that certain parcel of land (being portion of the land(s) described in and covered by Land Patent Number 8140, Land Commission Award Number 5230 to Kaaweamaiki) situate, lying and being at Pulehenui, District of Waialuku, Island and County of Maui, State of Hawaii, being LOT 2 of the PUA'A SUBDIVISION, per survey dated March 8, 2011, to wit:

Beginning at a pipe at the northeasterly corner of this lot, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU HELE" being 2,265.99 feet north and 17,073.08 feet east and running by azimuth measured clockwise from true South:

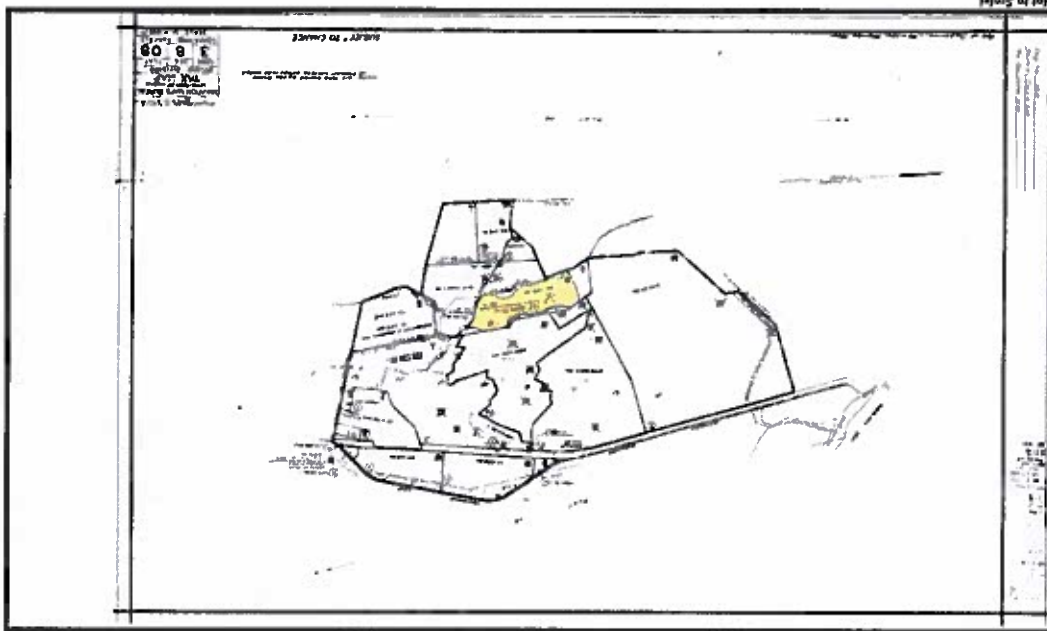
1. 1.99° 00' 428.45 feet Lot 3 of the Pua'a Subdivision to a pipe;

- 2. 179° 00' 180.00 feet along same to a pipe;
- 3. 260° 00' 50.00 feet along same to a pipe;
- 4. 315° 00' 200.00 feet along same to a pipe;
- 5. Thence along same on a curve to the left with a radius of 515.00 feet, the chord azimuth and distance being:
  - 299° 00' 283.91 feet along same to a pipe;
  - 6. 283° 00' 170.00 feet along Lot 3 of the Pua'a Subdivision to a pipe;
  - 7. 296° 00' 390.00 feet along same to a pipe;
- 8. Thence along same on a curve to the right with a radius of 362.00 feet, the chord azimuth and distance being:
  - 345° 00' 455.63 feet to a pipe;
  - 9. 24° 00' 240.00 feet along Lot 3 of the Pua'a Subdivision to a pipe;
  - 10. Thence along same on a curve to the left with a radius of 410.00 feet, the chord azimuth and distance being:
    - 348° 30' 476.18 feet to a pipe;
    - 11. 313° 00' 225.00 feet along Lot 3 of the Pua'a Subdivision to a pipe;
    - 12. Thence along same on a curve to the right with a radius of 380.00 feet, the chord azimuth and distance being:
      - 13. 23° 00' 40.00 feet along same to a pipe;
      - 14. 289° 00' 70.00 feet along same to a pipe;
      - 15. 346° 00' 400.00 feet along same to a pipe;
      - 16. 10° 00' 130.00 feet along same to a pipe;
      - 17. 320° 00' 130.00 feet along same to a pipe;
      - 18. 350° 00' 200.00 feet along same to a pipe;
      - 19. 20° 00' 160.00 feet along same to a pipe;

- 20. 350'-00" feet along same to a pipe;
- 21. 268'-00" feet along same to a pipe;
- 22. 347'-00" feet along same to a pipe;
- 23. 67'-00" feet along same to a pipe;
- 24. 79'-00" feet along same to a pipe;
- 25. 147'-00" feet along Lot 2-8-3 of the subdivision of Lot 2-8 of the Land of Pulehunu to a pipe;
- 26. 190'-00" feet along Lot 1 of the Puu'a Subdivision to a pipe;
- 27. 179'-00" feet along same to a pipe;
- 28. 140'-00" feet along same to a pipe;
- 29. 167'-00" feet along same to a pipe;
- 30. 179'-00" feet along same to a pipe;
- 31. 164'-00" feet along same to a pipe;
- 32. 189'-00" feet along same to a pipe;
- 33. 168'-00" feet along same to a pipe;
- 34. Thence along same on a curve to the left with a radius of 306.26 feet, the chord azimuth and distance being:  
145'-00" 239.33 feet to a pipe;
- 35. Thence along same on a curve to the right with a radius of 420.00 feet, the chord azimuth and distance being:  
139'-19" 250.03 feet to a pipe;
- 36. 173'-11" 30" 663.31 feet along Lot 2-8-2 of the Subdivision of Lot 2-8 of the Land of Pulehunu to the point of beginning and containing an area of 86.030 acres, more or less.

The State of Hawaii Tax Map further identifies the subject parcel as Division 2, Zone 3, Section 8, Plat 07, Parcel 102.

ACM Consultants, Inc. Puuene Heavly Industrial Subdivision, Waikuku, Maui



TAX MAP

**Census Tract:** The Proposed Project is identified as being within Census Tract No. 307.01.

**Owner of Record:** The owner of record, as identified by County of Maui public records, is CMBY 2011 Investment, LLC.

**Transaction History:** Public records indicate that Proposed Project was conveyed from Alexander & Baldwin, Inc. to CMBY 2011 Investment, LLC for a purchase price of \$3,500,000. This transaction was recorded in the Bureau of Conveyances on March 17, 2011 as Document No. 11-044566. There were no other conveyances of the Proposed Project within three (3) years prior to the effective date of this report.

**Subject Offering Information:** A search of Maui Multiple Listing Service did not reveal any listing of the subject parcel within three (3) years prior to the effective date of this report.

**Real Property Tax Assessments and Taxes:** Research at the Maui County Real Property Assessment Division revealed the following assessments and taxes for the subject parcel during the tax periods between 2009 and 2011.

Year	2011	2010	2009
Land (Market):	\$2,322,800	\$2,260,000	\$2,839,000
Land (Agricultural):	\$43,000	\$43,000	\$43,000
Building:	\$507,400	\$536,300	\$520,600
Exemptions:	\$0	\$0	\$0
Total:	\$550,400	\$579,300	\$583,600
Rate/\$1,000 (Agricultural):	\$5.80	\$5.00	\$4.50
R. P. Taxes:	\$3,192.32	\$2,896.50	\$2,536.20

For 2011-2012, the County of Maui Real Property Tax Division records show the subject parcel's market assessment at \$2,830,200; however, is being taxed at \$50,400, due to its dedicated agricultural use. The tax rate per \$1,000 valuation is \$5.80 for Pitt 500 (Agricultural). Based on this rate, the subject's real property tax amounts to \$3,192.32 (\$550,400 ÷ 1,000 x \$5.80). No known special assessments are on record against the subject property.

**Land Use Controls:** The Proposed Project is located in a State of Hawaii designated Agricultural District and is zoned by the County of Maui as Agricultural District. As shown on the Kihel-Makena Community Plan Map and verified with the Maui County Land Use and Codes Division, the subject property is located in an area classified as Agriculture.

### Site Description:

**Size and Shape:** The Proposed Project has a land area of 86.030 acres and has a highly irregular shape.

**Topography and Soil Condition:** A physical inspection of the property confirmed that topography is generally level to gently sloping. As derived from an USDA Natural Resources Conservation Service online web soil survey, the Proposed Project appears to have primarily Waialoa extremely stony silty clay loam, 3 to 5 percent slopes, eroded (WID2), with some parts of Aiea cobbly sandy loam, 3 to 7 percent slopes (Ac8).

The Consultant has not been provided with soil, subsoil or other engineering studies to determine the load-bearing capacity of the subject; however, based on typical construction in the neighborhood and our knowledge of other properties in the immediate vicinity, the project site is presumed to have stable soil conditions and any drainage problems are assumed to be correctable.

**Access:** As shown on an August 10, 2011 map by R.T. Tanaka Engineers, Inc., "Land of Pulehuni Exhibit Map Showing Proposed Easements B-1, B-2, B-3, B-4, B-5 and B-6", vehicular access to the Proposed Project from Makalele Highway will be via proposed easements over adjacent parcels. The proposed access easements will consist of portions of Kamacina Road, South Firebreak Road and Lower Kihel Road, which are private roadways situated on land owned by the State of Hawaii and Alexander & Baldwin, Inc ("A&B").

Encroaching portions of Kamacina Road, South Firebreak Road and Lower Kihel Road, proposed Easements B-1, B-3, B-4 and B-5 would need to be granted by the State of Hawaii. Should this access not be obtained within the next five (5) years, the Developer has secured an alternate means of access with A&B, via an easement around the northern and eastern sides of Reservoir No. 6.

**Easements and Restrictions:** According to a copy of a "Limited Warranty Deed with Reservation of Easements, Covenants, Reservations and Restrictions", recorded with the Bureau of Conveyances on March 17, 2011, the Proposed Project is encumbered by a 20-foot wide road easement along its westerly boundary. The document further describes a utility easement in favor of Maui Electric Company Limited and Hawaiton Telecom granting perpetual right and easement over Easement 3 for utility purposes.

**Flood Status:** Flood Hazard Districts are delineated on Flood Boundary and Floodway Maps and the Federal Insurance Rate Maps prepared by the Federal Insurance Administration and Federal Emergency Management Agency. The subject parcel is situated on Map Number 1500030580E, by the Federal Emergency Management

Agency, revised September 25, 2009, and lies in Flood Zone X. Zone X within Maui County indicates areas determined to be outside of the 0.2 percent annual chance flood plain. Flood insurance is not required for properties within this flood zone.

**Utilities:** Potable water and sewer service are currently unavailable, while electricity and telephone service are available from overhead lines in the area.

**Historic Uses:** According to the property owner, the subject property was used as a pig farm since the 1960s and was additionally used as an unpermitted scrap metal storage site since approximately 1995. Prior to the piggyery use, the subject property was partly used for cultivation of sugarcane and also as a plantation camp. Prior to that use, the subject property was part of the Puunene Naval Air Station.

**Current Use:** On the day of inspection, it was noted the subject parcel had been cleared of previously abandoned scrap metal material and the on-site dilapidated structures had been razed. A broadcast antenna was observed on the northern side of the property.

**Most Appropriate Use:** Under its agricultural zoning, the subject parcel has poor agricultural potential because of unfavorable soil quality. The proposed industrial subdivision is the most appropriate use of this site from a market perspective. The subject parcel has easy access to all urban areas on the island. It is located between Central Maui and South Maui, yet still is easily accessible to the West Maui and the Upcountry regions.

In addition to the support for heavy industrial use established in the following Market Study section, evidence of the appropriateness of the subject parcel's proposed heavy industrial use was found in the December 2010 Draft Maui Island Plan. The subject parcel is recognized by the Plan and has been included in its Urban Growth Boundary.

Furthermore, the current Kiheti-Makena Community Plan has classified approximately 561 acres near the subject parcel as Project District 10 "Old Puunene Airport area". The project district suggests "Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use." In this light, the creation of the Proposed Project would be consistent with the County of Maui's long-range planning goals for the area.

#### Description of the Proposed Project

**Land & Improvements:** The Proposed Project is envisioned as a 28-lot heavy industrial subdivision to be developed on approximately 86,030 acres east of Mokulele Highway, District of Waialuku, Island

and County of Maui. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Waialuku, Island and County of Maui. As of the effective date, the subject site is designated for agricultural uses by State Land Use law, County of Maui zoning and the Kiheti-Makena Community Plan. The subject parcel also lies within the proposed Urban Growth Boundary set forth by the (draft) Maui Island Plan (December 2010).

The heavy industrial zoning district provides for a minimum lot size of 10,000 square feet. The sizes of lots in the proposed heavy industrial subdivision shall be determined by the types of uses proposed and the market demand projected approximately six months before the application for subdivision approval is filed with the Development Services Administration, County of Maui. Currently, the plan is to provide ten (10) lots ranging in size from one-half (0.5) acre to one (1) acre; five (5) lots ranging from over one (1) acre to two (2) acres and the balance ranging from over two (2) acres to twenty (20) acres for a total of twenty eight (28) lots. The Proposed Project will feature interior roads as well as drainage facilities consistent with County requirements.

**Likely Purchasers or Tenants:** In light of its unique location, away from the central business districts, Kahului Harbor and Kahului Airport, the proposed subdivision is expected to attract pure industrial users. These types of users have been displaced from the central areas of Kahului and Waialuku, since Maui's "stacked" zoning allows higher-order business use on industrial land.

Those looking for pure industrial space will likely include businesses that manufacture or treat goods from raw materials, in addition to industrial warehouse users and those seeking secured baseyards. Commercial uses such as retail businesses, professional offices, and service companies are not expected for the Proposed Project, due to its lack of exposure, coupled with the potential for odor, dust, smoke, gas, noise, vibration, etc. from heavy industrial users in the project.



**PART III – ANALYSIS AND CONCLUSION**

**A. MARKET STUDY**

For the purpose of estimating the market response to the Proposed Project, a market study was conducted to determine how current supply and demand for industrial properties might be affected by the development of up to 28 heavy industrial lots. The extent of our survey encompassed existing, ongoing (in sales process), and proposed industrial developments on Maui, specifically in the Central Maui region of Waialua-Kahului.

One of the more difficult factors in determining the success of a proposed project is estimating future supply and demand. There are several components, including the design and pricing of the proposed project. This, of course, is well within the developer's control but has not yet been determined. Another is the overall market environment at the time of pre-sale and project completion. This is, obviously, more difficult to define because it involves forecasting such variables as interest rates, overall market conditions, and general and specific sector real estate market conditions.

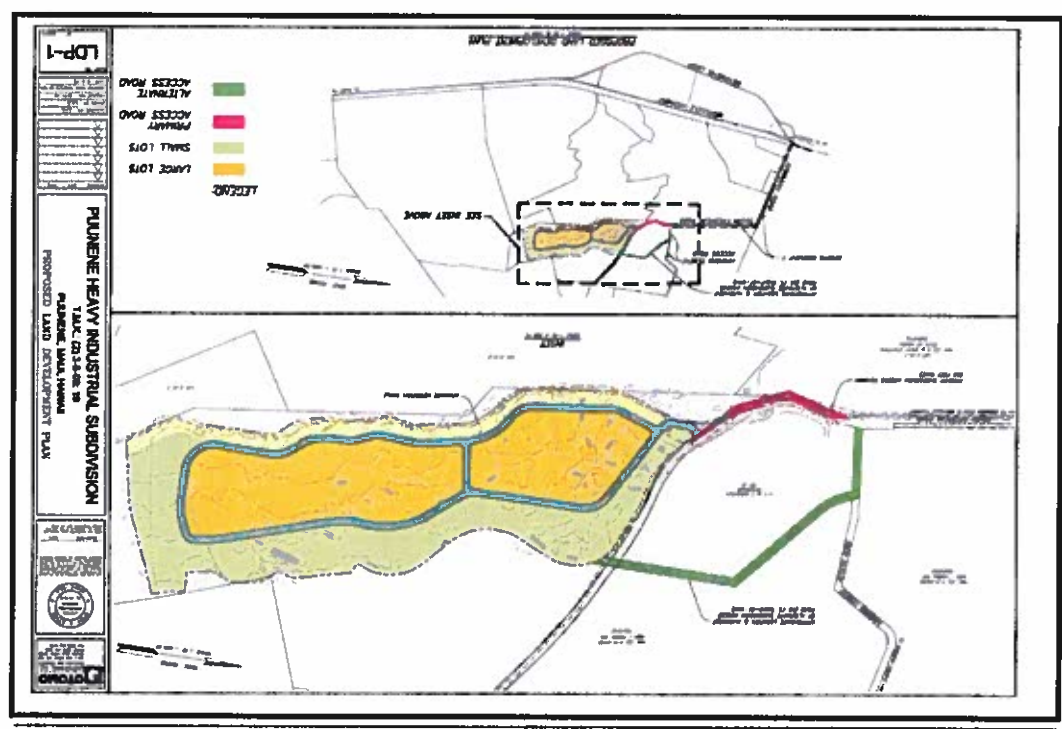
The added complications with most development projects are the time frames and time lags involved. Since most subdivision projects take several years between conception and completion, market and interest rate conditions can change significantly. Thus, a project may commence in a favorable environment and be completed in an unfavorable one (or vice versa). Furthermore, real estate is a cyclical industry and sales activity tends to move in spurts. It is not unusual for a new project to sell half its units in the first year of marketing and require 2 to 3 years (or longer) to sell the remaining half. Thus, the notion of a linear sales rate may be deemed unrealistic for practical purposes, but is a useful and convenient tool for planning.

**INDUSTRIAL OVERVIEW**

The area identified as the Central Maui region encompasses the major communities of Kahului and Waialua. This popular area contains the major business, civic and transportation centers for the entire island of Maui. Many businesses service the entire island from this convenient Central Maui location; and, as a result, demand for industrial space is strong here.

Central Maui has approximately 83 percent of the land in Maui's industrial and commercial subdivisions, with the largest amount situated in Kahului. This is not unusual, considering Kahului is home to the island's primary harbor and airport. Industrial developments in Kahului include the Maui Industrial Park, Kamehameha Parkway Subdivision No. 2; Maui Business Park Phase 1A and 1B; Airport

**PROPOSED LAND DEVELOPMENT PLAN**



Triangle; Waieka Industrial Subdivision and Central Maui Baseyard. Waialua's industrial projects include the Waialua Industrial Park, The Millyard, Waiko Baseyard, Consolidated Baseyards Subdivision, and the Maui Lani Village Center.

Table 2 - Summary of Commercial and Industrial Development Projects on Maui

Project Name	Location	Gross Project Area In Acres	Primary Users
<b>EXISTING (Central Maui)</b>			
Maui Industrial Park, Hono Highway and Dairy Road Industrial Subdivisions	Kahului	136	Mixed-Use, Light/Heavy Industrial
Koneiwehe Parkway Subdivision	Kahului	62	Commercial, Mixed-use, Light Industrial Retail & Commercial
Triangle Square Subdivision	Kahului	13	Commercial, Mixed-use, Light Industrial
Maui Business Park, Phase 1A & 1-B	Kahului	78	Commercial, Mixed-use, Light Industrial
Central Maui Baseyard	Kahului	12	Commercial, Mixed-use, Light Industrial
Waialua Industrial Park	Waialua	52	Commercial, Mixed-use, Light Industrial
The Millyard Subdivision	Waialua	30	Commercial, Mixed-use, Light Industrial
Waieka Baseyard Subdivision	Waialua	15	Light Industrial
Consolidated Baseyard Subdivision	Waialua	23	Light Industrial
Maui Lani Village Center	Waialua	110	Commercial, Mixed-use, Light Industrial
<b>Total</b>		<b>386</b>	
<b>EXISTING (South Maui)</b>			
Puunene Commercial Center	Kihei	16	Commercial, Mixed-use, Light Industrial
Pikani Business Park	Kihei	7	Commercial, Mixed-use, Light Industrial
Kihei Business Park	Kihei	14	Retail & Commercial
<b>Total</b>		<b>37</b>	
<b>EXISTING (West Maui)</b>			
Wailea Industrial Subdivision	Wailea	37	Commercial, Mixed-use, Light Industrial
Wailea Business Park (Phases I and II)	Wailea	41	Mixed-Use, Light Industrial
<b>Total</b>		<b>78</b>	
<b>PROPOSED</b>			
Puunene Heavy Industrial Park (SUBJECT)	Waialua	86	Heavy Industrial
Maui Business Park, Phase II	Kahului	179	Commercial, Mixed-Use, Light Industrial
Waieka Industrial Park	Waialua	31	Light Industrial
Waialea Master Plan	Kahului	16.3	Mixed-Use, Light Industrial
Waialua Light Industrial	Waialua	23	Commercial
Koneiwehe Business Park	Waialua	9	Light Industrial
<b>Total</b>		<b>419</b>	Commercial, Mixed-Use, Light Industrial

As research was conducted into industrial land in Central Maui, it became very clear that the vast majority of the available, undeveloped land is zoned for light industrial use. Most of the land in Central Maui zoned for heavy industrial use has already been built upon or is being utilized for yard purposes. The minimal amount of vacant land that is available to the market was found in areas considered unsuitable for heavy industrial users, due to its proximity to residential and commercial developments. The sections to follow discuss the supply and demand factors of the heavy industrial market, as well as their potential influence upon the Proposed Project.

**HEAVY INDUSTRIAL SUPPLY CHARACTERISTICS**

The Central Maui region contains approximately 442 acres of land zoned Heavy Industrial District. The Hawaiian Commercial & Sugar mill in Puunene occupies about 40 acres, while the future power generation plant site for Maui Electric Company was sold to be approximately 65 acres in size. Much of the remaining 337 acres is situated around the Kahului Harbor and Kahului Airport. These lands are utilized in the daily operation of the harbor and airport facilities and were not considered to be available to the market.

Other heavy industrial areas in Central Maui include Waieka Industrial Subdivision, Airport Industrial Subdivision, as well as portions of The Millyard and Maui (Kahului) Industrial Subdivision. The land underlying Queen Kaahumanu Center, Maui Mall, and the former Maui Land and Pineapple Company canyery is zoned for heavy industrial use, as are the Hobran Avenue area and two adjacent properties at the corner of Kaahumanu Avenue and Kahului Beach Road. Most of these areas have been improved with commercial and light industrial uses or are being held for future development.

Research of the Central Maui heavy industrial market revealed very little vacant land available. The following photographs depict various vacant heavy industrial parcels in Central Maui.



Photograph 1



Photograph 2

Photographs 1 and 2 depict two vacant heavy industrial parcels on Imi Kala Street in The Millyard Subdivision that are currently available for sale. The first lot is situated between a commercial retail/office project (at right) and the Waialua Post Office (at left). The second lot is located on the northern side of the Waialua Post Office, at the corner of Imi Kala Street and Eha Street.



Photograph 3

The recently conveyed heavy industrial lot depicted in Photograph 3 is located along Kaahumanu Avenue and is temporarily being used as a baseyard. The property is accessed from Wakea Avenue and is situated between Queen Kaahumanu Center (at left) and a gas station (at right).



Photograph 4

Photograph 4 depicts a heavy industrial area on the northern side Wakea Avenue that is currently being marketed. The property was formerly utilized by Maul Land & Pineapple Company for their cannery operation. Single family residences and senior housing are located across Wakea Avenue, while Queen Kaahumanu Center is to the adjacent north.



Photograph 5

The heavy industrial lot depicted in Photograph 5 is bounded by Haleakala Highway, Koloa Street and Kele Street. Neighboring properties include commercial retail/office projects and car dealerships.



Photograph 6

Photograph 6 depicts an available heavy industrial lot at the corner of Keolani Place and Haleakala Highway. Keolani Place is the entry roadway to the Kahului Airport. A hotel is being constructed on the adjacent parcel and Costco (at right) is located across Haleakala Highway.



Photograph 7

The heavy industrial lot depicted in Photograph 7 was previously listed for sale and is situated along Kahului Beach Road, between the Harbor Lights Condominium project (at right) and a commercial retail/office property. Kahului Harbor is located to the east across Lower Beach Road, while the University of Hawaii Maui College is to the west.

The aforementioned vacant heavy industrial land parcels represent most of the limited supply currently available to the market. However, they are all situated in areas deemed unsuitable for heavy industrial uses. The adjacent residential and commercial developments would likely object to the odor, dust, smoke, gas, noise, vibration, etc. that can be generated by a heavy industrial operation. As such, the highest and best use of these lots would likely be for commercial retail/office use, which is currently allowed by the M-2 Heavy Industrial District zoning. Market evidence has shown that the trend of commercial retail/office projects being built on industrial land has increased. The demand for developable industrial land for commercial use has led to a significant rise in unit prices, in addition to the decrease of an already limited supply.

There have not been any pure heavy industrial projects created in Central Maui for over a decade. During this period the focus has

been on the light industrial market, evidenced the creation of the Maui Business Park, Waiko Baseyard, Consolidated Baseyards and Maui Lani Village Center. The most recent development of heavy industrial land was the Airport Triangle Subdivision; however, this project houses commercial retail/office centers and car dealerships. As of the effective date, the Proposed Project represents the only planned heavy industrial development for the island. Creation of this additional supply will help alleviate the pent-up demand from pure heavy industrial users and allow them the opportunity to acquire suitable land to build new facilities or expand their current operations.

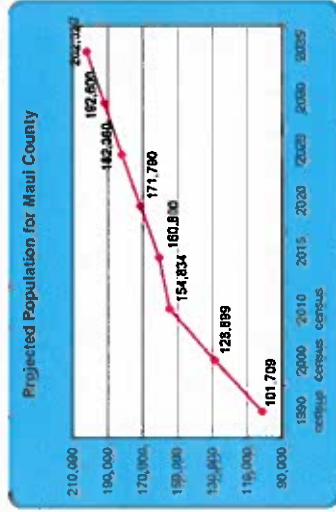
**HEAVY INDUSTRIAL DEMAND CHARACTERISTICS**

Demand is analyzed from two perspectives: The first is “demographic” demand, the number of units needed for a given market or employment base. Second is “effective” demand, the process which involves looking at the number of buyers who would be qualified and interested in purchasing industrial properties.

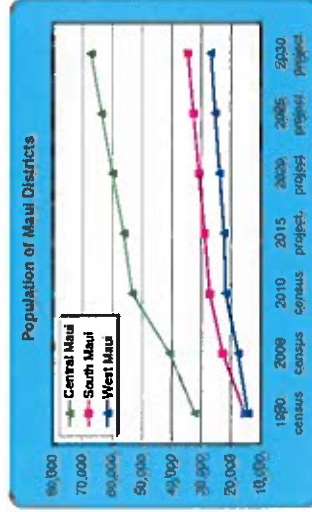
**Population**

Population growth on Maui over the last past 20 years (1980 to 2000) has been exceptionally high. Overall, population growth for the County of Maui during 1980 to 1990 was 41.67 percent. Meanwhile, the 2000 census figures indicate that population in Maui County increased by 26.73 percent between 1990 and 2000. Maui County was the fastest growing county in the state. With this growth in population came a surge in real estate prices. This increase, driven primarily by foreign and domestic investment and speculation, put the price of homes in Maui County well above the reach of many local residents, and affordable housing became a major concern to everyone. The most recent census data indicates an increase of 20.12 percent in population from 2000 to 2010. Maui County’s resident population now stands at 154,834 (2010 census).

According to Population and Economic Projections, Maui County: 2006 to 2035, (Maui County Data Book 2009), the projected population of Maui County is expected to be 192,600 by 2030 and 202,520 by the year 2035. The 2030 and 2035 estimates represent 24.4 and 30.8 percent increases over the 2010 census numbers, respectively.



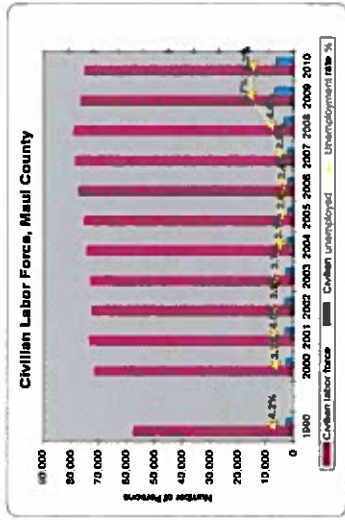
Central Maui’s population grew by approximately 26 percent from 32,310 people in the 1990 census to 40,867 people in the 2000 census. The 2010 census showed an increase to 53,456 people, up about 31 percent from the 2000 census. Central Maui has consistently maintained over 30 percent of the total population of Maui County during this period and its proportion of the County’s population increased between 2000 and 2010. The population of South Maui and West Maui accounted for approximately 18 and 14 percent of Maui County’s population, respectively, in each of the past census counts.



**Employment and Household Income**

The unemployment rate on Maui had been on a decline since 1992 when unemployment was at 8.0 percent. In 2007, the unemployment

rate was 2.8 percent. For 2008, this rate rose to 4.5 percent, after seeing month-over-month gains beginning May 2008. This trend continued in 2009, with the average unemployment rate jumping to 8.7 percent. The unemployment rate was 8.9 percent in January 2010 and gradually declined throughout the year ending at 7.4 percent in December 2010; the lowest it has been since late 2008. The average unemployment rate for 2010 was 8.3 percent.



Source: State of Hawaii Department of Business, Economic Development & Tourism; Monthly Economic Indicators

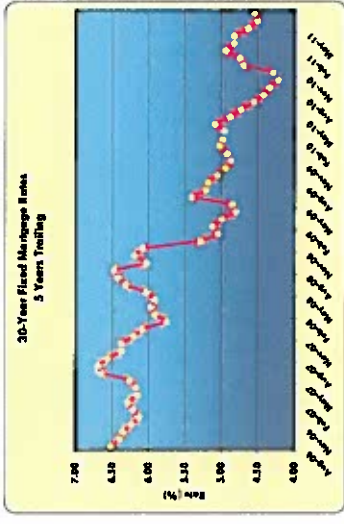
Household income figures have also been increasing. The estimated median annual household income for Maui in 2010 was \$76,000 (Source: U.S. Department of Housing and Urban Development), a rise of approximately 53 percent over the 1999 median household income of \$49,489 (Source: US Census 2000) and a 96 percent increase over the 1989 figure of \$38,771 (Source: US Census 1990). During the 12 year period from 1999 to 2010, this represented an average increase of over 4 percent per year.

**Mortgage Interest Rates**

From late-1991 to 2002, mortgage rates varied from 6.0 to 9.0 percent. In 2003, mortgage rates for a 30-year fixed rate mortgage fell below 6.0 percent for the first time since Freddie Mac began tracking 30-year mortgage rates in 1971. Over the next six years, the monthly interest rate fluctuated between 5.23 and 6.76 percent. However, due to cuts to the Federal Funds Rate in late 2008, interest rates in 2009 dipped below the 5.0 percent level on numerous occasions. The average interest rate for 2009 was 5.04 percent. Through 2010, the interest rate has averaged 4.69 percent, with the lowest rate seen in October at 4.23 percent. Records that reach back earlier than Freddie Mac's indicate that this rate is below record lows witnessed in the 1940s, during World War II. Mortgage rates have

been generally decreasing over the last four months since February 2011. (See Table 3 below.)

Table 3 – Historical Trend of 30 Year, Fixed Mortgage Rates



Source: Freddie Mac Primary Mortgage Survey

The lower mortgage rates typically mean that real estate becomes more affordable to a larger segment of the population. At the same time, however, prices rise. The rising prices can be driven even higher if developers are restrained from building additional inventory by government restrictions, the unavailability of development land, or unreasonably high land prices.

The aforementioned demographic statistics highlight significant growth for Maui over the past two decades. This has led to a considerable increase of light industrial goods and services providers in the Central Maui region. As discussed previously, light industrial businesses have been accommodated with the creation of the Maui Business Park, Waikoa Baseyard Subdivision, Consolidated Baseyards and Maui Lani Village Center.

However, there has not been a coinciding expansion for the heavy industrial businesses that fabricate, process, and manufacture the materials needed by light industrial users. These heavy industrial businesses may include: boiler and steel works; chemical manufacturers; concrete or cement products manufacturers; lumber yards; machine shops; oil storage plants; planing mills; petroleum products manufacturers or wholesale petroleum storage operations; plastic manufacturers; rolling mills; asphalt manufacturers; gas manufacturers; quarry and stone mills; rock, sand, gravel or earth excavation, crushing and distribution facilities; petroleum refineries; and saw mills.

The Proposed Project will also be attractive to other businesses such as automobile wrecking companies; factories; junkyard operators; soap manufacturers; crematories; fertilizer manufacturers; and slaughterhouses. These types of operations are typically not acceptable for populated areas, due to odor, dust, smoke, gas, noise, vibration, etc.

#### Other Market Influences

##### Urban Growth

The island of Maui has seen significant growth in virtually all aspects (e.g., population, visitor arrivals, economy) of the community through the last 20 years. Most of the industrial development is typically found in Central Maui where industrial land is currently about 83 percent of the island's total. Its proximity to the air and sea ports has resulted in the conglomeration of retail, office, service and industrial uses in the Waialuku-Kahului region. As a result, Central Maui has become the center of commerce for the island of Maui.

Over the past decade, there have been several light industrial subdivisions that have been introduced and have been successfully absorbed by the market until 2006. However, heavy industrial development has not followed suit. Instead, vacant land zoned for heavy industrial use in Central Maui, and on the island as a whole, has become increasingly rare. Much of the entitled land is situated by Kahului Harbor and Kahului Airport and is utilized in their operations. The remaining inventory of heavy industrial land in Central Maui has been depleted to a point where rising land values and industrial rents are making it unfeasible for heavy industrial users to build suitable facilities or expand their current operation.

##### Stacked Zoning

One of the primary reasons for the reduction of heavy industrial land is the M-2 Heavy Industrial District's stacked zoning. In addition to heavy and light industrial uses, the current zoning structure allows higher-order business uses. Examples of new commercial retail/office developments built on heavy industrial land include the Airport Triangle Subdivision, Costco and Kmart. This has also led to the continued conversion of improved properties for commercial retail/office use. 444 Hana Highway was originally a warehouse situated on heavy industrial land; however, the property was redeveloped and now houses numerous commercial retail/office businesses, as well as Marco's restaurant.

It is becoming increasingly difficult for heavy industrial users to find suitable space for their operations. Recent evidence of this can be seen in the Habran Avenue area, which is zoned for heavy industrial use. The Consultant is aware of a towing and metals recycling business owner that purchased land and relocated his operation to the

area. His property is on interior lot that sits behind a retail strip center, a fuel center/car wash facility and a proposed medical office complex that have frontage along Hana Highway. Although his business is out of character with his neighbors, it is the Consultant's opinion that the lack of suitable land elsewhere in Central Maui was a factor in his purchase.

Other areas, such as along South Waieka Avenue, Kahului Beach Road and near the Millyard, are also zoned Heavy Industrial District. However, the neighboring uses are primarily commercial retail/office in nature. Furthermore, continued urban expansion has led to residential developments nearby. Both of these factors would likely not be supportive of heavy industrial use.

Some heavy industrial users have moved to the Central Maui Baseyard on Mokuale Highway. While this has solved their problem of doing business in an unsuitable environment, the baseyard offers only short-term land rent. There is no stability for the heavy industrial business user, because there are no land ownership opportunities, nor the ability to build permanent improvements on the leased sites.

##### Economic Climate

The economic downturn being witnessed across the nation has significantly affected Maui, through a drop in visitor counts and the drastic slowdown of construction. These industries are two of the primary employment forces on the island and their decline has had an adverse impact on the local economy. Combined with a more stringent lending environment, the real estate market has been stagnant for the past 4 to 5 years.

However, the real estate market is cyclical. Although the causes and characteristics of these cycles vary, the implications for market participants remain similar in each cycle. On a basic level, when economic activity increases and interest rates rise, real estate becomes less affordable, resulting in decreases in demand and falling prices. Then, as economic activity slows and interest rates decline, properties again become more affordable and, consequently, demand and prices go up repeating the cycle. According to economists, the local economy has begun its recovery with an expected rebound in 2012 and 2013. The real estate market will likely follow suit in the years to follow. As previously stated, the Proposed Project is presently in its planning stage and would require approximately 4 to 5 years to acquire all necessary entitlements and begin construction. The Developers expect the construction phase to be approximately 30 months, followed by the sell-off of the individual lots. Based on this projection, the project may be very well timed with the economic recovery; thus, encountering strong demand from their target market.

### Market Absorption of Industrial Land

Due to the lack of development of pure heavy industrial subdivisions on the island, the Consultant has researched the overall industrial market to establish an anticipated absorption rate for the Proposed Project. As discussed previously, recently built subdivisions in Central Maui have catered to the light industrial market. Since many of the products and services needed by light industrial businesses are provided by heavy industrial users, it is reasonable to expect the demand for heavy industrial land to shadow light industrial land absorption.

Recently built subdivisions in Central Maui indicate significantly fast absorption rates. The 11 lots released by the developer of Walko Baseyard in October 2005 totaled just over five acres and were absorbed within five months. This would indicate an absorption rate of 11.90 acres per year.

Consolidated Baseyards was completed in 2006, with 35 marketable lots totaling approximately 22 acres. There were 27 lots, totaling almost 16 acres, immediately sold between October and December 2006. The remaining eight lots, of approximately 6 acres, were sold in 2007. Overall monthly absorption averaged 1.6 acres, which would translate into about 19 acres per year.

Development of Walko Baseyard and Consolidated Baseyards occurred during the most recent peak of the market, evidenced by their high absorption rates. Other projects that were brought to market during less robust times have witnessed longer marketing periods. To account for the cyclical nature of the real estate market, the Consultant has researched all commercial/industrial subdivisions constructed and marketed over the last 20 years in Central Maui. There were seven (7) subdivisions developed during this time. With the exception of Maui Lant Village Center, which only began closing lots within the last two years, all other subdivisions have been successfully absorbed by the market. Over the last 20 years, approximately 174.74 acres of industrial land has been absorbed, which reflects a straight-line absorption rate of 8.74 acres per year. (Refer to Table 4)

Table 4 – Absorption of Industrial Land (1991-2011)

Subdivision/Parcel	Tax Map Key	Year Introduced	Absorbed Land Area (Acres)
Kamohamaha Flwy	(I) 3-7-Plat 12	1991	19.34
Airport Triangle (incl. Kama'i/Costco)	(I) 3-8-Plat 76	1992-1994	42.23
Maui Business Park 1-A	(I) 3-8-Plat 80	1995	39.65
Maui Business Park 1-B	(I) 3-8-Plat 84	2000	31.95
Waiko Baseyard	(I) 3-8-Plat 27	2000	12.50
Consolidated Baseyards	(I) 3-8-Plat 64	2007	19.98
Maui Lant Village Center	(I) 3-8-Plat 97	2009	9.10
Total in Acres:			174.75
Average acres absorbed per year (20 Year Period to Present) =			8.74

Although the number of heavy industrial users is less than light industrial users, many heavy industrial uses can require substantial amounts of land to function efficiently. Examples of this include towing and vehicle storage base yards; industrial fabricators; portable toilet rental companies; septic tank pumping services; metal recycling facilities; and construction waste disposal operations. The current vision for the Proposed Project is to provide ten (10) lots ranging in size from one-half (0.5) acre to one (1) acre; five (5) lots ranging from over one (1) acre to two (2) acres and the balance ranging from over two (2) acres to twenty (20) acres for a total of twenty eight (28) lots. It is expected that the aforementioned potential users, among others, will show strong interest for the Proposed Project's heavy industrial lots.

### CONCLUSION

Besides the Proposed Project, there are no other heavy industrial subdivisions currently planned for the island of Maui. Given this limited supply, it is anticipated that there will be significant interest for its heavy industrial product. The location of the Proposed Project is ideal for heavy industrial use. The absence of residential development in the immediate vicinity should discourage any the demand for higher-end commercial retail/office facilities in the project. This was shown to be a recurring issue for other heavy industrial areas in Central Maui. Makulele Highway is expected to adequately accommodate any incremental increase in traffic and the project will be convenient to all of Maui's populated communities.

The Maui Raceway Park is located to the west of the subject parcel, within Project District 10. The park provides a wide variety of recreational uses including: drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing. Additional nearby uses include a quarry for Hawaiian Cement, the Maui Consolidated Facility for the Hawaii Army National Guard and commercial sugar cane production for HC&S. Heavy industrial operations are also located at the Central Maui

Baseyard approximately one mile to the north. These users already generate odor, dust, smoke, gas, noise, vibration, etc. from their various operations and are not anticipated to object to similar intrusions from the Proposed Project.

As discussed previously, the Proposed Project is recognized by the December 2010 Draft Maui Island Plan and has been included in its Urban Growth Boundary. Furthermore, the current Kihei-Makena Community Plan has classified approximately 561 acres adjacent to the subject parcel as Project District 10 "Old Punene Airport area". The project district suggests "Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use." In this light, the creation of the proposed Punene Heavy Industrial Subdivision would be consistent with the County of Maui's long-range planning goals for the area.

In light of the aforementioned supply and demand considerations, as well as other factors currently influencing the heavy industrial real estate market in Central Maui, it is anticipated that the Proposed Project will be well received. The Consultant is of the opinion that the heavy industrial lots within the proposed Punene Heavy Industrial Subdivision can be sold within a 10-year period, which would translate into an absorption rate of approximately 6.6 acres per annum.

## B. ECONOMIC IMPACT ANALYSIS AND PUBLIC COST/BENEFIT ASSESSMENT

### Assumptions and Conditions

Estimated construction costs, multipliers, tax rates, interest rates, earnings estimates, demographic information and per capita government expenditures were utilized by the Consultant in determining the economic and fiscal impacts of this proposed residential subdivision. These figures and statistics were obtained through conversations with those active in the construction industry, in addition to the review of various construction budgets, demographic and governmental reports. This consulting report has been based on the assumption that all information gleaned from third party sources is accurate for analytical purposes.

All conclusions in this counseling report have been stated in 2011 dollars, rounded to the nearest \$1,000. In doing so, the Consultant has assumed that all construction costs, multipliers, tax rates, interest rates, earnings estimates, demographic information and per capita government expenditures will remain constant throughout the overall 12.5-year construction time forecasted for the development of the subdivision and subsequent lot build-out. The Consultant recognizes that the Developer intends to create a lot-only project and that the individual lot buyers may not necessarily build immediately. However for the purposes of this assignment, it has been assumed that building construction would commence in conjunction with the lot sales. Although the cyclical nature of the real estate market would undoubtedly produce varied annual assessments and impacts, for the purposes of this report, they have been reported as unweighted averages.

### Economic Impacts Related to Development Activities

#### Construction of the Subdivision and Lot Build-Out

For the purposes of this analysis, it has been assumed that the entitlement process will take approximately 4 to 5 years, with subdivision construction to begin in 2016. According to the client, subdivision construction costs were estimated to be \$20,000,000. The forecasted construction time is approximately 30 months, with an average construction cost of \$8,000,000 per year.

Based on an average lot size of 102,491 square feet, and an assumed building-to-land ratio of 30 percent, the average building size in this subdivision is estimated to be approximately 31,000 square feet. Assuming site work costs for each lot is about \$307,000 and building construction costs of \$125 per square foot, the average development cost per building is estimated to be \$6,232,000, or \$174,504,000 for the 28 buildings. It was further assumed that the



lot build-out would take approximately 10 years, resulting in an average of \$17,504,000 per year.

For the purposes of this analysis, it has been assumed that the aforementioned costs are inclusive of all site work, roads, utilities and landscaping. It also includes the cost of hiring the civil and electrical engineers, soil engineer, environmental engineer, archaeologist, real estate appraiser, traffic engineer, planner, and other consultants.

#### Indirect Sales

Development and construction activities will also generate indirect sales, through the supply of goods and services to the various construction companies, in addition to the families of their employees. By the same token, these suppliers and their families will purchase goods and services from other companies. This chain reaction continues over and over, with some of the revenues leaking out of Hawaii's economy with each cycle.

Based on State economic multipliers, off-island indirect sales were estimated at about \$5,920,000 per year during the subdivision construction. Meanwhile, Maui indirect sales were estimated at about \$4,144,000 per year.

For the subsequent lot build-out, off-island indirect sales were estimated at about \$1,438,000 per year. Meanwhile, Maui indirect sales during this period were estimated at about \$10,044,000 per year.

#### Sale of Individual Heavy Industrial Lots

The 28 lots will have a total net land area of about 65.88 acres or approximately 2,869,733 square feet of heavy industrial zoned land. At a preliminary assumption of \$20.00 per square foot, the sales of these lots are expected to generate gross sales revenue of about \$57,395,000.

#### Taxable Expenditures and Sales

Final sales generated by the subdivision construction totaled \$2,129,000 per year and were considered to be from the personal consumption expenditures of the construction workers and indirect employees during this period. These are sales that are subject to the State of Hawaii General Excise Tax of 4.166 percent.

Intermediate sales, taxed at 0.5 percent, were determined to be from construction expenditures and indirect sales related to the subdivision construction, less personal consumption expenditures. Thus, the intermediate sales during the subdivision construction were forecasted to be \$15,935,000 per year. When added to the final sales, the taxable expenditures and sales amounted to \$18,064,000 annually.

Final sales generated by the subsequent lot build-out totaled \$10,411,000 per year and were considered to be from the sales of the individual developer lots, plus the personal consumption expenditures of the construction workers and indirect employees during this period. These are sales that are subject to the State of Hawaii General Excise Tax of 4.166 percent.

Intermediate sales, taxed at 0.5 percent, were determined to be from construction expenditures and indirect sales related to the lot build-out, less personal consumption expenditures. Thus, the intermediate sales during the lot build-out were forecasted to be \$34,731,000 per year. When added to the final sales, the taxable expenditures and sales amounted to \$45,142,000 annually.

#### Profits Realized

The Consultant has forecast profit and risk premium from the subdivision construction to be \$2,206,000 per year, over the 2.5-year period. Meanwhile, the forecasted profit and risk premium from the lot build-out amounted \$5,387,000 per year, over the 10-year period.

It should be noted that these figures considers both direct and indirect sales at all levels of business. For example, in addition to the profit to the Developer, there will be profit expectancies by subcontractors, service vendors, supply companies, and supportive goods and services providers.

#### Direct and Indirect Employment

New job opportunities created by this development will start with the design and entitlement process, employing architects, engineers, surveyors, and land use planners. Site work, road work and the installation of utility and drainage lines typically utilize heavy equipment operators, tractor-trailer drivers and utility personnel. Vertical construction of the heavy industrial buildings and lot improvements will employ masons, carpenters, sheet metal workers, roofers, drywall installers, plumbers, electricians and painters. Finish work will require cabinet makers, carpet and tile installers, interior decorators, and landscapers.

The increase in construction will also create the need for supplementary companies to strengthen their labor force. These jobs may be from building supply companies, hardware stores, equipment rental companies, and shipping/warehousing companies. In addition, the construction laborers and their families will patronize local goods and services providers. Grocers, restaurants, service stations, auto repair shops, financial institutions, recreational venues, medical facilities and personal care businesses could be considered potential companies that would need to bolster their employee count.

Based on State economic multipliers, direct jobs on Maui were forecasted to average 32 jobs annually, while indirect jobs were forecasted to average 33 jobs annually, resulting in an estimated annual average of 65 Maui jobs directly and indirectly tied to the subdivision construction. Meanwhile, indirect employment on Oahu could possibly add an average 17 jobs per year.

For the lot build-out, 70 direct and 72 indirect Maui jobs were forecasted annually, resulting in an estimated annual average of 142 Maui jobs directly and indirectly tied to the lot build-out. Meanwhile, indirect employment on Oahu could possibly add an average 38 jobs per year.

#### Direct and Indirect Payroll

Payroll directly related to the subdivision construction was estimated to be \$1,962,000 per annum, based on statistics gleaned from the State of Hawaii Department of Labor and Industrial Relations (DIR) and job counts determined in the previous section. It should be noted that most construction positions are expected to be filled by Maui laborers. Indirect Maui payroll came out to \$1,206,000 per year, while indirect Oahu payroll was \$703,000 annually. Total direct and indirect payroll attributed to the subdivision construction was forecasted to be \$3,871,000 per year.

Payroll directly related to the lot build-out was estimated to be \$4,292,000 per annum. Again, construction positions are expected to be filled by Maui laborers. Indirect Maui payroll came out to \$2,632,000 per year, while indirect Oahu payroll was \$1,570,000 annually. Total direct and indirect payroll attributed to the lot build-out was forecasted to be \$8,494,000 per year.

#### Supported Population

Statistical information obtained from the DIR indicated Maui residents supported by construction jobs attributed to the subdivision construction are expected to be 70 residents per year, while residents supported by indirect jobs amounted to 73 residents per year. Oahu residents supported by indirect jobs created by this development were estimated to be 36 residents per year. In all, 179 residents per year on Maui and Oahu will potentially be supported by the subdivision construction.

Maui residents supported by construction jobs attributed to the lot build-out are expected to be 154 residents per year, while residents supported by indirect jobs amounted to 158 residents per year. Oahu residents supported by indirect jobs created by this development were estimated to be 80 residents per year. In all, 392 residents per year on Maui and Oahu will potentially be supported by the lot build-out.

#### Supported Households

Statistical information obtained from the DIR indicated that 24 households per year on Maui are expected to be supported by construction jobs attributed to the subdivision construction, while households annually supported through indirect jobs amounted to 25. Oahu households annually supported through indirect jobs created by the subdivision construction were estimated to be 12. In all, 61 households on Maui and Oahu will potentially be supported annually by the subdivision construction.

52 households per year on Maui are expected to be supported by construction jobs attributed to the lot build-out, while households annually supported through indirect jobs amounted to 54. Oahu households annually supported through indirect jobs created by the lot build-out were estimated to be 26. In all, 132 households on Maui and Oahu will potentially be supported annually by the lot build-out.

It should be noted that this category does not necessarily represent additional housing units needed for direct and indirect employees, but indicates the potential number of households that would be financially linked to monies earned by such workers.

#### Economic Impacts at Stabilization

##### Employment and Wages

As discussed previously, the average lot size within the Pumehue Heavy Industrial Subdivision will be 2,353 acres. At a 30 percent floor area-to-lot ratio, the average building size within the subdivision is forecasted to be approximately 31,000 square feet. Assuming a 500 square foot per employee ratio, the subdivision is estimated to have about 1,736 employees upon stabilization. Assuming an average annual wage of \$38,025 per employee, the annual wages of the subdivision workforce is estimated to be \$66,011,000.

##### Gross Sales Revenue and Profit

Given the heavy industrial uses expected for this project, an assumption of \$250 gross sales revenue per square foot was applied to the total building area of the subdivision. This resulted in estimated annual gross sales revenue of \$217,000,000 for the subdivision. Assuming an average profit margin of 10 percent, the annual profit generated within the subdivision from the gross sales revenue was calculated to be \$21,700,000 per year.

##### Property Values

Upon stabilization of the subdivision, average property value was assumed to be \$6,232,000, or \$174,504,000 for the entire subdivision.

### Public Costs/Benefits Related to Development Activities

#### County of Maui

Typically, the County accumulates revenue from developments in the form of fees, such as for permits and impacts attributed to the development. However, permit fees are charged to cover the County's cost to provide services like plan review, inspections, etc. Impact fees are more common to residential development; however, even for industrial/commercial developments, the amount of the fees is typically based on an amount that will offset the anticipated additional burden to County facilities. In both cases, no net cost or benefit was considered at the County level.

Cumulative expenditures typically include the County's share of infrastructure and facility improvements, which may include interior roads, water sources, drainage and sewer systems, and recreational areas. In the case of the subject, the Developer will bear the majority of these improvement costs.

#### State of Hawaii

The majority of the revenues to the State of Hawaii will be recognized through various taxes, including Conveyance Tax, Excise Tax, Corporate Income Tax, and Personal Income Tax. For the purposes of this analysis, a conveyance tax based on \$0.20 per \$100 of value was assumed for the lot sales. With the average lot value being approximately \$2,357,000, the conveyance tax due to the development lot sales is about \$132,000.

Excise tax is based on two rates, 4.166 percent for final sales and 0.5 percent for intermediate sales. Over the course of the subdivision construction and subsequent lot build-out periods, the cumulative tax expectancy for final sales amounted to \$4,559,000, while intermediate sales should equal \$6,495,000.

Corporate Income Tax is realized on profits gained through the subdivision construction and subsequent lot build-out periods, which was estimated to be \$3,801,000. Meanwhile, personal income tax was forecasted to be \$3,974,000. As such, cumulative revenues related to the subdivision construction and subsequent lot build-out periods were \$14,401,000.

Cumulative expenses to the State are not expected. The subject's access point from Makulele Highway, a State roadway, is currently a signalized intersection. Given the heavy commercial vehicles that already operate in the area, it is assumed that there would not be a need to expand traffic control measures on Makulele Highway.

Regardless, it is assumed that the Developer would bear the majority of improvement costs necessary for project development.

### Public Costs/Benefits of Stabilization

#### County of Maui

Upon stabilization, County benefits would primarily be generated in the form of real property taxes. As previously discussed, the net taxable value of the 28 improved properties was determined to be about \$165,895,000. The 2011 tax rate for PITT Code 400 (Industrial) is \$7.00 per \$1,000 of assessed value. Thus, the tax obligation for the 28 improved properties was calculated at \$1,161,000 per year.

The Puunene Heavy Industrial Subdivision is slated to be built on State of Hawaii Tax Map Key: (2) 3-8-08-019. According to the County of Maui Real Property Tax Division, the Developer currently pays approximately \$3,000 per year in property taxes for this parcel. This amount was deducted from the annual revenues at stabilization, as the County will no longer receive this income. The resulting net real property tax revenue at stabilization was estimated to be about \$1,158,000 annually.

County of Maui annual costs at stabilization were considered to be for general services, infrastructure maintenance and public safety. These expenditures are more commonly attributed to the residential aspect of the island populace; however, for the purposes of this analysis, proportionate per-capita annual expenditures were utilized. This was based on the assumption that each employee is also a resident of Maui County. The Consultant acknowledges that in using this methodology, the results represent what is likely the high end of the annual cost expectancy to the County.

On a per-capita basis, the annual cost for services was estimated to be approximately \$2,779 per year, plus debt service of \$226 per year. Assuming that each employee spends approximately 20 percent of their time at their job site, the proportionate annual cost for County services was estimated at \$556, with proportionate annual debt service of \$45. The resulting net cost was estimated to be \$1,043,000.

#### State of Hawaii

Upon stabilization, State benefits would be through the receipt of Personal Income Tax, Excise Tax, and Corporate Income Tax as a result of the ongoing businesses. On an annual basis, personal income tax from the subdivision employee wages amounted to \$2,772,000, while excise tax on the gross sales revenue of the businesses was estimated to be \$9,040,000 per year. Corporate income tax as a

result of the gross sales revenue of the businesses was forecasted to be \$1,389,000 per year. Total annual revenues at upon stabilization amounted to \$13,201,000.

Annual expenditures to the State were said to be from the services to residents, and debt service attributed to general improvements. Proportionate per-capita annual expenditures were utilized, similar to the County cost analysis. Again, the Consultant acknowledges that in using this methodology, the results represent what is likely the high end of the annual cost expectancy to the State.

On a per-capita basis, the annual cost for services was estimated to be approximately \$7,442 per year, plus debt service of \$359 per year. Assuming that each employee spends approximately 20 percent of their time at their job site, the proportionate annual cost for County services was estimated at \$1,488, with proportionate annual debt service of \$72. The resulting net cost was estimated to be \$2,708,000.

**Conclusion**

The development of the Puunene Heavy Industrial Subdivision is expected to generate significant expenditures by the project developer, as well as by the secondary owners and developers of the 28 heavy industrial lots. These investments are expected to favorably impact the County and State economies on a broad scale, and in a multitude of ways.

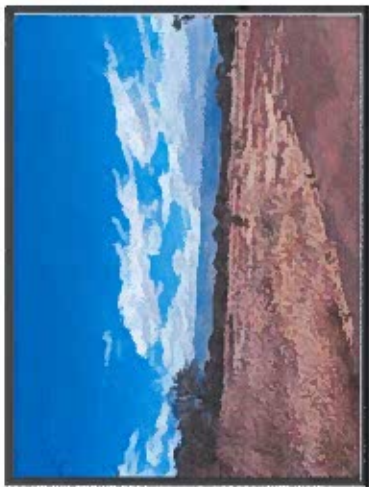
- Site work and infrastructure construction for this subdivision will immediately infuse capital into the County and State economies. Numerous consultants will be involved in the initial planning stages, and the construction trades will benefit from the job creation of this project.
- Advertising for the project and marketing of the lots will benefit graphic artists, advertising companies, newspapers, real estate sales agents, escrow companies, etc.
- Site work and the development of each individual lot (by secondary owners) will again result in additional work for engineers, architects, material suppliers, equipment rentals and sales, landscaping companies, and other related industries.
- The new buildings (by individual lot owners) will not only attract existing businesses, but it should also stimulate the generation of new businesses and employment growth. This will have an indirect effect on retail businesses, restaurants and service establishments as the expanded workforce purchases goods and services. This should pass through the

entire community, causing a ripple effect and increase the amount of capital flowing through Maui.

- Upkeep of this subdivision and the buildings will also translate into work for maintenance companies, painting companies, real estate management and leasing groups, etc.
- During the development of the Puunene Heavy Industrial Subdivision, fiscal benefits to the State of Hawaii will be realized through the receipt of additional income tax, general excise tax, and conveyance tax associated with construction activities. Based on the assessment assumptions contained herein, the cumulative benefits over the course of the development, which includes subdivision construction and subsequent lot build-out, are anticipated to outweigh the public cost to the State.
- Upon stabilization, fiscal benefits from the ongoing operation of the Puunene Heavy Industrial Subdivision will include increases in real estate taxes collected by the County of Maui, as well as additional income tax and general excise tax inflow for the State of Hawaii. Based on the assessment assumptions contain herein, the resulting annual public benefits are expected to consistently outweigh annual public costs, at both the County and State levels.

**EXHIBIT A**  
**Photographs of the Subject Site**

**EXHIBITS**



**Photograph No. 1**

View of northerly portion of subject.  
The camera is facing southeasterly.



**Photograph No. 3**

View of easterly portion of subject.  
The camera is facing northeasterly.



**Photograph No. 2**

View of southern portion of subject.  
The camera is facing northerly.



**Photograph No. 4**

View of westerly portion of subject.  
The camera is facing northwesterly.

**PHOTOGRAPHS OF THE SUBJECT**

**PHOTOGRAPHS OF THE SUBJECT**



**Photograph No. 3**  
View of proposed entrance to subdivision. The camera is facing southerly.



**Photograph No. 7**  
View of Kamacina Road, a portion of which will become an access easement in favor of the subject. The camera is facing easterly.



**Photograph No. 6**  
View of Lower Kheel Road and South Fire Break Road, portions of which will become access easements in favor of the subject. The camera is facing northwesterly.



**Photograph No. 8**  
View of intersection of Kamacina Road and Adelaide Highway. The camera is facing westerly.

**PHOTOGRAPHS OF THE SUBJECT**

**PHOTOGRAPHS OF THE SUBJECT**

**EXHIBIT B**  
**Claritas Demographic Data**

**MAUI COUNTY**



## Pop-Facts: Demographic Snapshot Report

Country: (see appendix for geographies), aggregate

Description	Total Country	%
<b>2015 Projection</b>	153,962	
2010 Estimate	146,193	
<b>2000 Census</b>	128,094	
1990 Census	100,374	
Growth 2010-2015	5.31%	
Growth 2000-2010	14.13%	
Growth 1990-2000	27.62%	
<b>2010 Est. Pop. by Single Race Class</b>	146,193	
White Alone	54,988	37.61
Black or African American Alone	1,361	0.93
Amer. Indian and Alaska Native Alone	731	0.50
Asian Alone	40,388	27.63
Native Hawaiian and Other Pac. Isl. Alone	14,700	10.06
Some Other Race Alone	2,443	1.67
Two or More Races	31,882	21.60
<b>2010 Est. Pop. Hispanic/Latino by Origin</b>	146,193	
Not Hispanic or Latino	131,667	90.06
Hispanic or Latino	14,526	9.94
Mexican	5,914	40.71
Puerto Rican	4,581	31.54
Cuban	55	0.38
All Other Hispanic or Latino	3,976	27.37
<b>2010 Est. Hisp or Latino by Single Race Class</b>	14,526	
White Alone	3,628	24.98
Black or African American Alone	30	0.21
American Indian and Alaska Native Alone	175	1.20
Asian Alone	1,331	9.16
Native Hawaiian and Other Pacific Islander Alone	804	5.53
Some Other Race Alone	2,224	15.31
Two or More Races	6,334	43.60

## Pop-Facts: Demographic Snapshot Report

Country: (see appendix for geographies), aggregate

Description	Total Country	%
<b>2010 Est. Pop. Asian Minor Race by Cat</b>	40,388	
Chinese, except Taiwanese	1,191	2.95
Filipino	22,491	55.69
Japanese	12,829	31.76
Asian Indian	110	0.27
Korean	812	2.01
Vietnamese	332	0.82
Cambodian	10	0.02
Hmong	0	0.00
Laotian	49	0.12
Thai	81	0.20
All Other Asian Races Including 2+ Category	2,483	6.15
<b>2010 Est. Population by Ancestry</b>	146,193	
Pop. Arab	145	0.10
Pop. Czech	180	0.12
Pop. Danish	485	0.33
Pop. Dutch	1,000	0.68
Pop. English	6,800	4.65
Pop. French (except Basque)	2,059	1.41
Pop. French Canadian	582	0.40
Pop. German	6,384	4.37
Pop. Greek	123	0.08
Pop. Hungarian	666	0.46
Pop. Irish	5,553	3.80
Pop. Italian	5,796	3.96
Pop. Lithuanian	179	0.12
Pop. United States or American	1,540	1.05
Pop. Norwegian	1,106	0.76
Pop. Polish	1,742	1.19
Pop. Portuguese	4,494	3.07
Pop. Russian	566	0.39
Pop. Scottish	1,801	1.23
Pop. Scotch-Irish	1,353	0.93
Pop. Slovak	13	0.01
Pop. Sub-Saharan African	84	0.06
Pop. Swedish	1,407	0.96
Pop. Swiss	567	0.39
Pop. Ukrainian	65	0.04
Pop. Welsh	857	0.59
Pop. West Indian (exc Hisp groups)	186	0.13
Pop. Other ancestries	93,362	63.86

## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County	%
2010 Est. Population by Ancestry	7,098	4.86
Pop. Ancestry Unclassified		
2010 Est. Pop. Age 5+ by Language Spoken at Home	136,459	
Speak Only English at Home	109,296	80.09
Speak Asian/Pac. Isl. Lang. at Home	20,876	15.30
Speak Indo-European Language at Home	2,669	1.96
Speak Spanish at Home	3,585	2.63
Speak Other Language at Home	33	0.02
2010 Est. Population by Sex	146,193	
Male	74,631	51.05
Female	71,562	48.95
2010 Est. Population by Age	146,193	
Age 0 - 4	9,734	6.66
Age 5 - 9	8,979	6.14
Age 10 - 14	8,732	5.97
Age 15 - 17	5,643	3.86
Age 18 - 20	4,645	3.18
Age 21 - 24	6,623	4.53
Age 25 - 34	21,519	14.72
Age 35 - 44	21,211	14.51
Age 45 - 54	22,098	15.12
Age 55 - 64	18,620	12.74
Age 65 - 74	9,895	6.77
Age 75 - 84	5,686	3.89
Age 85 and over	2,808	1.92
Age 16 and over	116,907	79.97
Age 18 and over	113,105	77.37
Age 21 and over	108,460	74.19
Age 65 and over	18,389	12.58
2010 Est. Median Age	38.40	
2010 Est. Average Age	38.60	



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## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County	%
2010 Est. Male Population by Age	74,631	
Age 0 - 4	5,031	6.74
Age 5 - 9	4,610	6.18
Age 10 - 14	4,417	5.92
Age 15 - 17	2,877	3.85
Age 18 - 20	2,416	3.24
Age 21 - 24	3,457	4.63
Age 25 - 34	11,890	15.93
Age 35 - 44	11,278	15.11
Age 45 - 54	10,979	14.71
Age 55 - 64	9,388	12.58
Age 65 - 74	4,740	6.35
Age 75 - 84	2,474	3.31
Age 85 and over	1,074	1.44
2010 Est. Median Age, Male	37.32	
2010 Est. Average Age, Male	37.70	
2010 Est. Female Population by Age	71,562	
Age 0 - 4	4,701	6.57
Age 5 - 9	4,369	6.11
Age 10 - 14	4,315	6.03
Age 15 - 17	2,766	3.87
Age 18 - 20	2,229	3.11
Age 21 - 24	3,166	4.42
Age 25 - 34	9,629	13.46
Age 35 - 44	9,933	13.88
Age 45 - 54	11,119	15.54
Age 55 - 64	9,232	12.90
Age 65 - 74	5,155	7.20
Age 75 - 84	3,212	4.49
Age 85 and over	1,734	2.42
2010 Est. Median Age, Female	39.64	
2010 Est. Average Age, Female	39.50	



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## Pop-Facts: Demographic Snapshot Report

Country, (see appendix for geographies), aggregate

Description	Total Country	%
<b>2010 Est. Pop. Age 15+ by Marital Status</b>	<b>118,748</b>	
Total, Never Married	37,238	31.36
Males, Never Married	21,914	18.45
Females, Never Married	15,324	12.90
Married, Spouse present	54,591	45.97
Married, Spouse absent	6,861	5.78
Widowed	6,128	5.16
Males Widowed	1,208	1.02
Females Widowed	4,920	4.14
Divorced	13,930	11.73
Males Divorced	6,403	5.39
Females Divorced	7,527	6.34
<b>2010 Est. Pop. Age 25+ by Educ. Attainment</b>	<b>101,837</b>	
Less than 9th grade	5,342	5.25
Some High School, no diploma	6,039	5.93
High School Graduate (or GED)	33,352	32.75
Some College, no degree	22,833	22.42
Associate Degree	9,806	9.63
Bachelor's Degree	16,576	16.28
Master's Degree	5,208	5.11
Professional School Degree	2,101	2.06
Doctorate Degree	580	0.57
<b>2010 Est. Pop. Age 25+ by Educ. Attain. Hisp. or Lat.</b>	<b>101,837</b>	
Less than 9th grade	269	0.26
Some High School, no diploma	1,258	1.24
High School Graduate (or GED)	3,740	3.67
Some College, no degree	1,409	1.38
Associate Degree	569	0.56
Bachelor's Degree	250	0.25
Master's Degree	292	0.29

## Pop-Facts: Demographic Snapshot Report

Country, (see appendix for geographies), aggregate

Description	Total Country	%
<b>Households</b>		
2015 Projection	54,018	
2010 Estimate	50,880	
2000 Census	43,507	
1990 Census	33,145	
Growth 2010-2015	6.17%	
Growth 2000-2010	16.09%	
Growth 1990-2000	31.26%	
<b>2010 Est. Households by Household Type</b>	<b>50,880</b>	
Family Households	34,948	68.69
Nuclear Households	15,932	31.31
1,608		
2010 Est. Group-Quarters Population	1,608	
<b>2010 HHs by Ethnicity, Hispanic/Latino</b>	<b>3,585</b>	<b>7.05</b>
<b>2010 Est. HHs by HH Income</b>	<b>50,880</b>	
Income Less than \$15,000	4,374	8.60
Income \$15,000 - \$24,999	3,869	7.60
Income \$25,000 - \$34,999	4,201	8.26
Income \$35,000 - \$49,999	6,485	12.75
Income \$50,000 - \$74,999	9,847	19.35
Income \$75,000 - \$99,999	8,241	16.20
Income \$100,000 - \$124,999	4,520	8.88
Income \$125,000 - \$149,999	3,216	6.32
Income \$150,000 - \$199,999	3,251	6.39
Income \$200,000 - \$499,999	2,340	4.60
Income \$500,000 and more	536	1.05
<b>2010 Est. Average Household Income</b>	<b>\$85,521</b>	
<b>2010 Est. Median Household Income</b>	<b>\$66,530</b>	
<b>2010 Est. Per Capita Income</b>	<b>\$30,004</b>	

## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County %
<b>2010 Hispanic III Inc by Single Race Class, or Ethn</b>	
White Alone	67,201
Black or African American Alone	37,839
American Indian and Alaska Native Alone	55,000
Asian Alone	73,355
Native Hawaiian and Other Pacific Islander Alone	57,608
Some Other Race Alone	47,914
Two or More Races	62,030
Hispanic or Latino	53,365
Not Hispanic or Latino	67,580
<b>2010 Est. Households III by Type, Presence Own Children</b>	<b>34,948</b>
Married-Couple Family, own children	11,017 31.52
Married-Couple Family, no own children	14,837 42.45
Male Householder, own children	1,152 3.30
Male Householder, no own children	1,686 4.82
Female Householder, own children	3,127 8.95
Female Householder, no own children	3,129 8.95
<b>2010 Est. Households by Household Size</b>	<b>50,880</b>
1-person household	11,722 23.04
2-person household	15,854 31.16
3-person household	8,725 17.15
4-person household	6,925 13.61
5-person household	3,722 7.32
6-person household	1,988 3.91
7 or more person household	1,941 3.82
<b>2010 Est. Average Household Size</b>	<b>2.84</b>

## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total County %
<b>2010 Est. Households by Presence of People</b>	<b>50,880</b>
Households with 1 or more People under Age 18:	
Married-Couple Family	17,967 35.31
Other Family, Male Householder	12,183 23.94
Other Family, Female Householder	1,657 3.26
Nonfamily, Male Householder	4,089 8.04
Nonfamily, Female Householder	24 0.05
	14 0.03
Households no People under Age 18:	<b>32,913 64.69</b>
Married-Couple Family	12,978 25.51
Other Family, Male Householder	1,105 2.17
Other Family, Female Householder	1,996 3.92
Nonfamily, Male Householder	8,770 17.24
Nonfamily, Female Householder	8,064 15.85
<b>2010 Est. Households by Number of Vehicles</b>	<b>50,880</b>
No Vehicles	2,629 5.17
1 Vehicle	15,744 30.94
2 Vehicles	19,766 38.85
3 Vehicles	7,584 14.91
4 Vehicles	3,316 6.52
5 or more Vehicles	1,841 3.62
<b>2010 Est. Average Number of Vehicles</b>	<b>2.01</b>
<b>Family Households</b>	
2015 Projection	37,102
2010 Estimate	34,948
2000 Census	29,899
1990 Census	23,537
Growth 2010-2015	6.16%
Growth 2000-2010	16.89%
Growth 1990-2000	27.03%
<b>2010 Est. Families by Poverty Status</b>	<b>34,948</b>
2010 Families at or Above Poverty	33,167 94.90
2010 Families at or Above Poverty with Children	16,990 48.62
2010 Families Below Poverty	1,781 5.10
2010 Families Below Poverty with Children	1,345 3.85

## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total Count	%
<b>2010 Est. Pop. Age 16+ by Employment Status</b>	<b>116,907</b>	
In Armed Forces	396	0.34
Civilian - Employed	77,635	66.41
Civilian - Unemployed	3,734	3.19
Not in Labor Force	35,142	30.06
<b>2010 Est. Civ. 16+ Employed Pop. 16+ by Class of Worker</b>	<b>74,231</b>	
For-Profit Private Workers	50,672	68.26
Non-Profit Private Workers	4,052	5.46
Local Government Workers	2,815	3.79
State Government Workers	6,815	9.18
Federal Government Workers	1,363	1.84
Self Emp Workers	8,207	11.06
Unpaid Family Workers	307	0.41
<b>2010 Est. Civ. 16+ Employed Pop. 16+ by Occupation</b>	<b>74,231</b>	
Architect/Engineer	958	1.29
Arts/Entertain/Spents	2,212	2.98
Building Grounds Maint	5,559	7.49
Business/Financial Ops	1,742	2.35
Community/Soc Svcs	1,249	1.68
Computer/Mathematical	501	0.67
Construction/Extraction	6,380	8.59
Edu/Training/Library	4,083	5.50
Farm/Fish/Forestry	880	1.19
Food Prep/Serving	6,904	9.42
Health Practitioner/Tec	2,753	3.71
Healthcare Support	1,620	2.18
Maintenance Repair	2,864	3.86
Legal	539	0.73
Life/Phys/Soc Science	518	0.70
Management	6,545	8.82
Office/Admin Support	8,824	11.89
Production	2,145	2.89
Protective Svcs	2,472	3.33
Sales/Related	8,881	11.96
Personal Care/Svc	2,800	3.77
Transportation/Moving	3,712	5.00

## Pop-Facts: Demographic Snapshot Report

County, (see appendix for geographies), aggregate

Description	Total Count	%
<b>2010 Est. Pop. Age 16+ by Description Classification</b>	<b>74,231</b>	
Blue Collar	15,101	20.34
White Collar	38,805	52.28
Service and Farm	20,325	27.38
<b>2010 Est. Workers Age 16+ by Transp. To Work</b>	<b>72,261</b>	
Drove Alone	50,850	70.37
Car Pooled	10,971	15.18
Public Transportation	1,361	1.88
Walked	1,986	2.75
Bicycle	461	0.64
Other Means	1,541	2.13
Worked at Home	5,091	7.05
<b>2010 Est. Workers Age 16+ by Travel Time to Work</b>	<b>72,261</b>	
Less than 15 Minutes	26,723	36.98
15 - 29 Minutes	21,220	29.37
30 - 44 Minutes	12,554	17.37
45 - 59 Minutes	4,816	6.75
60 or more Minutes	3,224	4.60
<b>2010 Est. Avg. Travel Time to Work in Minutes</b>	<b>22.72</b>	
<b>2010 Est. Tenure of Occupied Housing Units</b>	<b>50,880</b>	
Owner Occupied	20,265	37.52
Renter Occupied	21,615	42.48
<b>2010 Owner Occ. HUs: Avg. Length of Residence</b>	<b>17</b>	
<b>2010 Renter Occ. HUs: Avg. Length of Residence</b>	<b>8</b>	

## Pop-Facts: Demographic Snapshot Report

Country, (see appendix for geographies), aggregate

Description	Total Country
<b>2010 Est. All Owners-Occupied Housing Units</b>	<b>29,265</b>
Value Less than \$20,000	67 0.23
Value \$20,000 - \$39,999	53 0.18
Value \$40,000 - \$59,999	130 0.44
Value \$60,000 - \$79,999	66 0.23
Value \$80,000 - \$99,999	82 0.28
Value \$100,000 - \$149,999	300 1.03
Value \$150,000 - \$199,999	625 2.14
Value \$200,000 - \$299,999	2,989 10.21
Value \$300,000 - \$399,999	3,835 13.10
Value \$400,000 - \$499,999	4,622 15.79
Value \$500,000 - \$749,999	8,863 30.29
Value \$750,000 - \$999,999	3,625 12.39
Value \$1,000,000 or more	4,008 13.70
<b>2010 Est. Median All-Owner-Occupied Housing Value</b>	<b>\$552,572</b>

### 2010 Est. Housing Units by Units in Structure

<b>66,980</b>	
1 Unit Attached	2,868 4.28
1 Unit Detached	37,488 55.97
2 Units	3,871 5.78
3 or 4 Units	2,482 3.71
5 to 19 Units	8,881 13.26
20 to 49 Units	4,302 6.42
50 or More Units	7,024 10.49
Mobile Home or Trailer	64 0.10
Boat, RV, Van, etc	0 0.00
<b>66,980</b>	

### 2010 Est. Housing Units by Year Structure Built

<b>66,980</b>	
Housing Unit Built 2000 or later	11,064 16.52
Housing Unit Built 1990 to 1999	13,092 19.55
Housing Unit Built 1980 to 1989	14,033 20.95
Housing Unit Built 1970 to 1979	16,550 24.71
Housing Unit Built 1960 to 1969	5,562 8.30
Housing Unit Built 1950 to 1959	2,756 4.11
Housing Unit Built 1940 to 1949	1,645 2.46
Housing Unit Built 1939 or Earlier	2,278 3.40
<b>2010 Est. Median Year Structure Built **</b>	<b>1983</b>

\*\* 1939 will appear when at least half of the Housing Units in this reports area were built in 1939 or earlier

## Pop-Facts: Demographic Snapshot Report

Appendix: Area Listing

Area Name:

Type: List - County Reporting Detail: Aggregate Reporting Level: County  
 Geography Code: Geography Name: Maui County, HI  
 Geography Code: Geography Name:

Project Information:

Site: 1

Order Number: 969072959

## Pop-Facts: Demographic Snapshot 2010 Report

Places (see appendix for geographies), aggregate

Description	Total Place	%
<b>2013 Projection</b>		
2013 Projection	49,269	
2010 Estimate	46,795	
<b>2000 Census</b>		
2000 Census	40,867	
1990 Census	32,310	
<b>Growth 2010-2015</b>		
Growth 2010-2015	5.29%	
<b>Growth 2000-2010</b>		
Growth 2000-2010	14.51%	
Growth 1990-2000	26.48%	
<b>2010 Est. Pop. by Single Race Class</b>		
<b>White Alone</b>	<b>7,916</b>	<b>16.92</b>
Black or African American Alone	241	0.52
Amer Indian and Alaska Native Alone	203	0.43
Asian Alone	20,346	43.48
Native Hawaiian and Other Pac Isl. Alone	5,222	11.16
Some Other Race Alone	686	1.47
Two or More Races	12,181	26.03
<b>2010 Est. Pop. Hispanic or Latino, by Origin</b>		
<b>Non Hispanic or Latino</b>	<b>41,668</b>	<b>89.04</b>
<b>Hispanic or Latino</b>	<b>5,127</b>	<b>10.96</b>
Mexican	1,499	29.24
Puerto Rican	2,135	41.64
Cuban	7	0.14
All Other Hispanic or Latino	1,486	28.98
<b>2010 Est. Hisp or Latina by Single Race Class</b>		
<b>White Alone</b>	<b>880</b>	<b>17.16</b>
<b>Black or African American Alone</b>	<b>6</b>	<b>0.12</b>
American Indian and Alaska Native Alone	66	1.29
Asian Alone	580	11.31
Native Hawaiian and Other Pacific Islander Alone	307	5.99
Some Other Race Alone	632	12.33
Two or More Races	2,656	51.80

CENTRAL MAUI



Prepared On: Tue Aug 31, 2010 Page 1 OF 12

Prepared By:

Nelson Sullivan Center 1 846 6511

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CLARITAS  
MARKETPLACE

## Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Pop. Asian Alone Race by Cat</b>	<b>20,346</b>	
Chinese, except Taiwanese	472	2.32
<b>Filipino</b>	<b>10,764</b>	<b>52.90</b>
Japanese	7,319	35.97
<b>Asian Indian</b>	<b>26</b>	<b>0.13</b>
Korean	451	2.22
<b>Vietnamese</b>	<b>131</b>	<b>0.64</b>
Cambodian	3	0.01
<b>Hmong</b>	<b>0</b>	<b>0.00</b>
Laotian	23	0.11
<b>Thai</b>	<b>23</b>	<b>0.11</b>
All Other Asian Races Including 2+ Category	1,135	5.58
<b>2010 Est. Population by Ancestry</b>	<b>46,795</b>	
<b>Pop. Arab</b>	<b>38</b>	<b>0.08</b>
Pop. Czech	25	0.05
<b>Pop. Danish</b>	<b>14</b>	<b>0.03</b>
Pop. Dutch	73	0.16
<b>Pop. English</b>	<b>814</b>	<b>1.74</b>
Pop. French (except Basque)	284	0.61
<b>Pop. French Canadian</b>	<b>145</b>	<b>0.31</b>
Pop. German	801	1.71
<b>Pop. Greek</b>	<b>1</b>	<b>0.00</b>
Pop. Hungarian	76	0.16
<b>Pop. Irish</b>	<b>712</b>	<b>1.52</b>
Pop. Italian	669	1.43
<b>Pop. Lithuanian</b>	<b>14</b>	<b>0.03</b>
Pop. United States or American	209	0.45
<b>Pop. Norwegian</b>	<b>152</b>	<b>0.32</b>
Pop. Polish	183	0.39
<b>Pop. Portuguese</b>	<b>1,514</b>	<b>3.24</b>
Pop. Russian	36	0.08
<b>Pop. Scottish</b>	<b>165</b>	<b>0.35</b>
Pop. Scotch-Irish	156	0.33
<b>Pop. Slovak</b>	<b>1</b>	<b>0.00</b>
Pop. Sub-Saharan African	19	0.04
<b>Pop. Swedish</b>	<b>187</b>	<b>0.40</b>
Pop. Swiss	18	0.04
<b>Pop. Ukrainian</b>	<b>1</b>	<b>0.00</b>
Pop. Welsh	80	0.17
<b>Pop. West Indian (exc Hisp groups)</b>	<b>41</b>	<b>0.09</b>
Pop. Other ancestries	38,217	81.67

## Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Population by Ancestry</b>	<b>21,190</b>	<b>4.59</b>
Pop. Ancestry Unclassified	2,190	4.59
<b>2010 Est. Pop. Age 5+ by Language Spoken at Home</b>	<b>43,428</b>	
<b>Speak Only English at Home</b>	<b>32,768</b>	<b>75.45</b>
Speak Asian/Pac Isl. Lang. at Home	9,355	21.54
<b>Speak Indo-European Language at Home</b>	<b>385</b>	<b>0.89</b>
Speak Spanish at Home	913	2.10
<b>Speak Other Language at Home</b>	<b>7</b>	<b>0.02</b>
<b>2010 Est. Population by Sex</b>	<b>46,795</b>	
Male	23,694	50.63
Female	23,101	49.37
<b>2010 Est. Population by Age</b>	<b>46,795</b>	
Age 0 - 4	3,367	7.20
Age 5 - 9	2,954	6.31
Age 10 - 14	2,937	6.28
<b>Age 15 - 17</b>	<b>1,840</b>	<b>3.93</b>
Age 18 - 20	1,548	3.31
<b>Age 21 - 24</b>	<b>2,157</b>	<b>4.61</b>
Age 25 - 34	7,335	15.67
Age 35 - 44	6,462	13.81
Age 45 - 54	6,062	12.95
<b>Age 55 - 64</b>	<b>5,352</b>	<b>11.44</b>
Age 65 - 74	3,171	6.78
<b>Age 75 - 84</b>	<b>2,419</b>	<b>5.17</b>
Age 85 and over	1,191	2.55
Age 16 and over	36,937	78.93
<b>Age 18 and over</b>	<b>35,697</b>	<b>76.28</b>
Age 21 and over	34,149	72.98
Age 65 and over	6,781	14.49
<b>2010 Est. Median Age</b>	<b>36.95</b>	
<b>2010 Est. Average Age</b>	<b>38.40</b>	



## Pop-Facts: Demographic Snapshot 2010 Report

Place: (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Male Population by Age</b>	<b>23,694</b>	
Age 0 - 4	1,747	7.37
Age 5 - 9	1,517	6.40
Age 10 - 14	1,485	6.27
Age 15 - 17	937	3.95
Age 18 - 20	856	3.61
Age 21 - 24	1,125	4.75
Age 25 - 34	4,061	17.14
Age 35 - 44	3,425	14.46
Age 45 - 54	3,021	12.75
Age 55 - 64	2,646	11.17
Age 65 - 74	1,423	6.01
Age 75 - 84	1,016	4.29
Age 85 and over	435	1.84
<b>2010 Est. Median Age, Male</b>	<b>35.35</b>	
<b>2010 Est. Average Age, Male</b>	<b>37.10</b>	
<b>2010 Est. Female Population by Age</b>	<b>23,101</b>	
Age 0 - 4	1,620	7.01
Age 5 - 9	1,437	6.22
Age 10 - 14	1,452	6.29
Age 15 - 17	903	3.91
Age 18 - 20	692	3.00
Age 21 - 24	1,032	4.47
Age 25 - 34	3,274	14.17
Age 35 - 44	3,037	13.15
Age 45 - 54	3,041	13.16
Age 55 - 64	2,706	11.71
Age 65 - 74	1,748	7.57
Age 75 - 84	1,403	6.07
Age 85 and over	756	3.27
<b>2010 Est. Median Age, Female</b>	<b>38.76</b>	
<b>2010 Est. Average Age, Female</b>	<b>39.80</b>	

## Pop-Facts: Demographic Snapshot 2010 Report

Place: (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Pop. Age 15+ by Marital Status</b>	<b>37,537</b>	
Total, Never Married	11,963	31.87
Males, Never Married	6,997	18.64
Females, Never Married	4,966	13.23
Married, Spouse present	16,993	45.27
Married, Spouse absent	2,676	7.13
Widowed	2,447	6.52
<b>Males Widowed</b>	<b>490</b>	<b>1.31</b>
Females Widowed	1,957	5.21
<b>Divorced</b>	<b>3,458</b>	<b>9.21</b>
Males Divorced	1,569	4.18
Females Divorced	1,889	5.03
<b>2010 Est. Pop. Age 25+ by Edn. Attainment</b>	<b>31,992</b>	
Less than 9th grade	2,757	8.62
Some High School, no diploma	2,365	7.39
High School Graduate (or GED)	11,515	35.99
Some College, no degree	6,245	19.52
Associate Degree	3,065	9.58
Bachelor's Degree	4,389	13.72
Master's Degree	1,127	3.52
Professional School Degree	491	1.53
Doctorate Degree	38	0.12
<b>2010 Est. Pop. Age 25+ by Edn. Attainm., Hispanic/Lat</b>	<b>2,684</b>	
Less than 9th grade	99	3.69
Some High School, no diploma	364	13.56
High School Graduate (or GED)	1,360	50.67
Some College, no degree	444	16.54
Associate Degree	196	7.30
Bachelor's Degree	111	4.14
Graduate or Professional Degree	110	4.10

## Pop-Facts: Demographic Snapshot 2010 Report

Place: (see appendix for geographies), aggregate

Description	Total Place	%
<b>Households</b>		
2015 Projection	15,593	
2010 Estimate	14,735	
<b>2000 Census</b>	<b>12,626</b>	
1990 Census	9,953	
Growth 2010-2015	5.82%	
Growth 2000-2010	16.70%	
Growth 1990-2000	26.86%	
<b>2010 Est. Households, by Household Type</b>	<b>14,735</b>	
<b>Family Households</b>	<b>10,921</b>	<b>74.12</b>
Nonfamily Households	3,814	25.88
<b>2010 Est. Group-Quarters Population</b>	<b>937</b>	
<b>2010 HHS, by Ethnicity, Hispanic/Latino</b>	<b>1,186</b>	<b>8.05</b>
<b>2010 Est. HHS, by HIE Income</b>	<b>14,735</b>	
Income Less than \$15,000	1,351	9.17
Income \$15,000 - \$24,999	1,288	8.74
Income \$25,000 - \$34,999	1,150	7.80
Income \$35,000 - \$49,999	1,797	12.20
Income \$50,000 - \$74,999	2,955	20.05
Income \$75,000 - \$99,999	2,328	15.80
Income \$100,000 - \$124,999	1,388	9.42
Income \$125,000 - \$149,999	928	6.30
Income \$150,000 - \$199,999	888	6.03
Income \$200,000 - \$499,999	553	3.75
Income \$500,000 and more	109	0.74
<b>2010 Est. Average Household Income</b>	<b>\$81,332</b>	
<b>2010 Est. Median Household Income</b>	<b>\$65,071</b>	
<b>2010 Est. Per Capita Income</b>	<b>\$25,887</b>	

## Pop-Facts: Demographic Snapshot 2010 Report

Place: (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Median HHS, by Single Race/Latino or Ethnic</b>		
White Alone	57,933	
Black or African American Alone	50,466	
American Indian and Alaska Native Alone	60,417	
Asian Alone	73,339	
Native Hawaiian and Other Pacific Islander Alone	57,698	
Some Other Race Alone	73,877	
<b>Two or More Races</b>	<b>61,999</b>	
Hispanic or Latino	44,619	
Not Hispanic or Latino	66,688	
<b>2010 Est. Family HHS, by Presence Own Children</b>	<b>10,921</b>	
Married-Couple Family, own children	3,524	32.27
Married-Couple Family, no own children	4,280	39.19
Male Householder, own children	309	2.83
Male Householder, no own children	572	5.24
Female Householder, own children	1,008	9.23
Female Householder, no own children	1,228	11.24
<b>2010 Est. Households, by Household Size</b>	<b>14,735</b>	
1-person household	3,078	20.89
2-person household	3,908	26.52
3-person household	2,610	17.71
4-person household	2,252	15.28
5-person household	1,340	9.09
6-person household	723	4.91
7 or more person household	824	5.59
<b>2010 Est. Average Household Size</b>	<b>3.11</b>	

## Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Households by Presence of People</b>	<b>14,735</b>	
<b>Households with 1 or more People under Age 18:</b>		
Married-Couple Family	5,877	39.88
Other Family, Male Householder	4,009	68.22
Other Family, Female Householder	472	8.03
Nonfamily, Male Householder	1,388	23.62
Nonfamily, Female Householder	3	0.05
Nonfamily, Female Householder	5	0.09
<b>Households no People under Age 18:</b>	<b>8,858</b>	<b>60.12</b>
Married-Couple Family	3,664	41.36
Other Family, Male Householder	378	4.27
Other Family, Female Householder	785	8.86
Nonfamily, Male Householder	1,890	21.34
Nonfamily, Female Householder	2,141	24.17
<b>2010 Est. Households by Number of Vehicles</b>	<b>14,735</b>	
<b>No Vehicles</b>	<b>1,015</b>	<b>6.89</b>
1 Vehicle	4,451	30.21
2 Vehicles	5,283	35.85
3 Vehicles	2,300	15.61
4 Vehicles	1,070	7.26
5 or more Vehicles	616	4.18
<b>2010 Est. Average Number of Vehicles</b>	<b>2.03</b>	
<b>Family Households</b>		
2015 Projection	11,589	
2010 Estimate	10,921	
2000 Census	9,312	
1990 Census	7,549	
Growth 2010-2015	6.12%	
Growth 2000-2010	17.28%	
Growth 1990-2000	23.35%	
<b>2010 Est. Families by Poverty Status</b>	<b>10,921</b>	
<b>2010 Families at or Above Poverty</b>	<b>10,291</b>	<b>94.23</b>
2010 Families at or Above Poverty with Children	5,416	49.59
<b>2010 Families Below Poverty</b>	<b>630</b>	<b>5.77</b>
<b>2010 Families Below Poverty with Children</b>	<b>499</b>	<b>4.57</b>

## Pop-Facts: Demographic Snapshot 2010 Report

Place, (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Pop. Age 16+ by Employment Status</b>	<b>36,937</b>	
<b>In Armed Forces</b>	<b>150</b>	<b>0.41</b>
Civilian - Employed	22,730	61.54
Civilian - Unemployed	1,231	3.31
Not in Labor Force	12,836	34.75
<b>2010 Est. Civ. Employed Pop. by Class of Worker</b>	<b>21,397</b>	
<b>For-Profit Private Workers</b>	<b>14,966</b>	<b>69.94</b>
Non-Profit Private Workers	1,252	5.85
<b>Local Government Workers</b>	<b>1,170</b>	<b>5.47</b>
State Government Workers	2,324	10.86
<b>Federal Government Workers</b>	<b>401</b>	<b>1.87</b>
Self-Emp Workers	1,205	5.63
<b>Unpaid Family Workers</b>	<b>79</b>	<b>0.37</b>
<b>2010 Est. Civ. Employed Pop. by Occupation</b>	<b>21,397</b>	
Architect/Engineer	382	1.79
Arts/Entertain/Sports	324	1.51
Building Grounds Maint	1,888	8.82
Business/Financial Ops	498	2.33
Community/Soc Svcs	293	1.37
Computer/Mathematical	110	0.51
Construction/Extraction	1,519	7.10
Edu/Training/Library	1,016	4.75
Farm/Fish/Forestry	315	1.47
Food Prep/Serving	1,478	6.91
Health Practitioner/Tec	807	3.77
Healthcare Support	564	2.64
Ma intenance Repair	1,085	5.07
Legal	186	0.87
Life/Phys/Soc Science	146	0.68
Management	1,355	6.33
Office/Admin Support	3,012	14.08
Production	826	3.86
Protective Svcs	807	3.77
Sales/Related	2,824	13.20
Personal Care/Svc	617	2.88
Transportation/Moving	1,345	6.29

## Pop-Facts: Demographic Snapshot 2010 Report

Place (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. Pop. by Occupational Classification</b>	<b>21,397</b>	
Blue Collar	4,775	22.32
White Collar	10,953	51.19
Service and Farm	5,669	26.49
<b>2010 Est. Workers Age (65+), Transport. To Work</b>	<b>20,957</b>	
Drove Alone	15,014	71.64
Car Pooled	3,830	18.28
Public Transportation	474	2.26
Walked	400	1.91
Bicycle	59	0.28
Other Means	464	2.21
Worked at Home	716	3.42
<b>2010 Est. Workers Age (65+), Travel Time to Work *</b>	<b>9,000</b>	
Less than 15 Minutes	5,176	
15 - 29 Minutes	3,622	
30 - 44 Minutes	1,772	
45 - 59 Minutes	889	
60 or more Minutes	22,296	
<b>2010 Est. Tenure of Occupied Housing Units</b>	<b>14,735</b>	
Owner Occupied	9,000	61.08
Renter Occupied	5,735	38.92
<b>2010 Owner Occ. HUs: Avg. Length of Residence</b>	<b>19</b>	
<b>2010 Renter Occ. HUs: Avg. Length of Residence</b>	<b>9</b>	

## Pop-Facts: Demographic Snapshot 2010 Report

Place (see appendix for geographies), aggregate

Description	Total Place	%
<b>2010 Est. All Owner-Occupied Housing Values</b>	<b>9,000</b>	
Value Less than \$20,000	1	0.01
Value \$20,000 - \$39,999	26	0.29
Value \$40,000 - \$59,999	74	0.82
Value \$60,000 - \$79,999	35	0.39
Value \$80,000 - \$99,999	38	0.42
Value \$100,000 - \$149,999	60	0.67
Value \$150,000 - \$199,999	214	2.38
Value \$200,000 - \$299,999	878	9.76
Value \$300,000 - \$399,999	1,430	15.89
Value \$400,000 - \$499,999	1,927	21.41
Value \$500,000 - \$749,999	3,104	34.49
Value \$750,000 - \$999,999	814	9.04
Value \$1,000,000 or more	399	4.43
<b>2010 Est. Median All Owner-Occupied Housing Value</b>	<b>\$490,482</b>	
<b>2010 Est. Housing Units by Units in Structure</b>	<b>15,348</b>	
1 Unit Attached	984	6.41
1 Unit Detached	10,542	68.69
2 Units	490	3.19
3 or 4 Units	545	3.55
5 to 19 Units	1,892	12.33
20 to 49 Units	468	3.05
50 or More Units	399	2.60
Mobile Home or Trailer	28	0.18
Boat, RV, Van, etc.	0	0.00
<b>2010 Est. Housing Units by Year Structure Built</b>	<b>15,348</b>	
Housing Unit Built 2000 or later	2,402	15.65
Housing Unit Built 1990 to 1999	3,146	20.50
Housing Unit Built 1980 to 1989	2,377	15.49
Housing Unit Built 1970 to 1979	2,586	16.85
Housing Unit Built 1960 to 1969	2,305	15.02
Housing Unit Built 1950 to 1959	1,367	8.91
Housing Unit Built 1940 to 1949	497	3.24
Housing Unit Built 1939 or Earlier	668	4.35
<b>2010 Est. Median Year Structure Built **</b>	<b>1981</b>	

\*This row intentionally left blank. No total category data is available.

\*\*1939 will appear when at least half of the Housing Units in this reports area were built in 1939 or earlier

## Pop-Facts: Demographic Snapshot 2010 Report

### Appendix: Area Listing

Area Name:

Type: List - Place

Reporting Detail: Aggregate

Reporting Level: Place

Geography Code: Geography Name

Geography Code: Geography Name

1522700 Kahului CDP

1575950 Waikapu CDP

1575510 Waihee-Waiehu CDP

1577450 Wailuku CDP

**Project Information:**

Site: 1

Order Number: 96914179



Prepared On: Thu Aug 31, 2010 Page 12 Of 12 Prepared In

Marketplace Solution Center 1 800 866 6511

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Chapter 19.26

M-2 HEAVY INDUSTRIAL DISTRICT

Sections:

- 19.26.010 Generally
- 19.26.020 Use regulations
- 19.26.030 Height regulations
- 19.26.040 Area regulations
- 19.26.050 Yards

19.26.010 Generally.

Those uses which include the manufacture or treatment of goods from raw materials are permitted in the M-2 heavy industrial district. Those uses which are listed under subsection 28 of Section 19.26.020 cannot be automatically included in the heavy industrial district because of their hazardous or offensive nature. Provision is made whereby the location and conduct of these uses is subject to review and approval of the commission and council of the county of Maui as conforming to the intent of this title. (Prior code § 8-1.13(a))

19.26.020 Use regulations.

Within the M-2 district, no building, structure or premises shall be used and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

1. Any use permitted in the B-1, B-2 and B-3 business districts and M-1 district; provided, however, that no building, structure or portion thereof shall be hereafter erected, converted, or moved onto any lot in an M-2 district for dwelling purposes, including hotels and motels, except living quarters used by watchmen or custodians of industrially used property;
2. Alcohol manufacture;
3. Automobile wrecking, if conducted within a building;
4. Brick, tile or terra cotta manufacture;
5. Boiler and steel works;
6. Canneries, except fish canneries;
7. Chemical manufacture;
8. Concrete or cement products manufacture;
9. Factories;
10. Foundries;
11. Freight classification yard (railroad);
12. Junk establishment used for storing, depositing, or keeping junk or similar goods for business purposes, provided such establishment shall not be nearer than eight feet from any other property line for the storage of the junk or similar goods except in buildings entirely enclosed with walls;
13. Lime kilns which do not emit noxious and offensive fumes;
14. Lumber yard;
15. Machine shops;
16. Oil storage plants;
17. Oilcloth or linoleum manufacture;
18. Paint, oil (including linseed), shellac, turpentine, lacquer, or varnish manufacture;
19. Petroleum products manufacture or wholesale storage of petroleum;
20. Planing mill;
21. Plastic manufacture;

22. Railroad repair shops;

23. Rolling mills;

24. Ship works;

25. Soap manufacture;

26. Sugar mills and refineries;

27. In general those uses which may be obnoxious or offensive by reason of emission of odor, dust, smoke, gas, noise, vibration and the like and not allowed in any other district; provided, however, that any use not specified in this section shall be approved by the commission as conforming to the intent of this title;

28. All of the following uses are declared to be special uses and a use permit shall be obtained from the commission with approval of the council of the county for the location and operation thereof in the M-2 district:

- a. Acetylene gas manufacture or bulk storage,
  - b. Acid manufacture,
  - c. Ammonia, bleaching powder or chlorine manufacture,
  - d. Asphalt manufacture of refueling and asphaltic concrete plant,
  - e. Blast furnace or coke oven,
  - f. Cement, lime, gypsum, or plaster of paris manufacture,
  - g. Crematories,
  - h. Creosote treatment plants,
  - i. Explosives manufacture or storage,
  - j. Fertilizer manufacture,
  - k. Fish canneries,
  - l. Garbage, offal or dead animals reduction or dumping,
  - m. Gas manufacture,
  - n. Glue manufacture,
  - o. Quarry or stone mill,
  - p. Rock, sand or gravel or earth excavation, crushing or distribution,
  - q. Petroleum refinery,
  - r. Saw mill,
  - s. Slaughter of animals,
  - t. Stock yard or deeding pens,
  - u. Tannery or the curing or storage of raw hides.
- (Prior code § 8-1.13(b))

19.26.030 Height regulations.

No building or structure, and no enlargement of any building or structure, except smoke stacks or chimneys, shall be hereafter erected or maintained so as to exceed six stories. (Prior code § 8-1.13(c))

19.26.040 Area regulations.

Every lot within an M-2 district shall have a minimum lot area of not less than ten thousand square feet with a minimum lot width of seventy-five feet. (Prior code § 8-1.13(d))

#### 19.26.050 Yards.

- A. Front Yard. There shall be a front yard of not less than ten feet from any setback line for street widening purposes; and if no such line exists, then from the main street or front boundary.
- B. Side Yard.
1. Where the side or rear of the lot in an M-2 district abuts upon the side or rear of a lot of any residential, duplex, apartment, hotel, agricultural or farming districts, there shall be a side yard of ten feet.
  2. In all other cases, a side yard for a heavy industrial building shall not be required.

#### C. Rear yard.

No rear yard spacing shall be required except where the M-2 district abuts upon an agricultural, farming, residential, duplex, apartment or hotel district, in which case there shall be a rear yard of not less than fifteen feet. (Prior code § B-1.12(e))

#### Chapter 19.24

### M-1 LIGHT INDUSTRIAL DISTRICT

#### Sections:

- 19.24.010 Generally
- 19.24.020 Use regulations
- 19.24.030 Height regulations
- 19.24.040 Area regulations
- 19.24.050 Yards

#### 19.24.010 Generally.

The M-1 light industrial district is designed to contain mostly warehousing and distribution types of activity, and permits most compounding, assembly, or treatment of articles or materials with the exception of heavy manufacturing and processing of raw materials. Residential uses are excluded from this district. (Prior code § B-1.12(a))

#### 19.24.020 Use regulations.

A. Within the M-1 district, no building, structure or premises shall be used and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

1. Any use permitted in a B-1, B-2, or B-3 district; provided, however, that no building, structure or portion thereof shall be hereafter erected, converted, or moved onto any lot in an M-1 district for dwelling purposes, including hotels and motels, except living quarters used by waitmen or custodians of industrially used property;
2. Animal kennels;
3. Carpet cleaning plants;
4. Cold storage plants;
5. Commercial laundries;
6. Craft, cabinet and furniture manufacturing;
7. Assembly of electrical appliances, radios and phonographs including the manufacture of small parts such as coils, condensers, crystal holders and the like;
8. Farm implement sales and service;
9. General food, fruit and vegetable processing and manufacturing plants;
10. Ice cream and milk producing, manufacturing and storage;
11. Laboratories—experimental, photo or motion picture, film or testing;
12. Light and heavy equipment and product display rooms, storage and service;
13. Machine shop or other metal working shops;
14. The manufacture, compounding or treatment of articles or merchandise from the following previously prepared materials; aluminum, bone, cellophane, canvas, cloth, cork, feathers, felt, fibre, fur, glass, hair, horn, leather, plastics, precious or semi-precious metals or stones, shell, tobacco and wood;
15. The manufacture, compounding, processing, packing or treatment of such products as candy, cosmetics, drugs, perfumes, pharmaceutical, toiletries, and food products except the rendering or refining of fats and oils;
16. The manufacture, dyeing and printing of cloth fabrics and wearing apparel;
17. The manufacture of musical instruments, toys, novelties and rubber and metal stamps;
18. Manufacture of pottery and figurines or other similar ceramic products;
19. Milk bottling or central distribution stations;
20. Plumbing shops having more than five employees;

**Chapter 19.20**  
**B-3 CENTRAL BUSINESS DISTRICT**

**Sections:**

- 19.20.010 Generally
- 19.20.020 Permitted uses
- 19.20.030 Height regulations
- 19.20.040 Area regulations
- 19.20.050 Yards

**19.20.010 Generally.**

This district is applied to the central business district and permits general business enterprises, particularly financial, governmental, commercial and professional activities. Its distinguishing feature is the greater height limit permitted in the area. Manufacturing and nuisance industries are excluded from the zone. (Prior code § 8-1.10(a))

**19.20.020 Permitted uses.**

Within the B-3 district, there shall be permitted any use permitted in a B-1 district and B-2 community business district, with the following exceptions:

- A. Living or sleeping quarters in any detached accessory building or structure on the same lot;
- B. Automobile repair shops and garages;
- C. Automobile painting or steam cleaning;
- D. Automobile upholstery shops;
- E. Awning or canvas stores;
- F. Equipment rental and sales yards;
- G. Hatcheries;
- H. Lumber yards;
- I. Machine shops;
- J. Plumbing shops;
- K. Storage buildings and warehouses (separate from main building);
- L. Storage yards;
- M. Trucking and truck storage;
- N. Used car lots. (Prior code § 8-1.10(b))

**19.20.030 Height regulations.**

No building or structure nor the enlargement of any building or structure shall be erected or maintained to exceed four stories or forty-eight feet in height; provided, however, that the height of such building or structure shall not exceed one and one-half times the width of the widest street which it fronts. (Prior code § 8-1.12(c))

**19.20.040 Area regulations.**

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet. (Prior code § 8-1.10(c))

- 21. Poultry or rabbit slaughter incidental to a retail business on the same premises;
- 22. Radio transmitting and television stations; provided, that towers are of the self-sustaining type without guys;
- 23. Replating shop;
- 24. Retail lumber yard including mill and saw work, except that mill and saw work shall be conducted within a completely enclosed building;
- 25. Small boat building;
- 26. Soda water and soft drink bottling and distribution plants;
- 27. The repair operation including recapping and retreading;
- 28. Vocational and trade schools giving general instruction as prescribed by the State Department of Education;

**29. Warehouse, storage and loft buildings;**

**30. Wearing apparel manufacturing;**

**31. Wholesale business, storage buildings, nonexplosive goods and warehouses;**

**32. Apartment houses.**

B. The above uses are to be conducted wholly within a completely enclosed building, or within an area enclosed on all sides except the front of the lot, by a solid fence or wall or cyclone fence at least six feet in height. (Prior code § 8-1.12(b))

**19.24.030 Height regulations.**

No building or structure nor the enlargement of any building or structure shall be erected or maintained to exceed four stories or forty-eight feet in height; provided, however, that the height of such building or structure shall not exceed one and one-half times the width of the widest street which it fronts. (Prior code § 8-1.12(c))

**19.24.040 Area regulations.**

Every lot within an M-1 district shall have a minimum lot area of not less than seven thousand five hundred square feet, having an average lot width of sixty-five feet. (Prior code § 8-1.12(d))

**19.24.050 Yards.**

**A. Front Yard.**

- 1. Where all the frontage between intersecting streets is located within business districts or industrial districts, no front yard shall be required.
- 2. Where the frontage is located abutting the residential district, there shall be a front yard of not less than ten feet from any setback line for street widening purposes; and if no such line exists, then from the main street or front boundary.

**B. Side Yard.**

- 1. Where the side of a lot in an M-1 district abuts upon the side or rear of a lot in an agricultural, farming, hotel, apartment, duplex or any type of residential district, there shall be a side yard of not less than ten feet.

- 2. In all other cases a side yard for light industrial building shall not be required.

**C. Rear Yard.**

- 1. In the case where the rear lot in an M-1 district abuts upon the side or rear of a lot in any residential, agricultural, farming, hotel, apartment or duplex district, there shall be a rear yard of not less than ten feet.
- 2. In all other cases a rear yard for M-1 building shall not be required.
- 3. No accessory building or buildings shall be allowed in the required rear yard of any lot occupied by any building containing light industrial business use except for off-street parking purposes. (Prior code § 8-1.12(e))



**19.20.050 Yards.**

**A. Front Yard.**

1. Where all the frontage between intersecting streets is located within business districts or industrial districts, no front yard shall be required.
2. Where the frontage is located abutting the residential district, there shall be a front yard of not less than ten feet from any setback line for street widening purposes; and if no such line exists, then from the main street or front boundary.

**B. Side Yard.**

1. Where the side of a lot in an M-1 district abuts upon the side or rear of a lot in an agricultural, farming, hotel, apartment, duplex or any type of residential district, there shall be a side yard of not less than ten feet.

**C. Rear Yard.**

2. In all other cases a side yard for light industrial building shall not be required.
1. In the case where the rear lot in an M-1 district abuts upon the side or rear of a lot in any residential, agricultural, farming, hotel, apartment or duplex district, there shall be a rear yard of not less than ten feet.
2. In all other cases a rear yard for M-1 building shall not be required.
3. No accessory building or buildings shall be allowed in the required rear yard of any lot occupied by any building containing light industrial business use except for off-street parking purposes. (Prior code § 8-1.12(e))

**Chapter 19.18**

**B-2 COMMUNITY BUSINESS DISTRICT**

**Sections:**

- 19.18.010 Generally
- 19.18.020 Permitted uses
- 19.18.030 Area regulations
- 19.18.040 Height regulations
- 19.18.050 Yards

**19.18.010 Generally.**

A community business district is intended to provide all types of goods and services for the community, with the exception of those uses more generally associated with industrial district, but at a lower intensity of use than in the central business district. (Prior code § 8-1.9(a))

**19.18.020 Permitted uses.**

Within the B-2 district, the following uses shall be permitted:

1. Any use permitted in a B-1 neighborhood business district; however, no living or sleeping quarters shall be permitted in any detached accessory building or structure on the same lot;
2. Amusement enterprises, including billiard or pool halls;
3. Antique shops;
4. Apartments;
5. Art galleries;
6. Auctioneer establishments;
7. Auditoriums and theaters;
8. Automobile parking lots and/or buildings;
9. Automobile parts stores;
10. Automobile service stations, with or without auto repairing; provided all auto repairing or operations are conducted in enclosed buildings; and provided further, that tire rebuilding or battery manufacturing shall not be permitted within this district;
11. Automobile upholstery shops;
12. Awning or canvas shops;
13. Banks;
14. Baseball or football stadiums and other sport activities and amusements;
15. Bath houses, commercial (plunge);
16. Baths, Turkish and the like, including masseurs;
17. Block-printing establishments;
18. Bowling alleys;
19. Business offices and agencies;
20. Catering establishments employing not more than five persons;
21. Charity relief organizations;
22. Clinics, medical or dental;
23. Custom dressmaking or millinery shops;
24. Dancehalls;
25. Dancing and hula studios;
26. Dressmaking shops;
27. Dry goods and/or department stores;
28. Equipment rental and sales yards;
29. Feed stores;
30. Gymnasiums;

31. Haberdasheries and women's apparel shops;

32. Hardware and garden supply stores;

33. Ice cream and milk manufacturing plants employing not more than twenty-five persons;

34. Jewelry stores or fine art shops, including interior decorating;

35. Libraries;

36. Marinas;

37. Miniature golf courses;

38. Museums;

39. Music conservatories or music studios;

40. News and magazine stands;

41. Nurseries (flower or plants); provided, that all incidental equipment and supplies, including fertilizers and empty cans, are kept within enclosed buildings;

42. Nursing and convalescent homes;

43. Parcel delivery stations;

44. Pet shops, not involving the treatment or boarding of animals;

45. Photo studios;

46. Physical culture studios;

47. Plumbing shops within wholly enclosed buildings and employing not more than five persons;

48. Printing, lithography or publishing shops;

49. Private clubs or fraternal organizations;

50. Private schools or business colleges;

51. Professional and financial buildings;

52. Public parking areas;

53. Radio and television stations;

54. Religious, benevolent, and philanthropic societies;

55. Restaurants, cafes or bars, including drive-ins;

56. Sanitariums;

57. Shoe stores;

58. Sign-painting shops within wholly enclosed buildings and employing not more than five persons;

59. Skating shops;

60. Teller shops;

61. Trade schools;

62. Used car lots; provided all repair and maintenance is conducted within a wholly enclosed building;

63. Mortuaries, subject to the approval of the commission;

64. Warehouses and yards which are adjunct to, and part of, the operation of the permitted uses listed above may be permitted by the commission, provided such uses are determined to conform to the intent of this article, and subject to such terms and conditions as may be warranted. Such uses shall be conducted wholly within a completely enclosed building or within an area enclosed on all sides by a solid fence or wall of least six feet in height; and provided, that no goods, materials, or objects shall be stacked higher than the fence or walls so erected;

65. Bed and breakfast homes, subject to the restrictions and standards of section 19.64.030 of this title;

66. Any other retail businesses or commercial enterprises which are similar in character of rendering sales of commodities or performance of services to the community and not detrimental to the welfare of the surrounding area; provided, however, that such uses shall be approved by the commission as conforming to the intent of this article. (Ord. 2609 § 6, 1 1997; Ord. 1 960 § 1, 1 990; prior code § 8-1.9(b))

#### 19.18.030 Area regulations.

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet. (Prior code § 8-1.9(c))

#### 19.18.040 Height regulations.

The maximum height of any building shall be limited by the total floor area which shall not exceed in square feet two hundred percent of the total lot area; and provided further, that no building be more than six stories in height. (Prior code § 8-1.9(d))

#### 19.18.050 Yards.

No yard spacing shall be required, except such areas that shall be required for off-street parking; with the exception that where the side or rear of a lot in a B-2 community business district abuts a lot in any residential, apartment house or hotel district, the abutting side or rear yard shall have the same yard spacing as that required in the abutting residential, apartment house or hotel district, respectively; and provided further, that any apartment shall provide yard space in accordance with the requirements of the apartment district. (Ord. 1960 § 2, 1 990; prior code § 8-1.9(e))

Chapter 19.16

**B-1 NEIGHBORHOOD BUSINESS DISTRICT**

**Sections:**

- 19.16.010 Generally.
- 19.16.020 Permitted uses.
- 19.16.030 Required conditions.
- 19.16.040 Area regulations.
- 19.16.050 Height regulations.
- 19.16.060 Yards

**19.16.010 Generally.**

A neighborhood business district is one wherein retail businesses or service establishments supply commodities or perform services to meet the daily needs of the neighborhood. (Prior code § 8-1.8(c))

**19.16.020 Permitted uses.**

Within the B-1 district, the following uses shall be permitted:

- A. Barber or beauty shops;
- B. Baker goods stores;
- C. Book, stationery or gift stores;
- D. Candy stores;
- E. Churches;
- F. Day care centers and nurseries;
- G. Delicatessen stores;
- H. Drugstores;
- I. Florist shops;
- J. Grocery stores and meat markets;
- K. Ice cream or snack counters;
- L. Laundromats;
- M. Liquor stores (package only);
- N. Gasoline retailing, provided it is owned and operated as an adjunct to a neighborhood store; and provided further, that no servicing, repairing, storing, washing, or maintenance of vehicles will be permitted on the premises;
- O. Other similar retail businesses or service establishments which supply commodities or perform services primarily for residents of the surrounding neighborhood; provided, however, such uses shall be approved by the commission as conforming to the intent of this title;
- P. One single-family dwelling per lot, provided the lot is sufficiently large to provide a lot area six thousand square feet for the dwelling after the area for the business, parking and other accessory areas for the business have been subtracted; or living and sleeping quarters for a single family constructed above the ground floor of the business building;
- Q. Bed and breakfast homes, subject to the restrictions and standards of section 19.64.030 of this title; and
- R. Home occupations in single-family dwellings permitted pursuant to subsection P. (Ord. 3622 § 5, 2009; Ord. 2609 § 5, 1997; prior code § 8-1.8(b))

**19.16.030 Required conditions.**

- A. All business, services, or processing shall be conducted wholly within completely enclosed buildings, except for day care centers, nurseries, automobile parking, and/or off-street loading.
- B. All goods produced on the premises, whether primary or incidental, shall be sold at retail and only on the premises where produced. (Prior code § 8-1.8(c))

**19.16.040 Area regulations.**

The minimum lot area shall be six thousand square feet and the minimum lot frontage shall be sixty feet. (Prior code § 8-1.8(d))

**19.16.050 Height regulations.**

No building shall exceed two stories and thirty feet in height. (Prior code § 8-1.8(e))

**19.16.060 Yards.**

There shall be a front yard of fifteen feet, side yard of six feet, and a rear yard of six feet; except that for any two-story building, a side yard of ten feet, and a rear yard of ten feet shall be required. (Prior code § 8-1.8(f))

ORDINANCE NO. \_\_\_\_\_  
DRAFT 3/3/11

BILL NO. \_\_\_\_\_ (2010)

A BILL FOR AN ORDINANCE ESTABLISHING TITLE 19.25, MAUI COUNTY CODE,  
RELATING TO M-3 INDUSTRIAL DISTRICT

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Chapter 19.25, Maui County Code, is amended to read as follows:

**\*Chapter 19.25**

**M-3 INDUSTRIAL DISTRICT**

- 19.25.010 Purpose and Intent
- 19.25.020 Permitted uses.
- 19.25.030 Accessory uses and structures
- 19.25.040 Special Uses
- 19.25.050 Development Standards
- 19.25.060 Rule making authority

**19.25.010 Purpose and Intent**

Those uses which include the manufacture, processing, storage or treatment of goods from raw materials are permitted in the M-3 industrial district. The district is intended to include manufacturing and nuisance industries. General retail and office is specifically excluded from this district.

**19.25.020 Permitted uses**

Within the M-3 district, no building, structure or premises shall be used and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

Use	Notes and exceptions
Acetylene gas manufacture or bulk storage.	
Acid manufacture.	
Alcohol manufacture;	
Ammonia, bleaching powder or chlorine manufacture.	

**EXHIBIT D**  
**Draft Bill for Proposed County of Maui**  
**M-3 Industrial District**

Asphalt manufacture of refueling and asphaltic concrete plant.	
Automobile wrecking.	
Blast furnaces or coke oven.	
Boiler and steel works.	
Brick, tile or terra cotta manufacture.	
Canneries.	
Cement, lime, gypsum, or plaster of paris manufacture.	
Chemical manufacture.	
Concrete or cement products manufacture.	
Crematories, morgues.	
Energy systems, power plants, substations, and utility facilities, major.	
Explosives manufacture or storage.	
Factories.	
Fertilizer manufacture.	
Fish canneries.	
Foundries.	
Freight classification yard (railroad); (Garbage, offal or dead animals reduction or dumping.	
Gas manufacture.	
Glue manufacture.	
Heavy equipment storage, servicing, and sales	
Junk establishment used for storing, depositing, keeping junk or similar goods for business purposes.	
Land fill, solid waste processing and disposal	
Lime kilns	
Lumber yard and wood treatment facilities;	
Machine shops:	
Oil storage plants;	
Oilcloth or linoleum manufacture	
Paint oil (including linseed), shellac, turpentine, lacquer, or varnish manufacture.	
Petroleum or bio fuel product manufacturing or wholesale storage of petroleum or bio fuels;	
Petroleum refinery.	
Planing mill.	
Plastic manufacture.	
Quarry or stone mill.	
Railroad repair shops.	
Recycling processing facilities	
Rock, sand or gravel or earth excavation, crushing or distribution.	
Rolling mills.	
Saw mill.	
Ship works.	

Slaughter of animals.	
Soap manufacture.	
Stock yard or feeding pens.	
Sugar mills and refineries.	
Tannery or the curing or storage of raw hides.	
Telecommunication towers, antenna and equipment.	
Wood treatment plants.	
In general those uses which may be obnoxious or offensive by reason of emission of odor, dust, smoke, gas, noise, vibration and the like and not allowed in any other district;	provided, however, that any use not specified in this section shall be approved by the director as conforming to the intent of this title.

19.25.030 Accessory uses and buildings. The following uses

and structures, located on the same lot, are deemed accessory, customary, incidental, usual, and necessary to the above permitted uses in the district:

Uses	Notes and exceptions
A. Energy systems, small-scale;	
B. Fences, walls, patios, decks, and other landscape features;	
C. Garages, porte-cochere, mail boxes, ground signs, and trash enclosures;	
D. Subordinate uses and structures which are determined by the director of planning to be clearly incidental and customary to the permitted uses listed herein;	
E. Office, retail, or indoor product display area	Limited to 20 % of gross floor area not to exceed 1,000 sq.ft.
F. Security/watchman or custodian outbuildings	

19.25.040 Special uses.

Reserved

19.25.050 Development Standards

	M-3	Notes and exceptions
Minimum Lot Area (Square feet)	10,000	
Minimum Lot Width (in feet)	75	
Maximum Building Height	90	Except that vent pipes, fans,

(in feet)		chimneys, antennae, and equipment) on roofs shall not exceed 199 feet.
Minimum Yard Setback (in feet)		
Front	none	
Side and Rear	0 or the same as the adjoining zoning category which ever is greater	
Side and Rear above 15 feet	0 or the same as the adjoining zoning category which ever is greater	
Free standing antenna or wind turbine structures height and setback	Maximum height of 199 feet and shall be set back 1 foot for every foot in height from all property lines.	
Accessory structures within Setback Area	Maji boxes, trash enclosures, boundary walls, and ground signs	

19.25.060 Rule making authority. The planning director may adopt rules to clarify and implement this chapter.

1	custodians of industrially used property;
2	2. Alcohol manufacture;
3	3. Automobile wrecking, if conducted within a
4	building;
5	4. Brick, tile or terra cotta manufacture;
6	5. Boilers and steel works;
7	6. Canneries, except fish canneries;
8	7. Chemical manufacture;
9	8. Concrete or cement products manufacture;
10	9. Factories;
11	10. Foundries;
12	11. Freight classification yard (railroad);
13	12. Junk establishment used for storing,
14	depositing, or keeping junk or similar goods for
15	business purposes;
16	13. Lime kilns which do not emit noxious and
17	offensive fumes;
18	14. Lumber yard;
19	15. Machine shops;
20	16. Oil storage plants;
21	17. Oilcloth or linoleum manufacture;
22	18. Paint, oil (including linseed), shellac,
23	turpentine, lacquer, or varnish manufacture;
24	19. Petroleum products manufacture or
25	wholesale storage of petroleum;
26	20. Planing mill;
27	21. Plastic manufacture;
28	22. Railroad repair shops;
29	23. Rolling mills;
30	24. Ship works;
31	25. Soap manufacture;
32	26. Sugar mills and refineries;
33	27. In general those uses which may be
34	obnoxious or offensive by reason of emission
35	of odor, dust, smoke, gas, noise, vibration and
36	the like and not allowed in any other district;
37	provided, however, that any use not specified
38	in this section shall be approved by the director
39	as conforming to the intent of this title.

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4. Any use permitted in the B-1, B-2 and B-3 business districts and M-1 district; provided, however, that no building, structure or portion thereof shall be hereafter erected, converted, or moved onto any lot in an M-2 district for dwelling purposes, including hotels and motels, except living quarters used by watchmen or custodians of industrially used property.

ORDINANCE NO. \_\_\_\_\_  
DRAFT April 6, 2011  
BILL NO. \_\_\_\_\_ (2011)

**A BILL FOR AN ORDINANCE ESTABLISHING TITLE 19.26, MAUI COUNTY CODE, RELATING TO M-2 HEAVY INDUSTRIAL DISTRICT**

**BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:**

**SECTION 1.** Chapter 19.26, Maui County Code, is amended to read as follows:

**\*Chapter 19.26**

**M-2 LIGHT INDUSTRIAL DISTRICT**

- 19.26.010 General Purpose and Intent
- 19.26.020 Use-regulations Permitted uses.
- 19.26.030 Height-regulations Accessory Uses and structures
- 19.26.040 Area-regulation Special Uses
- 19.26.050 Yards Development Standards
- 19.26.060 Rule making authority

19.26.010 **General Purpose and Intent.**  
Those uses which include the manufacture or treatment of goods from raw materials are permitted in the M-2 heavy industrial district. Those uses which are listed under subsection 28 of Section 19.26.020 cannot be automatically included in the heavy industrial district because of their hazardous or offensive nature. Provision is made whereby the location and conduct of these uses is subject to review and approval of the commission and council of the county of Maui as conforming to the intent of this title. (Prior code § 8-1 13(a))

**19.26.020 Use-regulations Permitted uses.**

Within the M-2 district, no building, structure or premises shall be used and no building or structure hereafter erected, structurally altered, replaced, or enlarged except for one or more of the following uses:

Use	Notes and Exceptions
1. Any use permitted in the B-1, B-2 and B-3 business districts and M-1 district; provided, however, that no building, structure or portion thereof shall be hereafter erected, converted or moved onto any lot in an M-2 district for dwelling purposes, including hotels and motels, except living quarters used by watchmen or	

- 1 2-Alcohol manufacture
- 2 3-Automobile wrecking, if conducted within a building;
- 3 4-Brick, tile or terra cotta manufacture;
- 4 5-Boiler and steel works;
- 5 6-Canneries, except fish canneries;
- 6 7-Chemical manufacture;
- 7 8-Concrete or cement products manufacture;
- 8 9-Factories;
- 9 10-Foundries;
- 10 11-Freight classification yard (railroad);
- 11 12-Junk establishment used for storing, depositing or keeping junk or similar goods for
- 12 business purposes, provided such establishment shall not be heavier than eight feet from
- 13 any other property line for the storage of the junk or similar goods except in buildings
- 14 entirely enclosed with walls;
- 15 13-Lime kilns which do not emit noxious and offensive fumes;
- 16 14-Lumber yard;
- 17 16-Machine shops;
- 18 16-Oil storage plants;
- 19 17-Oilcloth or linoleum manufacture;
- 20 18-Paint, oil (including linseed), shellac, turpentine, lacquer, or varnish manufacture;
- 21 19-Petroleum products manufacture or wholesale storage of petroleum;
- 22 20-Planing mill;
- 23 21-Plastic manufacture;
- 24 22-Railroad repair shops;
- 25 23-Rolling mill;
- 26 24-Ship works;
- 27 25-Sheep manufacture;
- 28 26-Sugar mills and refineries;
- 29 27-In general those uses which may be obnoxious or offensive by reason of emission of
- 30 odor or dust, smoke, gas, noise, vibration and the like and not allowed in any other district,
- 31 provided, however, that any use not specified in this section shall be approved by the
- 32 commission as conforming to the intent of this title;
- 33 28-All of the following uses are declared to be special uses and a use permit shall be
- 34 obtained from the commission with approval of the council of the county for the location
- 35 and operation thereof in the M-2 district:
- 36 a-Acetylene gas manufacture or bulk storage;
- 37 b-Acid manufacture;
- 38 c-Ammonia, bleaching powder or chlorine manufacture;
- 39 d-Asphalt manufacture of refueling and asphaltic concrete plant;
- 40 e-Blast furnace or coke oven;
- 41 f-Cement, lime, gypsum, or plaster of paris manufacture;
- 42 g-Ceramics;
- 43 h-Creosote treatment plants;
- 44 i-Explosives manufacture or storage;
- 45 j-Fertilizer manufacture;
- 46 k-Fish canneries;
- 47 l-Garbage, offal or dead animal reduction or dumping;
- 48 m-Gas manufacture;
- 49 n-Glue manufacture;
- 50 o-Quarry or stone mill;
- 51 p-Rock, sand or gravel or earth excavation, crushing or distribution;

- 1 e-Petroleum refinery;
- 2 f-Saw mill;
- 3 g-Slaughter of animals;
- 4 h-Stock yard or feeding pens;
- 5 i-Tannery or the curing or storage of raw hides;
- 6
- 7
- 8 9.26.030 Accessory uses and structures Height regulations.
- 9 No building or structure, and no enlargement of any building or structure, except smoke
- 10 stacks or chimneys, shall be hereafter erected or maintained so as to exceed six stories;
- 11 (Prior code § 8-1.13(c))
- 12
- 13 The following uses and structures, located on the same lot, are deemed accessory,
- 14 customary, incidental, usual, and necessary to the above permitted uses in the district:
- 15

Uses	Notes and exceptions
A. Energy systems, small scale;	
B. Fences, walls, patios, decks, and other landscape features;	
C. Garages, porte-cochères, mail boxes, ground signs, and trash enclosures;	
D. Subordinate uses and structures which are determined by the director of planning to be clearly incidental and customary to the permitted uses listed herein;	
E. Security/watchman or custodian outbuildings	

- 16
- 17
- 18 19.26.040 Special Uses Area regulations.
- 19 Every lot within an M-2 district shall have a minimum lot area of not less than ten
- 20 thousand square feet with a minimum lot width of seventy-five feet.
- 21 (Prior code § 8-1.13(d))
- 22

Special Uses	Notes and exceptions
a. Acetylene gas manufacture or bulk storage;	
b. Acid manufacture;	
c. Ammonia, bleaching powder or chlorine manufacture;	
d. Asphalt manufacture of refueling and asphaltic concrete plant;	
e. Blast furnace or coke oven;	
f. Cement, lime, gypsum, or plaster of paris manufacture;	
g. Ceramics;	
h. Creosote treatment plants;	
i. Explosives manufacture or storage;	
j. Fertilizer manufacture;	



k. Fish canneries.
l. Garbage, oil or dead animals reduction or dumping.
m. Gas manufacture.
n. Glue manufacture.
o. Quarry or stone mill.
p. Rock, sand or gravel or earth excavation, crushing or distribution.
q. Petroleum refinery.
r. Saw mill.
s. Slaughter of animals.
t. Stock yard or deeding pens.
u. Tannery or the curing or storage of raw hides.

(Prior code § 8-1.13(b))

19.26.050 Yards-Development Standards.

Minimum Lot Area (Square feet)	M-2	Notes and exceptions
Minimum Lot Width (in feet)	75	
Maximum Building Height (in feet)	90	Except that vent pipes, fans, chimneys, antennae, and equipment on roofs shall not exceed 149 feet.
Minimum Yard Setback (in feet)		
Front	0 or the same as the adjoining zoning category which ever is greater	Where the set back of the adjoining non-industrial zoned parcel is less than 15 feet, a minimum set back of 15 feet shall be applied.
Side and Rear	0 or the same as the adjoining zoning category which ever is greater	
Side and Rear above 15 feet	0 or the same as the adjoining zoning category which ever is greater	
Free standing antenna or wind turbine structures height and setback	Maximum height of 90 feet and shall be set back 1 foot for every foot in height from all property lines.	

- 4 A. Front Yard—There shall be a front yard of not less than ten feet from any setback line for street-widening purposes, and if no such line exists, then from the main street or front boundary.
- 5 B. Side Yard.
- 6 4. Where the side or rear of the lot in an M-2 district abuts upon the side or rear of a lot of any residential duplex, apartment, hotel, agricultural or farming districts, there shall be a side yard of ten feet.
- 7 2. In all other cases, a side yard for a heavy industrial building shall not be required.

- 1 C. Rear yard.
- 2 No rear yard spacing shall be required except where the M-2 district abuts upon an agricultural, farming, residential, duplex, apartment or hotel district, in which case there shall be a rear yard of not less than fifteen feet.
- 3 (Prior code § 8-1.12(a))

4 19.26.060 Rule making authority. The planning director may adopt rules to clarify and implement this chapter.

5 19.26.070 Permits issued prior to the enactment of this ordinance.

6 Any dwelling structure that was constructed with a building permit that was approved prior to the enactment of said ordinance need not acquire a County special use permit, conditional permit or variance and may be reconstructed as permitted by the original building permit(s).

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## DEFINITIONS

The purpose of this Glossary is to assist the reader in understanding specific terminology used in this report.

**Appraisal**  
(noun) the act or process of developing an opinion of value; an opinion of value (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services.

**Cash Equivalent**  
A price expressed in terms of cash, as distinguished from a price expressed totally or partly in terms of the face amounts of notes or other securities that cannot be sold at their face amounts.

**Counseling**  
Providing competent, disinterested, and unbiased advice and guidance on diverse problems in the broad field of real estate; may involve any or all aspects of the business such as merchandising, leasing, management, acquisition/disposition planning, financing, development, cost-benefit studies, feasibility analysis, and similar services. Counseling services are often associated with evaluations, but they are beyond the scope of appraisal.

**Discounting**  
A procedure used to convert periodic incomes, cash flows, and reversions into present value; based on the assumption that benefits received in the future are worth less than the same benefits received now.

**Extraordinary Assumption**  
An assumption, directly related to a specific assignment, which, if found to be false, could alter the appraiser's opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if:

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions.

**Fair Value**  
The cash price that might reasonably be anticipated in a current sale under all conditions requisite to a fair sale. A fair sale means that buyer and seller are each acting prudently, knowledgeably, and under no necessity to buy or sell-, i.e., other than in a forced or liquidation sale. The appraiser should estimate the cash price that might be received upon exposure to the open market for a reasonable time, considering the property type and local market conditions. *When a current sale is unlikely, when it is unlikely that the sale can be completed within 12 months, the appraiser must discount all cash flows generated by the property to obtain the estimate of fair value.* These cash flows include, but are not limited to, those arising from ownership, development, operating, and sale of the property. The discount applied shall reflect the appraiser's judgment of what a prudent, knowledgeable purchaser under a necessity to buy would be willing to pay to purchase the property in a current sale.

**ADDENDA**

#### **Fee Simple Estate**

Absolute ownership encumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.

#### **Hawaiian Terms**

The Hawaiian words "mauka" and "makai" are commonly used in the islands as indicators of direction. The word "mauka" means toward the mountain, and "makai" means toward the ocean.

#### **Highest and Best Use**

The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

#### **Highest and Best Use of Land or a Site as Though Vacant**

Among all reasonable, alternative uses, the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.

#### **Highest and Best Use of Property as Improved**

The use that should be made of a property as it exists. An existing improvement should be renovated or retained as long as it continues to contribute to the total market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one.

#### **Hypothetical Condition**

That which is contrary to what exists, but is supposed for the purpose of analysis. Hypothetical conditions assume conditions contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. A hypothetical condition may be used in an assignment only if:

- Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison;
- Use of the hypothetical condition results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for hypothetical conditions

#### **Leased Fee Interest**

An ownership interest held by a landlord with the rights of use and occupancy conveyed by lease to others. The rights of the lessor (the leased fee owner) and the lessee are specified by contract terms contained within the lease.

#### **Leasehold Interest**

The interest held by the lessee (the tenant or renter) through a lease transferring the rights of use and occupancy for a stated term under certain conditions.

#### **Market Rent**

The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the specified lease agreement including term, rental adjustment and reevaluation, permitted uses,

use restrictions, and expense obligations; the lessee and lessor each acting prudently and knowledgeably, and assuming consummation of a lease contract as of a specified date and the passing of the leasehold from lessor to lessee under conditions whereby:

- Lessee and lessor are typically motivated.
- Both parties are well informed or well advised, and acting in what they consider their best interests.
- A reasonable time is allowed for exposure in the open market.
- The rent payment is made in terms of cash in United States dollars, and is expressed as an amount per time period consistent with the payment schedule of the lease contract.
- The rental amount represents the normal consideration for the property leased unaffected by special fees or concessions granted by anyone associated with the transaction.

#### **Market Value**

The major focus of most real property appraisal assignments. Both economic and legal definitions of market value have been developed and refined. Continual refinement is essential to the growth of the appraisal profession.

The most widely accepted components of market value are incorporated in the following definition:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."

Market value is defined in the Uniform Standards of Professional Appraisal Practice (USPAP) as follows:

"A type of value, stated as an opinion, that presumes the transfer of a property (i.e., a right of ownership or a bundle of such rights), as of a certain date, under specific conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal."

The following definition of market value is used by agencies that regulate federally insured financial institutions in the United States:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:"

- Buyer and seller are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and

- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

**Prospective Market Value Upon Completion of Construction**

The prospective future value of a property on the date that construction is completed, based upon market conditions forecast to exist at the completion date.

**Prospective Value Opinion**

A forecast of the value expected at a specified future date. A prospective value opinion is most frequently sought in connection with real estate projects that are proposed, under construction, or under conversion to a new use, or those that have not achieved sellout or a stabilized level of long-term occupancy at the time the appraisal report is written.

**Report**

Any communication, written or oral, of an appraisal, appraisal review, or appraisal consulting service that is transmitted to the client upon completion of an assignment. The types of written reports listed below apply to real property appraisals:

**Self-Contained Appraisal Report:** A written appraisal report prepared under Standards Rule 2-2(a) of the Uniform Standards of Professional Appraisal Practice. A self-contained appraisal report sets forth the data considered, the appraisal procedures followed, and the reasoning employed in the appraisal, addressing each item in the depth and detail required by its significance to the appraisal and providing sufficient information so that the client and the users of the report will understand the appraisal and not be misled or confused.

**Summary Appraisal Report:** A written report prepared under Standards Rule 2-2(b) or 8-2(b). A summary appraisal report contains a summary of all information significant to the solution of the appraisal problem. The essential difference between a self-contained appraisal report and a summary appraisal report is the level of detail of presentation.

**Restricted Appraisal Report:** A written report prepared under Standards Rule 2-2(c), 8-2(c), or 10-2(b). A restricted use appraisal report is for client use only. The restricted use appraisal report should contain a brief statement of information significant to the solution of the appraisal problem.

**Uniform Standards of Professional Appraisal Practice**

Current standards of the appraisal profession, developed for appraisers and the users of appraisal services by the Appraisal Standards Board of The Appraisal Foundation. The Uniform Standards set forth the procedures to be followed in developing an appraisal, analysis, or opinion and the manner in which an appraisal, analysis, or opinion is communicated. They are endorsed by the Appraisal Institute and by other professional appraisal organizations.

**LIMITING AND CONTINGENT CONDITIONS  
ACM Consultants, Inc.**

1. This is a Consulting Report which is intended to comply with the reporting requirements set forth under Standards Rule 5 of the Uniform Standards of Professional Appraisal Practice for a Consulting Report. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The Consultant is not responsible for unintended use of this report.

2. This report has not been prepared for federally-related mortgage financing purposes, and has not been prepared in compliance with the requirements of Title XI of the Federal Financial Institutions Reform, Recovery, and Enforcement Act of 1989.

3. No responsibility is assumed for legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated in this report.

4. The property analyzed is free and clear of any or all liens and encumbrances unless otherwise stated in this report.

5. Responsible ownership and competent property management are assumed unless otherwise stated in this report.

6. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.

7. All engineering is assumed to be correct. Any job plans and illustrative material in this report are included only to assist the reader in visualizing the property.

8. It is assumed that there are no hidden or unapparent conditions of the property, adjacent, or involves that reader is aware or has knowledge. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.

9. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated in this report.

10. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a non-conformity has been stated, defined, and considered in this consulting report.

11. It is assumed that all required permits, certificates of occupancy or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or amended for any use on which the value estimates contained in this report are based.

12. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. Measurements and exhibits found in this report are provided for reader reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

13. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless otherwise stated in this report.

14. The Consultant is not qualified to detect hazardous waste and/or toxic materials. Any comment by the Consultant that might suggest the possibility of the presence of such substances should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such substances, when present, are not to be detected by a visual inspection of the field of environmental assessment. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other pollutants, which may not be readily detected by visual inspection, may affect the value estimate is predicated on the assumption that there is no such material on or in the field of the property. The Consultant's responsibility is limited to the information provided in this report. No responsibility is assumed for any environmental conditions, or for any repetitive or multiple observations or to discover them. The Consultant's descriptions and resulting comments are the result of the routine observations made during the analysis process.

15. Unless otherwise stated in this report, the subject property is evaluated without a specific compliance survey having been conducted to determine if the property is or is not in compliance with the requirements of the Americans with Disabilities Act. The presence of architectural and communication barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.

16. Any proposed improvements are assumed to be completed in a good workable manner in accordance with the submitted plans and specification.

17. The distribution of any of the total valuation in this report (but when based) and improvements applies only under the stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.

18. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the consultant, and in any event, only with property written qualification and only in its entirety.

19. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the Consultant, or the firm with which the Consultant is connected) shall be disseminated to the public through advertising, public relations, news talks, or other media without prior written consent and approval of the Consultant.

20. ACCEPTANCE OF AND/OR USE OF THIS APPRAISAL REPORT BY CLIENT OR ANY THIRD PARTY CONSTITUTES ACCEPTANCE OF THE ACM CONSULTANTS, INC. CONDITIONS, LIMITING AND CONTINGENT CONDITIONS. CONSULTANT LIABILITY EXTENDS ONLY TO STATED CLIENT, NOT SUBSEQUENT PARTIES ON USES OF ANY TYPE, and the total liability of Consultant(s) and firm is limited to the amount of fee received by Consultant.

## PROFESSIONAL QUALIFICATIONS

Glenn K. Kunitzra, MAI, CRE



### STATE LICENSING

State Certified General Appraiser,  
State of Hawaii, License No. CGA 39, July 17, 1991  
Expiration: December 31, 2011

### PROFESSIONAL AFFILIATIONS

Member, Appraisal Institute, MAI Designation, Hawaii Chapter No. 67  
Member, The Counselors of Real Estate, CRE Designation, Hawaii Chapter  
Member, International Right of Way Association  
Member, National Association of Realtors, Maui Board of Realtors

### PROFESSIONAL INVOLVEMENT

Past President – Hawaii Chapter of the Appraisal Institute – 2009  
Vice Chairperson – Hawaii Chapter of The Counselors of Real Estate - 2010  
Education Chairperson – Hawaii Chapter of the Appraisal Institute – 2004 and 2005  
Former Multiple Listing Service (MLS) Committee Member – Realtors Association of Maui

### COMMUNITY AFFILIATIONS

St. Anthony Parish School Board  
Board Member 1995 to 2008  
Board President 1997 and 1998  
Altr Community Care, Inc. – A non-profit health care corporation  
Board Member 2004 to 2006

### EMPLOYMENT

President  
ACM Consultants, Inc.  
May, 1997 to present  
  
Previously associated with the following:  
ACM, Real Estate Appraisers, Inc. - 1986 to 1997  
A&B Commercial Company, a division of Alexander & Baldwin, Inc. - 1979 to 1985  
Bank of Hawaii - 1976 to 1979

### GENERAL EDUCATION

University of Hawaii at Manoa  
Master of Business Administration (MBA) - Executive MBA Program V, 1988  
Bachelor of Business Administration (BBA), 1976  
Iolani School, 1971

### LEGAL & CONSULTING

Qualified as an expert witness in the Second Circuit Court of the State of Hawaii  
Qualified as an expert in testimony to the State Land Use Commission  
Experienced in real estate arbitration assignments in the State of Hawaii

### APPRAISAL EDUCATION

Appraisal Institute  
Seminar  
Appraisal Curriculum Overview (2-day general)  
Honolulu, Hawaii – July 2010

Online Valuation of Green Residential Properties  
Chicago, Illinois – July 2010  
Hotel Valuation  
Honolulu, Hawaii – February 2010  
Online Small Hotel/Motel Valuation  
Chicago, Illinois – November 2009  
Business Practices and Ethics  
Honolulu, Hawaii – September 2009  
Hawaii Lands, Historical Review  
Lihue, Hawaii – August 2009  
Appraisal Challenges: Declining Markets and Sales Concessions  
Cambria, California – October 2008  
7-Hour National USPAP Update Course  
Honolulu, Hawaii – September 2008  
Online 7-Hour National USPAP Equivalent Course  
Chicago, Illinois – October 2007  
Valuation of Conservation Easements  
Denver, Colorado – October 2007  
Uniform Standards for Federal Land Acquisitions ("Yellow Book")  
Practical Applications for Fee Appraisers  
Honolulu, Hawaii – December 2006  
California Conservation Easements  
Sacramento, California – November 2005  
7-Hour National USPAP Update Course  
Honolulu, Hawaii – October 2005  
Case Studies in Limited Partnership and Partial Interest Valuation  
Honolulu, Hawaii – May 2005  
Appraisal Consulting: A Solutions Approach for Professionals  
Honolulu, Hawaii – February 2005  
Real Estate Finance, Value and Investment Performance  
Honolulu, Hawaii – February 2005  
Forensic Real Estate Presentation  
Honolulu, Hawaii - July 2004  
Subdivision Analysis  
Chicago, Illinois - August 2003  
Supporting Capitalization Rates  
Chicago, Illinois - August 2003  
The Technology Assisted Appraiser  
Chicago, Illinois - August 2003  
Scope of Work: Expanding Your Range of Services  
Chicago, Illinois - August 2003  
National Uniform Standards of Professional Practice  
Honolulu, Hawaii - May 2003  
Business Practices and Ethics  
Honolulu, Hawaii - May 2003  
The Private Conservation Market  
Honolulu, Hawaii - July 2002  
Finance Reporting Valuations Parts I and II  
Honolulu, Hawaii - July 2002  
Future of Appraisal Profession from a Global Perspective  
Honolulu, Hawaii - July 2002

Seminar	Appraisal Office Management Honolulu, Hawaii - July 2002
Course 540	Report Writing Denver, Colorado - December 2000
Seminar	Partial Interests: Theory and Case Law Las Vegas, Nevada - July 2000
Seminar	Easement Valuation Las Vegas, Nevada - July 2000
Seminar	Bridging the Gap: Marketability Discounts for Real Estate Interests Las Vegas, Nevada - July 2000
Course 430	Standards of Professional Practice, Part C Honolulu, Hawaii - September 1999
Seminar	Litigation Skills for the Appraiser: An Overview Honolulu, Hawaii - May 1998
Seminar	Special Purpose Properties Honolulu, Hawaii - September 1997
Seminar	Highest and Best Use Applications Honolulu, Hawaii - September 1997
Seminar	Detrimental Conditions Honolulu, Hawaii - July 1997
Seminar	The Appraiser As Expert Witness Honolulu, Hawaii - August, 1995
Seminar	How to Appraise FHA-Insured Property Los Angeles, California - January, 1995
Seminar	Understanding Limited Appraisals and Reporting Options Honolulu, Hawaii - August, 1994
Seminar	Valuation of Leasehold Interests Honolulu, Hawaii - May, 1993
Seminar	Valuation of Leased Fee Interests Honolulu, Hawaii - May, 1993
Seminar	Valuation Considerations: Appraising Non-Profits Boston, Massachusetts - July, 1992
Seminar	Americans With Disabilities Act Boston, Massachusetts - July, 1992
Seminar	Valuation in Today's Capital and Financing Markets Honolulu, Hawaii - June 1992
Seminar	Arbitration Principles, Procedures and Pitfalls Honolulu, Hawaii - June, 1992
Seminar	Institutional Real Estate in the 1990's Honolulu, Hawaii - June, 1992
Seminar	FIRREA and its Impact on Appraisers Honolulu, Hawaii - June, 1992
Course 410/420	Standards of Professional Practice, Parts A & B Honolulu, Hawaii - April, 1991
Seminar	<u>The American Society of Farm Managers and Rural Appraisers, Inc.</u> Agricultural Lease Valuation Honolulu, Hawaii - March 2006

Seminar	<u>Maui Coastal Land Trust</u> Understanding the New Tax Incentives: Conservation Easements & Other Charitable Contributions Waialuku, Hawaii - June 2007
Society of Real Estate Appraisers	
Course 101	Introduction to Appraising Real Property Dallas, Texas - 1987
Course 102	Applied Residential Property Valuation Honolulu, Hawaii - July 1990
Course 201	Principles of Income Property Appraising Chicago, Illinois, 1987
Course 202	Applied Income Property Valuation San Diego, California - 1988
Seminar	Professional Practice and the Society of Real Estate Appraisers Honolulu, Hawaii - 1988
Seminar	Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies Honolulu, Hawaii - April, 1988
Seminar	Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies Honolulu, Hawaii - April, 1988
American Institute of Real Estate Appraisers	
Seminar	Rates, Ratios and Reasonableness Honolulu, Hawaii - 1989
Seminar	Discounted Cash Flow Analysis Honolulu, Hawaii - 1989
Seminar	Highest and Best Use Honolulu, Hawaii - 1989
Seminar	Capitalization Overview - Part A Honolulu, Hawaii - 1990
Seminar	Capitalization Overview - Part B Honolulu, Hawaii - 1990
Seminar	Accrued Depreciation Honolulu, Hawaii - 1990
International Right of Way Association	
Course 101	Appraisal Las Vegas, Nevada - October, 1998
Course 101	Negotiation Las Vegas, Nevada - October 1998
National Business Institute, Inc.	
Seminar	Commercial Real Estate Leasing In Hawaii Honolulu, Hawaii - 1989
American Arbitration Association	
Seminar	Real Estate Dispute Resolution - Mediation and Arbitration Kohala, Maui, Hawaii - October, 1990

**PROFESSIONAL QUALIFICATIONS**

Shane M. Fukuda

**Professional Qualifications**  
Page 2

Course	Online 7 Hour National USPAP Equivalent Chicago, Illinois – December 2009
Seminar	Hawaii Lands, Historical Review Kahului, Hawaii – September 2009
Course 320	General Applications San Diego, California – July 2006
Course 310	Basic Income Capitalization San Diego, California – July 2006
Course 101	Basic Appraisal Procedures Denver, Colorado – April 2005
Course 100	Basic Appraisal Principles Denver, Colorado – April 2005

**Lincoln Graduate Center**

Course 405	Residential Sales Comparison & Income Approaches Honolulu, Hawaii – November 2006
Course 404	Residential Appraiser Site Valuation & Cost Approach Honolulu, Hawaii – November 2006
Course 403	Residential Market Analysis & Highest & Best Use Honolulu, Hawaii – November 2006
Course 772	National USPAP Course Honolulu, Hawaii – October 2006
Course 772	National USPAP Course Honolulu, Hawaii – January 2005

**MISCELLANEOUS EDUCATION**

**REALM Business Solutions**

Course	Argus 12.0 Honolulu, Hawaii – July 2005
--------	--

**STATE LICENSING**

State Certified General Appraiser  
State of Hawaii, License No. CGA-B10, July 1, 2007  
Expiration: December 31, 2011

**PROFESSIONAL AFFILIATIONS**

Shane Fukuda is a general Associate Member of the Appraisal Institute

**EMPLOYMENT**

ACM Consultants, Inc.  
November 2009 to Present  
Vice President – Commercial Division  
July 2007 to October 2009  
Staff Appraiser  
October 2004 to June 2007  
Appraiser Assistant; Appraiser Trainee

Previously associated with the following:

Dollar Thrifty Automotive Group, Inc.  
1994 to 2004  
Rental Agent; Lead Rental Agent; Station Manager; Senior Station Manager

**GENERAL EDUCATION**

Maui Community College, 1989-1990  
Henry Perrine Baldwin High School, 1989

**APPRAISAL EDUCATION**

**Appraisal Institute**

Course 501GD	Advanced Income Capitalization San Diego, California – June 2011
Seminar	Hotel Valuation Honolulu, Hawaii – February 2010
Seminar	Online Subdivision Valuation Chicago, Illinois – December 2009
Course	Online Business Practices and Ethics Chicago, Illinois – December 2009
Seminar	Online Small Hotel/Hotel Valuation Chicago, Illinois – December 2009

**APPENDIX N**  
**Agricultural Impact  
Assessment**





October 6, 2011

11-9079A

CMBY 2011 Investment, LLC  
c/o Ms. Blanca Lafollette, Project Coordinator  
Pacific Rim Land, Inc.  
1300 North Halopano Street, Suite 201  
P.O. Box 220  
Kihei, Hawaii 96753

Re: Agricultural Impact Assessment for the proposed Puunene Heavy Industrial Subdivision in  
Wailuku, Island and County of Maui; TMK [2] 3-8-008:019

Dear Ms. Lafollette:

In accordance with your request, we have inspected the above-referenced property in order to provide an agricultural impact assessment for the proposed Puunene Heavy Industrial Subdivision (the "Proposed Project") in Wailuku, Island and County of Maui. This counseling report, and the conclusions herein, is based on the on-site inspection of the property, a study of current political and economic conditions, and a historical review of the agricultural real estate market in the County of Maui and State of Hawaii in general. The effective date of this report is July 1, 2011.

**PREPARED FOR:** CMBY 2011 INVESTMENT, LLC  
**C/O MS. BLANCA LAFOLETTE**  
Project Coordinator  
Pacific Rim Land, Inc.  
1300 North Halopano Street, Suite 201  
P.O. Box 220  
Kihei, Hawaii 96753

**EFFECTIVE DATE:** July 1, 2011

The subject parcel, which consists of approximately 86,030 acres of land, has a State Land Use designation of Agricultural and is zoned for Agricultural District uses by the County of Maui. Although situated within the District of Wailuku, the subject parcel is classified for Agriculture (AG) by the Kihei-Makena Community Plan. As presently envisioned, the Proposed Project, which is still in its preliminary planning stage, will consist of 28 heavy industrial lots east of Mokuale Highway, in an area that currently contains primarily agricultural uses, specifically sugar cane production.

The Maui Raceway Park is located to the west of the subject parcel, within Project District 10. The park provides a wide variety of recreational uses including: drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing. Additional nearby uses include a quarry for Hawaiian Cement and the Maui Consolidated Facility for the Hawaii Army National Guard.


The assignment included the determination of general and specific effects arising from the development of the proposed subdivision. The following report presents a narrative review of the study and our analysis of data along with other pertinent materials on which this report is predicated. It contains data and exhibits gathered in our investigations, and will include a description of the analytical process and our conclusions, as of July 1, 2011.

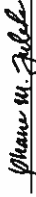
AN AGRICULTURAL IMPACT ASSESSMENT FOR THE PROPOSED  
PUUNENE HEAVY INDUSTRIAL SUBDIVISION, WAILUKU, ISLAND OF MAUI, HAWAII



Thank you for allowing us the opportunity to work on this interesting assignment.

Respectfully submitted,  
ACMA Consultants, Inc.

  
Glenn K. Kujitiso, MAI, CRE  
Certified General Appraiser,  
State of Hawaii, CGA-039  
Expiration: December 31, 2011

  
Shane M. Fukuda  
Certified General Appraiser,  
State of Hawaii, CGA-810  
Expiration: December 31, 2011

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## PART I – INTRODUCTION

### A. EXECUTIVE SUMMARY

#### Background

The proposed Puunene Heavy Industrial Subdivision (the “Proposed Project”) is envisioned as a 28-lot heavy industrial subdivision to be developed on approximately 86,030 acres east of Mokulele Highway, District of Wailuku, Island and County of Maui. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Wailuku, Island and County of Maui. As of the effective date, the subject site is designated for agricultural uses by State Land Use Law, County of Maui zoning and the Kihet-Makena Community Plan. The subject parcel also lies within the proposed Urban Growth Boundary set forth by the (draft) Maui Island Plan (December 2010).

The heavy industrial zoning district provides for a minimum lot size of 10,000 square feet. The sizes of lots in the proposed heavy industrial subdivision shall be determined by the types of uses proposed and the market demand projected approximately six months before the application for subdivision approval is filed with the Development Services Administration, County of Maui. Currently, the plan is to provide ten (10) lots ranging in size from one-half (0.5) acre to one (1) acre; five (5) lots ranging from over one (1) acre to two (2) acres and the balance ranging from over two (2) acres to twenty (20) acres for a total of twenty eight (28) lots. The Proposed Project will feature interior roads as well as drainage facilities consistent with County requirements.

#### Study Objectives

ACM Consultants, Inc. has been retained by CMRY 2011 Investment, LLC to analyze the agricultural real estate market in an effort to determine general and specific effects arising from the development of the proposed project. In particular, we studied agricultural trends and demographics, and supply and demand factors. In the process, we have gathered as much pertinent information as possible with respect to agricultural property in the County of Maui, as well as the State of Hawaii in general.

#### Conclusion

Development of the Proposed Project was deemed to have negligible impacts to agriculture. Based on the consultant’s research, removal of the subject parcel’s 86 acres is expected to have an insignificant impact to the supply of agricultural land, both for the State of Hawaii and County of Maui.

Furthermore, no agricultural activities were in operation on the subject parcel as of the effective date. As such, the removal of the subject parcel from agricultural use would have no immediate impact upon agricultural revenues or jobs. There was also little, if any,

foreseeable long term agricultural impacts, primarily due to the subject’s poor soil quality.

According to maps from three (3) soil studies commonly utilized in the State of Hawaii, the subject parcel has very rocky soil that was considered to have little agricultural potential. In this light, it is reasonable to assume that consolidation with adjacent sugarcane crops or acquisition by an agribusiness operation is highly unlikely.

Adjacent uses include planting, irrigation, fertilization and harvesting of sugarcane by HC&S; drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing at Maul Raceway Park; and the ongoing quarry operation of Hawaiian Cement. The odor, dust, smoke, gas, noise, vibration, etc. produced by these activities is allowable in heavy industrial areas. This being the case, additional intrusions caused by the Proposed Project’s heavy industrial users is assumed to be acceptable.

The Proposed Project lies within the proposed Urban Growth Boundary established by the (Draft) Maui Island Plan. Meanwhile, the current Kihet-Makena Community Plan has classified the area adjacent to the subject parcel (approximately 561 acres), as Project District 10 “Old Puunene Airport area”. The project district suggests “Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use.”

State and County classifications for the subject parcel currently suggest an agricultural use, provided that the land has productive soil characteristics. In the case of the subject parcel, its inferior soil quality likely precludes feasible agricultural use.

Based on the aforementioned factors, which include sufficient agricultural supply and demand, current agricultural trends, poor subject soil quality; and complementary surrounding uses, the agricultural impacts attributed to the development of the Proposed Project are expected to be negligible. Furthermore, creation of the proposed project would be consistent with the County of Maui’s long-range planning goals for the area.

### B. PURPOSE OF THE REPORT

The purpose of this report, as of July 1, 2011, is to generate an agricultural impact assessment in support of land use entitlement requests for the Proposed Project.

**C. INTENDED USE OF THE REPORT**

The intended use or function of this report is to provide real property information and real estate market data in support of an Environmental Assessment, a State Land Use District Boundary Amendment (Agricultural to Urban), Community Plan Amendment (Agriculture to Heavy Industrial), and a Change in Zoning (Agricultural District to M-2 or M-3 Heavy Industrial District).

**D. INTENDED USER OF THE REPORT**

The intended users of this report are CMBY 2011 Investment, LLC and the appropriate State and County agencies involved in the proposed land use changes.

**E. SCOPE OF THE REPORT**

The Consultant has provided an agricultural impact assessment estimating general and specific effects arising from the development of the proposed subdivision. The assessment was developed and prepared in conformity with, and subject to, the requirements of the Code of Professional Ethics and the Standards of Appraisal Practice of the Appraisal Institute, and the Uniform Standards of Professional Appraisal Practice.

**F. STATEMENT OF COMPETENCY**

ACM Consultants, Inc. has been actively involved in the real estate appraisal research and consulting business since 1982. Our business emphasis has focused mainly on the counseling and valuation of residential and commercial properties located within the State of Hawaii. The company considers itself competent to conduct an agricultural impact assessment with respect to a proposed industrial project in Wailuku, Island and County of Maui.

**G. EXTRAORDINARY ASSUMPTIONS AND HYPOTHETICAL CONDITIONS**

1. As of July 1, 2011, the subject was still in the preliminary stages of planning. A Proposed Land Development Plan, prepared by Oromo Engineering, Inc., was provided by the client and offered a visual indication of the proposed layout of the development. The consultant is not liable for any changes in the project plan past this date, nor for information that has not been developed, released or communicated to the Consultant.

2.

The Consultant has no control over economic conditions and other international events that could have an affect upon Hawaii's economy and the Maui real estate market. As a result, this report has not made any assumptions regarding potential conflicts with other nations, or external factors affecting economic conditions here.

3.

The counseling report is also subject to standard "Limiting and Contingent Conditions" located in the Addenda.

**H. CONFIDENTIALITY PROVISION**

The contents of agricultural impact assessment are confidential. Release of this counseling report by ACM Consultants, Inc. is limited to you for the intended uses stated above. Any further release of this report, or portions herein, is strictly prohibited and you shall accept the risk and liability for any such release without the previous written consent of ACM Consultants, Inc. Further, you shall indemnify and defend ACM Consultants, Inc., and its individual consultants/appraisers, from any claims arising out of any such unauthorized disclosure.

I. CERTIFICATION


The undersigned does hereby certify that except as otherwise noted in this consulting report:


1. The Consultant's compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
2. The Consultant has no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the parties involved. Any "Estimate(s) of Market Value" in the consulting report is not based in whole or in part upon the race, color, or national origin of the prospective owners or occupants of the properties in the vicinity of the property appraised.
3. The Consultant has personally inspected the property, and is a signatory of this Certification.
4. To the best of the Consultant's knowledge and belief, all statements of fact and information in this report are true and correct, and the Consultant(s) have not knowingly withheld any significant information.
5. No one provided significant professional assistance to the person(s) signing this report.
6. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and the Consultant's personal unbiased professional analyses, opinions and conclusions.
7. All analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Appraisal Practice.
8. This counseling report is subject to and in conformance with the Code of Professional Ethics and Standards of Professional Conduct of the Appraisal Institute. The analyses, opinions and conclusions of this counseling report have been made in conformity with, and are subject to, the requirements of the Uniform Standards of Professional Appraisal Practice (USPAP).
9. This counseling report is to be used only in its entirety and no part is to be used without the whole report. All conclusions and

opinions concerning the real estate are set forth in the counseling report were prepared by the Consultant(s) whose signature(s) appears on the counseling report. No change of any item in the counseling report shall be made by anyone other than the Consultant, and the Consultant shall have no responsibility for any such unauthorized change.

10. The Appraisal Institute, of which this Consultant is a member, has a legal right to review this report.
11. The qualifications of this Consultant, including completed educational requirements of his/her candidacy are located in the Addendum to this report. Any member signing the report has completed the requirements of the Appraisal Institute's continuing education program.
12. The Consultant has performed a previous appraisal of the subject property within the three years prior to this assignment.

ACM Consultants, Inc.

  
 Glenn K. Punihisa, MAI, CRE  
 Certified General Appraiser,  
 State of Hawaii, CGA-039  
 Expiration: December 31, 2011

  
 Shane M. Fukuda  
 Certified General Appraiser,  
 State of Hawaii, CGA-810  
 Expiration: December 31, 2011

**PART II – FACTUAL DATA**

**A. AGRICULTURAL OVERVIEW**

According to the State of Hawaii Land Use Commission, there are approximately 4,112,388 acres of land in the State of Hawaii. Of this total, approximately 1,930,224 acres have been designated as Agricultural District. The following table describes the breakdown of Agricultural District land by island and County:

State of Hawaii	Island	County	State
Mauka County		402,354	1,930,224
Molokai	244,088		
Molokai	11,427		
Molokai	46,539		
Honolulu City & County	128,810	128,810	
Honolulu County		1,214,040	
Honolulu	1,214,040		
Kauai County	139,270	185,020	
Kauai	45,700		
Niihau			

Source: 2009 State of Hawaii Data Book

The majority of the agricultural land in Hawaii is owned by government entities and large private landowners. Much of the private agricultural lands are held by companies with historical ties to commercial plantations, ranches, and land trusts.

In its prime, commercial agriculture in Hawaii was dominated by field crops, such as sugarcane, pineapple and coffee. Increased global competition, higher operational and shipping costs, as well as the long-term rise in fuel prices contributed to declines in profitability for these industries. The subsequent closure of commercial plantations across the state led to a paradigm shift toward urban development, leading to an increased sell-off of agricultural land.

Due to its relatively low cost, coupled with the lack of entitled land, tracts of agricultural land were purchased, rezoned and developed. The creation of land condominiums or "gentleman estates" also gained popularity, as these types of rural residential projects did not require rezoning. More recently, however, concerns over urban sprawl and the availability of water have caused government officials to be more cautious regarding the development of agricultural land.

In lieu of urbanization, selling and leasing land to diversified commercial agricultural businesses continues to be an option for large landowners. In addition to small-scale commercial farmers and ranchers, a number of agribusiness companies, such as Monsanto,

Syngenta, and Pioneer, have increased their land holdings in Hawaii. Alternative energy companies, primarily wind farms, have also begun purchasing tracts of land. The following section describes some of the various types of agricultural goods being produced in each County.

**B. AGRICULTURAL REGIONS AND PRODUCTS**

**County of Maui**

The State of Hawaii Land Use Commission has classified approximately 402,354 acres of land as Agricultural District in the County of Maui. The primary agricultural regions in this market area are shown on the following table:

Region	Agricultural Products
Hono	Bananas, Cattle, Flowers, Herbs, Hogs, Nursery Products, Tropical Specialty Fruits, Taro, Vegetables
Kohala / Waialeale	Bananas, Cattle, Flowers, Hogs, Nursery Products, Pineapples, Seed Crops, Sugarcane, Taro, Vegetables
Maui	Cattle, Nursery Products, Seed Crops, Sheep
Kula	Avocados, Bananas, Cattle, Flowers, Herbs, Hogs, Papayas, Pineapples, Tropical Specialty Fruits, Vegetables
Lahaina	Bananas, Cattle, Coffee, Nursery Products, Papayas, Pineapples, Seed Crops, Vegetables
Maui	Bananas, Cattle, Herbs, Papayas
Molokai	Appalooses, Bananas, Cattle, Coffee, Flowers, Herbs, Hogs, Nursery Products, Papayas, Seed Crops, Taro, Tropical Specialty Fruits, Vegetables

Source: Statistics of Hawaii Agriculture, 2009. State of Hawaii Department of Agriculture

**City and County of Honolulu**

The State of Hawaii Land Use Commission has classified approximately 128,810 acres of land as Agricultural District in the City and County of Honolulu. The primary agricultural regions in this market area are shown on the following table:

Region	Agricultural Products
Kohala	Appalooses, Bananas, Cattle, Flowers, Nursery Products, Papayas, Taro, Vegetables, Watermelon
Kona	Bananas, Flowers, Herbs, Melons, Nursery Products, Pineapples, Seed Crops, Vegetables, Watercress
Waikaloa	Appalooses, Bananas, Cattle, Coffee, Flowers, Lanai Root, Nursery Products, Papayas, Pineapples, Seed Crops, Taro, Tropical Specialty Fruits, Vegetables
Waianae	Flowers, Herbs, Hogs, Nursery Products, Poultry, Vegetables
Waianae	Bananas, Flowers, Nursery Products, Poultry, Vegetables

Source: Statistics of Hawaii Agriculture, 2009. State of Hawaii Department of Agriculture

**County of Hawaii**

The State of Hawaii Land Use Commission has classified approximately 1,214,040 acres of land as Agricultural District in the County of Hawaii. The primary agricultural regions in this market area are shown on the following table:

Region	Agricultural Products
Hilo	Onion, Flowers, Guava, Macadamia Nuts, Nursery Products, Tropical Specialty Fruits, Vegetables
Honolulu	Bananas, Cattle, Coffee, Forestry, Ginger Root, Macadamia Nut, Papayas, Taro, Tropical Specialty Fruits, Vegetables
Kaunaloa	Cattle, Flowers, Nursery Products, Vegetables
Kapaau	Cattle, Flowers, Macadamia Nuts, Nursery Products, Poultry, Sheep
Kaohikaheka	Aquaculture, Avocado, Cattle, Coffee, Flowers, Forestry, Honey, Macadamia Nuts, Nursery Products, Vegetables
Pohole	Cattle, Citrus, Coffee, Forestry, Macadamia Nuts
Pohopoho	Anthurium, Bananas, Citrus, Flowers, Guava, Macadamia Nuts, Nursery Products, Papayas, Tropical Specialty Fruits, Vegetables

Source: *Statistics of Hawaii Agriculture, 2009*. State of Hawaii Department of Agriculture

**County of Kauai**

The State of Hawaii Land Use Commission has classified approximately 185,020 acres of land as Agricultural District in the County of Kauai. The primary agricultural regions in this market area are shown on the following table:

Region	Agricultural Products
Hanalei	Bananas, Cattle, Guava, Papaya, Taro, Tropical Specialty Fruits, Vegetables
Honopoulo	Aquaculture, Bananas, Cattle, Coffee, Flowers, Hops, Honey, Nursery Products, Seed Crops, Singapore, Taro
Waialeale	Bananas, Cattle, Flowers, Nursery Products, Vegetables

Source: *Statistics of Hawaii Agriculture, 2009*. State of Hawaii Department of Agriculture

**D. AGRICULTURAL LAND OWNERSHIP**

As previously mentioned, the majority of the agricultural land in the State of Hawaii is owned by government entities and large private landowners. Much of the private agricultural lands are held by companies with historical ties to commercial plantations and ranches. While in operation, there was no reason for these businesses to sell off their land holdings; however, as more and more closed their doors, many of these landowners began selling their idle agricultural land.

Research of agricultural zoned vacant land revealed that over 70 percent of the agricultural zoned vacant land in each County is owned by "large landowners" (those who control over 1,000 acres). The following sections summarize this relationship, as well as some of the "large landowners" within each market area. (Source: Hawaii Information Service)

County of Maui, Agricultural Zoned Vacant Land	
Number of Parcels:	5,653 parcels
Total Acreage:	198,864 acres
Acreage of "Large Landowners" (1,000+ Acres):	151,147 acres
Acreage of "Large Landowners" to Total Acreage:	76 percent

Notable "Large Landowners" (in alphabetical order): Alexander & Baldwin, Alpha Omega Holding LLC, Bemice Pauahi Bishop Estate Trust, Cooke Land Company, County of Maui, Dunbar Ranch Partners, Howard Dumam Trust, East Maui Irrigation Company, Haleakala Ranch, Hana Acquisition Partners LLC, Hana Forest Reserve Corporation, Hawaiian Home Lands, Kaanapali Land Management Corporation, Kaupo Ranch, Kawela Plantation, Homeowners Association, Kualapuu Ag Company LLC, Kula 1800 Investment Partners, Maui Land & Pineapple Company, Malakal Properties, Malakal Ranch, Ni'u Mauka LLC, Pu'u O Haku Ranch, State of Hawaii, Ulupalakua Ranch, and United States of America

County of Honolulu, Agricultural Zoned Vacant Land	
Number of Parcels:	1,879 parcels
Total Acreage:	63,120 acres
Acreage of "Large Landowners" (1,000+ Acres):	49,444 acres
Acreage of "Large Landowners" to Total Acreage:	78 percent

Notable "Large Landowners" (in alphabetical order): Bemice Pauahi Bishop Estate Trust, Castle & Cooke, City & County of Honolulu, Dillingham Ranch Alna LLC, Dale Food Company, George Galbraith Trust, Hawaiian Home Lands, James Campbell Company, James Campbell Trust, Kualoa Ranch, Pioneer Hi-Bred International, Robinson Kumia Land LLC, State of Hawaii, Syngenta Hawaii LLC, and United States of America

County of Hawaii, Agricultural Zoned Vacant Land	
Number of Parcels:	61,233 parcels
Total Acreage:	861,904 acres
Acreage of "Large Landowners" (1,000+ Acres):	607,547 acres
Acreage of "Large Landowners" to Total Acreage:	70 percent

Notable "Large Landowners" (in alphabetical order): Thomas Atwood, Bemice Pauahi Bishop Estate Trust, Bridge Alna Lea LLC, Bridge Puako LLC, Cambium Pahala, County of Hawaii, EWM Enterprises LP, David Greenwell Trust, Tobi Haleen Trust, Hawaiian Home Lands, Hakukano Ranch, HPAC LLC, Kapaia Orchards Estates LLC, Pitkol Kawanakoa, Kilauea Trust 1, Kohala Preserve Conservation Trust, Kualoa Ranch LLC, Lanikou Properties LLC, Mauna Loa Macadamia Orchards LP, Manika Mallick, Peier Matsura Trust, Maulua Investments LLC, MC Candleless Land & Cattle, The Nature Conservancy, New Moon Foundation, Edmund Olson Trust, Parker Land Trust, Parker Ranch, Teresa Prekaski, Priest (Monk) of Bang San Ho Temple, The Queen Emma Foundation, Roman Catholic Church, Sands of South Kona LLC, Show Family Hawaii LLC, Unda Shum, South Kona LLC, SRBIC LLC, Elizabeth Stack, State of Hawaii, Tokyu Corporation, United States of America, W H Shipman, Waikiki Ranch, Waikaloa

Mauka LLC, Waikoloa Village Association, Wall Ranch, WVK Hawaii, Yee Hop

County of Kauai, Agricultural Zoned Vacant Land 2,528 parcels  
 Number of Parcels: 94,117 acres  
 Total Acreage: 67,183 acres  
 Acreage of "Large Landowners" (1,000+ Acres): 71 percent  
 Percentage of "Large Landowners" to Total Acreage: 71 percent

Notable "Large Landowners" (in alphabetical order):  
 Betts Midler Family Trust, Bernice Pauahi Bishop Estate Trust, Ben Dyré Family Limited Partnership, Comparkers Realty Holding Company, Gay & Robison, Grove Farm Company, Jurassic Kahill Ranch LLC, Knudsen Trust, Ithue Plantation Company, McBryde Sugar Company, State of Hawaii, Vitiany LLC, John & Marilyn Wells Family Trust

It should be noted that the Acreage of "Large Landowners" and Acreage "Large Landowners" to Total Acreage figures listed on the previous pages are likely higher. In many cases, the parcel owners listed in public databases were actually leasehold owners, with the leased fee interest held by one of the "Large Landowners".

Based on this research, it would appear that out of 1,218,005 acres of agricultural zoned vacant land at least 875,352 acres are owned by only 91 government entities and private owners. Many of these "Large Landowners" choose to hold or lease their land, rather than make it available for sale on market. In this light, although there are currently over 71,000 agricultural zoned vacant land parcels across the State of Hawaii, the potential available supply in each market area is much less. However, the current supply appears to be sufficient to satisfy demand, evidenced by the annual contraction of farm land discussed in the following section.

**E. FARMING TRENDS**

The following information was gleaned from the most recent Census of Agriculture (2007) by the USDA National Agricultural Statistics Service:

**Land in Farms**

There were 1,121,329 acres of land in farms in the State of Hawaii as of 2007, which was down 43.6 percent from the 1,988,282 acres reported in the 1978 Ag Census. This translated into a straight line average decline of 1.5 percent over the 29 year period. As shown in the table to follow, land in farms has decreased from 1.5 to 13.8 percent between Censuses.

Census Year	Land in Farms (Acres)	Change from Previous (Acres)	Change from Previous (%)
1978	1,988,282	N/A	N/A
1982	1,957,501	-30,781	-1.5%
1987	1,721,321	-235,980	-12.1%
1992	1,588,843	-132,678	-7.7%
1997	1,439,071	-149,772	-9.4%
2002	1,300,499	-138,572	-9.6%
2007	1,121,329	-179,170	-13.8%

**Number of Farms**

There were 7,521 farms in the State of Hawaii as of 2007, which was an increase of 74.5 percent from the 4,310 farms reported in the 1978 Ag Census. This translated into a straight line average increase of 2.6 percent over the 29 year period. As shown in the table to follow, the number of farms increased from 2.6 to 9.6 percent between Censuses, with the exception of one year, where a 1.4 percent decrease was reported.

Census Year	Number of Farms	Change from Previous	Change from Previous (%)
1978	4,310	N/A	N/A
1982	4,495	285	6.6%
1987	4,870	275	6.0%
1992	5,316	466	9.6%
1997	5,473	137	2.6%
2002	5,398	-75	-1.4%
2007	7,521	2,123	39.3%

**Average Farm Size**

The average farm size in the State of Hawaii, as of 2007, was 149 acres, a decrease of 67.7 percent from the 461-acre average reported in the 1978 Ag Census. This translated into a straight line average decrease of 2.3 percent over the 29 year period. As shown in the table to follow, the average farm size has decreased from 7.6 to 38.2 percent between Censuses.

Census Year	Average Farm Size (Acres)	Change from Previous (Acres)	Change from Previous (%)
1978	461	N/A	N/A
1982	426	-35	-7.6%
1987	353	-73	-17.1%
1992	298	-55	-15.6%
1997	263	-35	-11.7%
2002	241	-22	-8.4%
2007	149	-92	-38.2%

**Product Market Value Average per Farm**

The product market value average per farm in the State of Hawaii, as of 2007, was \$68,292, a decrease of 29.8 percent from the \$97,274 reported in the 1978 Ag Census. This translated into a straight line average decrease of 1.0 percent over the 29 year period. As shown in the table to follow, the product market value average per farm has



varied from a decrease of 30.9 percent to an increase of 25.0 percent between Censuses.

Census Year	Product Market Value Avg./Farm	Change from Previous	Change from Previous (%)
1978	\$97,274	N/A	N/A
1982	\$171,269	\$24,993	23.0%
1987	\$125,203	\$3,634	3.0%
1992	\$103,458	-\$21,745	-17.4%
1997	\$90,798	-\$12,660	-12.2%
2002	\$18,819	\$8,071	8.8%
2007	\$18,292	-\$30,537	-30.9%

According to the Statistics of Hawaii Agriculture 2009, seed crops had the highest production value in the State of Hawaii. Seed crop production value was \$222,540,000 in 2009, up 25.7 percent over the \$176,990,000 reported in 2008. As shown in the table to follow, seed crop production value in 2009 was greater than the rest of the top 10 commodities combined:

2009 Rank	Commodity	2008 Production Value	2009 Production Value	Change from Previous (\$)	Change from Previous (%)
1	Seed Crops	\$176,990,000	\$222,540,000	\$45,570,000	25.7%
2	Sugarcane	\$44,200,000	\$44,200,000	\$0	0.0%
3	Coffee	\$29,580,000	\$31,220,000	\$1,740,000	5.9%
4	Macadamia Nut	\$33,500,000	\$29,400,000	-\$4,100,000	-12.2%
5	Corn	\$24,205,000	\$28,945,000	\$4,640,000	19.1%
6	Algae	\$1,574,000	\$16,993,000	\$1,233,000	8.0%
7	Papayas	\$14,393,000	\$14,186,000	-\$207,000	-1.4%
8	Bananas	\$8,004,000	\$10,173,000	\$2,171,000	27.1%
9	Eggs	\$8,278,000	\$8,258,000	-\$81,000	0.9%
10	Milk	\$5,460,000	\$7,491,000	\$2,031,000	37.2%

Rounding out the top 20 commodities for 2009 were basil, sweet potatoes, potted palms, potted dendrobiums, cut anthuriums, hogs, head cabbage, potted dracaena, taro and ginger root. As such, in addition to a greater number of smaller farms, it appears that more diverse commodities are being produced in the State of Hawaii.

In light of the aforementioned Census information, it appears that over the last 30 years, there has been a significant shift in the farming industry. Whereas the industry was previously dominated by larger commercial operations, namely sugarcane and pineapple, the trend has moved toward smaller farms producing more diverse commodities. Although the most recent Census of Agriculture was conducted in 2007, based on what is currently being observed in the market, it is reasonable to assume that this trend has continued.

**Conclusion**

**F. REGIONAL CHARACTERISTICS**

Agriculture on Maui has historically been dominated by larger operations like Maui Land & Pineapple Company and Alexander & Baldwin's Hawaii Commercial and Sugar (HC&S).

Pineapple now faces more foreign competition from places like Thailand. In 2007, Maui Land & Pineapple Company shut down the canning portion of its operation to rely solely on the more profitable fresh fruit segment. Downsizing of the plantation occurred in 2008, which resulted in a reduction of over 200 employees. In December 2009, Maui Land & Pineapple Company announced that it would be shutting down its agricultural arm, citing continued annual losses. However, a new company, Halimalele Pineapple Company, was formed the following week and immediately took over pineapple operations.

HC&S survives as Hawaii's only remaining sugar operation due in part to its economies of scale, its land configuration (a relatively compact and contiguous area in the isthmus of the Valley Isle), and its commitment and ability over the years to reinvest and upgrade plant and equipment. But the last active sugar plantation in the state is facing other hardships, namely water. There were drought conditions on Maui between 2007 and 2009, contributing to low yields. According to HC&S, future viability is heavily dependent on continued stream diversion; however, there have been opposition to this continued practice. HC&S continues to re-evaluate its operations to remain viable, including consideration of potential biofuels and other energy alternatives.

Another of Maui's sugar operation casualties, Pioneer Mill in West Maui, is missed visibly. For years, proponents of maintaining and sustaining Hawaii's sugar industry argued that growing sugarcane imparted to this economy an important, if underestimated, non-pecuniary benefit; sugar kept the land green and attractive, for tourists and locals alike, and its cultivation contributed to the recharge of groundwater resources. Economists call this situation an "externality," an activity that affects others for better or worse, without those others paying or being compensated for activity.

Anyone who doubts that logic now has only to drive the West Maui coast from Olowalu to Kaanapali and look mauka, at an entire mountain side of dry brush and unused fields. As with many cases where sugar plantations have shut down, most diversified agriculture crops are just not land intensive enough to utilize all the vacant land. Coffee and seed corn operations are possibilities, but they make only a small dent.

In addition to sugar and pineapple cultivation, Maui also offers rich opportunities for agricultural diversification by small farmers and large agribusinesses. Top among new agricultural products are: papaya, cut flowers, coffee, Kula onions and strawberries, and Chinese cabbage from Kula. Malokai offers its sweet potatoes, lettuce and alfalfa, as well as taro.

## G. SUBJECT CHARACTERISTICS

### Environs

The Puunene Heavy Industrial Subdivision (the "Proposed Project") is a proposed 28-lot, heavy industrial subdivision situated east of Makulele Highway, District of Wailuku, Island and County of Maui.

Makulele Highway is the primary roadway connecting Kahului to Kihui and runs in a generally north-south direction. It is an asphalt-paved four-lane thoroughfare with two lanes in each direction, divided by a median. Makulele Highway has street lights, as well as overhead and underground utilities. A dedicated bicycle and pedestrian path is situated along the eastern side of the roadway.

Puunene is primarily an agricultural area between the Central Maui and South Maui regions. The majority of the surrounding land is being utilized for commercial sugar cane production. Maui Raceway Park, the Hawaiian Cement quarry, the Maui Army National Guard Armory, and the Maui Humane Society are located nearby. Central Maui Baseyard, a light/heavy industrial yard storage development, is situated approximately one mile to the north. Although the immediate area is unpopulated, the Proposed Project will be conveniently located with respect to its many supporting facilities, such as shopping, schools, employment, residential and recreational areas in both Central Maui and South Maui.

### Physical Description

**Size, Shape and Topography:** The Proposed Project has a land area of 86.030 acres and has a highly irregular shape. A physical inspection of the property confirmed that topography is generally level to gently sloping.

The Consultant has not been provided with soil, subsoil or other engineering studies to determine the load-bearing capacity of the subject; however, based on typical construction in the neighborhood and our knowledge of other properties in the immediate vicinity, the site is presumed to have stable soil conditions and any drainage problems are assumed to be correctable.

**Access:** As shown on an August 10, 2011 map by R.I. Tanaka Engineers, Inc., "Land of Pulehuni Exhibit Map Showing Proposed Easements B-1, B-2, B-3, B-4, B-5 and B-6", vehicular access to the Proposed Project from Makulele Highway will be via proposed

easements over adjacent parcels. The proposed access easements will consist of portions of Kamadina Road, South Firebreak Road and Lower Kihel Road, which are private roadways situated on land owned by the State of Hawaii and Alexander & Baldwin, Inc. ("A&B").

Enccompassing portions of Kamaoia Road, South Firebreak Road and Lower Kihel Road, proposed Easements B-1, B-3, B-4 and B-5 would need to be granted by the State of Hawaii. Should this access not be obtained within the next five (5) years, the Developer has secured an alternate means of access with A&B, via an easement around the northern and eastern sides of Reservoir No. 6.

**Easements and Restrictions:** According to a copy of a "Limited Warranty Deed with Reservation of Easements, Covenants, Reservations and Restrictions", recorded with the Bureau of Conveyances on March 17, 2011, the subject parcel is encumbered by a 20-foot wide road easement along its westerly boundary. The document further describes a utility easement in favor of Maui Electric Company Limited and Hawaiian Telecom granting perpetual right and easement over Easement 3 for utility purposes.

**Flood Status:** Flood Hazard Districts are delineated on Flood Boundary and Floodway Maps and the Federal Insurance Rate Maps prepared by the Federal Insurance Administration and Federal Emergency Management Agency. The subject parcel is situated on Map Number 1500030580E, by the Federal Emergency Management Agency; revised September 25, 2009, and lies in Flood Zone X. Zone X within Maui County indicates areas determined to be outside of the 0.2 percent annual chance flood plain. Flood insurance is not required for properties within this flood zone.

**Utilities:** Potable water and sewer service are currently unavailable, while electricity and telephone service are available from overhead lines in the area.

### Agricultural Characteristics

**Soil Type:** As derived from an USDA Natural Resources Conservation Service online web soil survey, the subject parcel appears to have primarily Waialoa extremely stony silty clay loam, 3 to 5 percent slopes, eroded (WID2), with some parts of Alae cobbly sandy loam, 3 to 7 percent slopes (Ac6).

**Soil Ratings:** The USDA National Conservation Research Service Land Capability Grouping (non-irrigated) for the subject parcel indicated soil consisting primarily of Subclass VIs with some parts designated Subclass VIs. Subclass VIs soils have very severe soil limitations because of unfavorable texture, or because they are extremely rocky or stony. Also included are land types that are steep, rocky or stony. Subclass VIs soils have severe limitations because of stoniness or

unfavorable texture. The soils are very stony, very rocky, extremely stony, or extremely rock and have slopes of 0 to 35 percent.

As shown on the Agricultural Lands of Importance in the State of Hawaii (ALISH) map, the Proposed Project appears to be designated as being "residual". The residual classification is given to land that is not placed in one of the study's three (3) important agricultural land categories: Prime, Unique and Other Important Ag.

A University of Hawaii Land Study Bureau (LSB) map indicated the Proposed Project has an Overall Productivity Rating of "E", which indicates land that is very poor/not suitable for agricultural production.

**Elevation:** U.S. Geological survey maps indicated the Proposed Project ranges in elevation from approximately 120 feet on its western side, rising to approximately 140 on its eastern side.

**Solar Radiation:** Solar Maps from the State Department of Business, Economic Development and Tourism indicated that the Proposed Project receives an average of between 450 and 500 calories per square centimeter per day. This translated into an average of 5.2 to 5.8 peak sun hours daily.

**Rainfall:** Recording stations closest to the Proposed Project are located in Kahului and Kihel. According to precipitation data gleaned from the USDC National Oceanographic and Atmospheric Administration, between 1997 and 2009 the annual rainfall recorded at the Kahului recording station averaged approximately 14.5 inches. The Kihel recording station reported an annual average of about 11.3 inches during the same period.

**Temperatures:** Recording stations closest to the Proposed Project are located in Kahului and Makena. USDC National Oceanographic and Atmospheric Administration temperature data showed that between 1997 and 2009 the annual temperature recorded at the Kahului and Makena recording stations averaged approximately 75 degrees Fahrenheit.

**Wind Speed:** Wind direction for the area typically flows from north to south. As shown on a wind speed map by Hawaiian Electric Company, the Proposed Project has a 'mean speed at 50 meters' of about 14 miles per hour.

#### Land Use Controls

**State of Hawaii:** As depicted on State of Hawaii Land Use Commission Maps and confirmed with the County of Maui Planning Department Zoning Administration and Enforcement Division, the Proposed Project is located within the State Agricultural District.

Hawaii Administrative Rules, Title 15; Department of Business Economic Development, and Tourism; Subtitle 3; State Land Use Commission; Chapter 15; Land Commission Rules; Subchapter 2 states that Agricultural Districts: 1) shall include lands with a high capacity for agricultural production; 2) may include lands with significant potential for grazing or for other agricultural uses; and 3) may include lands surrounded by or contiguous lands or which are not suited to agricultural and ancillary activities by reason of topography, soils, and other related characteristics.

A district boundary amendment from Agricultural to Urban would be needed for the Proposed Project.

**County of Maui:** As confirmed with the County of Maui Planning Department Zoning Administration and Enforcement Division, the subject parcel is zoned for agricultural uses.

Maui County Code, Title 19, Article II, Chapter 19.30A, Section 19.30A.010 states that the purpose of the Agricultural District is to: 1. Implement chapter 205, Hawaii Revised Statutes, and the goals and policies of the Maui County general plan and community plans; 2. promote agricultural development; 3. preserve and protect agricultural resources; and 4. support the agricultural character and components of the County's economy and lifestyle.

A change in zoning from the Agricultural District to the M-2 or M-3 Heavy Industrial District would be needed for the Proposed Project.

**Kihel-Makena Community Plan:** As shown on Kihel-Makena Community Plan Maps and confirmed with the County of Maui Planning Department Zoning Administration and Enforcement Division, the subject parcel is classified for agricultural uses. The Agriculture land use category indicates areas for agricultural activity which would be in keeping with the economic base of the County and the requirements and procedures of Chapter 205 HRS, as amended.

A revision from Agriculture to Heavy Industrial would be needed for the Proposed Project. An alternative would be to have the subject assimilated with Project District 10, if feasible.

The current Kihel-Makena Community Plan (1998) describes the area adjacent to the subject Parcel as Project District 10 (Old Pu'uene Airport area). The objective of this project district is to establish a master planned recreational and industrial expansion area to meet future recreational needs and to provide areas for industrial activities, including government facilities, whose locations are better suited away from urban areas.

**Land Use**

**Historic Uses:** According to the property owner, the property was used as a pig farm since the 1960s and was additionally used for unpermitted solid waste management activities since approximately 1995. Prior to the pigery use, the property was partly used for cultivation of sugarcane and also as a plantation camp. Prior to that use, the property was part of the Punene Naval Air Station.

**Current Use:** On the day of inspection, it was noted the subject parcel been cleared of previously abandoned solid waste material and the on-site dilapidated structures had been razed. A broadcast antenna was observed on the northern side of the property.

**Proposed Use:** The Proposed Project is envisioned as a 28-lot heavy industrial subdivision to be developed on approximately 86.030 acres east of Mokulele Highway, District of Wailuku, Island and County of Maui. As shown on the State of Hawaii Tax Maps, the subject parcel is within the District of Wailuku, Island and County of Maui. As of the effective date, the subject site is designated for agricultural uses by State Land Use law, County of Maui zoning and the Kihel-Makena Community Plan. The subject parcel also lies within the proposed Urban Growth Boundary set forth by the (draft) Maui Island Plan (December 2010).

The heavy industrial zoning district provides for a minimum lot size of 10,000 square feet. The sizes of lots in the proposed heavy industrial subdivision shall be determined by the types of uses proposed and the market demand projected approximately six months before the application for subdivision approval is filed with the Development Services Administration, County of Maui. Currently, the plan is to provide ten (10) lots ranging in size from one-half (0.5) acre to one (1) acre; five (5) lots ranging from over one (1) acre to two (2) acres and the balance ranging from over two (2) acres to twenty (20) acres for a total of twenty eight (28) lots. The Proposed Project will feature interior roads as well as drainage facilities consistent with County requirements.

**Most Appropriate Use:** The subject parcel is recognized by the December 2010 Draft Maui Island Plan and has been included in the Urban Growth Boundary. As stated in the Maui Island Plan draft, "The Punene Industrial Planned Growth Area's location midway between Kihel and Kahului makes it an ideal site to serve the island's industrial land use needs." In light of the site's inferior potential for feasible agricultural production, coupled with its inclusion in the Maui Island Plan, it is the Consultant's opinion that the most appropriate use for the subject parcel would be for a heavy industrial development.

**PART III – AGRICULTURAL IMPACTS AND CONCLUSION****A. REGIONAL AGRICULTURAL SUPPLY**

As of 2009, the USDA National Agricultural Statistics Service reported that there was approximately 230,000 acres of land in farms in the County of Maui. Supply of land in farms has been decreasing over the years. When compared to the 355,786 acres reported in 1992 Ag Census, the 2009 figure represented a decrease of over 125,000 acres, or approximately 35 percent of the total Maui County farm land. This translated into a straight line decrease of almost 7,000 acres per year, or 2 percent per annum.

The subject parcel, at about 86 acres, represents approximately four-hundredths of 1 percent (0.04%) of the County's land in farms, as of 2009. In addition, the 86 acres would amount to only 1.2 percent of the average annual contraction for Maui County. In this light, removing the subject parcel's 86 acres from agricultural use will have negligible impact on the County of Maui's overall farm land supply.

**B. NEIGHBORING OPERATIONS**

The neighboring properties consist primarily of sugarcane crops grown by Hawaiian Commercial & Sugar Company (HC&S). HC&S is the only commercial sugar producer on the Island and the last plantation in operation in the State of Hawaii.

As of 2009, the USDA National Agricultural Statistics Service reported that HC&S had 34,400 acres in sugar cropland. Although removing the subject parcel's 86 acres from agricultural use would deny the HC&S the opportunity to expand their operation, consolidation by HC&S would only result in an increase of gross acreage of less than three-tenths of 1 percent (0.3%).

The subject parcel was sold to the current landowners by Alexander & Baldwin, Inc., the parent company of HC&S. Therefore, it is reasonable to assume that HC&S did not have future plans for the subject parcel. Furthermore, HC&S has actually lessened its active crop acreage over the years. According to annual figures by the Hawaii Agricultural Statistics Service, HC&S had 36,700 crop acres in 2003, but their crop acreage had dropped to 34,400 acres as of 2009. Based on these factors, it is the Consultant's opinion that the assimilation by HC&S scenario is highly unlikely.

Part of the reason for the crop acreage reduction by HC&S is due to their sale of land to agribusinesses. These companies have been increasing their land holdings for seed crop production in Maui County, as well as across the State. However, according to an HC&S

representative, the agribusiness industry is very selective when it comes to land acquisition. Soil condition was said to be one of their primary considerations, along with solar radiation and wind conditions. Given its poor soil conditions, the subject parcel may not meet the seed crop companies' acquisition criteria.

Development of the Proposed Project will likely produce additional odor, dust, smoke, gas, noise, vibration, etc. which are commonly associated with heavy industrial uses. However, these potential intrusions are expected to have negligible impact on the surrounding properties, especially since the existing operations are already mutually subjected to these types of by-products. Examples of this include planting, irrigation, fertilization and harvesting of sugarcane by HCS; drag racing, auto cross racing, go kart racing, dirt oval track racing, radio controlled model aircraft flying and dirt bike racing at Maui Raceway Park; and the ongoing quarry activities of Hawaiian Cement.

#### C. ON-SITE OPERATIONS

The subject parcel was not being actively farmed, as of the effective date. Historical agricultural uses were said to include commercial sugarcane cultivation and pig farming. In the Consultant's opinion, a return to agricultural use is highly unlikely, primarily because of the subject parcel's poor soil conditions.

As discussed previously in the Agricultural Characteristics section, the USDA National Conservation Research Service Land Capability Grouping (non-irrigated) for the subject parcel indicated that it consists primarily of Class VII with some parts designated Class VI. The Land Capability Grouping has eight classes, Class I to Class VIII, with Class I having the fewest limitations and Class VIII having limitations that preclude use for agricultural purposes. It is generally recognized that the effective cutoff for agricultural use is Class IV, since soils in this class already exhibit very severe limitations that reduce choice of crops, require very careful management practices, or both. The subject parcel's "S" subclass further indicates soils that have unfavorable texture, that are extremely rocky or stony, and that may exhibit steep slopes.

#### D. AGRICULTURAL ECONOMIC IMPACTS

There would be no immediate impact to agricultural revenues or jobs due to the development of the proposed project, since there were no on-site agricultural activities taking place, as of the effective date.

It is difficult to accurately assess long-term agricultural economic impacts, as these figures would vary, depending on the type of

agricultural use. As previously indicated, although the removal of the subject parcel's 86 acres from agriculture would result in the inability to expand agricultural operations in the vicinity, the subject parcel's poor soil conditions may inhibit financially feasible crop production. This being said, the long-term agricultural economic impact from the development of the proposed project is estimated to be very little to none.

#### E. GOVERNMENTAL POLICY

Development of the subject parcel would require a State Land Use District boundary amendment from the State Agricultural District to the State Urban District, a change in zoning from the Agricultural District to M-2 or M-3 Heavy Industrial District, and a revision to the Kihel-Makana Community Plan from Agriculture to Heavy Industrial. In general, the purpose of agricultural classifications is to preserve agricultural land, as well as to foster the growth and diversification of agriculture. As such, the removal of the subject parcel's 86 acres from agriculture use would initially appear to be inconsistent with the intent of these governmental policies.

It must be noted, however, that the policies commonly describe the agricultural land to be considered for safeguarding as "suitable", "important", "prime" or "productive". As determined in the previous Agricultural Characteristics section, the subject parcel's soil was poorly rated by the three (3) agricultural soil rating systems generally recognized in the State of Hawaii.

Given the subject parcel's unlikelihood of feasible agricultural production in the future; a change in allowable land use may be in order. A review of the December 2010 Draft Maui Island Plan revealed that the subject parcel has been recognized and included in the plan's Urban Growth Boundary.

Furthermore, the current Kihel-Makana Community Plan has classified approximately 561 acres adjacent to the subject parcel, as Project District 10 "Old Pu'unene Airport area". The project district suggests "Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use."

#### F. OFFSETTING BENEFITS

The Proposed Project would remove approximately 86 acres of land from agricultural use. However, development of the Proposed Project is expected to generate significant expenditures by the project developer, as well as by the secondary owners (future purchasers) of the saleable lots within the proposed project. The operation of the heavy industrial businesses locating to the Proposed Project is expected to generate significant ongoing revenue.

This would favorably impact the County and State economies by means of job creation; additional direct and indirect sales expenditures; and increased tax revenues and fees to government coffers.

## G. CONCLUSION

It has been determined that the agricultural impacts from the development of the Proposed Project are anticipated to be minimal. The State of Hawaii and County of Maui appear to have sufficient supply of agricultural land to meet the current demand. In any case, the subject parcel's 86 acres represents only a small fraction of the overall agricultural land in the State and County.

The current trend for farms has shifted from large-scale commercial operations to smaller, more diverse crop production. Seed crops were shown to be the most valuable product in the State, with 2009 dollars reported to be in excess of the next nine most valuable commodities combined.

From a production perspective, development of the Proposed Project would have no immediate impacts to agricultural revenue or jobs, since there was no active farming taking place, as of the effective date. Long-term impacts were also foreseen to be negligible, primarily because of the subject parcel's poor soil condition.

In the Consultant's opinion, consolidation with the larger surrounding parcels for sugarcane production is highly doubtful. Aside from the aforementioned inferior soil, HC&S was the entity that sold the subject to the current property owner. In this light, it is reasonable to assume HC&S had no future plans involving the subject. Furthermore, the plantation has continued to decrease its land holdings over the years; therefore, expansion would seem unlikely.

A potential development alternative for the subject parcel would be acquisition by a seed crop operation. However, these agribusinesses are very selective in the land they obtain, with one of the primary criteria said to be soil condition. Given the subject parcel's poor soil quality, this scenario would also seem unlikely.

The Proposed Project is recognized by the December 2010 Draft Maui Island Plan and has been included in its Urban Growth Boundary. Meanwhile, the current Khei-Makena Community Plan has classified approximately 561 acres adjacent to the subject parcel as Project District 10 "Old Puuene Airport area". The project district suggests "Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use."

In light of the potential heavy industrial users expected to occupy this development, there may be an increase in odor, dust, smoke, gas, noise, vibration, etc. Since the surrounding users already produce some of these intrusions themselves, these impacts to the subject parcel and adjacent operations is foreseen as being mutually acceptable.

Changes to current land use controls will be needed, prior to the proposed development of the subject parcel. State and County classifications for the subject parcel currently suggest an agricultural use. Generally, the purpose of the agricultural classifications is to preserve agricultural land, as well as to foster the growth and diversification of agriculture. These uses are based on the premise that the land has productive soil characteristics. In the case of the subject parcel, its inferior soil quality likely precludes feasible agricultural use.

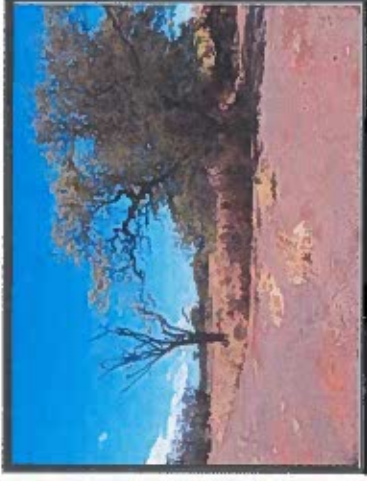
Based on the aforementioned factors, which include sufficient agricultural supply and demand; current agricultural trends; poor subject soil quality; and complementary surrounding uses, the agricultural impacts attributed to the proposed development of the Proposed Project are expected to be negligible. Furthermore, creation of the Proposed Project would be consistent with the County of Maui's long-range planning goals for the area.

**EXHIBIT A**  
**Photographs of the Subject Site**

**EXHIBITS**



**Photograph No. 1**  
View of northerly portion of subject.  
The camera is facing southeasterly.



**Photograph No. 3**  
View of easterly portion of subject.  
The camera is facing northeasterly.



**Photograph No. 2**  
View of southern portion of subject.  
The camera is facing northerly.



**Photograph No. 4**  
View of westerly portion of subject.  
The camera is facing northwesterly.

**PHOTOGRAPHS OF THE SUBJECT**

**PHOTOGRAPHS OF THE SUBJECT**

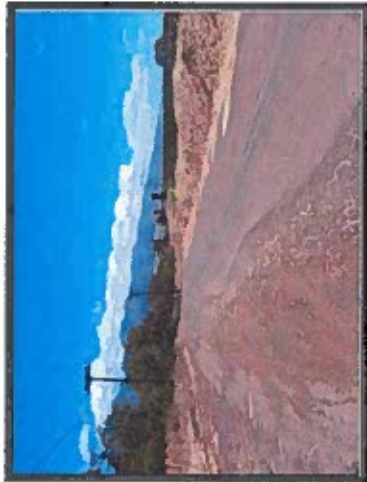




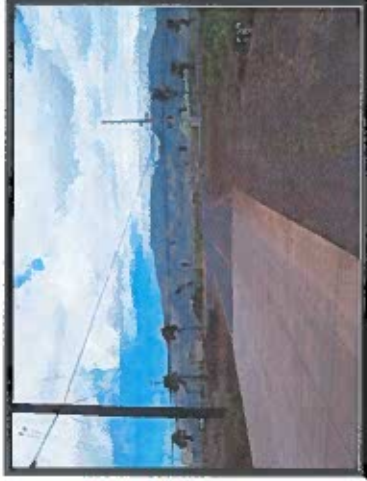
**Photograph No. 3**  
View of proposed entrance to subdivision. The camera is facing southwesterly.



**Photograph No. 7**  
View of Kamaoia Road, a portion of which will become an access easement in favor of the subject. The camera is facing easterly.



**Photograph No. 6**  
View of Lower Kihai Road and South Five Break Road, portions of which will become access easements in favor of the subject. The camera is facing northwesterly.



**Photograph No. 8**  
View of intersection of Kamaoia Road and Mokuile Highway. The camera is facing westerly.

**PHOTOGRAPHS OF THE SUBJECT**

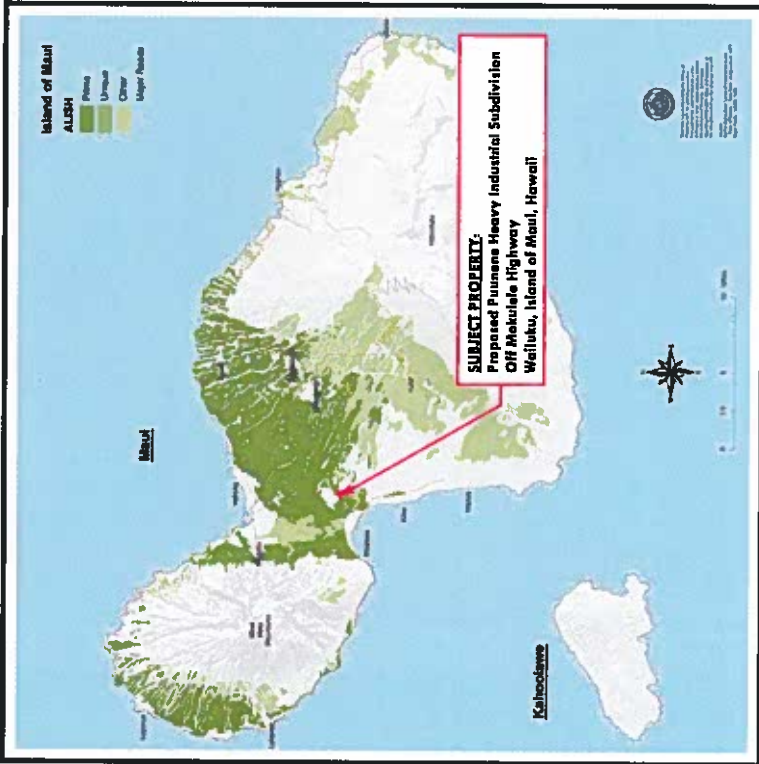
**PHOTOGRAPHS OF THE SUBJECT**



Not to scale... Area shown is approximate and for illustrative purposes only!  
Source: USDA Natural Resources Conservation Service (Unconfirmed)

**WEB SOIL SURVEY MAP**

**EXHIBIT B**  
**Selected Maps of the Subject**



Not to scale...For illustrative purposes only!  
Source: State of Hawaii Office of Planning (Unconfirmed)

**AGRICULTURAL LANDS OF IMPORTANCE TO THE STATE OF HAWAII MAP**



Not to scale...Area shown is approximate and for illustrative purposes only!  
Source: State of Hawaii Office of Planning (Unconfirmed)

**PORTION OF ALISH MAP**



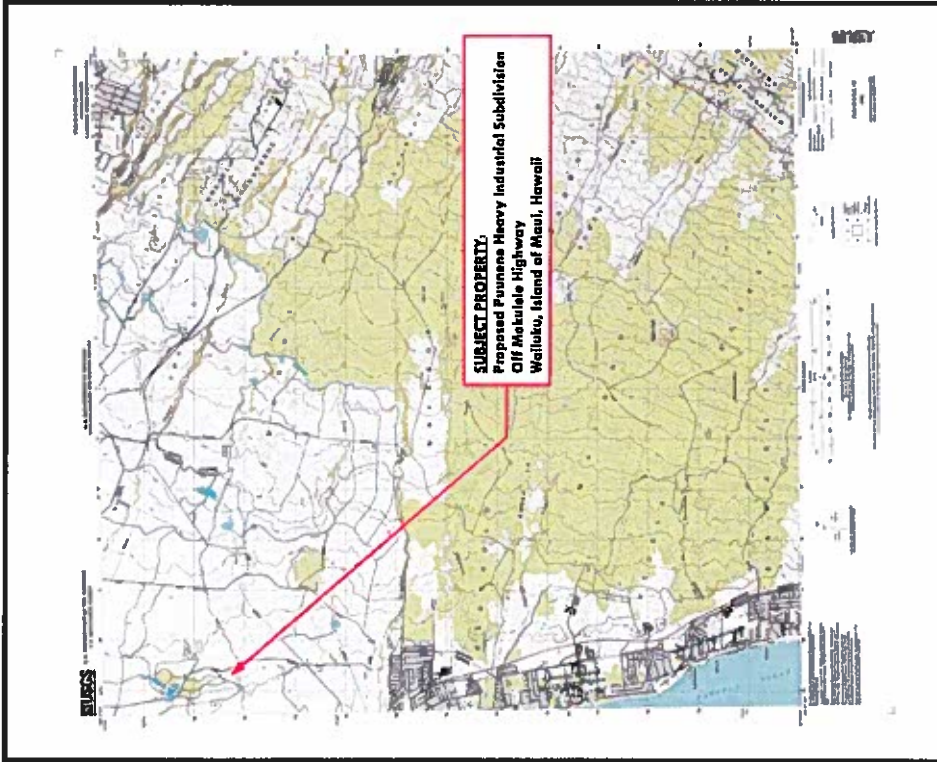
Not to scale...For illustrative purposes only!  
Source: State of Hawaii Office of Planning (Unconfirmed)

**LAND STUDY BUREAU CLASSIFICATION MAP**



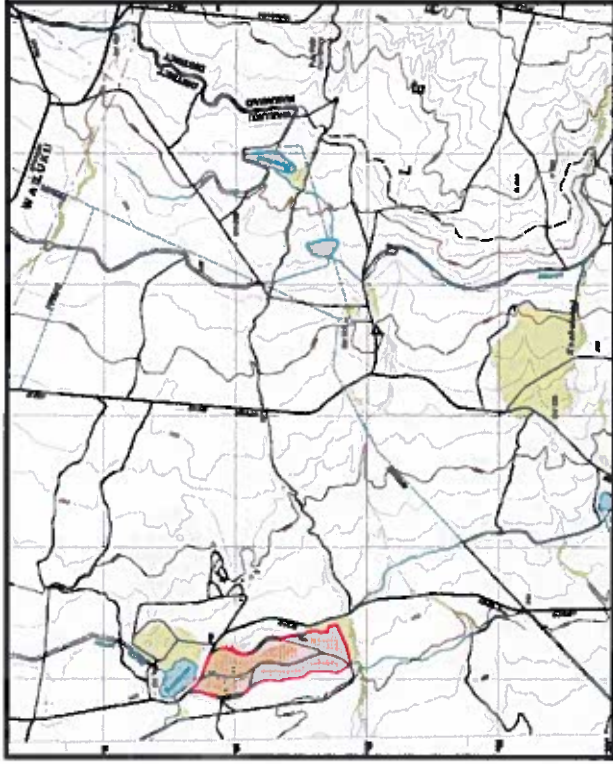
Not to scale...Area shown is approximate and for illustrative purposes only!  
Source: State of Hawaii Office of Planning (Unconfirmed)

**PORTION OF LSB MAP**



Not to scale...For illustrative purposes only!  
 Source: US Department of the Interior (Unconfirmed)

**US GEOLOGICAL SURVEY ELEVATION MAP**



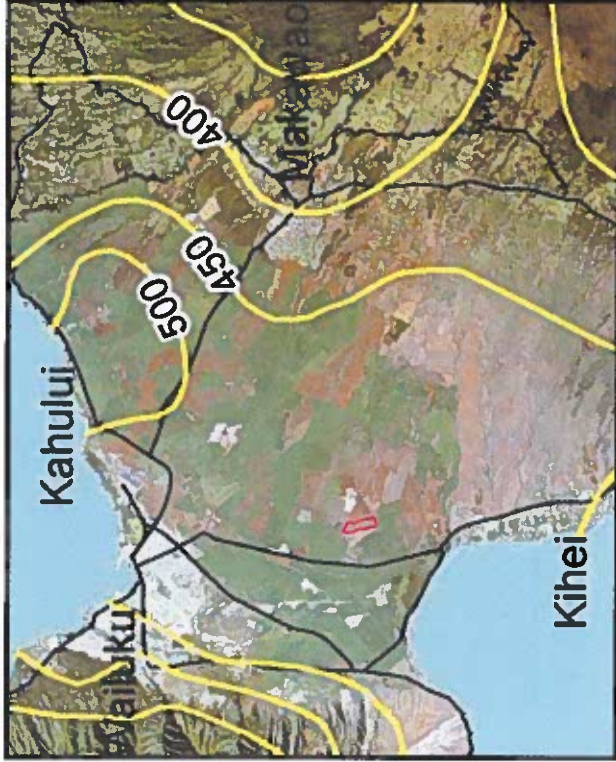
Not to scale...Area shown is approximate and for illustrative purposes only!  
 Source: US Department of the Interior (Unconfirmed)

**PORTION OF USGS ELEVATION MAP**



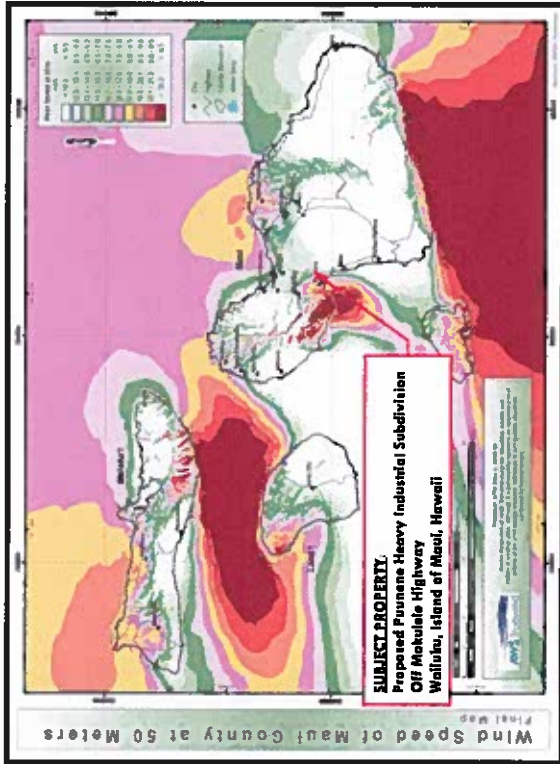
Not to scale... For illustrative purposes only!  
Source: State of Hawaii Department of Business, Economic Development and Tourism (Unconfirmed)

**SOLAR RADIATION MAP**

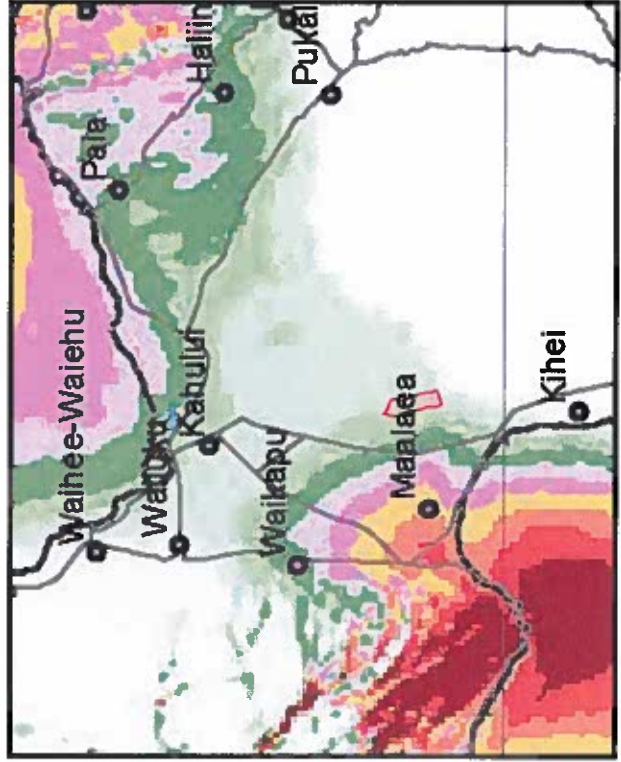


Not to scale... Area shown is approximate and for illustrative purposes only!  
Source: State of Hawaii Department of Business, Economic Development and Tourism (Unconfirmed)

**PORTION OF SOLAR RADIATION MAP**



**WIND SPEED OF MAUI COUNTY AT 50 METERS MAP**



**PORTION OF WIND SPEED MAP**

## DEFINITIONS

The purpose of this Glossary is to assist the reader in understanding specific terminology used in this report.

**Appraisal** (noun) the act or process of developing an opinion of value; an opinion of value (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services.

**Cash Equivalent** A price expressed in terms of cash, as distinguished from a price expressed totally or partly in terms of the face amounts of notes or other securities that cannot be sold at their face amount.

**Counseling** Providing competent, disinterested, and unbiased advice and guidance on diverse problems in the broad field of real estate; may involve any or all aspects of the business such as merchandising, leasing, management, acquisition/disposition planning, financing, development, cost-benefit studies, feasibility analysis, and similar services. Counseling services are often associated with evaluation, but they are beyond the scope of appraisal.

**Discounting** A procedure used to convert periodic incomes, cash flows, and reversion into present value; based on the assumption that benefits received in the future are worth less than the same benefits received now.

**Extraordinary Assumption** An assumption, directly related to a specific assignment, which, if found to be false, could alter the appraiser's opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if:

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions.

**Fair Value** The cash price that might reasonably be anticipated in a current sale under all conditions requisite to a fair sale. A fair sale means that buyer and seller are each acting prudently, knowledgeably, and under no necessity to buy or sell-, i.e., other than in a forced or liquidation sale. The appraiser should estimate the cash price that might be received upon exposure to the open market for a reasonable time, considering the property type and local market conditions. *When a current sale is unlikely-, when it is unlikely that the sale can be completed within 12 months-the appraiser must discount all cash flows generated by the property to obtain the estimate of fair value.* These cash flows include, but are not limited to, those arising from ownership, development, operating, and sale of the property. The discount applied shall reflect the appraiser's judgment of what a prudent, knowledgeable purchaser under no necessity to buy would be willing to pay to purchase the property in a current sale.



#### **Fee Simple Estate**

Absolute ownership encumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.

#### **Hawaiian Terms**

The Hawaiian words "mauka" and "makai" are commonly used in the islands as indicators of direction. The word "mauka" means toward the mountain, and "makai" means toward the ocean.

#### **Highest and Best Use**

The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

#### **Highest and Best Use of Land or a Site as Though Vacant**

Among all reasonable, alternative uses, the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.

#### **Highest and Best Use of Property as Improved**

The use that should be made of a property as it exists. An existing improvement should be renovated or retained as long as it continues to contribute to the total market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one.

#### **Hypothetical Condition**

That which is contrary to what exists, but is supposed for the purpose of analysis. Hypothetical conditions assume conditions contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. A hypothetical condition may be used in an assignment only if:

- Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison;
- Use of the hypothetical condition results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for hypothetical conditions

#### **Leased Fee Interest**

An ownership interest held by a landlord with the rights of use and occupancy conveyed by lease to others. The rights of the lessor (the leased fee owner) and the lessee are specified by contract terms contained within the lease.

#### **Leasehold Interest**

The interest held by the lessee (the tenant or renter) through a lease transferring the rights of use and occupancy for a stated term under certain conditions.

#### **Market Rent**

The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the specified lease agreement including term, rental adjustment and reevaluation, permitted uses,

use restrictions, and expense obligations; the lessee and lessor each acting prudently and knowledgeably, and assuming consummation of a lease contract as of a specified date and the passing of the leasehold from lessor to lessee under conditions whereby:

- Lessee and lessor are typically motivated.
- Both parties are well informed or well advised, and acting in what they consider their best interests.
- A reasonable time is allowed for exposure in the open market.
- The rent payment is made in terms of cash in United States dollars, and is expressed as an amount per time period consistent with the payment schedule of the lease contract.
- The rental amount represents the normal consideration for the property leased unaffected by special fees or concessions granted by anyone associated with the transaction.

#### **Market Value**

The major focus of most real property appraisal assignments. Both economic and legal definitions of market value have been developed and refined. Continual refinement is essential to the growth of the appraisal profession.

The most widely accepted components of market value are incorporated in the following definition:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."

Market value is defined in the Uniform Standards of Professional Appraisal Practice (USPAP) as follows:

"A type of value, stated as an opinion, that presumes the transfer of a property (i.e., a right of ownership or a bundle of such rights), as of a certain date, under specific conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal."

The following definition of market value is used by agencies that regulate federally insured financial institutions in the United States:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:"

- Buyer and seller are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and

**LIMITING AND CONTINGENT CONDITIONS**  
**ACM Consultants, Inc.**

1. This is a Consulting Report which is intended to comply with the reporting requirements set forth under Standard Rule 5 of the Uniform Standards of Professional Appraisal Practice for a Consulting Report. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The Consultant is not responsible for unauthorized use of this report.

2. This report has not been prepared for federally-subsidized mortgage financing purposes, and has not been prepared in compliance with the requirements of Title XI of the Federal Financial Institutions Reform, Recovery, and Enforcement Act of 1989.

3. No responsibility is assumed for legal or title considerations. This is to the property is assumed to be good and workable unless otherwise stated in this report.

4. The property analyzed is free and clear of any or all liens and encumbrances unless otherwise stated in this report.

5. Responsible ownership and complete property management are assumed unless otherwise stated in this report.

6. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.

7. All engineering is assumed to be correct. Any plan print and illustrative material in this report are included only to assist the reader in visualizing the property.

8. It is assumed that there are no hidden or unapparent conditions of the property, subject, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.

9. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated in this report.

10. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a non-conformity has been stated, defined, and considered in this consulting report.

11. It is assumed that all required licenses, certificates of occupancy or other legislative or administrative authority from any local, state, or national governmental or private entity or organization have been or can be obtained or required for any use on which the value estimates contained in this report are based.

12. Any sketch in this report may show approximate dimensions and is included to assist the reader in visualizing the property. Maps and exhibits found in this report are provided for reader reference purposes only. No guarantee as to accuracy is expressed or implied unless otherwise stated in this report. No survey has been made for the purpose of this report.

13. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless otherwise stated in this report.

14. The Consultant is not qualified to detect hazardous waste and/or toxic materials. Any comment by the Consultant that might suggest the possibility of a hazardous waste problem should not be taken as confirmation of the presence of hazardous waste and/or toxic materials. Such determination and remedial actions should be made by a qualified professional in the field of environmental assessment. The presence of substances such as asbestos, lead, radon, or other potentially hazardous materials, or other conditions that may affect the value of the property, is the Consultant's sole responsibility. The Consultant is not responsible for such conditions or for any environmental conditions, or for any expertise or engineering knowledge related to discover them. The Consultant's descriptions and resulting comments are the result of the routine observations made during the analysis process.

15. Unless otherwise stated in this report, the subject property is evaluated without a specific compliance survey having been conducted to determine if the property is or is not in conformance with the requirements of the Americans with Disabilities Act. The presence of architectural and communication barriers that are structural in nature that would restrict access by disabled individuals may adversely affect the property's value, marketability, or utility.

16. Any proposed improvements are assumed to be completed in a good workmanlike manner in accordance with the submitted plans and specifications.

17. The distribution of any of the total value in this report between land and improvements applies only under the stated program of utilization. The separate allocations for land and buildings may not be used in conjunction with any other appraisal and are treated as an asset.

18. Presentation of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the consultant, and in any event, only with property written authorization and only in its entirety.

19. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the Consultant, or the firm with which the Consultant is connected) shall be disseminated to the public through advertising, public relations, news stories, or other media without prior written consent and approval of the Consultant.

20. ACCEPTANCE OF AND/OR USE OF THIS APPRAISAL REPORT BY CLIENT OR ANY THIRD PARTY CONSTITUTES ACCEPTANCE OF THE ACM CONSULTANTS, INC. CERTIFICATION, LIMITING, AND CONTINGENT CONDITIONS. CONSULTANT LIABILITY EXTENDS ONLY TO STATED CLIENT, NOT SUBSEQUENT PARTIES OR USERS OF ANY TYPE, and the total liability of Consultant and firm is limited to the amount of fee received by Consultant.

• The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

**Prospective Market Value Upon Completion of Construction**

The prospective future value of a property on the date that construction is completed, based upon market conditions forecast to exist as of the completion date.

**Prospective Value Opinion**

A forecast of the value expected at a specified future date. A prospective value opinion is most frequently sought in connection with real estate projects that are proposed, under construction, or under conversion to a new use, or those that have not achieved sellout or a stabilized level of long-term occupancy at the time the appraisal report is written.

**Report**

Any communication, written or oral, of an appraisal, appraisal review, or appraisal consulting service that is transmitted to the client upon completion of an assignment. The types of written reports listed below apply to real property appraisals:

**Self-Contained Appraisal Report:** A written appraisal report prepared under Standards Rule 2-2(c) of the Uniform Standards of Professional Appraisal Practice. A self-contained appraisal report sets forth the data considered, the appraisal procedures followed, and the reasoning employed in the appraisal, addressing each item in the depth and detail required by its significance to the appraisal and providing sufficient information so that the client and the users of the report will understand the appraisal and not be misled or confused.

**Summary Appraisal Report:** A written report prepared under Standards Rule 2-2(b) or 8-2(b). A summary appraisal report contains a summary of all information significant to the solution of the appraisal problem. The essential difference between a self-contained appraisal report and a summary appraisal report is the level of detail of presentation.

**Restricted Appraisal Report:** A written report prepared under Standards Rule 2-2(c), 8-2(c), or 10-2(b). A restricted use appraisal report is for client use only. The restricted use appraisal report should contain a brief statement of information significant to the solution of the appraisal problem.

**Uniform Standards of Professional Appraisal Practice**

Current standards of the appraisal profession, developed for appraisers and the users of appraisal services by the Appraisal Standards Board of The Appraisal Foundation. The Uniform Standards set forth the procedures to be followed in developing an appraisal, analysis, or opinion and the manner in which an appraisal, analysis, or opinion is communicated. They are endorsed by the Appraisal Institute and by other professional appraisal organizations.

## PROFESSIONAL QUALIFICATIONS

Glenn K. Kunihsa, MAI, CRE

### STATE LICENSING

State Certified General Appraiser,  
State of Hawaii, License No. CGA 39, July 17, 1991  
Expiration: December 31, 2011

### PROFESSIONAL AFFILIATIONS

Member, Appraisal Institute, MAI Designation, Hawaii Chapter No. 67  
Member, The Counselors of Real Estate, CRE Designation, Hawaii Chapter  
Member, International Right of Way Association  
Member, National Association of Realtors, Maui Board of Realtors

### PROFESSIONAL INVOLVEMENT

Past President - Hawaii Chapter of the Appraisal Institute - 2009  
Vice Chairperson - Hawaii Chapter of The Counselors of Real Estate - 2010  
Education Chairperson - Hawaii Chapter of the Appraisal Institute - 2004 and 2005  
Former Multiple Listing Service (MLS) Committee Member - Realtors Association of Maui

### COMMUNITY AFFILIATIONS

St. Anthony Parish School Board  
Board Member 1995 to 2008  
Board President 1997 and 1998  
Alli Community Care, Inc. - A non-profit health care corporation  
Board Member 2004 to 2006

### EMPLOYMENT

President  
ACH Consultants, Inc.  
May, 1997 to present  
Previously associated with the following:  
ACH, Real Estate Appraisers, Inc. - 1986 to 1997  
A&B Commercial Company, a division of Alexander & Baldwin, Inc. - 1979 to 1985  
Bank of Hawaii - 1976 to 1979

### GENERAL EDUCATION

University of Hawaii at Manoa  
Master of Business Administration (MBA) - Executive MBA Program V, 1988  
Bachelor of Business Administration (BBA), 1976  
Iolani School, 1971

### LEGAL & CONSULTING

Qualified as an expert witness in the Second Circuit Court of the State of Hawaii  
Qualified as an expert in testimony to the State Land Use Commission  
Experienced in real estate arbitration assignments in the State of Hawaii

### APPRAISAL EDUCATION

Appraisal Institute  
Seminar  
Appraisal Curriculum Overview (2-day general)  
Honolulu, Hawaii - July 2010

## Professional Qualifications

Page 2

Online Valuation of Green Residential Properties  
Chicago, Illinois - July 2010  
Seminar  
Hotel Valuation  
Honolulu, Hawaii - February 2010  
Seminar  
Online Small Hotel/Motel Valuation  
Chicago, Illinois - November 2009  
Seminar  
Business Practices and Ethics  
Honolulu, Hawaii - September 2009  
Seminar  
Hawaii Lands, Historical Review  
Lihue, Hawaii - August 2009  
Seminar  
Appraisal Challenges: Declining Markets and Sales Concessions  
Cambria, California - October 2008  
Course  
7-Hour National USPAP Update Course  
Honolulu, Hawaii - September 2008  
Course  
Online 7-Hour National USPAP Equivalent Course  
Chicago, Illinois - October 2007  
Course  
Valuation of Conservation Easements  
Denver, Colorado - October 2007  
Seminar  
Uniform Standards for Federal Land Acquisitions ("Yellow Book")  
Practical Applications for Fee Appraisers  
Honolulu, Hawaii - December 2006  
Seminar  
California Conservation Easements  
Sacramento, California - November 2005  
Course 400  
7-Hour National USPAP Update Course  
Honolulu, Hawaii - October 2005  
Seminar  
Case Studies in Limited Partnership and Partial Interest Valuation  
Honolulu, Hawaii - May 2005  
Seminar  
Appraisal Consulting: A Solutions Approach for Professionals  
Honolulu, Hawaii - February 2005  
Seminar  
Real Estate Finance, Value and Investment Performance  
Honolulu, Hawaii - February 2005  
Seminar  
Fannie Mae Residential Presentation  
Honolulu, Hawaii - July 2004  
Seminar  
Subdivision Analysis  
Chicago, Illinois - August 2003  
Seminar  
Supporting Capitalization Rates  
Chicago, Illinois - August 2003  
Seminar  
The Technology Assisted Appraiser  
Chicago, Illinois - August 2003  
Seminar  
Scope of Work: Expanding Your Range of Services  
Chicago, Illinois - August 2003  
Course 400  
National Uniform Standards of Professional Practice  
Honolulu, Hawaii - May 2003  
Course 420  
Business Practices and Ethics  
Honolulu, Hawaii - May 2003  
Seminar  
The Private Conservation Market  
Honolulu, Hawaii - July 2002  
Seminar  
Finance Reporting Valuations Parts I and II  
Honolulu, Hawaii - July 2002  
Seminar  
Future of Appraisal Profession from a Global Perspective  
Honolulu, Hawaii - July 2002

Seminar	Appraisal Office Management Honolulu, Hawaii - July, 2002
Course 540	Report Writing Denver, Colorado - December 2000
Seminar	Partial Interests: Theory and Case Law Las Vegas, Nevada - July 2000
Seminar	Easement Valuation Las Vegas, Nevada - July 2000
Seminar	Bridging the Gap: Marketability Discounts for Real Estate Interests Las Vegas, Nevada - July 2000
Course 430	Standards of Professional Practice, Part C Honolulu, Hawaii - September, 1999
Seminar	Litigation Skills for the Appraiser: An Overview Honolulu, Hawaii - May 1998
Seminar	Special Purpose Properties Honolulu, Hawaii - September 1997
Seminar	Highest and Best Use Applications Honolulu, Hawaii - September 1997
Seminar	Detrimental Conditions Honolulu, Hawaii - July 1997
Seminar	The Appraiser As Expert Witness Honolulu, Hawaii - August, 1995
Seminar	How to Appraise FHA-Insured Property Los Angeles, California - January, 1995
Seminar	Understanding Limited Appraisals and Reporting Options Honolulu, Hawaii - August, 1994
Seminar	Valuation of Leasehold Interests Honolulu, Hawaii - May, 1993
Seminar	Valuation of Leased Fee Interests Honolulu, Hawaii - May, 1993
Seminar	Valuation Considerations: Appraising Non-Profits Boston, Massachusetts - July, 1992
Seminar	Americans With Disabilities Act Boston, Massachusetts - July, 1992
Seminar	Valuation in Today's Capital and Financing Markets Honolulu, Hawaii - June 1992
Seminar	Arbitration Principles, Procedures and Pitfalls Honolulu, Hawaii - June, 1992
Seminar	Institutional Real Estate in the 1990's Honolulu, Hawaii - June, 1992
Seminar	FIRREA and its Impact on Appraisers Honolulu, Hawaii - June, 1992
Course 410/420	Standards of Professional Practice, Parts A & B Honolulu, Hawaii - April, 1991
Seminar	<b>The American Society of Farm Managers and Rural Appraisers, Inc.</b> Agricultural Lease Valuation Honolulu, Hawaii - March 2006

Seminar	<b>Maui Coastal Land Trust</b> Understanding the New Tax Incentives: Conservation Easements & Other Charitable Contributions Waialuku, Hawaii - June 2007
Society of Real Estate Appraisers	
Course 101	Introduction to Appraising Real Property Dallas, Texas - 1987
Course 102	Applied Residential Property Valuation Honolulu, Hawaii - July 1990
Course 201	Principles of Income Property Appraising Chicago, Illinois, 1987
Course 202	Applied Income Property Valuation San Diego, California - 1988
Seminar	Professional Practice and the Society of Real Estate Appraisers Honolulu, Hawaii - 1988
Seminar	Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies Honolulu, Hawaii - April, 1988
Seminar	Appraisal Standards Seminar - Federal Home Loan Bank Board Guidelines, Regulations and Policies Honolulu, Hawaii - April, 1988
Seminar	
American Institute of Real Estate Appraisers	
Seminar	Rates, Ratios and Reasonableness Honolulu, Hawaii - 1989
Seminar	Discounted Cash Flow Analysis Honolulu, Hawaii - 1989
Seminar	Highest and Best Use Honolulu, Hawaii - 1989
Seminar	Capitalization Overview - Part A Honolulu, Hawaii - 1990
Seminar	Capitalization Overview - Part B Honolulu, Hawaii - 1990
Seminar	Accrued Depreciation Honolulu, Hawaii - 1990
International Right of Way Association	
Course 101	Appraisal Las Vegas, Nevada - October, 1998
Course 101	Negotiation Las Vegas, Nevada - October 1998
National Business Institute, Inc.	
Seminar	Commercial Real Estate Leasing in Hawaii Honolulu, Hawaii - 1989
American Arbitration Association	
Seminar	Real Estate Dispute Resolution - Mediation and Arbitration Kahului, Maui, Hawaii - October, 1990

**PROFESSIONAL QUALIFICATIONS**

Shane M. Fukuda

Professional Qualifications  
Page 2

**STATE LICENSING**

State Certified General Appraiser  
State of Hawaii, License No. CGA-810, July 1, 2007  
Expiration: December 31, 2011

**PROFESSIONAL AFFILIATIONS**

Shane Fukuda is a general Associate Member of the Appraisal Institute

**EMPLOYMENT**

ACM Consultants, Inc.  
November 2009 to Present  
Vice President – Commercial Division  
July 2007 to October 2009  
Staff Appraiser  
October 2004 to June 2007  
Appraiser Assistant; Appraiser Trainee

Previously associated with the following:

Dollar Thrifty Automotive Group, Inc.  
1994 to 2004  
Rental Agent; Lead Rental Agent; Station Manager; Senior Station Manager

**GENERAL EDUCATION**

Mauit Community College, 1989-1990  
Henry Perrine Baldwin High School, 1989

**APPRAISAL EDUCATION**

**Appraisal Institute**

Course 501 GD Advanced Income Capitalization  
San Diego, California – June 2011

Seminar  
Hotel Valuation  
Honolulu, Hawaii – February 2010

Seminar  
Online Subdivision Valuation  
Chicago, Illinois – December 2009

Course  
Online Business Practices and Ethics  
Chicago, Illinois – December 2009

Seminar  
Online Small Hotel/Motel Valuation  
Chicago, Illinois – December 2009

Course  
Online 7 Hour National USPAP Equivalent  
Chicago, Illinois – December 2009

Seminar  
Hawaii Lands, Historical Review  
Kahului, Hawaii – September 2009

Course 320  
General Applications  
San Diego, California – July 2006

Course 310  
Basic Income Capitalization  
San Diego, California – July 2006

Course 101  
Basic Appraisal Procedures  
Denver, Colorado – April 2005

Course 100  
Basic Appraisal Principles  
Denver, Colorado – April 2005

**Lincoln Graduate Center**

Course 405  
Residential Sales Comparison & Income Approaches  
Honolulu, Hawaii – November 2006

Course 404  
Residential Appraiser Site Valuation & Cost Approach  
Honolulu, Hawaii – November 2006

Course 403  
Residential Market Analysis & Highest & Best Use  
Honolulu, Hawaii – November 2006

Course 772  
National USPAP Course  
Honolulu, Hawaii – October 2006

Course 772  
National USPAP Course  
Honolulu, Hawaii – January 2005

**MISCELLANEOUS EDUCATION**

**REALM Business Solutions**

Course  
Argus 12.0  
Honolulu, Hawaii – July 2005

**APPENDIX O**

Groundwater  
Resource and  
Water System  
Assessment

**Groundwater Resource and  
Water System Assessment for the  
Proposed Puunene Industrial Subdivision  
in Kahului, Maui**

*Prepared for:*  
CMBY 2011 Investment, LLC  
P. O. Box 220  
Kihali, Maui, Hawaii 96753

*Prepared by:*  
Tom Nance Water Resource Engineering  
880 Ala Moana Boulevard - Suite 406  
Honolulu, Hawaii 96813

September 2011

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**Introduction**

CMBY 2011 Investment, LLC proposes to develop the Puunene Heavy Industrial Subdivision on TMK 3-9-08:19, an 86-acre parcel in Kahului, Maui. Figure 1, shows the project's location. The subdivision would consist of 28 lots on approximately 66 acres, nine (9) acres of drainage retention, and about 11 acres of roads (refer to Figure 2). Water supply from the County Department of Water Supply (DWS) is not available for the project. The intent is to develop onsite groundwater, using this water directly for non-potable requirements and providing reverse osmosis (RO) treatment to supply potable uses.

This report provides estimates of the project's potable and non-potable supply requirements, identifies the water system infrastructure necessary to meet these requirements, and analyzes the project's probable impacts on groundwater resources.

**Projected Potable and Non-Potable Supply Requirements**

DWS' design standard for industrial use of 6000 gallons per day per acre (GPD/acre) is adopted herein. In addition, it is assumed that the drainage retention area will be landscaped and irrigated at an average of 2500 GPD/acre and that 20 percent of the gross roadway ROW would also be irrigated at 2500 GPD/acre. The latter is equivalent to 500 GPD per gross acre of roadway ROW. The Honolulu Board of Water Supply's (BWS) dual water system guidelines recommend a 30/70, potable/non-potable split for industrial land uses, a reasonable criterion adopted herein. Based on the foregoing, the project's average potable and non-potable water use would be as tallied below.

**Projected Average Demand for the Puunene Heavy Industrial Subdivision**

Land Use	Area (Acres)	Total		Potable		Non-Potable	
		Use Rate (GPD/Unit)	Amount (GPD)	Use Rate (GPD/Unit)	Amount (GPD)	Use Rate (GPD/Unit)	Amount (GPD)
Industrial Lots	66	6000	396,000	1800	118,800	4200	277,200
Drainage Retention	9	2500	22,500	0	0	2500	22,500
Roadway	11	500	5,500	0	0	500	5,500
<b>Totals</b>	<b>86</b>	<b>-</b>	<b>424,000</b>	<b>-</b>	<b>118,800</b>	<b>-</b>	<b>305,200</b>

Other water system design sizing criteria used herein draw primarily (but not exclusively) from the standards of Maui DWS and Honolulu BWS.

- For both the potable and non-potable systems, maximum day demand is defined as 1.5 times the average use amounts given above. Peak flowrate is defined as 3.0 times the average amounts.



**CMBY HART**  
INCORPORATED

**PUUNENE**  
86-ACRE PARCEL  
LOCATION MAP

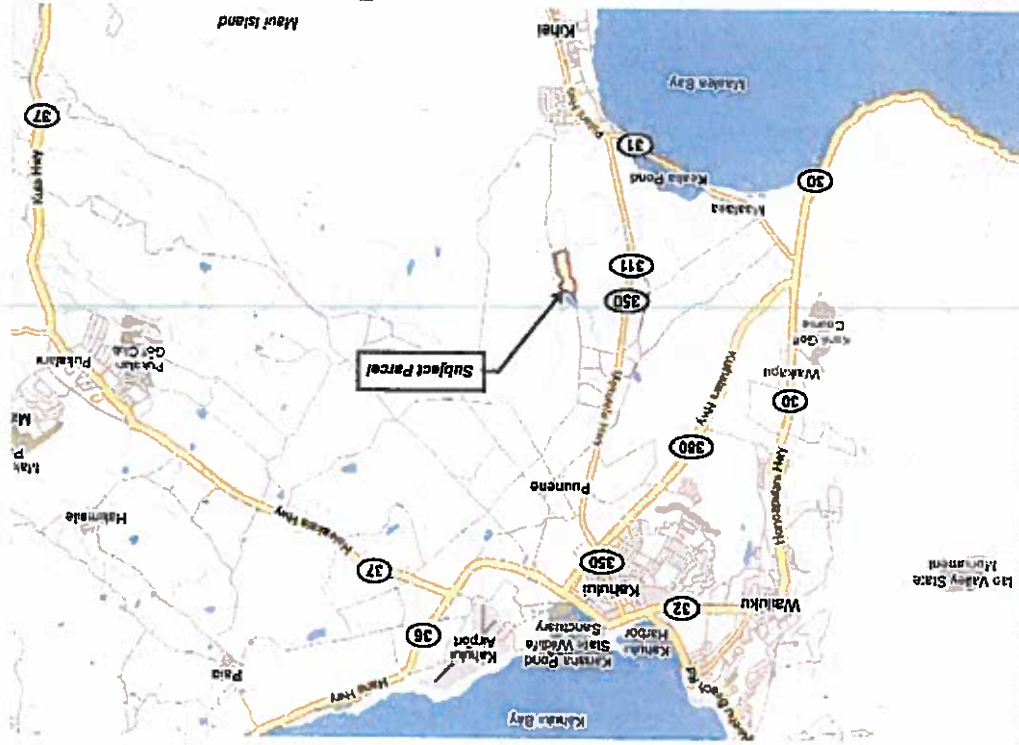
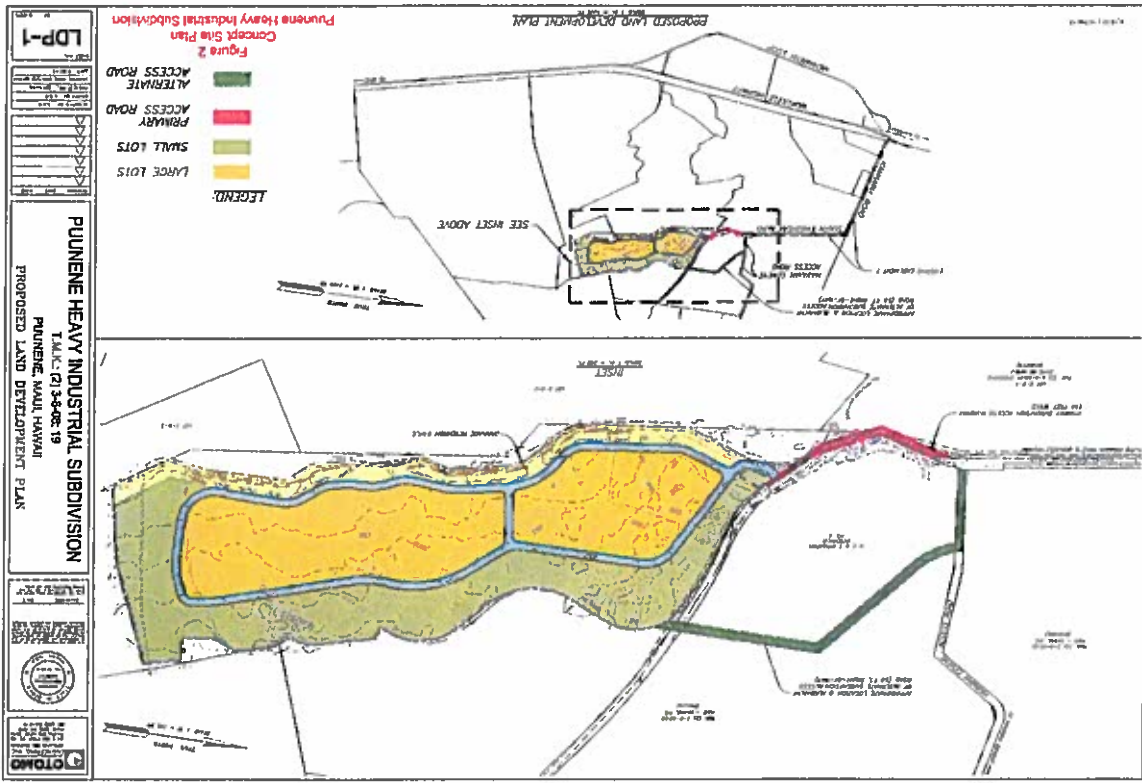
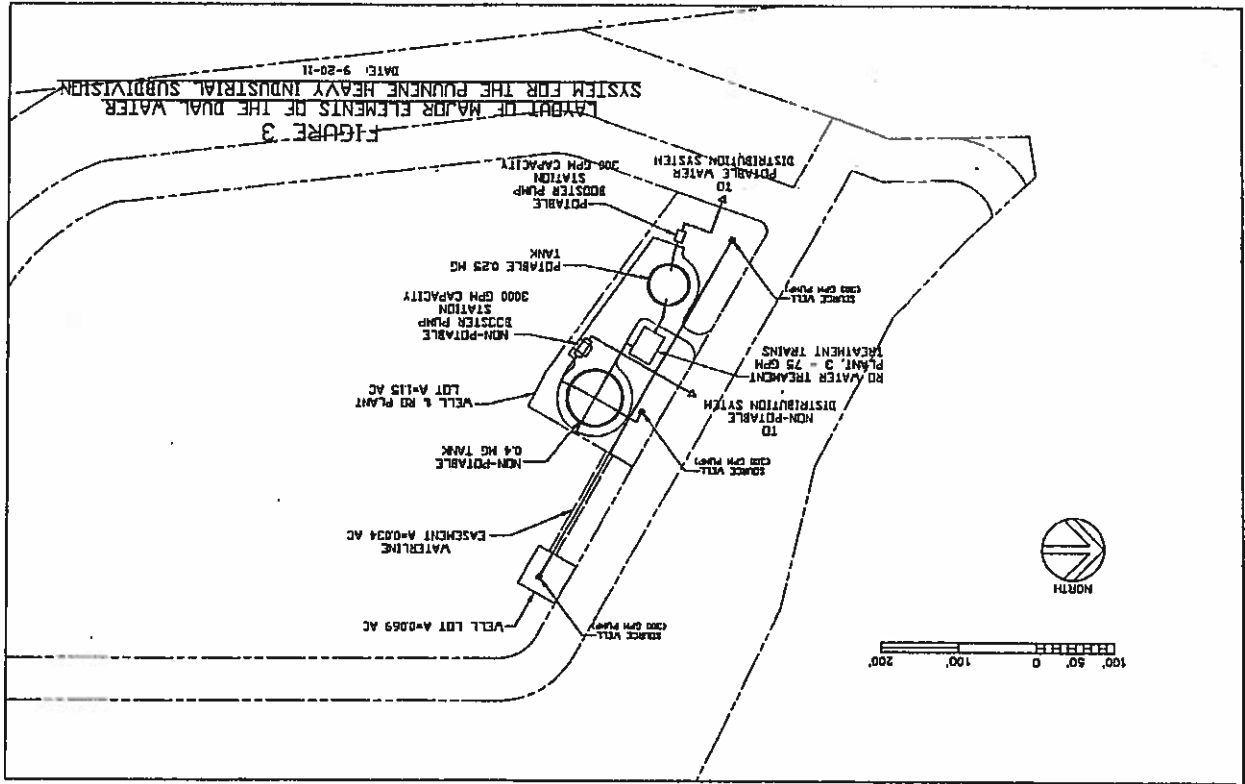


Figure 1





- The much larger non-potable system will provide fire protection. Its reservoir sizing will be the larger of the average day demand or DWS' fire flowrate sizing criterion.
  - Reservoir storage for the potable system will be the maximum day amount.
  - Source capacities of both systems will provide the maximum day supply in a 24-hour pumping day with the largest individual source out of service. DWS' standard is a 18-hour pumping day. However, for the wells within the project site which will draw water from a relatively thin basal lens, a 24-hour pumping day is a more appropriate criterion.
  - To account for uncertainty in the 30/70 assumed split between potable and non-potable uses, flowrates used for sizing of all potable system components – source of supply, reservoir storage, and pipelines – will be increased by a factor of 20 percent.
  - Based on the salinity of onsite Well 4927-01 (discussed subsequently), it is assumed that the RO treatment will convert 80 percent of the brackish well water for potable use. The 40 percent remainder, referred to as concentrate, will be too saline for non-potable use.
  - Potable and non-potable pipeline sizing criteria are identical to DWS' standards for peak and fire flowrate conditions.
- Size of the Water System Infrastructure**
- Onsite Wells** The non-potable system's maximum day design use is 457,800 GPD (305,200 GPD x 1.5). The potable system's maximum day use, including the 1.2 sizing factor, is 213,840 GPD (118,800 GPD x 1.5 x 1.2). At the 60 percent rate of RO product recovery, the potable supply capacity will need to be 356,400 GPD. Together with the non-potable supply requirement, a "safe" well pumping capacity of 814,200 GPD or 565 GPM for a 24-hour pumping day will be required. Three 300 GPM wells, one providing standby capacity, would be installed.
- RO Treatment** The maximum day potable supply requirement (with the 1.2 factor) of 213,840 GPD is equivalent to a capacity of about 150 GPM. Three 75 GPM RO treatment trains are proposed, one providing standby capacity.
- Portable Reservoir Storage** The maximum day amount (with the 1.2 factor) is 213,840 GPD. A 0.25 million gallon (MG) storage reservoir is proposed.
- Non-Potable Storage Reservoir** The average demand sizing criterion would require reservoir storage of 0.30 MG. The fire flowrate sizing criterion is based on:
- DWS' 2500 GPM fire flowrate for two hours;



- Coincident maximum day non-potable demand of 318 GPM for the two-hour period;
- Coincident feedwater draw for two RO treatment trains of 250 GPM (150 GPM + 0.6) for the two-hour period;
- Input of two of the three 300 GPM supply pumps for the two-hour period; and
- The reservoir 3/4 full at the start of the fire.

The foregoing translates to a storage requirement of 394,880 gallons, the governing storage criterion. Non-potable reservoir storage of 0.40 MG is proposed.

**Pumped Distribution.** The potable and non-potable storage reservoirs would be onsite and would not provide sufficient gravity pressure for customer use or fire protection. Two automated, multiple pump stations would be provided with start/stop control to maintain system pressure. The potable pump station would be sized to meet peak the flowrate requirement (with the 1.2 factor) of 248 GPM. A capacity of 300 GPM is proposed. A 3000 GPM non-potable pump station would provide the 2500 GPM fire flowrate with the 318 GPM coincident maximum day demand. Backup generator power for the non-potable pump station would be provided to ensure fire protection during a MECO power outage.

**System Layout.** Figure 3 is a preliminary layout of the water system's major elements described above. These would be located near the north end of the project site. Department of Health (DOH) regulations require a minimum of 1500 feet spacing between the supply and RO concentrate disposal wells. DOH will also require wastewater disposal systems to be 1000 feet or more from the supply wells. For lots within this 1000-foot setback, onsite enhanced septic systems with disposal in a common leach field beyond the 1000-foot setback will be required.

#### Impact on Water Resources

As there are no natural drainageways across the site and the ground is very permeable, stormwater runoff onto the site from upgradient or from the site to downgradient areas is not known to occur. The subdivision's development concept is to retain and dispose of surface runoff in the 9-acre portion of the site designated for that purpose. Disposal will occur by evaporation and seepage from this area. As such, the project will not impact surface water resources. Its impact will be limited to the underlying groundwater. These impacts, each of which is quantified in sections following, will consist of the following:

- Withdrawal of groundwater for non-potable use and as feedwater to RO treatment to produce the required potable supply;

- Disposal of the RO concentrate in onsite disposal wells;
- Disposal of treated domestic wastewater in leachfields;
- Percolation of excess landscape irrigation and industrial wash water, and
- Change in the quality of onsite rainfall percolating to groundwater.

**Groundwater Occurrence.** Knowledge of groundwater occurrence in the Kahului area comes primarily from wells, some of which are listed in Table 1. A number of these have been used by HC&S for sugarcane irrigation for more than 70 years. Groundwater in the Kahului isthmus occurs as a relatively thin basal lens (water levels typically on the order of three to four feet above sea level) floating on saline groundwater at depth and in hydraulic contact with seawater along the Maalea and Kahului Bay shorelines. The following factors significantly influence the quality and quantity of water this groundwater body can provide:

- Although rainfall-recharge directly on the 27-square mile Kahului isthmus is only on the order of five (5) MGD, pumpage by the HC&S plantation was on the order of 45 MGD for decades and still is about 25 MGD.
- Rainfall-recharge may actually be the smallest of the aquifer's sources of recharge. Others include: underflow from Haleakala; underflow from the West Maui Mountain; leakage of water imported in the East Maui irrigation system; leakage from the Waitee Ditch system of West Maui; and irrigation return from HC&S fields and other agricultural areas.
- Both shorelines, Maalea and Kahului, have alluvial deposits which function as a caprock, retarding seawater intrusion.

As a result of the aquifer's various sources of recharge, the Kahului Aquifer has potable quality water in some locations and only slightly brackish water over most of the rest of its area. Its sustainable yield, as designated by the State Commission on Water Resource Management (CWRM), is 1.0 MGD. This is based exclusively on rainfall recharge and does not account for the other sources of recharge listed above. Its actual sustainable yield is far greater, even if HC&S were to cease all activities, including the impoundment of ditch water. This underflow from outside of the aquifer, particularly from Haleakala, would sustain an order of magnitude greater yield than the CWRM's 1.0 MGD sustainable yield amount.

Table 1. Data on Wells in the General Vicinity of the Punene Heavy Industrial Subdivision Site\*

Well Number	Owner/Name	Year Drilled	Casing Diameter (Inches)	Ground Elevation (Feet MSL)	Total Depth (Feet)	Elevation at Bottom (Feet MSL)	Elevation (Feet)	Length of Casing		State Water Level (Feet MSL)	Chlorides (MGL)	Hydraulic Drawdown (Feet @ GPM)	Pump Capacity (GPM)
								Perforated (Feet)	Non-Perforated (Feet)				
477-01	HC&S Kona Shaft (Shaft 14)	1900	8	329	28	3	3	3	3	3.5	450-650	1340	None Scaled
482-01	Elmer's Farm Shaft 15	1942	8	70	0	0	0	0	0	3.8	280-490	12,600	None Scaled
492-02	Punene Airport	1942	72	83	0	0	0	0	0	2.5	250	0.4 @ 240	None Scaled
507-01	S. F.	2009	12	130	158	-22	-22	131	20	2.85	75	0.1 @ 305	None Scaled
508-01	Test Hole HC&S	1920	7	100	140	-40	-40	142	358	5.5	80-125		
608-02	HC&S TH	1939	1	120	400	-280	-280	142	358	2.4	70		
817-01	Punene HC&S TH	?	7	105	165	-60	-60	142	358	5.0	270		
8129-02	HC&S Shaft 18	1929	6	145	185	-40	-40	177	31	5.7	250 to 620	4.7 @ 844	25,200
8129-04	A&B Well 1	2007	14	183	205	-25	-25	177	31	3.4	40	0.4 @ 500	450
8226-02	Punene Pump 6 Shaft 18	1934	14	184	217	-33	-33	181	30	3.3	35	1.1 @ 500	450
8227-04	Punene Pump 8 Shaft 17	1939	6	182	170	+0 (?)	+0 (?)	181	30	4.4	330 to 480		16,100
8227-06	Punene Pump 19 Shaft 35	1952	8	60	7								8,440

\* Information as available from the files of the State Commission on Water Resource Management.



150 Royal Oak Dr., Suite 100  
 Alhambra, California 91815-3233  
 Fax: 626 286 1100  
 1 800 486 1443 (t) 602 486 8277

Tom Nance Water Resource Engineering  
 Tom Nance  
 660 Ala Moana Blvd. Suite 406  
 Honolulu, HI 96813

Laboratory  
 Hills Report: 313448

Samples Received on:  
 07/16/2010

Analyzed	Analyte	Sample ID	Result	Frequency MCU	Units	MCL
07/21/2010	201007180433	Elmer Farm Well	290		mg/L	2
07/21/2010	22:06 Alkalinity in CaCO3 units		1.7	10	ug/L	1
07/22/2010	17:15 Ammonia Total (CAP)MS		0.12	3	ug/L	0.05
07/26/2010	20:58 Arsenite		3.9	2000	ug/L	2
07/26/2010	17:15 Barium Total (CAP)MS		3.1		ug/L	3
07/22/2010	12:45 Bids, Gross		23		ug/L	1
07/21/2010	7:23 Calcium Total (CAP)		6.3	100	ug/L	5
07/22/2010	03:40 Chromium Total (CAP)MS		2.8	1300	ug/L	2
07/20/2010	17:15 Copper Total (CAP)MS		7.5		ug/L	0.1
	Field pH		7.5		umho/cm	
	Field Specific Conductance		159		umho/cm	
07/23/2010	12:37 Fluoride		0.69	4	mg/L	0.05
07/20/2010	17:15 Lead Total (CAP)MS		1.5	15	ug/L	0.05
07/15/2010	19:54 Nitrate as Nitrogen by IC		4.5	10	mg/L	0.5
07/15/2010	19:54 Nitrate as NO3 (calc)		20	45	mg/L	2.2
07/16/2010	18:43 PH (2-mpast HT not compliant)		8.1		umho/cm	0.1
07/17/2010	13:41 Specific Conductance, 25 C		1600	5	umho/cm	2
07/16/2010	08:59 Turbidity		1.2		NTU	0.05

Table 2

Groundwater Flowrate Beneath the Project Site. With sources of recharge to the aquifer coming from various directions and significant pumpage occurring at the active HC&S well batteries, the direction and rate of groundwater flow are not known precisely. Approximations used for this assessment are as follows:

- The direction of flow is from northeast to southwest beneath the project site and, perpendicular to this direction, the width of the project is 0.63 miles;
- The groundwater level is 3.6 feet above sea level;
- The groundwater gradient is on the order of 0.6 feet per mile, equivalent to 0.00112 ft/ft. and
- The permeability coefficient is 10,000 feet per day.

For these approximations, the groundwater flowrate beneath the project's 0.63-mile width is 4.0 million gallons per day (MGD). Estimated changes to groundwater flowrate presented herein will be as increases or decreases of this 4.0 MGD flowrate.

Groundwater Quality. A short-term pump test and water quality sampling of onsite Well 4827-01 was done in July 2010. Laboratory-detected regulated drinking water constituents are presented in Table 2. The relatively high level of nitrate-nitrogen, a result of ongoing agricultural activities, is notable. However, none of the detected constituents exceed levels allowed by EPA and DOH for drinking water use. During the well's short-term pump test, the salinity of the pumped water was stable and only slightly brackish: salinity was 0.60 parts per thousand (PPT); specific conductance was 1600 µS/cm; and chlorides were 250 MG/L.

Table 3 is a compilation of salinity and nutrient levels from wells in the Kahului Aquifer. Salinities were consistently low, except nearshore at the north end of Malaea Bay where the caprock is absent. High nutrient levels, particularly as nitrate-nitrogen, are present throughout the aquifer. For the project's potential impacts to groundwater presented subsequently, the present quality of the underlying groundwater is taken to be: salinity of 0.60 PPT; nitrogen concentration of 3.30 micro-molar (µM); and phosphorus concentration of 3.4 µM.

Project's Estimated Changes to the Groundwater Flowrate. The project's onsite wells will draw from the underlying groundwater, but some of this water will be returned in the form of RO concentrate, wastewater from septic systems, excess landscape irrigation, and percolating wash water from the non-potable system. These quantities, expressed as year-round averages at full build-out, are estimated as follows:

Nutrient and Salinity Levels in Kahului Groundwater

Table 3

State No.	Name	Date Sampled	Forms of Nitrogen					Forms of Phosphorus			Silica Salinity (PT)
			NO <sub>3</sub> (µM)	NH <sub>4</sub> (µM)	DON (µM)	TN (µM)	PO <sub>4</sub> (µM)	DOP (µM)	TP (µM)		
4727-01	HC&S Pump 1	8-24-10	589	0.20	0.38	86.2	2.77			823	1.24
4728-08	Kealia A5	8-24-10	85.8	0.60	6.88	89.0	0.12	2.62	3.40	881	1.28
4728-09	Kealia C	8-24-10	81.5	0.64	25.4	287	0.36	3.16	3.40	870	0.87
4825-01	HC&S Pump 3	8-24-10	236	0.84	25.4	287	0.36	3.16	3.40	856	8.50
4829-02	MECO-1	10-29-10	271	0.84	25.4	287	0.36	3.16	3.40	801	8.39
4829-03	MECO-2	10-29-10	278	1.32	10.6	290	0.04	2.98	2.98	859	0.94
4830-01	Mahele Triangle	6-09-11	181	0.20						859	0.94
4827-01	Elmer's Farm	8-24-10	333							987	1.10
4930-01	Pohaka 1	2-11-11	152	3.60						1250	0.43
6128-02	HC&S Pump 7	8-24-10	511							813	0.64
6227-05	HC&S Pump 18	8-24-10	388							1001	1.25

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- Pumpage by Wells.** Average potable use would be 0.118 MGD. With a 60 percent recovery through the RO treatment, draft for the feedwater supply would be 0.198 MGD. The non-potable use would average 0.305 MGD, bringing the total groundwater pumpage to 0.503 MGD.
  - Return as RO Concentrate.** The RO concentrate, containing dissolved constituents removed from the potable product water, would be returned to groundwater in disposal wells located 1500 feet downgradient of the supply wells. The quantity of concentrate would be 0.079 MGD.
  - Return to Groundwater as Treated Domestic Wastewater.** Of the estimated 0.118 MGD for within-building potable use, it is assumed that 80 percent or 0.107 MGD would become wastewater that would be treated in septic tanks and disposed of in leach fields.
  - Return to Groundwater as Excess Landscape Irrigation.** Landscape irrigation by the non-potable system is estimated as:

    - 20% of the 88 acres of industrial lots at 4000 GPD/acre;
    - 20% of the 11 acres of roadway at 2500 GPD/acre; and
    - 100% of the 9 acres of drainage retention at 2500 GPD/acre.

For these approximations, the estimated total for landscape irrigation would be 0.081 MGD. Of this amount, it is assumed that 15 percent or 0.012 MGD percolates below the root zone and returns to groundwater. The balance would be lost to plant evapotranspiration or direct evaporation.
  - Return to Groundwater by Other Non-Potable Uses.** The remaining 0.224 MGD of non-potable water use would be external to buildings. Some of it would be lost to evaporation or otherwise consumed and the remainder would return to groundwater via percolation from individual, on-site drainage systems or in the retention area. As an order of magnitude approximation, it is assumed that one-third or 0.075 MGD returns to groundwater.
  - Onsite Rainfall-Recharge to Groundwater.** Rainfall of about 15 inches per year over the 88-acre project site amounts to a year-round average of 0.096 MGD. As a first order approximation, about 40 percent of this or 0.038 MGD percolates to groundwater with the remainder being lost to direct evaporation or plant evapo-transpiration. It is assumed that this quantity will remain essentially the same after the project is developed.
- With the uses and returns to groundwater as estimated above, the net use of groundwater would be 0.23 MGD. This would be 5.8 percent reduction of the estimated 4.0 MGD flow of groundwater directly beneath the site.

dilutes the receiving groundwater. For the estimates herein, it is simply assumed that the post-development rainfall-recharge is increased by 20 and 2 µM for nitrogen and phosphorus in comparison to pre-development conditions.

Except for the RO concentrate which will be delivered directly to groundwater, all of the other returns to groundwater described above will travel vertically through the sandy soil layer, alluvium, and unweathered lavas to the groundwater below. These various strata will function as a trickling filter to naturally remove nitrogen and phosphorus. Expectable removal rates are greater than 80 percent for nitrogen and more than 85 percent of phosphorus. In the summary of estimated changes listed in Table 4, more conservative natural removal rates of 50 percent of nitrogen and 90 percent of phosphorus are used. The net impacts to the 4.0 MGD of groundwater flowing directly beneath the project site are listed below. All of the changes are modest and, on an aquifer-wide perspective, insignificant. At present, the only current use of groundwater downgradient of the project site are three wells in the Kealia National Wildlife Refuge. These are pumped seasonally when surface water is insufficient to maintain the ponds and wetlands areas. The projected changes due to the development of the Puunaha Heavy Industrial Subdivision should be of no consequence to this ongoing use.

- a 5.7 percent decrease in flowrate;
- a 3.8 percent increase in salinity;
- a 1.3 percent increase in nitrogen; and
- a 7.1 percent increase in phosphorus.

Project's Estimated Changes to Groundwater Salinity and Nutrient Levels. Based on data from onsite Well 4927-01 and others nearby, it is assumed that the underlying groundwater has a salinity of 0.8 PPT, a nitrogen content of 330 micro-molar (µM), and a phosphorus content of 3.4 µM. This would also be the quality of water extracted by the supply wells. Salinity and nutrient levels of the project's various water uses and wastewaters are estimated as follows:

- RO Product for Potable Uses. It is assumed that the RO supply for potable use will have a salinity of 0.15 PPT and similar reduction of nitrogen and phosphorus. As such, nitrogen and phosphorus concentrations of the product water would be 55 and 0.45 µM, respectively.
- RO Concentrate Returned to Groundwater. Salts and nutrients removed by the RO process would be in the concentrate. Its salinity would therefore be 2.0 PPT. Nitrogen and phosphorus concentrations would be 750 and 6.1 µM, respectively. The concentrate would be discharged into disposal wells designed to deliver the water into strata of similar or greater salinity. This would be in the transition zone below the basal lens.
- Domestic Wastewater. Treatment of domestic wastewater would be in septic systems with disposal in leach fields. The treated effluent would have increases in salinity and nutrient levels. Using typical concentrations for secondary treated effluent, it is assumed that the salinity would be doubled (to 0.30 PPT) and that nitrogen and phosphorus concentrations discharged in the leach fields would be 1750 and 200 µM, respectively.
- Excess Landscape Irrigation. Excess water applied to landscaping and percolating to groundwater will carry with it dissolved fertilizer. To approximate this, the following assumptions are made: (1) nitrogen in fertilizer would be applied to an average of four pounds/year/1000 ft<sup>2</sup> and phosphorus would be applied at 0.5 pounds/year/1000 ft<sup>2</sup>; and (2) 10 percent of the applied nitrogen and two percent of the applied phosphorus would be carried below the root zone. For these assumptions and the estimated 0.013 MGD of excess landscape water, its nitrogen and phosphorus concentrations would be 780 and 8.9 µM, respectively. It is also assumed that due to evaporative losses, the salinity of the percolating water would have doubled.
- Other Non-Potable Water Uses. Uses of this supply will be varied, meaning that there is no single basis to predict changes to the quality of the portion percolating to groundwater. In view of this, it is simply assumed that for the portion percolating to groundwater, its salinity and nutrient levels will have doubled.
- Rainfall-Recharge. Data of the quality of rainfall-recharge are essentially non-existent. Data for rainfall-runoff quality are scarce, but in almost every case, the salinity is very low and nutrient levels are far less than the receiving groundwater. In other words, the rainfall recharge actually

Table 4  
 Summary of Estimated Changes to Groundwater as a Result of the Proposed Punene Heavy Industrial Subdivision

Item	Flowrate (MGD)	Salinity (PPT)	Nitrogen (lbs/day)	Phosphorus (lbs/day)
Existing Conditions	4.0	0.80	153.9	3.51
• Groundwater Entering Mauka End of Site	4.0	0.80	153.9	3.51
• Addition of Onsite Rainfall-Recharge	0.038	0.12	Neg.	Neg.
Groundwater Leaving the Makai End of Site	4.038	0.79	153.9	3.51
Changes as a Result of the Project's Development	-0.503	0.80	-19.35	-0.442
• Withdrawal by Onsite Wells	No Change	-	0.11	0.005
• Rainfall-Recharge	0.107	0.30	10.92	0.552
• Disposal of Domestic Wastewater	0.012	1.60	0.54	0.003
• Excess Landscape Irrigation	0.079	2.02	6.91	0.120
• Disposal of RO Concentrate	0.075	1.60	2.85	0.013
• Other Non-Potable Water Use	-0.230	0.31	1.98	0.251
Total for All Changes	-0.230	0.31	1.98	0.251
Post-Development Groundwater Leaving the Makai End of the Site	3.808	0.82	155.9	3.761
• Quantiles				
• Percent Change	5.7% Decrease	3.8% Increase	1.3% Increase	7.1% Increase

0-11-30 / 20 Sept-11

**APPENDIX O-1**  
CWRM Letter of  
Assurance for Well  
Nos. 4927-02 and  
4927-03





STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96822

WILLIAM J. ALIA, JR.  
COMMISSIONER OF WATER  
WILLIAM D. BAUTOUR, JR.  
DEPUTY COMMISSIONER OF WATER  
LORETTA L. FORD, A.C.S.W., M.P.H.  
HEAL & FULMANN  
TED YAMAMURA  
WILLIAM M. TAM  
DEPUTY DIRECTOR

RECEIVED  
JUL 03 2012  
PACIFIC RIM LAND, INC.  
MAUI - HAWAII

4927-2&3.10a

Ms. Bianca Lafolette  
CMBY 2011 Investment, LLC  
P.O. Box 220  
Kilhei, HI 96753

Dear Ms. Lafolette:

Letter of Assurance for Well No. 4927-02 & 03

We have completed the review process for your well Construction/Pump Installation Permit application(s) and the permit(s) are ready to be issued. However, in accordance with the State Water Code, §174C-84(e), the permit can only be issued to a licensed contractor and, to date, one has not been identified for your well(s).

Once you have selected a licensed contractor, please have the contractor sign and return to the Commission a copy of the original application, upon which a permit will be immediately issued provided that the following conditions are met:

1. The contractor has no outstanding issues with the Commission.
2. There are no significant changes to the application.
3. There have been no significant changes to applicable laws, rules or regulations since the application date.
4. There have been no significant changes to hydrogeologic conditions since the application date.

Also, attached for your information are copies of comments from reviewing agencies.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0218 or toll-free at 984-2400 (Maui), extension 70218.

Sincerely,

*William M. Tam*

WILLIAM M. TAM  
Deputy Director

Class  
Enclosure



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96822

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WILLIAM M. TAM  
DEPUTY DIRECTOR

May 21, 2012

Honorable Lorenza J. Fuddy, A.C.S.W., M.P.H., Director  
Department of Health  
Attention: Acting Chief, Wastewater Branch  
Joanna L. Seem, Chief, Safe Drinking Water Branch  
Alice Wong, Chief, Clean Water Branch  
Dr. Keith Kawachi, Office of Hazard Evaluation and Emergency Response

FROM: William J. Alia, Jr., Chairperson  
Commission on Water Resources Management

SUBJECT: Well Construction/Pump Installation Permit Application  
CMBY Wells 1 & 2 (Well No. 4927-02 & 03) TMK (2) 3-4-008:019

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the program, plans, and objectives specific to your department. Please respond by returning this cover memo form by June 21, 2012. If we do not receive comments or a request for additional review time by that date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0218.

Class  
Attachment(s)

RESPONSE:

- This well location is shown within all areas of a water resource protection zone to a public water system (defined as working 24 or more months of base flow on the ground surface) as shown on the approved State Water System (SWS) Plan. Attachment(s) include: Title 11, Chapter 20, Rules Relating to Public Water Systems, §§11-20-20.
- This well does not qualify as a source of public water because it does not meet the 24 month or more of base flow on the ground surface or 24 month or more of base flow on the surface. The proposed well location is shown on the approved State Water System (SWS) Plan. Attachment(s) include: Title 11, Chapter 20, Rules Relating to Public Water Systems, §§11-20-20.
- This well is located in a public water resource protection zone. The proposed well location is shown on the approved State Water System (SWS) Plan. Attachment(s) include: Title 11, Chapter 20, Rules Relating to Public Water Systems, §§11-20-20.
- It does not appear that this well will be used for consumption purposes and is not subject to both Drinking Water Regulations.
- Per the applicant's information, a source of public water resource protection (SWS) is not located near the proposed well site (drinking water).
- An HRSZ permit is required.
- Other relevant (CR) information, information, or recommendations are attached.
- In the event that the location of the well identified in the well permit application is not suitable for the proposed well location, we will be required to review this application.
- No comments/objections.

Contact Person: MICHAEL MUYALINPA Phone: 586-4288  
Signature: *Michael Muyalinpa* Date: 5/23/12

CWRM Application Source: CMBY Wells 1 & 2 (4927-02,-03)

TMK: (2) 3-8-008:019

Safe Drinking Water Branch (SDWB) - Engineering Section

- This well qualifies as a source that serves a regulated public water system. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems.
- All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements.
- Projects that propose development of new sources of potable water serving or proposed to serve a public water system must comply with the terms of HAR 11-20-29. This section requires that all new public water system sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.
- The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water

CWRM Well Application Standard Comments (SDWB)  
Vers. 9/30/09

quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the state of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

- All public water system sources must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the drinking water source.
- Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification. These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.
- All public water systems must be operated by certified distribution system and water treatment plant operators as defined by Hawaii Administrative Rules, Title 11, Chapter 11-25 titled; Rules Pertaining to Certification of Public Water System Operators.
- All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing potable water system to meet irrigation or other needs must be carefully design and operate these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the potable system. The two systems must be clearly labeled

CWRM Well Application Standard Comments (SDWB)  
Vers. 9/30/09

and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with Hawaii Administrative Rules, Title 11, Chapter 11-21 titled, Cross-Connection and Backflow Control is also required.

- All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawaii's Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other regulated public water system programs, please contact the Safe Drinking Water Branch Engineering Section at 586-4258.

*CIWPM Well Application Standard Comments (SDWB)  
Vers. 9/30/09*

SDWB Underground Injection Control (UIC) Section

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii's Administrative Rules, Title 11, Chapter 11-23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form is needed to apply for a UIC permit.

A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term. For further information about the UIC permit and the Underground Injection Control Program, please contact the UIC staff of the Safe Drinking Water Branch at 586-4258.

The UIC Program has the following comments specific to this Application:

1. In general, a shallow well, or a well that recharges quickly from local rainfall, should not be used as a potable water source because such a well increases the risk of having unsatisfactory groundwater quality that when consumed may compromise health. Factors that directly influence a well's groundwater quality include

*CIWPM Well Application Standard Comments (SDWB)  
Vers. 9/30/09*

wastewater disposal systems (cesspools, septic systems, drainage wells), lawn/garden/crop-growing activities, and even the proximity to the ocean where salt water intrusion may occur.

2. The siting of a drinking water source below the UIC line may restrict new and existing injection well construction. New injection wells will be prohibited within setback areas defined in Chapter 11-23. If this drinking water source will serve a regulated public water system, the applicant will be required to inform landowners located within the setback surrounding the well of this proposed action because it will affect the injection well development potential of their properties.

3. Well water quality should be initially and periodically tested for its acceptable and intended use, especially if for human consumption. Water quality should not be presumed acceptable and unchanging. Land-based activities around the well and within the well's recharge area may, over time, have an unacceptable effect on the well's water quality. Well construction materials and related equipment could also affect water quality.

**WARNING!**

As the owner of a privately-owned well, you should NOT assume that water from your well is safe for consumption. It is your responsibility to make sure that your well water is safe to drink. The only way to do this is to have your well regularly tested for bacteriological and chemical contaminants.

There are no regulations controlling water quality in private wells serving individual residences as there are for public water systems (public or privately owned utilities supplying water to 25 or more people or 15 service connections). In other words, there are no enforceable limits for contaminants and no requirements for regular testing. Private wells are often found in rural areas, where many activities such as onsite wastewater disposal can contaminate the ground water.

#### U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) RECOMMENDATIONS

The EPA recommends that private well owners test their well water each year for such contaminants as Total Coliform Bacteria, Nitrates, as well as any other contaminants that may be of concern in your area. More frequent testing may be appropriate if you suspect a problem. EPA also suggests that you consider testing for pesticides, organic chemicals, and heavy metals before using it for the first time. Please refer to the EPA website on Private Drinking Water Wells at <http://www.epa.gov/safewater/privatewells/fact.html>

#### OTHER CONTAMINANTS

Water testing can be very expensive. It is important that you spend time to identify what other potential contaminants may be of concern. Please refer to the EPA website on Private Drinking Water Wells at <http://www.epa.gov/safewater/privatewells/whatyoucando.html> for more helpful information. Be aware of what and how you use and dispose of household and garden chemicals. Also determine the location of nearby septic tanks or cesspools, and agricultural or industrial activities in the area. General information on known chemical contamination of ground water in Hawaii can also be found at the DOI website [www.hawaii.gov/health/environmental/water/swbw/contaminants/pdf/commg05.pdf](http://www.hawaii.gov/health/environmental/water/swbw/contaminants/pdf/commg05.pdf)

#### LABORATORIES

Local commercial laboratories can be found in the yellow pages of the telephone book under "Laboratories, Analytical." Whenever possible, utilize a laboratory that is certified or approved for the specific drinking water tests and carefully follow their instructions for collecting, storing, and transporting the samples. Just be sure to ask the lab to use EPA approved methods for drinking water analysis. A list of labs certified or approved by the Department of Health can be found at [www.hawaii.gov/health/environmental/water/swbw/swbw/pdf/Testing%20Labs.pdf](http://www.hawaii.gov/health/environmental/water/swbw/swbw/pdf/Testing%20Labs.pdf). As lab certification status changes constantly, confirm their status when you contact the lab. Please note that the list is limited to currently regulated contaminants in public water systems.

#### RESULTS

Once the lab provides you with the test results, you will be in a better position to determine if your well water is safe to drink or what contaminant you need to treat for. Generally, you should compare the results with Federal ([www.epa.gov/safewater/html](http://www.epa.gov/safewater/html)) and State ([www.hawaii.gov/health/environmental/water/swbw/swbw/pdf/State%20MCL.pdf](http://www.hawaii.gov/health/environmental/water/swbw/swbw/pdf/State%20MCL.pdf)) drinking water standards. Where your test results are greater than the State or Federal maximum contaminant levels, your well water should be considered as unsafe for consumption.



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96822

May 21, 2012

TO: Honorable Loreta J. Fuddy, A.C.S.W., M.P.H., Director  
Department of Health  
Attention: Acting Chief, Wastewater Branch  
Joanna L. Seto, Chief, Safe Drinking Water Branch  
Alec Wong, Chief, Clean Water Branch  
Dr. Keith Kawooka, Office of Hazard Evaluation and Emergency Response

FROM: William J. Alla, Jr., Chairperson  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application  
CMBY Wells 1 & 2 (Well No. 4927-02 & 03) TMDR (3) 3-4-008-019

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by June 21, 2012. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Lee of the Commission staff at 597-0218.

Clear Attachment(s)

RESPONSE:

- 1) This well location is a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people of legal age (PLANS), Title 11, Chapter 26, Rules Relating to Public Water Systems, §§11-26-27).
- 1) This well does not qualify as a source of potable water system (within the 25 people or more people or legal age (PLANS), Title 11, Chapter 26, Rules Relating to Public Water Systems, §§11-26-27) and therefore is not subject to the provisions of the Public Water System Act (PLANS), Title 11, Chapter 26, Rules Relating to Public Water Systems, §§11-26-27).
- 1) If this well is used to supply both potable and non-potable purposes in a single system, the user shall obtain some separation and backflow protection by physically separating a potable and non-potable system by an air gap or an approved backflow preventer, and by clearly labeling the well and piping with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be readily available and tested.
- 1) It does not appear that this well will be used for nonpotable purposes and is not subject to Safe Drinking Water Regulations.
- 1) Per the applicant's information, a source of potable water system (as defined in the (Administrative Manual)).
- 1) An NPDES permit is required.
- 1) Other relevant DCR information, information, or recommendations are attached.
- 1) In the event that the location of the well changes, the user shall obtain the permit described on this application, and division considers this comment to self to be applicable, and we do not need to review this permit location.

No comments/objections  
Contact Person: Roland Telano, Eng. on Maui  
884-8232  
Date: 5-23-2012

Signed: *Roland Telano* 10 993



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96822

May 21, 2012

TO: Honorable Loreta J. Fuddy, A.C.S.W., M.P.H., Director  
Department of Health  
Attention: Acting Chief, Wastewater Branch  
Joanna L. Seto, Chief, Safe Drinking Water Branch  
Alec Wong, Chief, Clean Water Branch  
Dr. Keith Kawooka, Office of Hazard Evaluation and Emergency Response

FROM: William J. Alla, Jr., Chairperson  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application  
CMBY Wells 1 & 2 (Well No. 4927-02 & 03) TMDR (3) 3-4-008-019

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by June 21, 2012. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Lee of the Commission staff at 597-0218.

Clear Attachment(s)

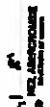
RESPONSE:

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- 1) This well does not qualify as a source of potable water system (within the 25 people or more people or legal age (PLANS), Title 11, Chapter 26, Rules Relating to Public Water Systems, §§11-26-27) and therefore is not subject to the provisions of the Public Water System Act (PLANS), Title 11, Chapter 26, Rules Relating to Public Water Systems, §§11-26-27).
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- 1) It does not appear that this well will be used for nonpotable purposes and is not subject to Safe Drinking Water Regulations.
- 1) Per the applicant's information, a source of potable water system (as defined in the (Administrative Manual)).
- 1) An NPDES permit is required.
- 1) Other relevant DCR information, information, or recommendations are attached.
- 1) In the event that the location of the well changes, the user shall obtain the permit described on this application, and division considers this comment to self to be applicable, and we do not need to review this permit location.

No comments/objections  
Contact Person: Darryl Lum  
886-4309  
Date: 5/29/12

Signed: *Darryl Lum*

1-1/2-184



DEPT OF PLANNING  
COUNTY OF MAUI

MAY 23 2012  
RECEIVED



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

May 21, 2012

Mr. William Spence, Director  
Planning Department  
County of Maui  
230 South High Street  
Waikuku, HI 96793

Dear Mr. Spence:

Special Management Area Use Permit Requirements for  
Well Construction/Pump Installation Permit Application  
CMBRY Wells 1 & 2 (Well No. 4977-92 & 93)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump  
Installation permit application.

We would appreciate your comments on the captioned application with regard to the SMA, permitting  
requirements specific to your division. Please respond by returning this cover sheet (附表 2),  
10/12. If we do not receive comments or a request for additional review time by this date, we will assume you  
have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit  
application, request additional information, or request additional review time, please contact Charley Lee of the  
Commission staff at 587-0218.

Sincerely,

*William J. Aila, Jr.*  
WILLIAM J. AILA, JR.  
Chairperson

Class

RESPONSE:

This well project requires PD does not require a SMA. If a SMA is required it has not been approved  
and [ ] is not currently active.

Other relevant rules/regulations, information, or recommendations are attached.

No objections

Other comments: Regulations of all applicable governmental  
agencies should be followed.

Contact Person: Christy Williams Phone: 808 270 1789

Signed: Christy Williams Date: 6/1/12

1. For Well-Drilling Activities

Any discharge to State water of treated process wastewater effluent associated with well  
drilling activities is regulated by Hawaii Administrative Rules (HAR), Title 11, Chapter 55,  
Appendix 1, effective October 22, 2007, and compiled June 15, 2009. Treated process  
wastewater effluent covered by this general permit includes well drilling sludges,  
lubricating fluids wastewater, and well purge wastewater. This general permit does not  
cover well pump testing. The applicable Notice of Intent (NOI) Forms and filing fee shall  
be submitted at least 30 calendar days before the start of discharge to the:

Department of Health  
Clean Water Branch  
919 Ala Moana Boulevard, Room 301  
Honolulu, Hawaii 96814-4920

The CWB/NOI Forms are available online at  
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/naoi/index.html>.  
Inquiries may be directed to the CWB at (808) 586-4309 or by fax (808) 586-4352.

2. For Well Pump Testing

The discharger shall take all measures necessary to prevent the discharge of pollutants from  
existing State waters. Such measures shall include, if necessary, containment of initial  
discharge until the discharge is essentially free of pollutants. If the discharge is entering a  
stream or river bed, best management practices shall be implemented to prevent the  
discharge from disturbing the clarity of the receiving water. If the discharge is entering a  
storm drain, the discharger must obtain written permission from the owner of the storm  
drain prior to discharge. Furthermore, best management practices shall be implemented to  
prevent the discharge from collecting sediments and other pollutants prior to entering the  
storm drain.

3. For Construction Activities Disturbing One (1) or More Acres of Total Land Area

By HAR, Title 11, Chapter 55, Appendix C, effective October 22, 2007, and compiled  
June 15, 2009, an NPDES permit or Notice of General Permit Coverage is required before  
the start of the construction activities that result in the disturbance of one (1) or more acres  
of total land area, including clearing, grading, and excavation. The total land area includes  
a contiguous area where multiple separate and distinct construction activities may be taking  
place at different times on different schedules under a larger common plan of development  
or sale. An NOI (see Comment No. 1, above) shall be submitted 30 calendar days before  
the start of construction activities.



WILLIAM J. ALA, JR.  
WILLIAM B. BAUMANN, JR.  
LORRETTA J. FORDY, A.C.L.W., M.P.H.  
NEAL S. FUJIMURA  
TED YAMAMOTO  
WILLIAM H. TAN

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96820

RECEIVED  
LAND DIVISION  
2012 MAY 22 P 3 22  
DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

May 21, 2012

TO: Russell Tsuji, Administrator  
Land Division  
FROM: William M. Tan, Deputy Director  
Commission on Water Resource Management  
SUBJECT: Well Construction/Pump Installation Permit Application  
CMBY Wells 1 & 2 (Well No. 4927-02 & 03) WPK (2) 3-8-1008:019

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.  
We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by June 21, 2012. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0218.

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Class Attachment(s) P11 2 51  
RESPONSE:  
 A water lease/permit is required of this applicant and an application for such will be requested by this division.  
 A water lease/permit is NOT required of this applicant.  
 A water lease/permit has been obtained by the applicant through lease no. \_\_\_\_\_  
 Other relevant Land Division rules/regulations, information, or recommendations are attached.  
 No objections  
 Other comments: The property's original source of private title is Land Commission Award 5230 Issued between 1865 and 1855.  
Contact Person: Gary Martini Phone: 587-0421  
Signed: [Signature] Date: May 29, 2012

**APPENDIX P**  
Preliminary  
Engineering Report



**PRELIMINARY ENGINEERING REPORT**

**FOR**

**PUUNENE HEAVY INDUSTRIAL SUBDIVISION**

Puunene, Maui, Hawaii

T.M.K.: (2) 3-8-008: 019

Prepared for:

CMBY 2011 Investment, LLC  
1300 N. Holopono Street, Suite 201  
Kihei, Maui, Hawaii 96753

Prepared by:



CONSULTING CIVIL ENGINEERS  
105 SCUMMACH STREET, SUITE 102  
WAILUKU, MAUI, HAWAII 96793  
PHONE: (808) 242-0032  
FAX: (808) 242-5779

February 2012

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- 2.0 EXISTING INFRASTRUCTURE
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  - 2.3 SEWER
  - 2.4 WATER
  - 2.5 ELECTRIC AND TELEPHONE
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**PRELIMINARY ENGINEERING REPORT  
FOR  
PUUNENE HEAVY INDUSTRIAL SUBDIVISION  
T.M.K.: (2) 3-8-008: 019**

**1.0 INTRODUCTION**

The purpose of this report is to provide information on the existing infrastructure which will be servicing the proposed project. It will also evaluate the adequacy of the existing infrastructure and anticipated improvements which may be required for the proposed project.

The subject parcel is identified as T.M.K.: (2) 3-8-008: 019, and encompasses an area of approximately 86.030 acres. It is also known as Lot 2 of the Puua Subdivision. It is bordered by undeveloped land, an irrigation reservoir and sugar cane fields to the north; sugar cane fields and a quarry to the east, sugar cane fields to the south, and the old Puunene Airport to the west.

Access to the project site is from Kamaaina Road, South Firebreak Road, and Lower Kihei Road. There is an existing traffic signal at the Mokulele Highway - Kamaaina Road intersection with a left turn storage lane and a right turn deceleration lane.

The project plan is to seek a change in zoning to heavy industrial. The heavy industrial zoning district provides for a minimum lot size of 10,000 square feet. The sizes of the lots in the proposed heavy industrial subdivision shall be determined by the types of uses proposed in the subdivision and the market demand at the time the subdivision application is filed with the County of Maui. Currently, the plan is to provide ten (10) lots ranging in size from one-half to one acre, five (5) lots ranging in size from over one acre to two acres and the balance of the lots ranging in size from over two acres to twenty acres for a total of 28 lots. Proposed improvements include paved private roadways, private water system, and landscaping. Underground water, sewer, drainage, electrical, and telephone systems will also be constructed.

**2.0 EXISTING INFRASTRUCTURE**

**2.1 ROADWAYS**

All traffic will access and egress from the project site at the Mokulele Highway-Kamaaina Road-Mehameha Loop intersection. Mokulele Highway runs in the north-south direction with Kamaaina Road at the east approach and Mehameha Loop at the west approach. Kamaaina Road intersects with South Firebreak Road which provides access to the Hawaiian Cement Quarry and the project site. Mehameha Loop provides access to the Maui Humane Society to the west.

Mokulele Highway is a four-lane undivided State Highway which runs in the north-south direction which connects Kahului and Kihei. The speed limit is 45 miles per hour (mph) in the vicinity of Kamaaina Road. There is a separate bike path along the east side of Mokulele Highway.

The intersection of Mokulele Highway at Kamaaina Road is a four-legged, signalized intersection. The northbound and southbound approaches of Mokulele Highway have separate left turn and right turn deceleration and storage lanes. The eastbound (Mehameha Loop) and westbound (Kamaaina Road) approaches are one lane.

Kamaaina Road has a 24-foot wide concrete pavement for approximately 1,500 feet from Mokulele Highway and transitions to an asphalt pavement up to South Firebreak Road. South Firebreak Road has a 24-foot wide asphalt pavement up to the project site.

**2.2 DRAINAGE**

The parcel slopes down in the east to west direction ranging in elevation from approximately 140 feet to 120 feet above mean sea level, with an average slope of approximately 1.8%. It is estimated that the existing 50-year storm runoff from the project site is 75.2 cfs and 135,400 cf of runoff volume. Presently, onsite runoff sheet flows across the project site in a east to west direction into the downstream parcels and towards Mokulele Highway.

According to the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August, 1972)," prepared by the United States Department of Agriculture Soil Conservation Service, a majority of the soil within the project site is classified as Watakoa extremely stony silty clay loam (WID2).

Waiakoa extremely stony silty clay loam is characterized as having medium runoff, and a severe erosion hazard. A portion of the soils within the southern end of the property is classified as Alae Sandy Loam Alae sandy loam (AaB). Alae Sandy Loam is characterized as having slow runoff with a slight erosion hazard (See Exhibit 3).

According to Panel Number 1500030580E of the Flood Insurance Rate Map, dated September 25, 2009, prepared by the United States Federal Emergency Management Agency, the project site is situated in Flood Zone X. Flood Zone X represents areas outside of the 0.2% annual chance flood plain (See Exhibit 4).

### 2.3 SEWER

There are no County sewer facilities within or adjacent to the project site. The nearest County sewerline is approximately 10,000 feet to the south of the project site in Kihei.

### 2.4 WATER

There is no County water system currently servicing the project site. However, there is an 8" water line from the County water system extending up Kamaaina Road to service some of the surrounding properties. The source for this water system is the Mokuhaui wells located in Happy Valley. The 36-inch Central Maui transmission line runs along Mokulele Highway from Wailuku to service the Kihei area. This system is at or near capacity therefore may be inadequate to provide source and storage for this project.

### 2.5 ELECTRIC AND TELEPHONE

There is an existing electrical transmission system traversing along Kaimana Road and South Firebreak Road to the north end of the project site providing service to the surrounding area. This system is located within an easement granted to Maui Electric Company, Ltd.

## 3.0 ANTICIPATED INFRASTRUCTURE IMPROVEMENTS

### 3.1 ROADWAYS

Access to the proposed subdivision will be from Kamaaina Road, South Firebreak Road, and Lower Kihei Road. From Mokulele Highway, there will be access to Kihei to the south and Kahului to the north. Easements from Alexander & Baldwin and/or the State of Hawaii will provide for access to the project area from Mokulele Highway (see Exhibit 5).

The interior subdivision streets will have 56 foot right-of-ways and will be improved with two 18 foot wide travel lanes and 10 foot wide shoulders on each side. The larger traffic lanes are to accommodate the larger fire trucks in the Central and South Maui district. Flexible design standards will be utilized in the design of the subdivision's internal and external roadway system as provided for by Section 18.32.030 of the Maui County Code pertaining to General Criteria for Flexible Design Standards. Appropriate striping and signage will be installed in accordance with the Department of Public Works.

A Traffic Impact Analysis Report (TIAR), dated January 24, 2012 was prepared by Phillip Rowell and Associates, which provided the following summary for recommended mitigation for 2015 background conditions:

*"Intersection of Mokulele Highway at Kamaaina Road and Mehamaha Loop - No mitigation required."*

The following summary was recommended to mitigate the background plus the project deficiencies:

1. *Modify westbound approach to provide a separate right turn lane.*
2. *Provide acceleration lane for westbound to northbound right turns.*
3. *Lengthen southbound left turn deceleration lane from 60 feet to 350 feet."*

In addition, the TIAR recommended the following:

*\*1. The areas adjacent to Kamaaina Road, South Firebreak Road and Lower Kihei Road should be monitored often to insure that the sugar cane growth impedes sight distances and visibility of traffic control devices are maintained.*

*2. Because of the increased traffic volumes along Kamaaina Road, South Firebreak Road and Lower Kihei Road as a result of the project, these roadways should be striped and signed per County of Maui Standards. The high proportion of traffic that will be heavy vehicles should be considered in the design and installation of traffic control devices, especially the longer stopping sight distances required for the heavy vehicles.\**

### **3.2 DRAINAGE**

The project's drainage system will be designed to accommodate the increase in runoff generated by the development of the entire project site. Subdivision improvements will include a master drainage system within the roadways, including catch basins, manholes, drainlines and a drain stubout to each lot. As each lot is developed, it will be required to install an onsite drainage system to collect runoff from the site and provide a drainline connection to the drain stubout to the master drainage system. The roadside runoff will be captured by the catch basins within the right-of-way, and conveyed to a series of retention basins constructed as part of the subdivision improvements. It is estimated that the post development runoff will be approximately 328.5 cfs and generate 413,900 cf of surface runoff volume. This would be an increase of approximately 253.3 cfs of runoff and 278,500 cf of runoff volume. The proposed retention basins to be constructed along the western portion of the property will have a capacity to accommodate at least the increase in surface runoff from a fully developed project site.

There will be no increase in runoff sheet flowing from the project site after completion of the development and the drainage design will also be to minimize any alterations to the natural pattern of the existing onsite surface runoff. This is in accordance with Chapter 4. Rules for the Design of Storm Drainage Facilities in the County of Maui.

### **3.3 SEWER**

The nearest County sewer system is located approximately 10,000 feet from the project site, therefore a master private sewer system will be installed within the subdivision roadways and a sewer lateral will be provided to each lot. The master sewer system will outlet into a community leach field within the project site, which will require review and approval from the State Department of Health (SDOH).

Individual wastewater systems (IWS) will be installed by individual lot owners and used for the treatment of wastewater for each lot. Each lot will be required to connect the outlet line of the IWS to the sewer lateral provided. Wastewater will be conveyed from each lot into the community leach field which is required to be at least 1,000 feet away from the wells providing water to the subdivision. Each IWS will adhere strictly to the requirements set forth by the SDOH.

As the project progresses and building permits are applied for, the building permit applicant will be required to submit the design of an IWS. It is the responsibility of the SDOH to review and approve the IWS. Some of the restrictions of an IWS are that it has to be at least 5 feet away from the wall line of any structure, 9 feet from a property line, 50 feet from a stream, 10 feet from a large tree, and 1,000 feet from a potable drinking water well (if cesspools are used). The IWS to be used for the subdivision will be aerobic units which will allow installation in close proximity to the subdivision walls.

### **3.4 WATER**

The development plan will involve the construction of a dual water system to provide the required potable and non-potable water, as well as adequate fire flow. Groundwater supplied by onsite wells will provide the source for non-potable water use and as well as reverse osmosis (RO) treatment for potable water use.

As determined by the Domestic Consumption Guidelines set forth by the Department of Water Supply and dual water system guidelines that recommend a 30/70, potable/non-potable split for industrial lands, the potable water demand for the proposed lots of the subdivision is calculated to be approximately 118,620 gallons per day. The non-potable requirement for the

proposed lots as well as the landscaped and irrigated common areas and roadways is calculated to be approximately 305,030 gallons per day. In accordance with Department of Water Supply standards, the fire flow demand for a heavy industrial development is 2,500 gallons per minute for a 2-hour duration. The maximum spacing for fire hydrants is 250 feet. The projects fire flow demand will be met by the proposed non-potable system.

A Groundwater Resource and Water System Assessment Report, prepared by Tom Nance Water Resource Engineering, provided the following summary of recommended improvements for the proposed dual water system:

1. Three 300 gpm wells, one providing standby capacity.
2. Three 75 gpm reverse osmosis (RO) treatment trains, one providing standby capacity.
3. A 0.25 million gallon (MG) storage reservoir for potable use
4. A 0.30 million gallon (MG) storage reservoir for non-potable use.
5. The potable and non-potable water system will each require a booster pump with a backup generator power for the non-potable pump station to ensure fire protection during a power outage.

### 3.5 ELECTRIC AND TELEPHONE

The proposed electrical and telephone distribution systems for the subject subdivision will be installed from the existing overhead facilities located along the north side of the project site. Within the project site, the electric and telephone systems will be installed underground in accordance with the utility companies rules and regulations. Street lights will be installed along the subdivision streets at intervals to be determined by the electrical engineer.

### **EXHIBITS**

- 1 Location Map
- 2 Vicinity Map
- 3 Soil Survey Map
- 4 Flood Insurance Rate Map
- 5 Preliminary Site Plan
- 6 Preliminary Grading & Drainage Plan

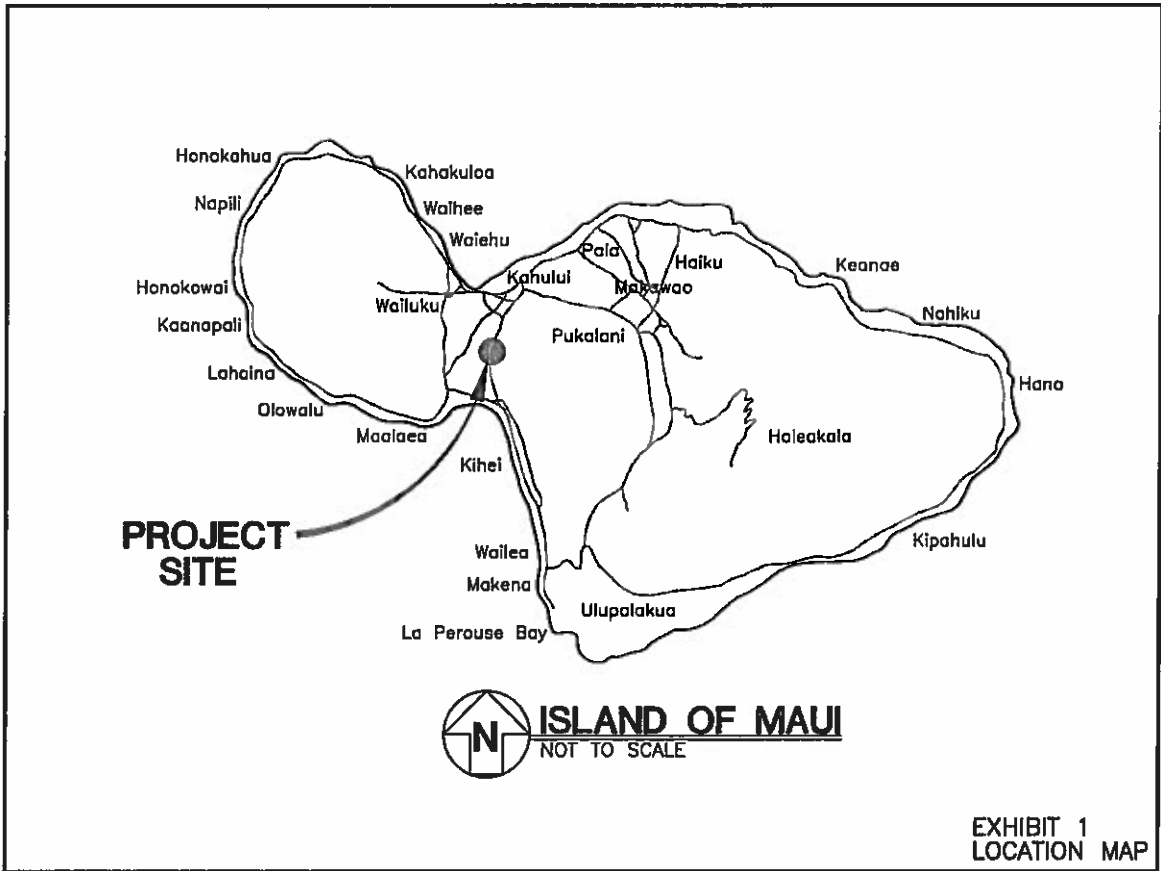


EXHIBIT 1  
LOCATION MAP

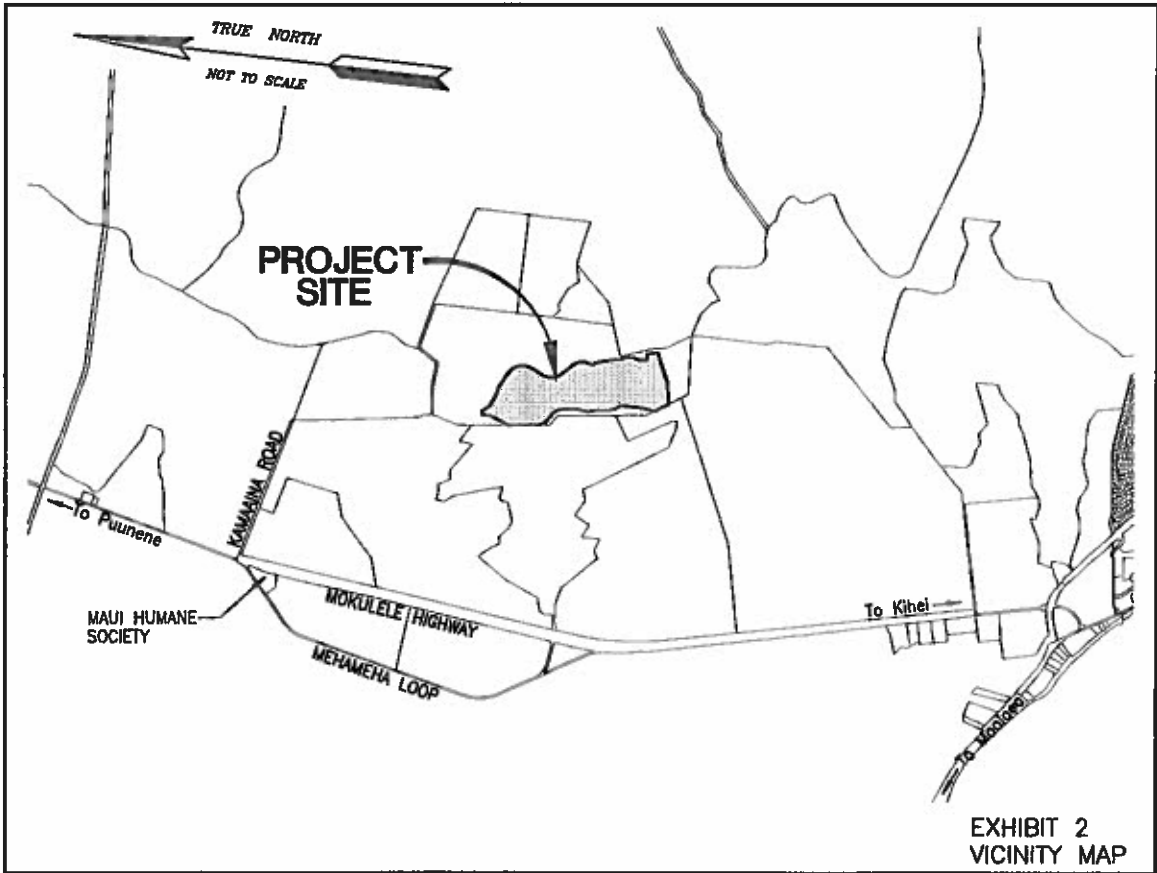
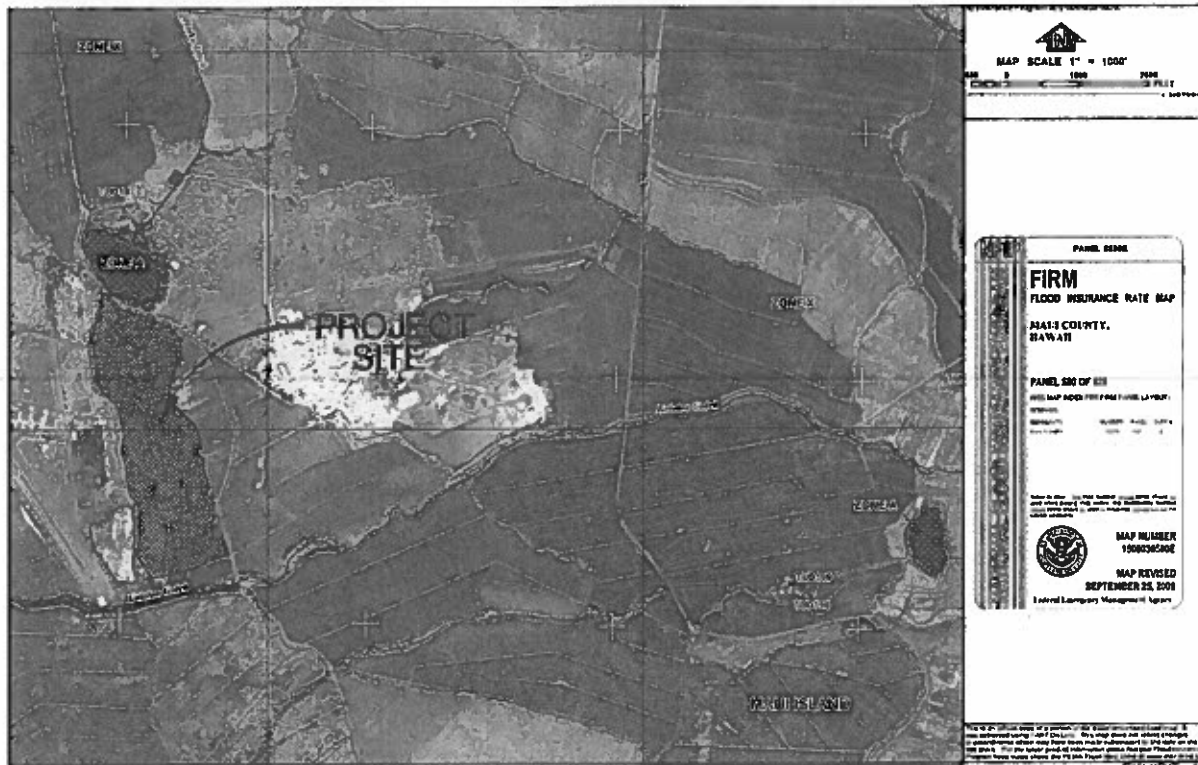
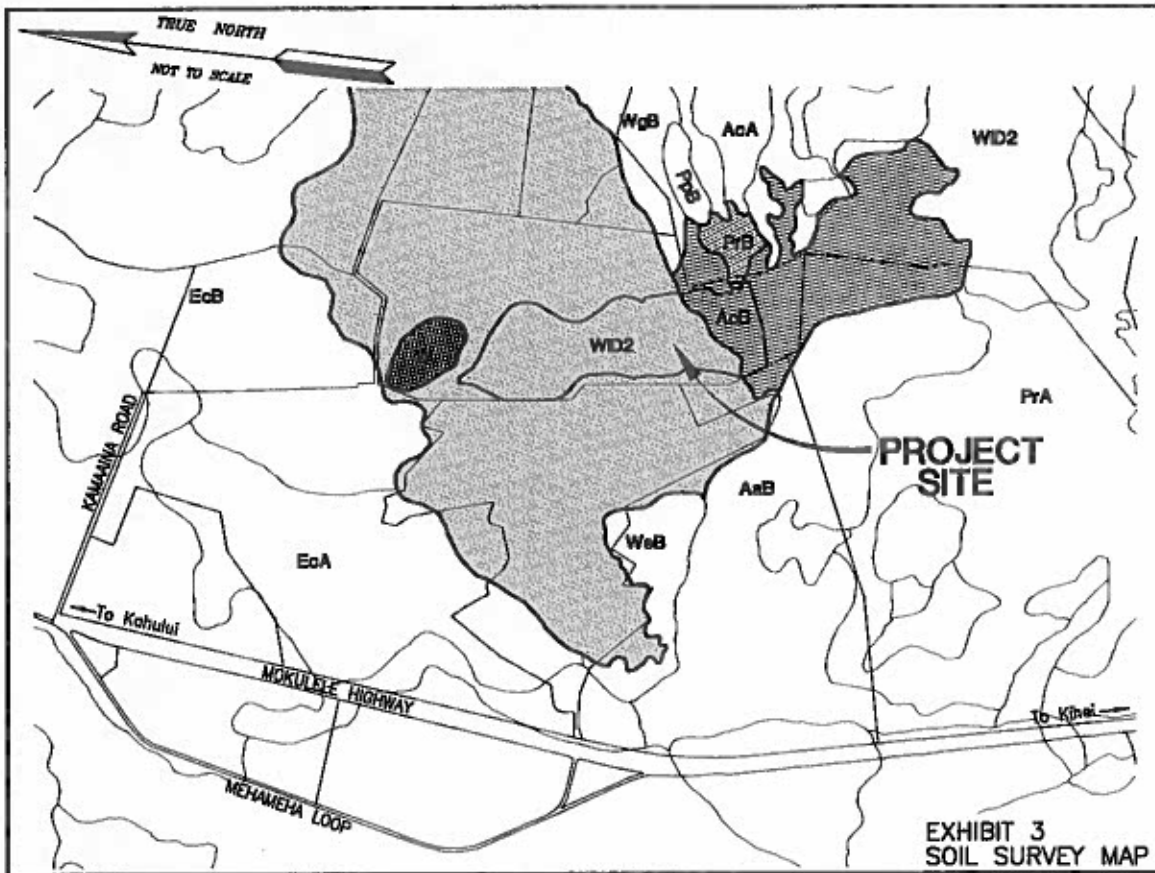
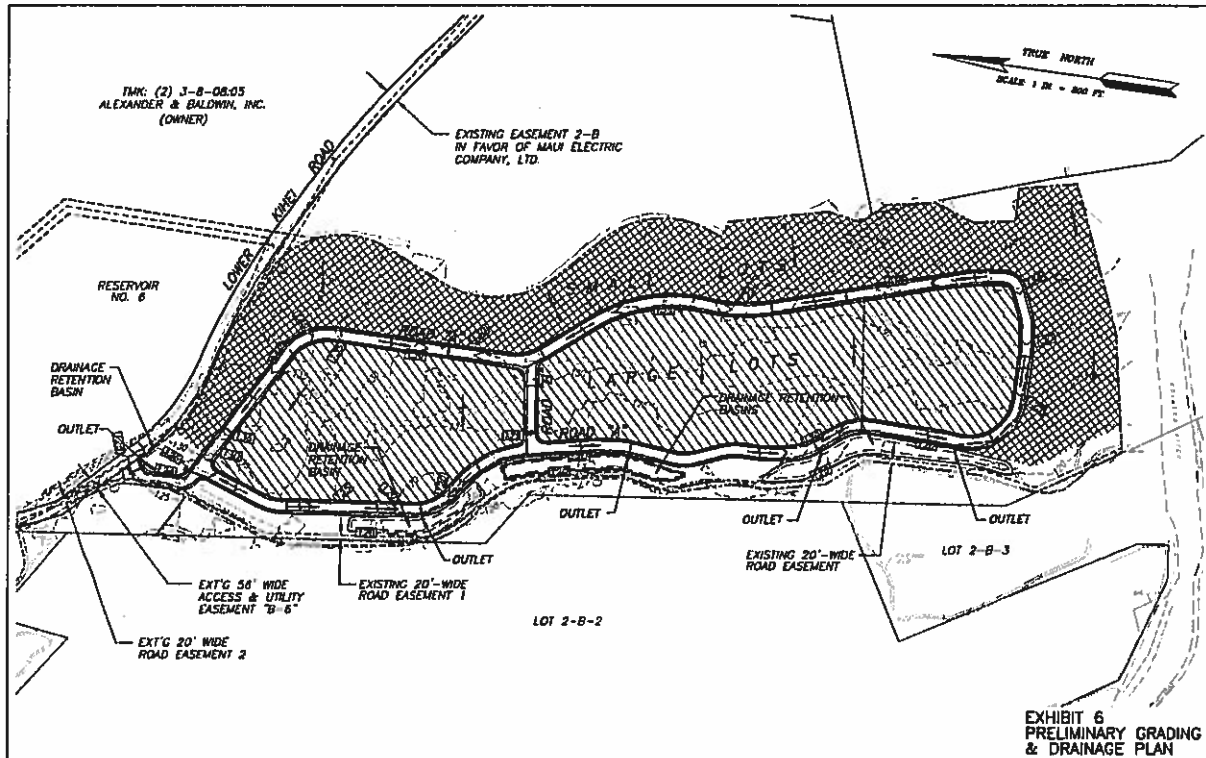
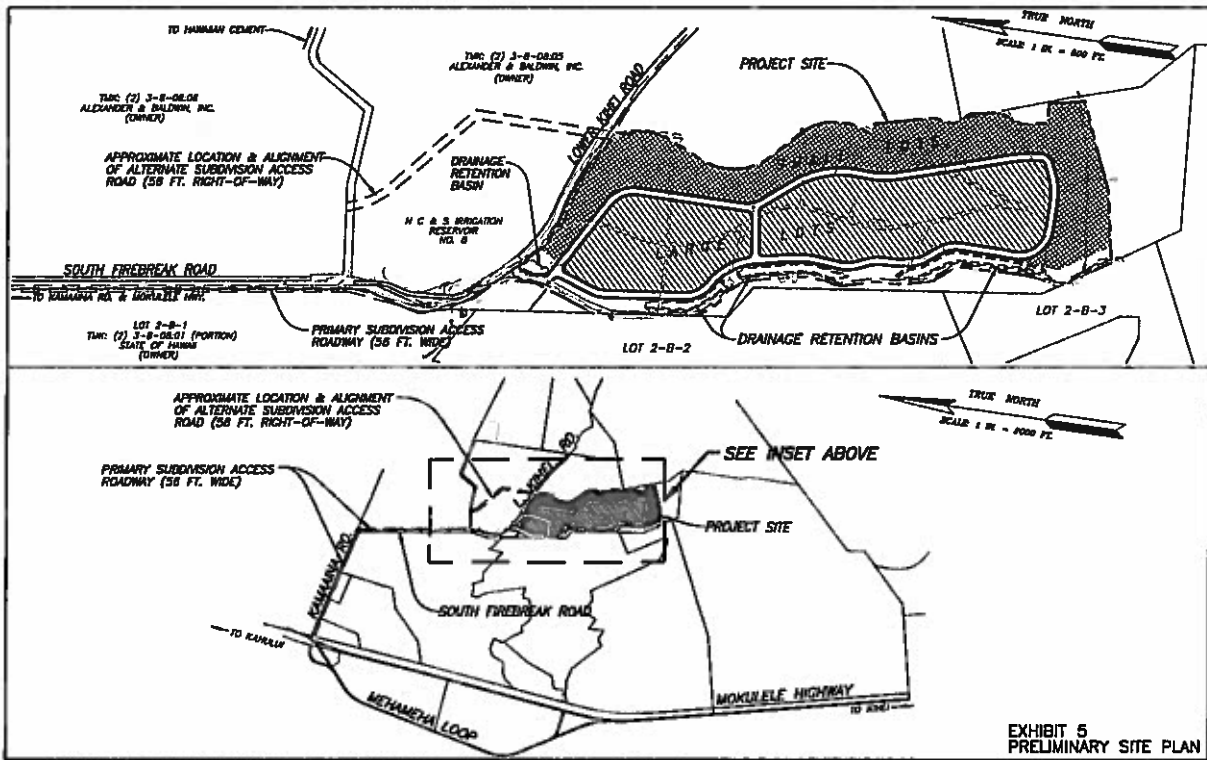


EXHIBIT 2  
VICINITY MAP







## Hydrologic Calculations

**Purpose:** Determine the increase in onsite surface runoff from the undeveloped portion of the project site based on a 50-year, 1-hour storm.

A. Determine the Runoff Coefficient (C):

EXISTING AREAS:	
Infiltration (Medium)	= 0.07
Relief (Flat)	= 0.00
Vegetal Cover (Good)	= 0.03
Development Type (Open)	= <u>0.15</u>
<b>C</b>	<b>= 0.25</b>

DEVELOPED AREAS:	
Infiltration (Negligible)	= 0.20
Relief (Flat)	= 0.00
Vegetal Cover (Poor)	= 0.05
Development Type (Industrial)	= <u>0.55</u>
<b>C</b>	<b>= 0.80</b>

B. Determine the 50-year 1-hour rainfall:  
 $i_{50} = 2.5$  inches

Adjust for time of concentration to compute Rainfall Intensity (I):

Existing Condition:  
 $T_c = 30$  minutes  
 $I = 3.50$  inches/hour

Developed Condition:  
 $T_c = 14$  minutes  
 $I = 4.78$  inches/hour

C. Drainage Area (A) = 86 acres

D. Compute the 50-year storm runoff volume (Q)

## APPENDIX A HYDROLOGIC CALCULATIONS

# Hydrograph Plot

English

Hyd. No. 1

PRE

Hydrograph type = Rational  
 Storm frequency = 50 yrs  
 Drainage area = 86.0 ac  
 Intensity = 3.50 in  
 I-D-F Curve = 2-5.IDF

Peak discharge = 75.22 cfs  
 Time interval = 1 min  
 Runoff coeff. = 0.25  
 Time of conc. (Tc) = 30 min  
 Reced. limb factor = 1

Total Volume = 135,395 cuft

Q = CIA

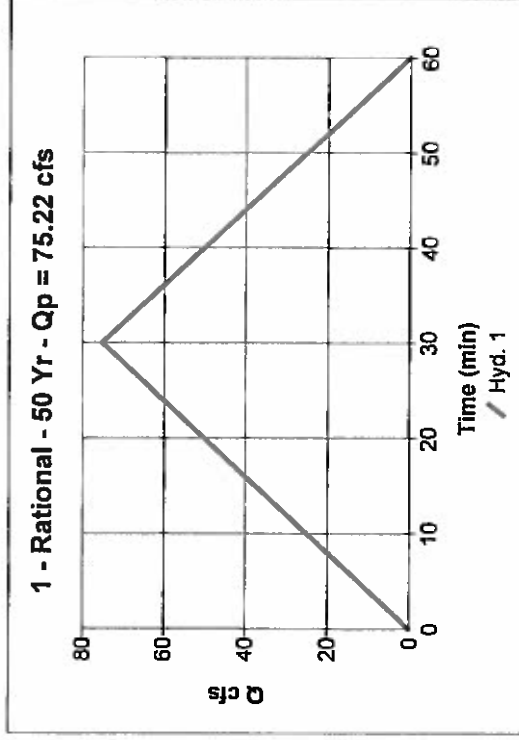
Existing Condition:

$$Q = (0.25)(3.50)(86) = 75.2 \text{ cfs}$$

Developed Condition:

$$Q = (0.80)(4.78)(86) = 328.5 \text{ cfs}$$

The increase in runoff due to the proposed development is  $328.5 - 75.2 = 253.3$  cfs.







# Reservoir Report

Page 1

English

## Reservoir No. 4 - BASIN 4

### Pond Data

Pond storage is based on known contour areas

Stage / Storage Table			
Stage	Elevation	Contour area	Total storage
ft	ft	sqft	cuft
0.00	124.00	4,910	0
1.00	125.00	1,053	2,982
2.00	126.00	11,746	9,381

### Culvert / Orifice Structures

#### Weir Structures

[A]	[B]	[C]	[D]	[A]	[B]	[C]	[D]
Rise In = 0.0	0.0	0.0	0.0	Crest Len ft = 0.00	0.00	0.00	0.00
Span In = 0.0	0.0	0.0	0.0	Crest El. ft = 0.00	0.00	0.00	0.00
No. Barrels = 0	0	0	0	Weir Coeff. = 0.00	0.00	0.00	0.00
Invert El. ft = 0.00	0.00	0.00	0.00	Eqn. Exp. = 0.00	0.00	0.00	0.00
Length ft = 0.0	0.0	0.0	0.0	Multi-Stage = No	No	No	No
Slope % = 0.00	0.00	0.00	0.00				
N-Value = .000	.000	.000	.000				
Orif. Coeff. = 0.00	0.00	0.00	0.00				
Multi-Stage =	No	No	No	Tailwater Elevation = 0.00 ft			

Note: All structures have been analyzed under field and quality control.

### Stage / Storage / Discharge Table

Stage	Storage	Elevation	Civ A	Civ B	Civ C	Civ D	Wr A	Wr B	Wr C	Wr D	Discharge
ft	cuft	ft	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs
0.00	0	124.00	--	--	--	--	--	--	--	--	0.00
1.00	2,982	125.00	--	--	--	--	--	--	--	--	0.00
2.00	9,381	126.00	--	--	--	--	--	--	--	--	0.00

## APPENDIX B WATER DEMAND CALCULATIONS

## WATER DEMAND CALCULATIONS

Proposed subdivision area uses:

Industrial lots = 65.9 acres

Common area landscaping = 9.1 acres

Roadways = 11.0 acres

Water demand for Industrial lots (6,000 gallons per acre per day):  
Average Daily Demand (ADD) = (6,000)(65.9) = 395,400 gpd

Based on 30/70, potable/non-potable split

ADD (potable) = 395,400 gpd x 30% = 118,620 gpd

ADD (non-potable) = 395,400 gpd x 70% = 276,780 gpd

Water demand for Common area landscaping (2,500 gallons per acre per day):  
ADD (non-potable) = (2,500)(9.1) = 22,750 gpd

Water demand for Roadways (2,500 gallons per acre per day):

Based on 20% of ROW to be irrigated

ADD (non-potable) = (2,500)(2.2) = 5,500 gpd

Total ADD (non-potable) = 276,780 + 22,750 + 5,500 = 305,030 gpd

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- C. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U.S. Department of Commerce, Weather Bureau, 1962.
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- E. Chapter 4. Rules for the Design of Storm Drainage Facilities in the County of Maui, prepared by the Department of Public Works and Waste Management, County of Maui, 1995.
- F. Water System Standards, Department of Water Supply, County of Maui, 2002.
- G. Traffic Impact Analysis Report for Puunene Heavy Industrial Subdivision, prepared by Phillip Rowell and Associates, January 24, 2012.
- H. Groundwater Resource and Water System Assessment for the Proposed Puunene Industrial Subdivision, prepared by Tom Nance Water Resource Engineering, June 2011.

**APPENDIX Q**  
Traffic Impact  
Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT FOR  
**PUUNENE HEAVY INDUSTRIAL  
 SUBDIVISION**

TMK: (2) 3-8-008-019  
 IN PUUNENE, MAUI, HAWAII

Prepared For

**CMBY 2011 INVESTMENT, LLC**

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January 24, 2012

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# 1. INTRODUCTION

Phillip Rowell and Associates has been retained to prepare a Traffic Impact Analysis Report for the proposed heavy industrial subdivision in Puunene, Maui, Hawaii. This introductory chapter discusses the location of the project, the proposed development, and the study methodology.

## Project Location and Description

1. The project is located approximately 1.4 miles east of Mokulele Highway in the vicinity of the Old Puunene Airport. Figure 1 indicates the approximate location on the Island of Maui.
2. The total project area of the subdivision is 86 acres. Approximately 66 acres will be developed as industrial lots, while the remaining area will be roadway right-of-way and a drainage reserve. The current plan is to subdivide the project into 28 lots. A proposed development plan is provided as Appendix A.
3. Access to and egress from the project will be via Kama'aina Road, which intersects Mokulele Highway adjacent to the Maui Humane Society at the intersection of Mokulele Highway at Mehamaha Loop, South Firebreak Road and Lower Kihia Road. A schematic drawing of this access route is referred to as Alternate 1 on Figure 2. The Applicant has submitted a request for an easement between Mokulele Highway and the proposed project's entrance. If the Applicant does not obtain this easement, an alternate easement will be obtained. The alternate alignment, referred to as Alternate 2, is also shown on Figure 2. If the Alternate 2 alignment is used, the project's access will be located eastward as shown.

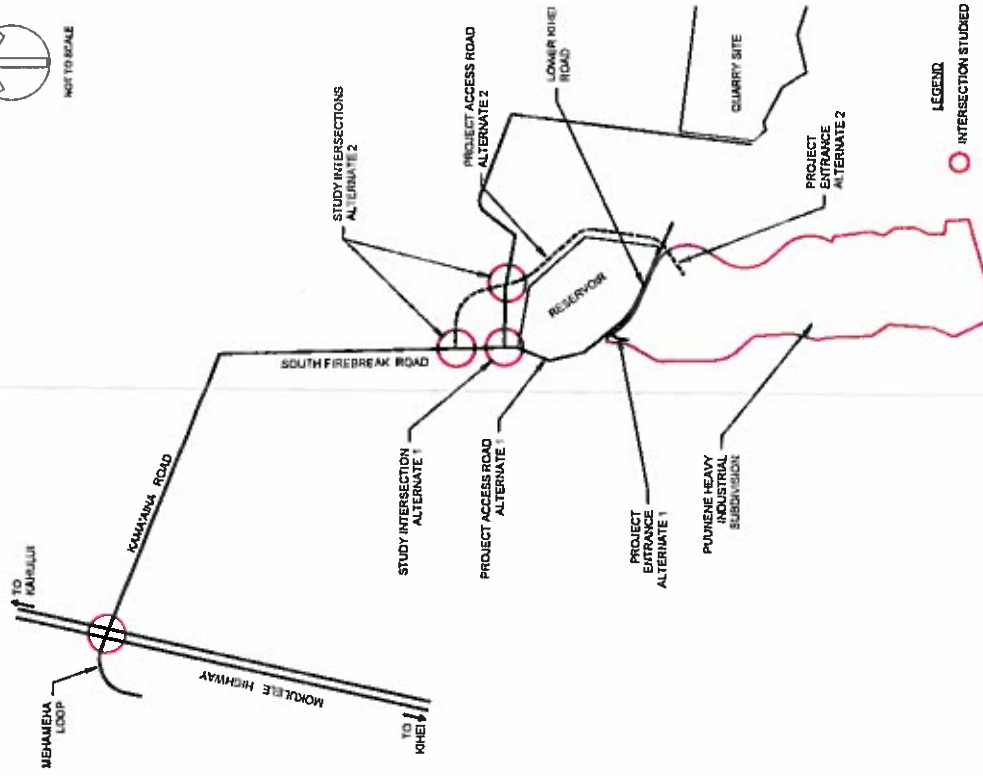


Figure 2  
SCHEMATIC DRAWING OF ACCESS ROUTES TO PROJECT

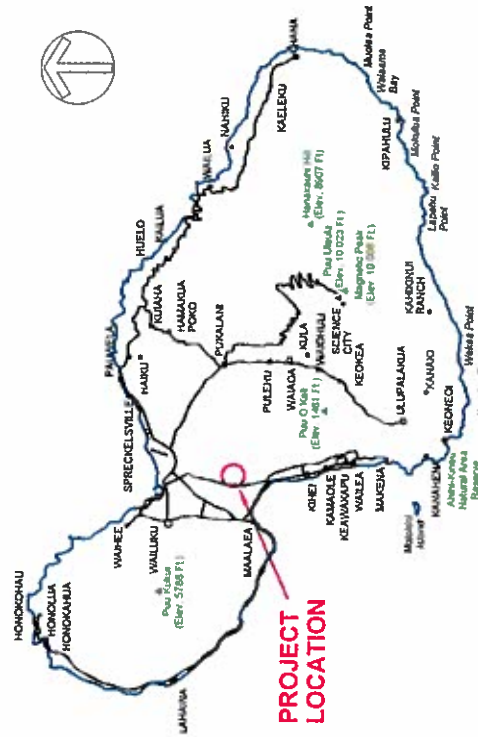


Figure 1  
PROJECT LOCATION ON MAUI

4. The project will have no right of access to Maui Raceway Park roads. Additionally, there will be a drainage swall between the project lots and the property line adjacent to the park. This will prevent any traffic connection between the project and the park.
5. Since the current plan is to subdivide the property, there is no estimate as to when development of the lots will be completed. Therefore, 2015 is used as the project completion date.

#### Study Methodology

The following is a summary list of the tasks performed:

1. A field reconnaissance was performed to identify existing roadway cross-sections, intersection lane configurations, traffic control devices, and surrounding land uses.
2. Existing weekday peak hour traffic volumes were obtained for the intersection of Mokulele Highway at Kama'aina Road. Since existing and proposed traffic using Kama'aina Road is industrial related, traffic data included the number of heavy vehicles. Existing levels-of-service were determined using the methodology described in the 2000 Highway Capacity Manual.
3. A list of related development projects within and adjacent to the study area that will impact traffic conditions at the study intersections was compiled.
4. Future background traffic volumes without traffic generated by the study project were estimated. A level-of-service analysis was performed to determine traffic operating conditions and levels-of-service as a result of background growth and traffic generated by other known future development projects.
5. Peak hour traffic that the proposed project will generate was estimated using trip generation analysis procedures recommended by the Institute of Transportation Engineers. Project generated traffic was distributed and assigned to the adjacent roadway network.
6. A level-of-service analysis for future traffic conditions with traffic generated by the study project was performed.
7. The impacts of traffic generated by the proposed project were quantified and summarized.
8. Improvements or modifications necessary to mitigate the traffic impacts of the project and to provide adequate access to and egress from the site were identified and analyzed.
9. A report documenting the conclusions of the analyses performed and recommendations was prepared.

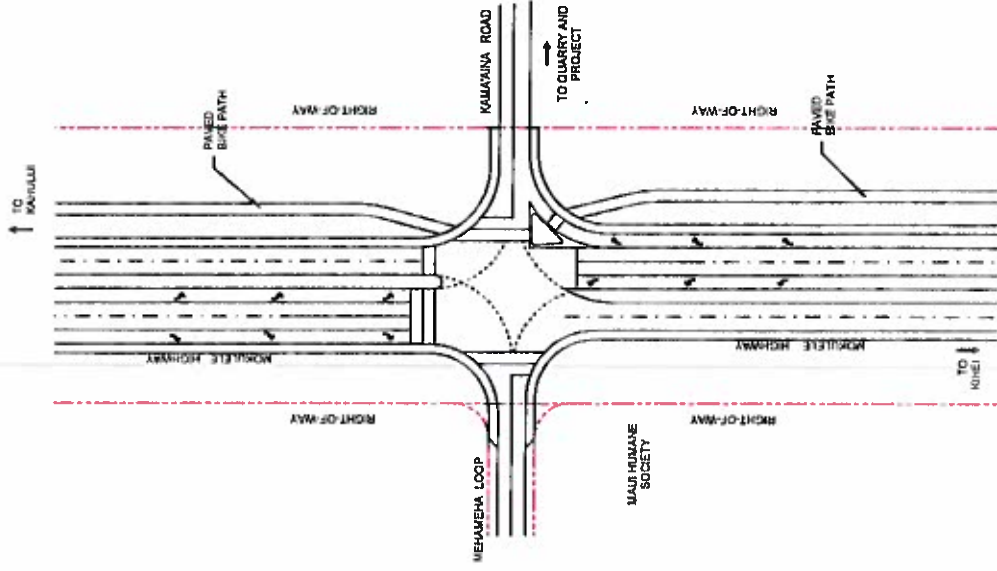
#### Order of Presentation

Chapter 2 describes existing traffic conditions, the Level-of-Service (LOS) concept and the results of the Level-of-Service analysis of existing conditions.

Chapter 3 describes the process used to estimate 2015 background traffic volumes and the resulting background traffic projections. Background conditions are defined as future background traffic conditions without traffic generation by the study project.

Chapter 4 describes the methodology used to estimate the traffic characteristics of the proposed project, including 2015 background plus project traffic projections.

Chapter 5 describes the traffic impacts of the proposed project, conclusions of the impact analysis and recommended mitigation measures.



## 2. ANALYSIS OF EXISTING CONDITIONS

This chapter presents the existing traffic conditions on the roadways adjacent to the proposed project. The level-of-service (LOS) concept and the results of the LOS analysis for existing conditions are also presented. The purpose of this analysis is to identify existing deficiencies and to establish the base conditions for the determination of the impacts of the project which are described in a subsequent chapter.

### Existing Streets and Intersection Controls

All traffic will access and egress the project via the intersection of Mokulele Highway at Kama'aina Road and Mehamaha Loop. The north and south approaches are Mokulele Highway. The east approach is Kama'aina Road and the west approach is Mehamaha Loop. Kama'aina Road, along with South Firebreak Road, connects Mokulele Highway with the Hawaiian Cement Quarry and the west leg connects with the Maui Humane Society facility. A schematic of this intersection is provided as [Figure 3](#).

Mokulele Highway is a four-lane, divided highway with a north-south orientation connecting Kahuku to the north with Kinei to the south. The posted speed limit is 45 miles per hour. There is a separate bike path along the east side of the highway.

The intersection of Mokulele Highway at Kama'aina Road is a four-legged, signalized intersection. The northbound and southbound approaches of Mokulele Highway both have separate left turn and right turn deceleration and turn storage lanes. Northbound and southbound left turn lanes are protected. The eastbound (Mehamaha Loop) and westbound (Kama'aina Road) approaches are one lane each.

Figure 3  
SCHEMATIC DRAWING OF INTERSECTION OF  
MOKULELE HIGHWAY AT KAMA'AINA ROAD AND MEHAMEHA LOOP

Existing Peak Hour Traffic Volumes

The intersection of Mokulele Highway at Kama'aina Road was counted from 6:30 AM to 9:00 AM on Friday, August 12, 2011 and from 3:00 PM to 6:00 PM on Thursday, August 11, 2011. Since Kama'aina Road provides access to the quarry and is heavily used by heavy trucks, the number of heavy vehicles was also counted. A heavy vehicle is defined by the Highway Capacity Manual as "a vehicle with more than four wheels touching the pavement during normal operation." Heavy vehicles have a significant impact on the capacity of an intersection as a result of the vehicles operating characteristics. The percentage of heavy vehicles is therefore a critical input to the capacity analysis of this intersection.

The results of the traffic counts are summarized as Figure 4. Shown are the peak hour volumes of heavy vehicles, other vehicles and total vehicles. Also shown are the percentages of heavy vehicles of each traffic movement.

The traffic count summary worksheets are provided as Appendix B.

The morning peak hour is from 7:15 AM to 8:15 AM. This is consistent with traffic counts completed in 2010 at the intersection of Mokulele Highway at North Kihei Road, which is the next signalized intersection south of this intersection. The total morning peak hour volume along Mokulele Highway is approximately 2,200 vehicles per hour. The direction split is 50/50. Left and right turns are minimal. Traffic turning into and out of Kama'aina Road is largely heavy vehicles. The percentages of westbound left and right turns from Kama'aina Road that are heavy vehicles are 80% and 67%, respectively. 48% of the southbound left turns and 17% of the northbound right turns into Kama'aina Road are heavy vehicles also.

The afternoon peak hour along Mokulele Highway is from 3:30 PM to 4:30 PM. The total afternoon peak hour traffic volume is approximately 2,380 vehicles per hour. The directional split is also 50/50. 100% of the southbound left turns, 73% of the westbound left turns are heavy vehicles and 84% of the northbound right turns are heavy vehicles.

The peak hour volumes along Mehamaha Loop are approximately 35 vehicles per hour during the morning peak hour and 40 vehicles per hour during the afternoon peak hour. There were no heavy vehicles along Mehamaha Loop during the peak hours.

The peak hour volumes along Kama'aina Road are 57 vehicles per hour during the morning peak hour and 36 during the afternoon peak hour. During the morning peak hour, 25% of the vehicles along Kama'aina Road are heavy vehicles. During the afternoon peak hour, 22% of the vehicles are heavy vehicles.

Existing Public Transportation

The Maui Public Bus system operates the Kihei Islander bus route (Route 10) along Mokulele Highway at one hour intervals between 5:30 AM and 9:30 PM. This route connects Kanulua and Kihei. There are no bus stops along Mokulele Highway. Therefore, there is no bus service available to the project site.

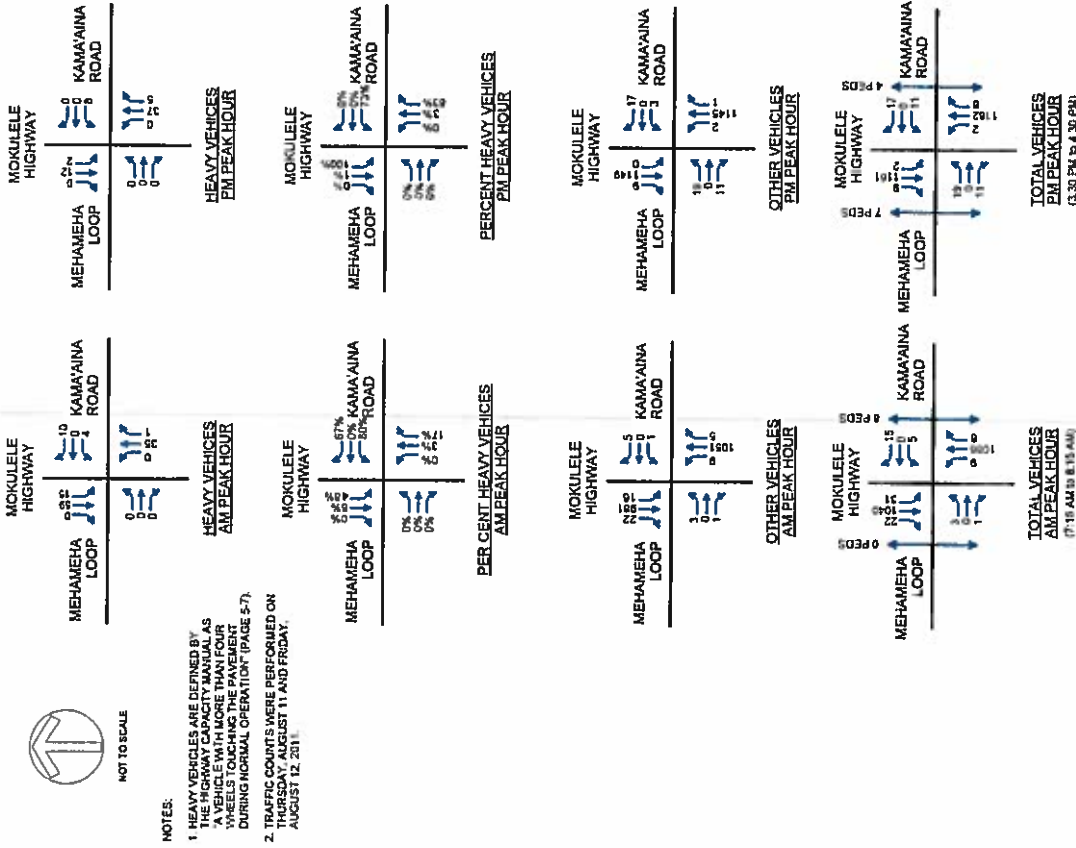


Figure 4  
EXISTING PEAK HOUR TRAFFIC VOLUMES

**Level-of-Service Concept**

**Signalized Intersections**

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in Table 1. In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.<sup>2</sup>

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

**Table 1 Level-of-Service Definitions for Signalized Intersections<sup>(1)</sup>**

Level of Service	Interpretation	Volume-to-Capacity Ratio <sup>(2)</sup>	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<20.0
C	Light congestion; occasional backups on critical approaches.	0.701-0.800	20.1-35.0
D	Congestion on critical approaches but intersection operations remain functional. Vehicle movement through cycle during short periods. No long standing lines formed.	0.801-0.900	35.1-55.0
E	Severe congestion with some standing lines on critical approaches. Backlog of intersection if signal does not provide protected turning movements.	0.901 - 1.000	55.1-80.0
F	Total breakdown with stop-and-go operation.	> 1.001	>80.0

(1) Source: Highway Capacity Manual, 2000.  
 (2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

**Unsignalized Intersections**

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. Table 2 summarizes the definitions for level-of-service and the corresponding delay.

**Table 2 Level-of-Service Definitions for Unsignalized Intersections<sup>(1)</sup>**

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	> 50.1

(1) Source: Highway Capacity Manual, 2000.  
 (2) When defined volume exceeds the capacity of the lane, extreme delays will be experienced with traffic which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

**Methodology for Level-of-Service Analysis**

1. Synchro 6 was used to perform the level-of-service analysis. Synchro 6 is based on the Highway Capacity Manual.
2. The percentage of heavy vehicles as shown previously (Figure 4) was input for the appropriate lane group.
3. The Highway Capacity Manual defines level-of-service by delay.

Level-of-Service Analysis of Existing Conditions

The existing levels-of-service of the intersection of Mokuiaia Highway at Kama'ana Road and Mehamaha Loop are summarized in Table 3. The volume-to-capacity ratios, delays and levels-of-service of the overall intersection and each lane group as reported by Synchro are shown.

**Table 3 2011 Levels-of-Service - Mokuiaia Highway at Kama'ana Road & Mehamaha Loop**

Intersection and Movement	AM Peak Hour 7:15 AM to 8:15 AM		PM Peak Hour 3:30 PM to 4:30 PM	
	V/C	Delay <sup>1</sup>	V/C	Delay
<b>Overall Intersection</b>	<b>0.50</b>	<b>5.9</b>	<b>A</b>	<b>5.0</b>
Eastbound Lft, Thru & Right	0.10	37.1	D	35.2
Westbound Lft, Thru & Right	0.25	39.4	D	37.3
Northbound Lft	0.48	50.9	D	41.1
Northbound Thru	0.46	5.0	A	3.9
Northbound Right	0.01	2.9	A	2.1
Southbound Lft	0.56	47.7	D	51.2
Southbound Thru	0.41	3.5	A	3.7
Southbound Right	0.03	2.2	A	2.1

NOTES:  
 (1) Delay is in seconds per vehicle.  
 (2) LOS is calculated using the definitions method described in Highway Capacity Manual. Level-of-Service is based on delay.  
 (3) See Appendix C for Level-of-Service Analysis Worksheets.

Existing Deficiencies

We have used the Institute of Transportation Engineers standard that Level-of-Service D is the minimum acceptable Level-of-Service and that the criteria is applicable to the overall intersection rather than each controlled lane group. Minor movements, such as left turns, and minor side street approaches may operate at Level-of-Service E or F for short periods of time during the peak hours so that the overall intersection and major movements along the major highway will operate at Level-of-Service D, or better. All volume-to-capacity ratios must be 1.00 or less.

Using this standard, no deficiencies were identified at the intersection of Mokuiaia Highway at Kama'ana Road at Mehamaha Loop. The overall intersection operates at Level-of-Service A during both morning and afternoon peak hours. The eastbound approach, the westbound approach, the northbound left turn lane and the southbound left turn lane are shown as operating at Level-of-Service D. The levels-of-service shown are based on the calculated delay of the lane group. However, the volume-to-capacity ratio is low. This indicates that the long delay is because vehicles must wait for the signal to go through the rest of the traffic signal cycle resulting in a longer delay than desirable. As previously noted, Level-of-Service D is considered an acceptable level-of-service.

**3. PROJECTED BACKGROUND TRAFFIC CONDITIONS**

The purpose of this chapter is to discuss anticipated 2015 background conditions without project generated traffic. Background traffic conditions are defined as future traffic projections without traffic generated by the proposed project under study.

Future traffic growth consists of two components. The first is ambient background growth that is a result of regional growth and cannot be attributed to a specific project. This growth also considers traffic associated with minor, or small, projects for which no traffic data, or traffic study, are available. The second component is estimated traffic that will be generated by other major development projects in the vicinity of the proposed project. Included in the assessment of future background conditions are roadway improvements that are part of the related projects.

A level-of-service of future (2015) background traffic conditions is then performed, existing deficiencies identified and appropriate mitigation measures identified and assessed where needed. The purpose of this process is to identify roadway improvements required to mitigate unacceptable conditions as a result of background traffic growth and traffic generated by related projects in the area so that improvements can be assessed against the appropriate project.

Design Year for Traffic Forecasts

The design, or horizon, year of a project is the future year for which background traffic conditions are estimated. The design year is typically several years after completion of the study project. The year 2015 is used in this study to be compatible with the traffic studies for other major projects within and adjacent to the study area.

**Background Traffic Growth**

The Maui Long Range Transportation Plan<sup>3</sup> concluded that traffic on Maui would increase an average of 1.6% per year from 1990 to 2020. This growth rate was used to estimate the background growth between 2011 and 2015, which is the design year for this project. The growth factor was calculated using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor  
 i = Average annual growth rate, or 0.016  
 n = Growth period, or 4 years

It should be noted that some traffic studies for projects in Kihai have used a growth factor of 2.0% rather than 1.6% used in the study. We have checked with the other consultants and verified that this is the result of rounding.

This growth factor was applied to the northbound and southbound through traffic movements along Mokuieie Highway.

**Related Projects**

The second component in estimating background traffic volumes is traffic resulting from other proposed projects in the vicinity. Related projects are defined as those projects that are under construction or have been approved for construction and would significantly impact traffic in the study area. Related projects may be development projects or roadway improvements. The following related projects were identified.

**Kaiwahine Village**

The proposed Kaiwahine Subdivision is located at the east end of Kaiwahine Street and will consist of 120 multi-family units. The traffic assignments for the subdivision were obtained from the traffic study for the project.<sup>4</sup>

**Maui Lu Resort**

Maui Lu Resort is located in the northeast quadrant of the intersection of South Kihai Road at Kaonoulu Street. The existing resort will be demolished and a 400 unit timeshare will be constructed. Each timeshare unit will have one lock off unit which may be used as a separate hotel room. As part of the Maui Lu project, the intersection of South Kihai Road at Kaonoulu Street will be signalized and a separate southbound to eastbound left turn lane will also be constructed. The traffic assignments for the project were obtained from the traffic study for the project.<sup>5</sup>

<sup>3</sup> Kubu Associates, Maui Long Range Land Transportation Plan, October 1996

<sup>4</sup> Phillip Rowell and Associates, TIAR for Kaiwahine Village, July 15, 2010

<sup>5</sup> Phillip Rowell and Associates, TIAR for Maui Lu Resort, March 7, 2007

**Kihai Residential Subdivision**

The Kihai Residential Subdivision will be located along the east side of Piliiani Highway between Kaiwahine Street and North Kihai Road. The project will consist of 400 single family units, 200 multifamily units, 2,000 square feet of commercial floor area and 7,000 square feet of office floor area. The traffic assignments for the project were obtained from the traffic study for the project.<sup>6</sup>

Primary access to and egress from this project is via the intersection of Piliiani Highway at Kaiwahine Street. The TIAR includes improvements at this intersection to accommodate project generated traffic. These improvements are:

1. Modify the eastbound approach of Uwapo Road to provide separate left, through and right turn lanes.
2. Modify the westbound approach of Kaiwahine Street to provide two left turn lanes, one through lane and one right turn only lane.
3. Modify the southbound approach of Piliiani Highway to provide two separate left turn lanes.

**Kihai High School**

The proposed Kihai High School will be located along the east side of Piliiani Highway across from the Piliiani Subdivision. According to the Environmental Impact Statement Preparation Notice (EISP/N), the school will have a capacity of 1600 students for grades 9 through 12.

As described in the EISP/N, access and egress will be via the intersection of Piliiani Highway at Kulanihakai Road, which will be modified with an extension of Kulanihakai Road across Piliiani Highway. Right turns only will be allowed into and out of the school site and the intersection will be unsignalized.

The number of trips that the high school will generate was estimated for a 1600-student high school using Institute of Transportation Engineers trip generation data. These trips were assigned based on the traffic circulation patterns described in the EISP/N.

**Kenolio 6 Affordable Housing Project**

The Kenolio 6 Affordable Housing Project is located between Piliiani Highway and Kenolio Road in the southwest quadrant of the intersection of Kaonoulu Street at Piliiani Highway. The project is a 124 unit multi-family affordable housing development.

Access to and egress from the project will be via two driveways along the east side of Kenolio Road.

The traffic assignments for the project were obtained from the traffic study for the project.<sup>7</sup>

<sup>6</sup> Austin, Tauruama & Associates, TIAR for Kihai Residential Project, May 22, 2007

<sup>7</sup> Phillip Rowell and Associates, TIAR for Kenolio 6 Affordable Housing Project, May 27, 2010



**Pilani Promenade**

The project is located along the mauka (east) side of Pilani Highway opposite Kaonouku Street in the Khei area of Maui. The extension of Kaonouku Street will divide the project into two parcels. The north parcel is referred to as the Maui Quiet Center and will consist of 290,000 leasable square feet of retail and commercial uses. The south parcel is referred to as the Maui Retail Center and will consist of 410,000 leasable square feet of retail floor area. This includes 38,000 square feet for an outdoor garden area.

The traffic assignments for the project were obtained from the traffic study for the project. As part of the project, the intersection of Pilani Highway at Kaonouku Street will be signalized.

The projects that were identified as related projects and the estimated number of peak hour trips generated by each are summarized in Table 4. The approximate locations of these projects are shown in Figure 5. Traffic assignments at the intersection of Mokuiele Highway at Kama'ana Road and Meremeha Loop for the related projects are shown as Figure 6.

It was assumed that traffic volumes into and out of the Maui Humane Society facility and the Hawaiian Cement quarry would not change.

**2015 Background Traffic Projections**

2015 background traffic projections were calculated by expanding existing traffic volumes by the appropriate growth rates and then superimposing traffic generated by related projects. The 2015 background peak hour traffic projections at the intersection of Mokuiele Highway at Kama'ana Road and Meremeha Loop are shown in Figure 7.

**Table 4 Trip Generation Summary of Related Projects**

Related Project	Description	AM Peak Hour		PM Peak Hour		Total
		In	Out	In	Out	
A Kawahine Village	120 Multi-Family	19	47	66	49	20
B Maui Lu Resort	400 Timeshares + 400 Lock Off Units (Maximum)	245	140	385	205	415
C Khei Residential	400 Single Family 2,000 SF Commercial 7,000 SF Office	213	403	616	405	737
D Khei High School	1600 Students Grades 9 thru 12	455	200	655	105	225
E Kenolio 6 Affordable Housing Project	124 Multi-Family	20	48	68	51	83
F Pilani Promenade	700,000 SF Retail	422	268	690	1,391	2,898
<b>TOTALS</b>		<b>1,374</b>	<b>1,108</b>	<b>2,480</b>	<b>2,206</b>	<b>4,458</b>

Philip Rowell and Associates, TIAR for Pilani Promenade, June 7, 2011



**Figure 5 LOCATIONS OF RELATED PROJECTS**

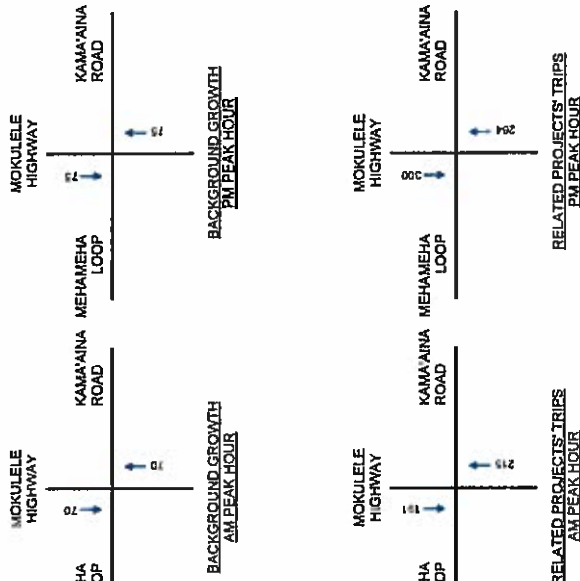


Figure 6  
BACKGROUND GROWTH AND RELATED PROJECTS' TRIPS



NOTES  
 1. HEAVY VEHICLES ARE DEFINED BY THE FOLLOWING CRITERIA:  
 - A VEHICLE WITH MORE THAN FOUR WHEELS TOUCHING THE PAVEMENT DURING NORMAL OPERATION (PAGE 5-7)

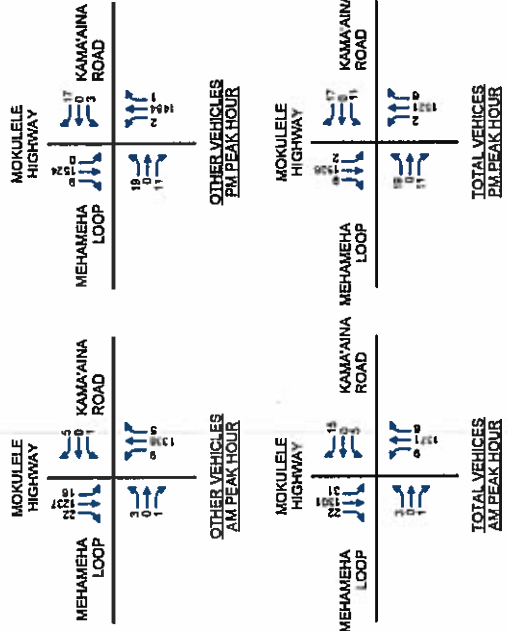
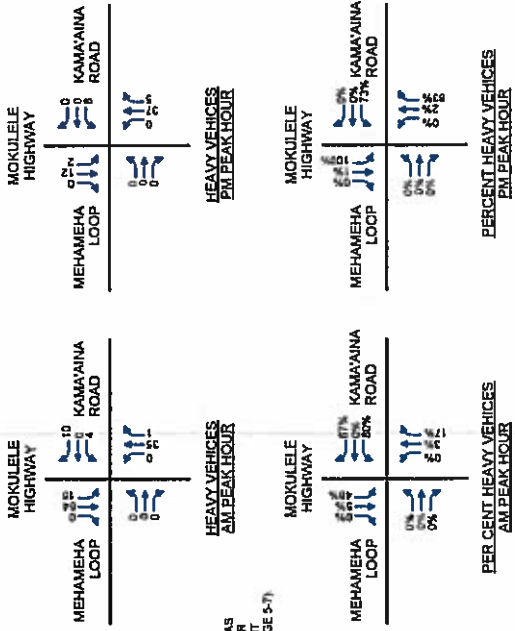


Figure 7  
2015 BACKGROUND TRAFFIC PROJECTIONS

2015 Background Levels-of-Service

Table 5 summarizes the results of the level-of-service analysis of the intersection of Mokulele Highway at Kama'aina Road for 2015 background conditions without project generated traffic. Volume-to-capacity ratios, delays and levels-of-service of the overall intersection and each lane group as reported by Synchro are shown.

Table 5 2015 Background Levels-of-Service - Mokulele Highway at Kama'aina Road & Mehamaha Loop

Interaction and Movement	AM Peak Hour		PM Peak Hour	
	V/C	Delay <sup>1</sup>	V/C	Delay
<b>Overall Intersection</b>	<b>0.59</b>	<b>6.3</b>	<b>0.59</b>	<b>5.6</b>
Eastbound Left, Thru & Right	0.10	37.1	0.23	38.2
Westbound Left, Thru & Right	0.24	39.3	0.30	37.3
Northbound Left	0.41	48.7	0.16	41.1
Northbound Thru	0.56	5.8	0.58	4.7
Northbound Right	0.01	2.9	0.01	2.1
Southbound Left	0.56	47.6	0.31	51.2
Southbound Thru	0.52	4.3	0.59	4.7
Southbound Right	0.03	2.2	0.01	2.1

NOTES:  
 (1) Delay is in seconds per vehicle.  
 (2) LOS is calculated using the procedure method described in Highway Capacity Manual. Level-of-Service is based on delay.  
 (3) See Appendix D for Synchro Service Analysis Worksheets.

Mitigation Required for 2015 Background Conditions

The results are consistent with the results and conclusions of the level-of-service analysis of existing conditions. The overall intersection operates at Level-of-Service A during both morning and afternoon peak hours. The eastbound approach, the westbound approach, the northbound left turn lane and the southbound left turn lane are shown as operating at Level-of-Service D. The levels-of-service shown are based on the calculated delay of the lane group. However, the volume-to-capacity ratio is low. This indicates that the long delay is because vehicles must wait for the signal to go through the rest of the traffic signal cycle resulting in a longer delay than desirable. As previously noted, Level-of-Service D is considered an acceptable level-of-service.

No mitigation is required for 2015 background conditions.

4. PROJECT-RELATED TRAFFIC CONDITIONS

This chapter discusses the methodology used to identify the traffic-related impacts of the proposed project. This chapter presents the generation, distribution and assignment of project generated traffic and the background plus project traffic projections. The result of the level-of-service analysis of background plus project conditions is presented in the following chapter.

Methodology

Future traffic volumes generated by the project were estimated using the procedures described in the Trip Generation Handbook<sup>9</sup> and data provided in Trip Generation<sup>10</sup>. This method used trip generation rates or formulas to estimate the number of trips that the project will generate during the peak hours.

Trip Generation of Proposed Development

Trip generation equations for industrial parks (Land Use Code 130) were used to estimate the number of peak hour trips generated by the project. These rates are based on the number of acres to be developed.

The area used to estimate the number of trips the project will generate was the net area to be developed, 65.92 acres. The area is the total project area minus the drainage reserve and roadway right-of-way as shown.

<sup>9</sup> Institute of Transportation Engineers, Trip Generation Handbook, Washington, D.C., 1998, p. 7-12

<sup>10</sup> Institute of Transportation Engineers, Trip Generation, Washington, D.C., 2003

Traffic Impact Analysis Report for Puunene Heavy Industrial Subdivision

Acres	Use
65.92	Lots
9.10	Drainage Reserve
10.98	Road Right-of-Ways
86.00	Total Area

The results of the trip generation calculations are shown as Table 6. The project will generate 392 inbound and 80 outbound trips during the morning peak hour. During the afternoon peak hour, the project will generate 99 inbound and 372 outbound trips.

Table 6 Trip Generation Calculations

Time Period	Direction	Industrial Park (LU Code 130)	
		Equation or %	Acres
AM Peak Hour	Total	$Ln(T) = 0.78Ln(A) + 2.89$	65.92
	In	83%	392
	Out	17%	80
PM Peak Hour	Total	$Ln(T) = 0.72Ln(A) + 3.14$	471
	In	21%	99
	Out	78%	372

Trip Distribution and Assignments

The project-related trips were distributed along the anticipated approach and departure routes from the project site based on the distribution of population as reported in the Maui Long Range Land Transportation Plan. The distribution of population in 2015 was estimated by interpolating between the 1990 and 2020 population estimates provided in the appendices of the Plan. Accordingly, 62% of the project trips were distributed as approaching from and departing to the north. The remaining 38% of the project trips were distributed as approaching from and departing to the south.

The project will have no right of access to Maui Raceway Park roads. Additionally, there will be a drainage swale between the project lots and the property line adjacent to the park. This will prevent any traffic connection between the project and the park. Accordingly, all traffic was assigned to us the intersection of Mokulele Highway at Kama'aina Road and Mehamaha Loop.

Based on observations at the Central Maui Baseyard that is located north of the study project and the Consolidated Baseyard on Waiko Road, it was assumed that 25% of the vehicles generated by the project will be heavy vehicles.

The project morning and afternoon peak hour trip assignments at the intersection of Mokulele Highway at Kama'aina Road and Mehamaha Loop are shown in Figure 8.

2015 Background Plus Project Projections

Background plus project traffic conditions are defined as 2015 background traffic conditions plus project related traffic. The 2015 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2015 background peak hour traffic volumes presented in Chapter 3. The 2015 background plus the project traffic projections at the intersection of Mokulele Highway at Kama'aina Road and Mehamaha Loop are shown in Figure 9.

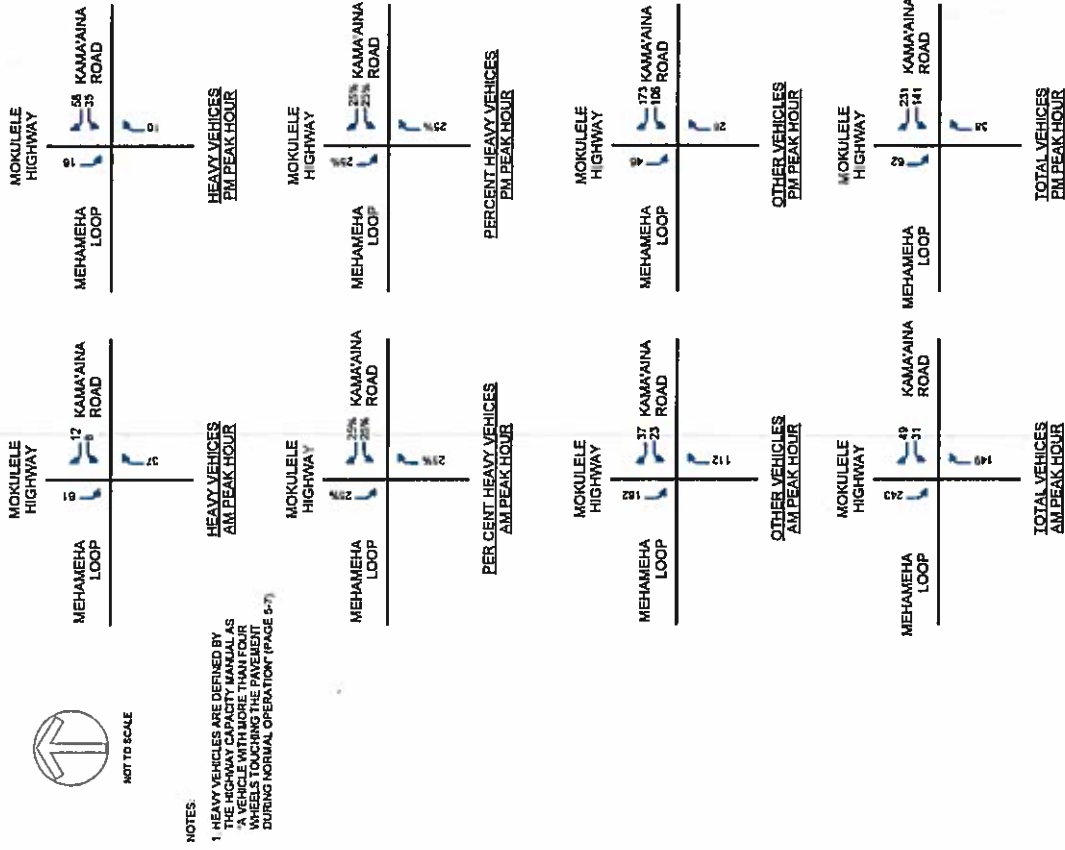
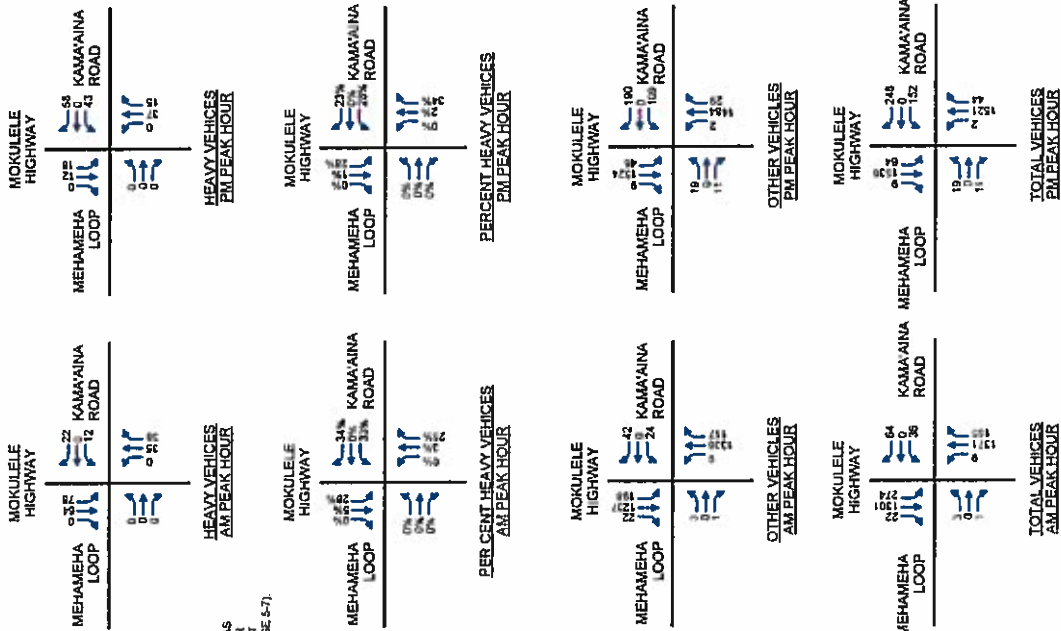


Figure 8 PROJECT TRIP ASSIGNMENTS



NOTES

- 1. HEAVY VEHICLES ARE DEFINED BY THE HIGHWAY CAPACITY MANUAL AS A VEHICLE WITH MORE THAN FOUR WHEELS TOUCHING THE PAVEMENT DURING NORMAL OPERATION (PAGE 5-7).

### 5. TRAFFIC IMPACT ANALYSIS

The impact of the project was assessed by analyzing the changes in traffic volumes and levels-of-service at the study intersections. These impacts are discussed in this chapter. Intersection traffic movements that do not meet the standard for acceptable levels-of-service are identified and improvements that will result in acceptable levels-of-service are identified and assessed.

This chapter also describes anticipated traffic operating conditions at the project's driveways along Kama'aina Road.

#### Changes in Total Intersection Volumes

An analysis of the project's share of 2015 background plus project intersection approach volumes at the intersection of Mokulele Highway at Kama'aina Road is summarized in Table 7. The table summarizes the project's share of total 2015 peak hour approach volumes. Also shown are the percentage of 2015 background plus project traffic that is the result of background growth and traffic generated by related projects. As shown, project generated traffic will represent 14.5% of the morning peak hour traffic and 13.2% of the afternoon peak hour traffic.

An analysis of the project's pro rata share of the increase of traffic volumes between 2010 and 2015 is summarized in Table 8. This table summarizes the growth between 2010 and 2015 and indicates the percentage of growth resulting from background growth and related projects and the percentage growth resulting from project generated traffic.

Figure 9  
2015 BACKGROUND PLUS PROJECT TRAFFIC PROJECTIONS

**Table 7 Analysis of Project's Share of Total Intersection Approach Volumes<sup>(1)</sup>**

Intersection	Period	Existing	2015 Background		Background Growth		Project Traffic	
			AM	PM	Trips	Percent of Total Traffic <sup>(2)</sup>	Trips	Percent of Total Traffic <sup>(2)</sup>
Mokulele Hwy at Kama'aina Road	AM	2218	2764	546	19.9%	472	14.6%	
	PM	2420	3134	714	19.8%	472	13.1%	

Notes:  
 (1) Volumes shown are total intersection approach volumes or projections.  
 (2) Percentage of total 2015 background plus project traffic.

**Table 8 Analysis of Project's Share of Total Intersection Approach Volumes Growth<sup>(1)</sup>**

Intersection	Period	Existing	2015 Background		Background Growth <sup>(2)</sup>		Project Trips <sup>(3)</sup>	
			AM	PM	Volume	% of 2015 to 2016 Growth	Volume	% of 2016 to 2018 Growth
Mokulele Hwy at Kama'aina Road	AM	2218	2764	3236	54.6%	472	48.4%	
	PM	2420	3134	3606	60.2%	472	39.8%	

Notes:  
 (1) Volumes shown are total intersection approach volumes or projections.  
 (2) Background versus existing.  
 (3) Background plus project versus background.  
 (4) Project generated traffic.

**2015 Background Plus Project Level-of-Service Analysis**

The level-of-service analysis was performed for background and background plus project conditions. The incremental difference between the two conditions quantifies the impact of the project. The results of the Level-of-Service analysis of the intersection of Mokulele Highway at Kama'aina Road and Mehamaha Loop are summarized in **Table 9**.

**Table 9 2015 Background Plus Project Levels-of-Service - Mokulele Hwy at Kama'aina Rd**

Intersection and Movement	AM Peak Hour						PM Peak Hour					
	Without Project		With Project		Without Project		With Project		Without Project		With Project	
Overall Intersection	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Eastbound L&T, Thru & Right	0.59	6.3	A	0.65	17.1	B	0.59	5.6	A	1.07	31.4	C
Westbound L&T, Thru & Right	0.24	39.3	D	0.45	38.9	D	0.26	38.2	D	0.07	20.1	C
Northbound Left	0.56	5.8	A	0.79	19.7	B	0.16	41.1	D	0.22	46.3	D
Northbound Right	0.01	2.9	A	0.13	10.6	B	0.01	2.1	A	0.04	10.6	B
Southbound Left	0.56	47.6	D	0.89	53.7	D	0.31	51.2	D	1.06	146.3	F
Southbound Thru	0.52	4.3	A	0.53	5.2	A	0.59	4.7	A	0.84	20.7	C
Southbound Right	0.03	2.2	A	0.03	2.7	A	0.01	2.1	A	0.01	8.8	A

Notes:  
 (1) Delay is in seconds per vehicle.  
 (2) V/C is volume-to-capacity ratio.  
 (3) See Appendix E for Level-of-Service and Project Warrants.

The findings of the level-of-service analysis are:

- The northbound left will operate at Level-of-Service E during the morning peak hour. However, the volume-to-capacity ratio is 0.55, which means that the long delay is the result of the signal timing. No mitigation is required.
- During the afternoon peak hour, the westbound approach will operate at Level-of-Service E, the southbound left will operate at Level-of-Service F and the overall intersection will operate at Level-of-Service C, but the volume-to-capacity ratio is 1.07. As the volume-to-capacity ratios for these movements are greater than 1.00, mitigation is required.

**Mitigation Measures - Mokulele Highway at Kama'aina Road & Mehamaha Loop**

An assessment of modifying the westbound approach to provide a separate right turn lane is summarized in **Table 10**. With this improvement, all controlled movements will operate at Level-of-Service D, or better, the overall intersection will operate at Level-of-Service B and all volume-to-capacity ratios are less than 1.00.

**Table 10 Mitigation Analysis - Mokulele Highway at Kama'aina Road & Mehamaha Loop**

Intersection and Movement	AM Peak Hour						PM Peak Hour					
	Without Mitigation		With Mitigation		Without Mitigation		With Mitigation		Without Mitigation		With Mitigation	
Overall Intersection	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Eastbound L&T, Thru & Right	0.85	17.1	B	0.78	16.0	B	1.07	31.4	C	0.79	17.3	B
Westbound L&T, Thru & Right	0.45	38.9	D	0.45	38.9	D	1.01	78.7	E	0.10	24.0	C
Westbound L&R & Thru				0.54	44.9	D				0.80	46.2	D
Northbound Left				0.50	41.1	D				0.06	36.1	D
Northbound Right	0.53	57.6	E	0.52	53.9	D	0.22	46.3	D	0.16	39.3	D
Northbound Thru	0.79	19.7	B	0.76	17.5	B	0.91	27.0	C	0.80	15.7	B
Southbound Left	0.89	53.7	D	0.13	9.7	A	0.04	10.6	B	0.04	7.0	A
Southbound Thru	0.53	5.2	A	0.89	54.1	D	1.06	146.3	F	0.72	54.7	D
Southbound Right	0.03	2.7	A	0.52	4.4	A	0.84	20.7	C	0.72	11.3	B
				0.03	2.3	A	0.01	8.8	A	0.01	5.1	A

Notes:  
 (1) Delay is in seconds per vehicle.  
 (2) V/C is volume-to-capacity ratio.  
 (3) See Appendix E for Level-of-Service and Project Warrants.

Because of the large number of heavy trucks entering and exiting the project via the intersection of Mokulele Highway at Kama'aina Road, the need for an acceleration lane for traffic turning from westbound Kama'aina Road to northbound Mokulele Highway was assessed. A review of information provided in *A Policy on Geometric Design of Highways and Streets*, published by the American Association of State Highway and Transportation Officials (AASHTO), concluded that there are general guidelines regarding the need for an acceleration lane, but no warrants. It should be noted that an acceleration lane was not provided at this intersection or the exit from the Central Maui Baseyard, which is north of this intersection along Mokulele Highway, when Mokulele Highway was recently widened.

The projected number of heavy vehicles that would use an acceleration lane at this location is significantly higher than estimated for background without project conditions. The number of heavy vehicles is expected to increase from 10 to 22 vehicles per hour during the morning peak hour and from zero to 58 vehicles during the afternoon peak hour. Given this significant increase and the impacts that heavy vehicles have on the capacity of intrusions and roadways, it is recommended that an acceleration lane be provided for vehicles turning right from westbound Kama'aina Road to northbound Mokulele Highway.

Levels-of-Service of Unsignalized Intersections

The results of the level-of-service analysis are summarized in Table 11.

Intersection and Movement	AM Peak Hour		PM Peak Hour		
	Delay <sup>(1)</sup>	LOS <sup>(2)</sup>	Delay	LOS	
S. Firebreak Rd at Quarry Access Rd (Alternate 1)	Westbound Left & Right	1.1	A	7.0	A
	Southbound Left & Thru	9.6	A	11.6	B
	Southbound Left & Right	1.0	A	0.9	A
S. Firebreak Rd at Project Access Rd (Alternate 2)	Westbound Left & Right	7.9	A	8.7	A
	Southbound Left & Thru	9.0	A	11.4	B
	Southbound Left & Right	8.0	A	7.0	A
Quarry Access Rd at Project Access Rd (Alternate 2)	Eastbound Left, Thru & Right	9.4	A	8.7	A
	Westbound Left, Thru & Right	9.7	A	9.1	A
	Northbound Left, Thru & Right	8.7	A	12.7	B
	Southbound Left, Thru & Right	13.4	B	8.8	A

NOTES:  
 (1) Delay is volume-to-capacity ratio. Volume-to-capacity ratios are not calculated for the unsignalized intersections.  
 (2) LOS denotes Level-of-Service calculated using the operational method described in Highway Capacity Manual. Level-of-Service is based on delay.  
 (3) See Appendix C for Level-of-Service Analysis Worksheets.  
 (4) See Appendix D for Level-of-Service Analysis Worksheets.

Alternate 1

For Alternate 1, the only unsignalized intersection with controlled lane groups is the intersection of South Firebreak Road at Quarry Access Road. At this intersection, all project related traffic will continue south to the industrial subdivision while all quarry related traffic will use the Quarry Access Road. It was assumed that the Quarry Access Road approach is the STOP sign controlled approach. Refer to Figure 10.

All controlled lane groups will operate at Level-of-Service A or B. This implies good operating conditions and minimal delays.

Alternate 2

For Alternate 2, two intersections have controlled lane groups: South Firebreak Road at the Project Access Road and the Quarry Access Road at the Project Access Road. At the intersection of South Firebreak Road at the Project Access Road, all project related traffic will turn onto the Project Access Road and all quarry related traffic will continue to use the south leg of the intersection. It was assumed that the Project Access Road approach is the STOP sign controlled approach. At the intersection of the Quarry Access Road at the Project Access Road, all northbound and southbound traffic is project related while all eastbound and westbound traffic is quarry related. Refer to Figure 11. It was assumed that all approaches are STOP sign controlled and that no turns will be allowed at this intersection.

All controlled lane groups movements will operate at Level-of-Service A or B. This implies good operating conditions and minimal delays.

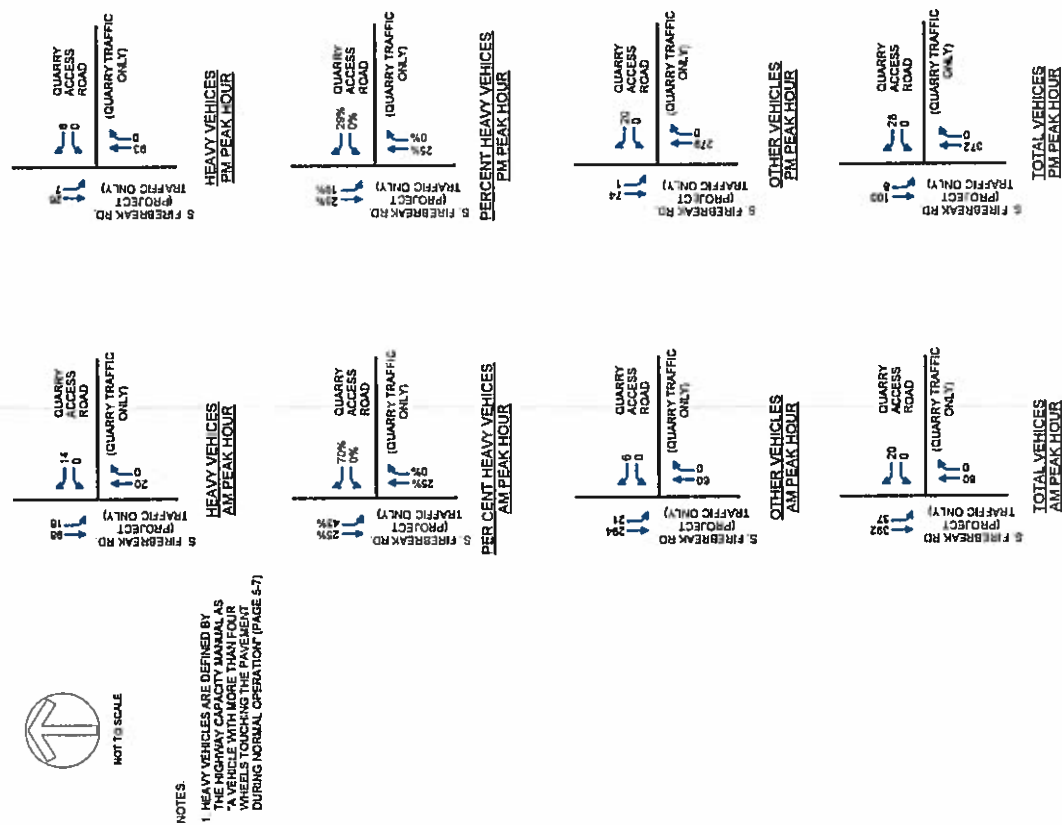


Figure 10 2016 BACKGROUND PLUS PROJECT TRAFFIC PROJECTIONS AT UNSIGNALIZED INTERSECTIONS (ALTERNATE 1)

Required Left Turn Storage Lane Lengths

The left turn storage lengths required to accommodate estimated traffic volumes were calculated using guidelines in A Policy on Geometric Design of Highways and Streets published by the American Association of State Highway and Transportation Officials. There are separate policies for signalized and unsignalized intersections, but as the subject intersection is signalized, only the policy relative to signalized intersections is provided. The policy and assumptions used are as follows:

1. For signalized intersections, the length of the left turn storage lane should be "1.5 to 2.0 times the average number of vehicles that would store per cycle, which is predicted on the design volume."
2. The average length required per vehicle is 25 feet
3. As a minimum, a left turn storage lane should accommodate two vehicles, one automobile size vehicle and one truck. A length of 60 feet has been typically used as a minimum
4. A traffic signal cycle length of 90 seconds was used. This is longer than the cycle length currently in use. Since the length of the left turn storage lane is directly related to the signal cycle length, using a longer cycle length will insure that queues do not exceed the capacity of the storage lane if the traffic signal timing is modified at a future date.

Using the above criteria, the left turn storage lane requirements were calculated and the results are summarized in Table 12. Also shown are the storage lane length recommended.

Table 12 Left Turn Storage Lane Requirements

Intersection	Approach & Time Period	Design Volume (veh/hr)	Cycle Length (seconds)	Cycles per Hour	Average Vehicles per Cycle	Recommended Length <sup>1)</sup>				
						Minimum Veh	Flt	Desirable Veh	Flt	
Mokulele Hwy at Kamauna Road	NB AM	5	90	40	0	0	0	0	0	Relax 60 ft storage lane
	NB PM	2	90	40	0	0	0	0	0	
	SB AM	274	90	40	7	11	275	14	350	Increase length of left turn storage lane from 60 to 350 ft
	SB PM	64	90	40	2	3	75	4	100	

NOTE: Minimum queue length is 2 ft; base average number of vehicles; Desirable queue length is 2.0 times average number of vehicles.  
 (1) Minimum queue length is 2 ft; base average number of vehicles; Desirable queue length is 2.0 times average number of vehicles.

The existing and recommended turn lanes and storage lane lengths at the intersection of Mokulele Highway at Kamauna Road are summarized as Table 13. The turn lanes consist of three components: the taper, the deceleration length and the storage length. The deceleration length is a function of the design speed of the roadway. It is the length required for a driver to safely decelerate from the travel speed of the roadway to a stop condition at the beginning of the storage area. The storage length calculations are described above.

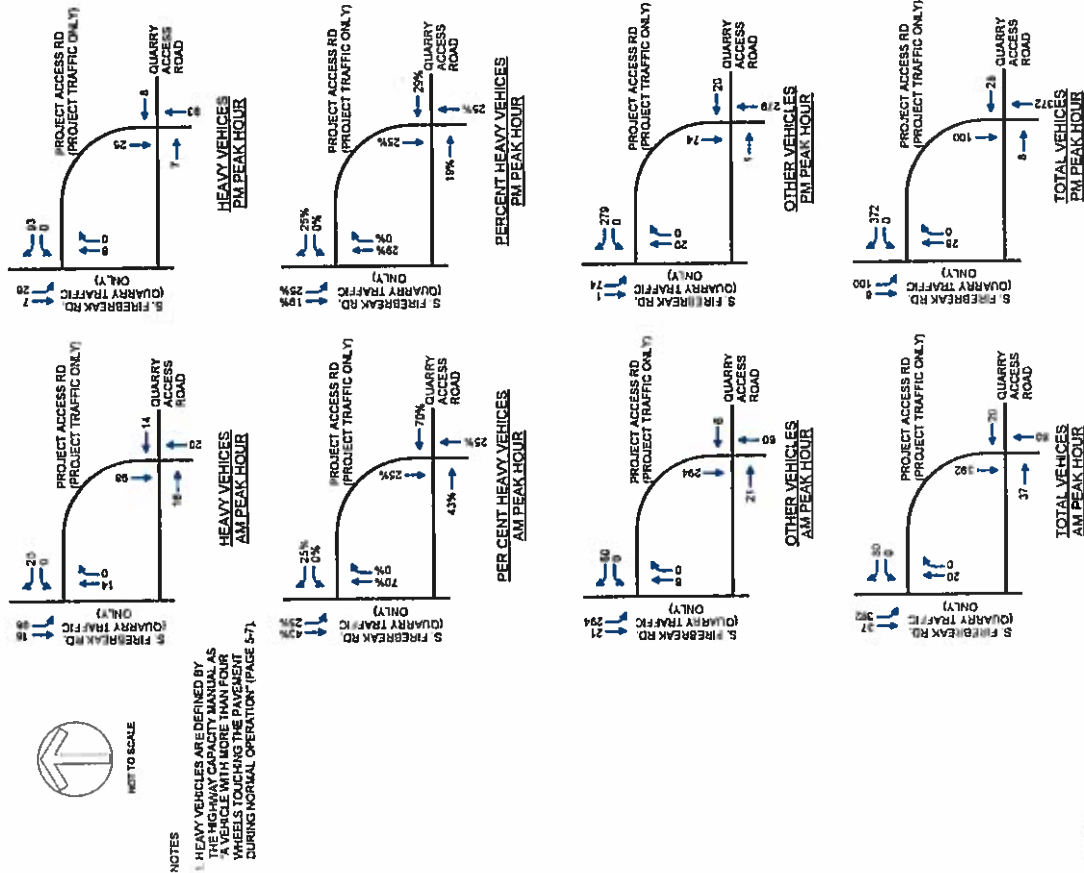


Figure 11  
 2015 BACKGROUND PLUS PROJECT TRAFFIC PROJECTIONS  
 AT UNSIGNALIZED INTERSECTIONS (ALTERNATE 2)



Table 13 Assessment of Deceleration Lane Requirements

Intersection	Approach & Movement		Existing <sup>(1)</sup>				Recommended	
	Left	Right	Taper (feet)	Deceleration Length (feet)	Storage (feet)	Taper (feet)	Deceleration Length (feet)	Storage (feet)
Mokulele Hwy at Kama'ama Road	NB	Right	180	510	60	180	510	60
	SB	Left	180	475	60	180	475	60
		Right	180	485	60	180	485	360
		Left	180	430	60	180	430	60

NOTE: (1) Existing lengths were obtained from construction plans of the subject intersection. Plans are dated June 2005.

Summary Mitigation Measures and Recommendations

Table 14 is a summary of mitigation required at the intersection of Mokulele Highway at Kama'ama Road. A drawing of these mitigation improvements prepared by the project's civil engineer is presented as Appendix I.

Table 14. Summary of Recommended Mitigation for 2015 Background Conditions

Intersection	Mitigation Required to Mitigate Existing (2011) Deficiencies	Mitigation Required to Mitigate Background Plus Project Deficiencies	Mitigation Required to Mitigate Background Plus Project Deficiencies
Mokulele Hwy at Kama'ama Road and Mikanaha Loop	No mitigation required.	No mitigation required.	<ol style="list-style-type: none"> <li>1. Modify westbound approach to provide a separate right turn lane.</li> <li>2. Provide acceleration lane for westbound to northbound right turns.</li> <li>3. Lengthen southbound left turn deceleration lane from 60 feet to 350 feet</li> </ol>

In addition to the mitigation measures described above, the following is recommended:

1. The areas adjacent to Kama'ama Road, South Firebreak Road and Lower Kihai Road should be monitored to insure that the sugar cane growth does not impede sight distances and that visibility of traffic control devices is maintained
2. Because of the increased traffic volumes along Kama'ama Road, South Firebreak Road and Lower Kihai Road as a result of the project, these roadways should be stoped and signed per County of Maui Standards. The high proportion of traffic that will be heavy vehicles should be considered in the design and installation of traffic control devices, especially the longer stopping distances required for the heavy vehicles.

Early Consultation Letters and Responses

Letters were received from the following agencies in response to requests for early consultation comments:

1. State of Hawaii Department of Transportation
2. State of Hawaii Department of Business, Economic Development and Tourism Office of Planning
3. County of Maui Police Department
4. County of Maui Department of Planning

The letter from County of Maui Department of Planning did not contain any issues relative to the TIAR and the comments from Office of Planning advised to contact State of Hawaii Department of Transportation, which was done and a comment letter received. The comments from State of Hawaii Department of Transportation and County of Maui Police Department have been responded to. The comments and responses are provided as Appendix H.

**Appendix A**  
**Proposed Land Development Plan**  
**(Provided by Otomo Engineering, Inc.)**

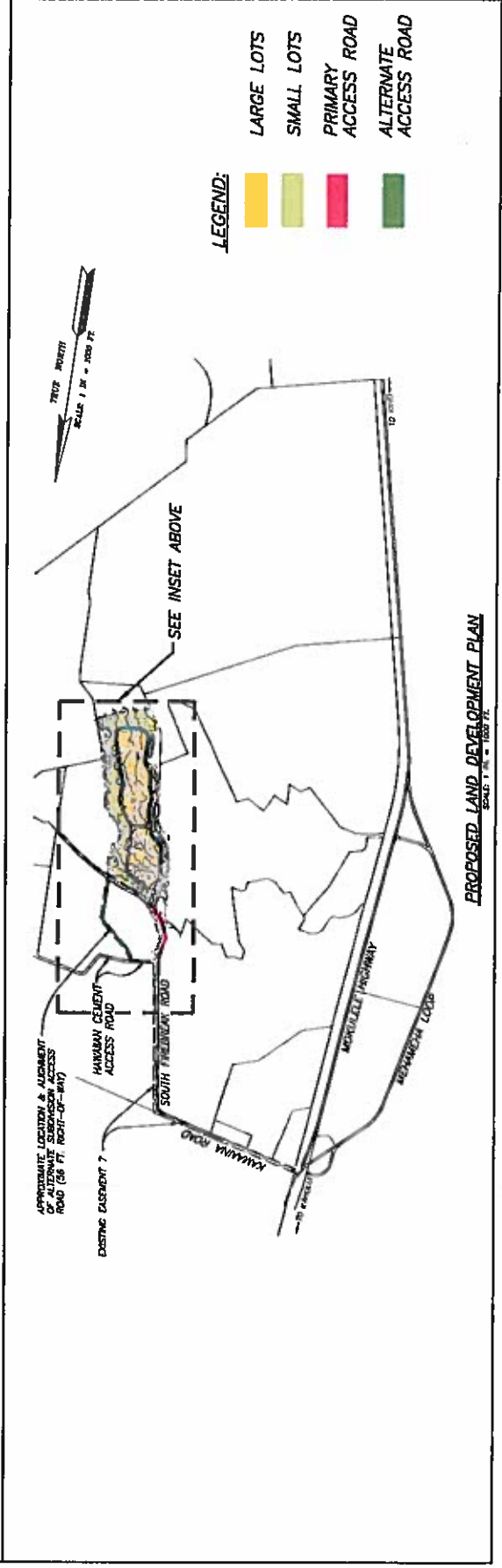
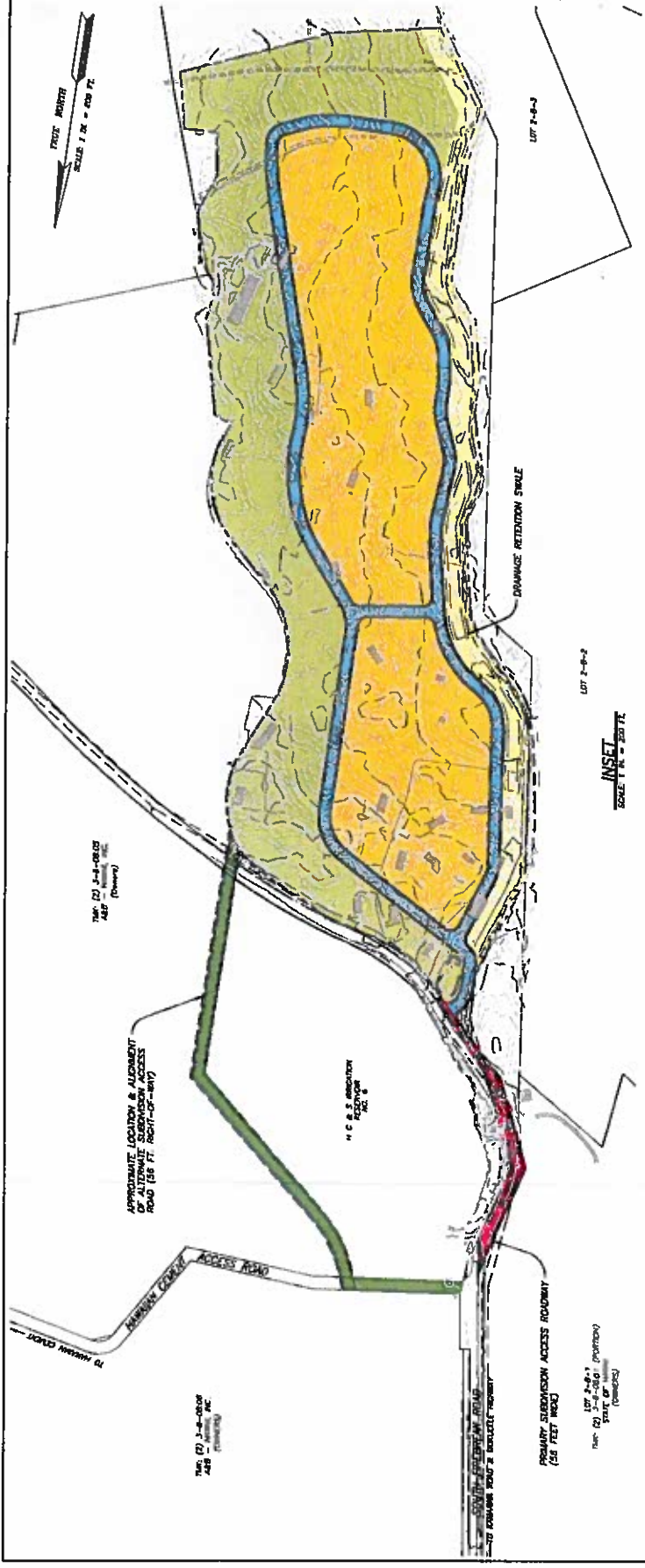


DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

PUUNENE HEAVY INDUSTRIAL SUBDIVISION  
 T.M.K.: (2) 3-8-08: 19  
 PUUNENE, MAUI, HAWAII  
 PROPOSED LAND DEVELOPMENT PLAN

REVISION	DATE	BY	REMARKS

PROJECT NO.: 2011-08  
 DRAWN BY: E.S.S.  
 DATE: 3-8-11  
**LDP-1**  
 SHEET NO. 1 OF 1



- LEGEND:
- LARGE LOTS
  - SMALL LOTS
  - PRIMARY ACCESS ROAD
  - ALTERNATE ACCESS ROAD

**TRAFFIC COUNT SUMMARY WORKSHEET**

PROJECT: PULINENS HEAVY INDUSTRIAL SUBDIVISION  
 INTERSECTION: Mohale Highway at Kamassa Road and Menemba Loop (TOTAL VEHICLES)  
 DAY & DATE: Friday, August 12, 2011  
 START TIME: 6:45 am  
 END TIME: 8:30 am

**15-Minute Volumes Beginning at:**

Interval	North Approach				East Approach				South Approach				West Approach				Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1 6:45 am	3	140	11	5	6	0	2	0	7	0	193	1	0	0	0	0	389
2 7:00 am	1	210	12	6	0	0	1	2	243	1	0	0	0	0	0	0	476
3 7:15 am	1	251	5	4	0	0	1	284	0	1	0	0	0	0	0	0	547
4 7:30 am	4	273	10	4	0	2	1	300	4	0	0	0	0	0	0	0	588
5 7:45 am	6	275	7	5	0	0	0	272	2	0	0	1	568				568
6 8:00 am	11	241	9	2	0	3	4	230	3	0	0	2	505				505
7 8:15 am																	0
8 8:30 am																	0
9 8:45 am																	0
10 9:00 am																	0
11 9:15 am																	0
12 9:30 am																	0
13 9:45 am																	0
14 10:00 am																	0
Maximum:	11	275	12	6	0	3	4	300	4	1	0	2	588				588

**Appendix B  
 Traffic Count Summary Worksheets**

**Hourly Volume of Each Movement**

6:45 am	7:45 am	9	914	38	19	0	5	4	1020	6	1	0	0	2016
7:00 am	8:00 am	12	1009	34	19	0	3	4	1099	7	1	0	1	2189
7:15 am	8:15 am	22	1040	31	15	0	5	6	1086	9	1	0	3	2218
7:30 am	8:30 am													
7:45 am	8:45 am													
8:00 am	9:00 am													
8:15 am	9:15 am													
8:30 am	9:30 am													
8:45 am	9:45 am													
9:00 am	10:00 am													
9:15 am	10:15 am													
Peak Hour Volume	22	1040	31	15	0	5	6	1086	9	1	0	3	2218	
Peak Hour Factor	0.50	0.95	0.65	0.63	0.00	0.42	0.38	0.91	0.56	0.25	0.00	0.38	0.93	
Total Arrivals	1093			20				1101					4	
Total Departures	1104			37				1046					31	
Total	2197			57				2147					35	

**TRAFFIC COUNT SUMMARY WORKSHEET**

PROJECT: FUMIENE HEAVY INDUSTRIAL SUBDIVISION  
 INTERSECTION: Mokulele Highway at Kamaeua Road and Mahamela Loop (HEAVY VEHICLES)  
 DAY & DATE: Friday, August 12, 2011  
 START TIME: 8:45 am  
 END TIME: 8:30 am

15-Minute Volumes Beginning at:

Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	8:45 am	0	14	3	4	0	0	0	0	0	0	0	0	30
2	9:00 am	0	8	3	3	0	1	2	17	0	0	0	0	34
3	9:15 am	0	13	3	3	0	1	1	11	0	0	0	0	31
4	9:30 am	0	12	6	3	0	2	0	6	0	0	0	0	29
5	9:45 am	0	17	3	2	0	0	0	6	0	0	0	0	28
6	10:00 am	0	17	4	2	0	2	0	12	0	0	0	0	37
7	10:15 am	0	0	0	0	0	0	0	0	0	0	0	0	0
8	10:30 am	0	0	0	0	0	0	0	0	0	0	0	0	0
9	10:45 am	0	0	0	0	0	0	0	0	0	0	0	0	0
10	11:00 am	0	0	0	0	0	0	0	0	0	0	0	0	0
11	11:15 am	0	0	0	0	0	0	0	0	0	0	0	0	0
12	11:30 am	0	0	0	0	0	0	0	0	0	0	0	0	0
13	11:45 am	0	0	0	0	0	0	0	0	0	0	0	0	0
14	12:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum:		0	17	6	4	0	2	2	17	0	0	0	0	37

**TRAFFIC COUNT SUMMARY WORKSHEET**

PROJECT: FUMIENE HEAVY INDUSTRIAL SUBDIVISION  
 INTERSECTION: Mokulele Highway at Kamaeua Road and Mahamela Loop (TOTAL VEHICLES)  
 DAY & DATE: Thursday, August 11, 2011  
 START TIME: 3:30 pm  
 END TIME: 5:30 pm

15-Minute Volumes Beginning at:

Interval	Start Time	1	2	3	4	5	6	7	8	9	10	11	12	Totals
1	3:30 pm	4	262	0	7	0	3	3	327	0	4	0	5	635
2	3:45 pm	4	313	1	3	0	5	0	247	1	4	0	4	562
3	4:00 pm	1	277	1	4	0	0	2	250	1	0	0	6	582
4	4:15 pm	0	289	0	3	0	3	1	318	0	3	0	4	621
5	4:30 pm	1	283	0	4	0	0	0	266	1	3	0	2	560
6	4:45 pm	1	311	0	2	0	0	1	237	2	2	0	4	550
7	5:00 pm	1	284	0	0	0	0	1	269	0	2	0	1	553
8	5:15 pm	0	308	0	1	0	1	0	291	0	1	0	1	603
9	5:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
10	5:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
11	6:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
12	6:15 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
13	6:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
14	6:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum:		4	313	1	7	0	5	3	327	2	4	0	6	635

Hourly Volume of Each Movement

7:00 am	8:00 am	0	47	16	13	0	3	3	42	0	0	0	0	124
7:15 am	8:15 am	0	50	15	11	0	3	3	40	0	0	0	0	122
7:30 am	8:30 am	0	59	16	10	0	4	1	35	0	0	0	0	125
7:45 am	8:45 am	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 am	9:00 am	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 am	9:15 am	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 am	9:30 am	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 am	9:45 am	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 am	10:00 am	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 am	10:15 am	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume		0	59	16	10	0	4	1	35	0	0	0	0	125
Peak Hour Factor		0.00	0.87	0.67	0.63	0.00	0.50	0.13	0.51	0.00	0.00	0.00	0.00	0.84
Total Arrivals		75	14	36	0	0	0	0	0	0	0	0	0	125
Total Departures		45	17	83	0	0	0	0	0	0	0	0	0	122
Total		120	31	89	0	0	0	0	0	0	0	0	0	124

Hourly Volume of Each Movement

3:30 pm	4:30 pm	9	1161	2	17	0	11	6	1182	2	11	0	19	2420
3:45 pm	4:45 pm	6	1162	2	14	0	8	3	1121	3	10	0	16	2345
4:00 pm	5:00 pm	3	1160	1	13	0	4	4	1111	4	8	0	18	2323
4:15 pm	5:15 pm	3	1167	0	9	0	4	2	1080	3	10	0	11	2289
4:30 pm	5:30 pm	3	1166	0	7	0	2	1	1063	3	8	0	6	2281
4:45 pm	5:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 pm	6:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 pm	6:15 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 pm	6:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 pm	6:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 pm	7:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume		9	1161	2	17	0	11	6	1182	2	11	0	19	2420
Peak Hour Factor		0.56	0.53	0.50	0.61	0.00	0.55	0.50	0.90	0.25	0.69	0.00	0.79	0.95
Total Arrivals		1172	26	1130	30	0	0	0	1180	0	0	0	0	2373
Total Departures		1218	8	1183	11	0	0	0	1163	0	0	0	0	2373
Total		2390	36	2313	41	0	0	0	2343	0	0	0	0	4746

**TRAFFIC COUNT SUMMARY WORKSHEET**

PROJECT: PULNERE HEAVY INDUSTRIAL SUBDIVISION  
 INTERSECTION: Mousie Highway at Kansara Road and Mehambah Loop (HEAVY VEHICLES)  
 DAY & DATE: Thursday, August 11, 2011  
 START TIME: 3:30 pm  
 END TIME: 5:30 pm

**15-Minute Volumes Beginning at:**

Interval	Start Time	North Approach			East Approach			South Approach			West Approach			Totals
		1	2	3	4	5	6	7	8	9	10	11	12	
1	3:30 pm	0	3	0	0	0	2	2	7	0	0	0	0	14
2	3:45 pm	0	2	1	0	0	3	0	11	0	0	0	0	17
3	4:00 pm	0	3	1	0	0	2	12	0	0	0	0	0	16
4	4:15 pm	0	4	0	0	0	3	7	0	0	0	0	0	15
5	4:30 pm	0	4	0	0	0	0	8	0	0	0	0	0	12
6	4:45 pm	0	2	0	0	0	0	9	0	0	0	0	0	11
7	5:00 pm	0	4	0	0	0	0	2	0	0	0	0	0	6
8	5:15 pm	0	2	0	0	0	0	4	0	0	0	0	0	6
9	5:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
10	5:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
11	6:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
12	6:15 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
13	6:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
14	6:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum:		0	4	1	0	0	3	2	12	0	0	0	0	18

**Hourly Volume of Each Movement**

3:30 pm	4:30 pm	0	12	2	0	0	6	6	37	0	0	0	0	64
3:45 pm	4:45 pm	0	13	2	0	0	6	3	38	0	0	0	0	62
4:00 pm	5:00 pm	0	13	1	0	0	3	3	36	0	0	0	0	50
4:15 pm	5:15 pm	0	14	0	0	0	3	1	26	0	0	0	0	44
4:30 pm	5:30 pm	0	12	0	0	0	0	0	23	0	0	0	0	35
4:45 pm	5:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 pm	6:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 pm	6:15 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 pm	6:30 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 pm	6:45 pm	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 pm	7:00 pm	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Volume	0	12	2	0	0	0	6	6	37	0	0	0	0	64
Peak Hour Factor	0.00	0.75	0.50	0.00	0.00	0.67	0.67	0.53	0.77	0.00	0.00	0.00	0.00	0.89

Total Arrivals	14
Total Departures	37
Total	51

**Appendix C  
 Level-of-Service Worksheets for Existing Conditions**

HCM Signalized Intersection Capacity Analysis  
 1. KAMAYAINA ROAD & MOKULELE HIGHWAY

11/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Lane Util. Factor	0.95	0.97	0.98	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Flt Protected	1756	994	1805	3505	1380	1220	3406	1615	1805	3505	1380	1220
Satd. Flow (prot)	0.78	0.87	0.82	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Flt Permitted	1415	882	1805	3505	1380	1220	3406	1615	1805	3505	1380	1220
Satd. Flow (perm)	3	0	1	5	0	15	9	1086	6	31	1040	22
Volume (vph)	0.38	0.92	0.25	0.42	0.92	0.75	0.56	0.91	0.38	0.78	0.95	0.50
Peak-hour factor, PHF	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles (%)	0%	0%	0%	80%	0%	67%	0%	3%	17%	48%	6%	0%
Turn Type	Perm	Perm	Perm	Perm	Prot	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases	4	8	8	5	2	2	1	1	6	6	6	6
Permitted Phases	4	8	8	5	2	2	1	1	6	6	6	6
Actuated Green, G (s)	5.0	5.0	5.0	1.5	60.7	60.7	4.8	64.0	64.0	64.0	64.0	64.0
Effective Green, g (s)	5.0	5.0	5.0	1.5	60.7	60.7	4.8	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.06	0.06	0.06	0.02	0.74	0.74	0.06	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	86	53	33	2579	1015	71	2642	253	0.01	c0.34	c0.03	c0.32
v/s Ratio Prot	0.01	c0.04	0.48	0.46	0.01	0.01	0.56	0.41	0.03	0.03	0.03	0.03
v/s Ratio Perm	0.10	0.25	37.0	40.1	4.4	2.9	37.8	3.1	2.1	2.1	2.1	2.1
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.5	2.5	10.8	0.6	0.0	9.8	0.5	0.0	0.0	0.0	0.0	0.0
Incremental Delay, d2	37.1	39.4	50.9	5.0	2.9	47.7	3.5	2.2	2.2	2.2	2.2	2.2
Delay (s)	D	D	D	A	A	A	D	A	A	A	A	A
Level of Service	D	D	D	A	A	A	D	A	A	A	A	A
Approach Delay (s)	37.1	39.4	50.9	5.0	2.9	47.7	3.5	2.2	2.2	2.2	2.2	2.2
Approach LOS	D	D	D	A	A	A	D	A	A	A	A	A
<b>Intersection Summary</b>												
HCM Average Control Delay	5.9 HCM Level of Service A											
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	82.5 Sum of lost time (s)											
Intersection Capacity Utilization	40.0% ICU Level of Service A											
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 Philip Rowell & Associates  
 Puunene Baseyard  
 Casot1pm

HCM Signalized Intersection Capacity Analysis  
 1. KAMAYAINA ROAD & MOKULELE HIGHWAY

8/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Lane Util. Factor	0.95	0.97	0.98	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Flt Protected	1745	994	1805	3505	1380	1220	3406	1615	1805	3505	1380	1220
Satd. Flow (prot)	0.78	0.87	0.82	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Flt Permitted	1415	882	1805	3505	1380	1220	3406	1615	1805	3505	1380	1220
Satd. Flow (perm)	3	0	1	5	0	15	9	1086	6	31	1040	22
Volume (vph)	0.38	0.92	0.25	0.42	0.92	0.75	0.56	0.91	0.38	0.78	0.95	0.50
Peak-hour factor, PHF	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles (%)	0%	0%	0%	80%	0%	67%	0%	3%	17%	48%	6%	0%
Turn Type	Perm	Perm	Perm	Perm	Prot	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases	4	8	8	5	2	2	1	1	6	6	6	6
Permitted Phases	4	8	8	5	2	2	1	1	6	6	6	6
Actuated Green, G (s)	5.0	5.0	5.0	1.5	60.7	60.7	4.8	64.0	64.0	64.0	64.0	64.0
Effective Green, g (s)	5.0	5.0	5.0	1.5	60.7	60.7	4.8	64.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.06	0.06	0.06	0.02	0.74	0.74	0.06	0.78	0.78	0.78	0.78	0.78
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	73	25	2698	680	13	2751	1243	0.02	c0.37	c0.00	c0.35
v/s Ratio Prot	0.02	c0.04	0.48	0.46	0.01	0.01	0.56	0.41	0.03	0.03	0.03	0.03
v/s Ratio Perm	0.10	0.25	37.0	40.1	4.4	2.9	37.8	3.1	2.1	2.1	2.1	2.1
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.5	2.5	10.8	0.6	0.0	9.8	0.5	0.0	0.0	0.0	0.0	0.0
Incremental Delay, d2	37.1	39.4	50.9	5.0	2.9	47.7	3.5	2.2	2.2	2.2	2.2	2.2
Delay (s)	D	D	D	A	A	A	D	A	A	A	A	A
Level of Service	D	D	D	A	A	A	D	A	A	A	A	A
Approach Delay (s)	36.2	37.3	41.1	3.9	2.1	51.2	3.7	2.1	2.1	2.1	2.1	2.1
Approach LOS	D	D	D	A	A	A	D	A	A	A	A	A
<b>Intersection Summary</b>												
HCM Average Control Delay	5.0 HCM Level of Service A											
HCM Volume to Capacity ratio	0.50											
Actuated Cycle Length (s)	76.2 Sum of lost time (s)											
Intersection Capacity Utilization	42.7% ICU Level of Service A											
Analysis Period (min)	15											
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis  
 Philip Rowell & Associates  
 Puunene Baseyard  
 Casot1pm

HCM Signalized Intersection Capacity Analysis  
 1: KAMAYAINA ROAD & MOKULELE HIGHWAY

8/25/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Fit Protected	0.97	0.98	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1756	964	964	1805	3505	1380	1220	3438	1615	1615	1615	1615
F <sub>all</sub> Permitted	0.78	0.87	0.87	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (perm)	1415	862	862	1805	3505	1380	1220	3438	1615	1615	1615	1615
Volume (vph)	3	0	1	5	0	15	9	1371	6	31	1301	22
Peak-hour factor, PHF	0.38	0.92	0.25	0.42	0.92	0.75	0.58	0.95	0.38	0.78	0.95	0.50
Adj. Flow (vph)	8	0	4	12	0	20	16	1443	16	40	1369	44
RTOR Reduction (vph)	0	4	0	0	19	0	0	0	0	4	0	0
Lane Group Flow (vph)	0	6	0	0	13	0	16	1443	12	40	1369	34
Heavy Vehicles (%)	0%	0%	0%	80%	0%	67%	0%	3%	17%	48%	5%	0%
Turn Type	Perm	Perm	Perm	Perm	Perm	Prot	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	4			8			5			2		1
Permitted Phases	4			8			5			2		1
Actuated Green, G (s)	5.0			5.0			1.8			60.6		4.8
Effective Green, g (s)	5.0			5.0			1.8			60.6		4.8
Actuated g/C Ratio	0.06			0.06			0.02			0.74		0.06
Clearance Time (s)	4.0			4.0			4.0			4.0		4.0
Vehicle Extension (s)	3.0			3.0			3.0			3.0		3.0
Lane Grp Cap (vph)	86			54			39			2578		1015
v/s Ratio Prot	0.01			c0.04			0.01			c0.41		c0.03
v/c Ratio Perm	0.10			0.24			0.41			0.56		0.52
Uniform Delay, d1	36.6			36.9			39.8			4.9		37.8
Progression Factor	1.00			1.00			1.00			1.00		1.00
Incremental Delay, d2	0.5			2.4			6.9			0.9		0.7
Delay (s)	37.1			39.3			46.7			5.8		47.6
Level of Service	D			D			D			A		D
Approach Delay (s)	37.1			39.3			6.2			6.2		5.4
Approach LOS	D			D			A			A		A
<b>Intersection Summary</b>												
HCM Average Control Delay	6.3 HCM Level of Service A											
HCM Volume to Capacity ratio	0.59											
Actuated Cycle Length (s)	82.4 Sum of lost time (s) 16.0											
Intersection Capacity Utilization	47.9% ICU Level of Service A											
Analysis Period (min)	15											
c Critical Lane Group												

Appendix D  
 Level-of-Service Worksheets for 2015 Background  
 Conditions



HCM Signalized Intersection Capacity Analysis  
 1: KAMA'AINA ROAD & MOKULELE HIGHWAY

12/24/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.95	0.92	0.98	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.85
Flt Protected	1745	1315	1805	3539	883	902	3574	1615				
Flt Permitted	0.90	0.87	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1615	1166	1805	3539	883	902	3574	1615				
Volume (vph)	19	0	11	11	0	17	2	1521	6	2	1536	9
Peak-hour factor, PHF	0.79	0.92	0.69	0.85	0.92	0.61	0.50	0.95	0.50	0.50	0.95	0.58
Adj. Flow (vph)	24	0	16	20	0	28	4	1601	12	4	1617	16
RTOR Reduction (vph)	0	15	0	0	26	0	0	0	3	0	0	4
Lane Group Flow (vph)	0	25	0	0	22	0	4	1601	9	4	1617	12
Heavy Vehicles (%)	0%	0%	0%	73%	0%	0%	0%	2%	83%	100%	1%	0%
Turn Type	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Protected Phases	4	4	4	4	4	4	4	4	4	4	4	4
Permitted Phases	4	4	4	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Effective Green, g (s)	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Actuated p/C Ratio	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	73	25	2724	680	13	2751	1243				
vis Ratio Prot	0.02	c0.04	0.16	0.59	0.01	0.31	0.59	0.01	0.31	0.59	0.01	0.01
vis Ratio Perm	0.25	34.9	35.0	38.1	3.8	2.1	38.2	3.8	2.1	38.2	3.8	2.1
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	1.3	2.3	3.0	0.9	0.0	1.30	0.9	0.0	1.30	0.9	0.0	0.0
Incremental Delay, d2	36.2	37.3	41.1	4.7	2.1	51.2	4.7	2.1	51.2	4.7	2.1	2.1
Level of Service	D	D	D	A	A	D	A	D	A	D	A	A
Approach Delay (s)	36.2	37.3	41.1	4.7	2.1	51.2	4.7	2.1	51.2	4.7	2.1	2.1
Approach LOS	D	D	D	A	A	D	A	D	A	D	A	A

Intersection Summary	
HCM Average Control Delay	5.6
HCM Level of Service	A
HCM Volume to Capacity ratio	0.59
Actuated Cycle Length (s)	78.2
Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.5%
ICU Level of Service	A
Analysis Period (min)	15
c Critical Lane Group	

Appendix E  
 Level-of-Service Worksheets for 2015 Background Plus  
 Project Conditions

HCM Signalized Intersection Capacity Analysis  
 1: KAMAINA ROAD & MOKULELE HIGHWAY

9/1/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																				
Lane Configurations																																
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900																				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0																				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Flt. Protected	0.95	0.97	0.98	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.85																				
Flt. Flow (prot)	1745	1745	1745	1368	1805	3505	1292	1410	3438	1615	1615	1615																				
Flt. Permitted	0.80	0.88	0.88	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00																				
Satd. Flow (perm)	1445	1445	1445	1138	1805	3505	1292	1410	3438	1615	1615	1615																				
Volume (vph)	3	0	1	36	0	64	9	1371	155	274	1301	22																				
Peak-hour factor, PHF	0.38	0.92	0.25	0.90	0.92	0.90	0.56	0.95	0.90	0.90	0.95	0.50																				
Adj. Flow (vph)	8	4	4	40	0	71	16	1443	172	304	1369	44																				
RTOR Reduction (vph)	0	4	0	0	65	0	0	0	82	0	0	11																				
Lane Group Flow (vph)	0	8	0	0	46	0	16	1443	90	304	1369	33																				
Heavy Vehicles (%)	0%	0%	0%	33%	0%	34%	0%	3%	25%	28%	5%	0%																				
Turn Type	Perm	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Perm	Prot	Perm	Perm																				
Protected Phases	4	4	4	8	8	8	5	2	2	1	6	6																				
Permitted Phases	4	4	4	8	8	8	5	2	2	1	6	6																				
Actuated Green, G (s)	7.6	7.6	7.6	7.6	7.6	7.6	1.4	43.5	43.5	20.2	62.3	62.3																				
Effective Green, g (s)	7.6	7.6	7.6	7.6	7.6	7.6	1.4	43.5	43.5	20.2	62.3	62.3																				
Actuated g/C Ratio	0.09	0.09	0.09	0.09	0.09	0.09	0.02	0.52	0.52	0.24	0.75	0.75																				
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0																				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0																				
Lane Grp Cap (vph)	132	132	132	104	366	366	30	1630	675	342	2571	1208																				
v/s Ratio Prot	0.01	0.01	0.01	c0.10	c0.10	c0.10	0.01	c0.41	0.13	c0.22	0.40	0.03																				
v/c Ratio	0.06	0.06	0.06	0.45	0.45	0.45	0.53	0.79	0.13	0.89	0.53	0.03																				
Uniform Delay, d1	34.6	34.6	34.6	35.9	35.9	35.9	40.6	16.2	10.2	30.5	4.4	2.7																				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Incremental Delay, d2	0.2	0.2	0.2	3.0	3.0	3.0	17.0	3.5	0.4	23.2	0.8	0.0																				
Delay (s)	34.8	34.8	34.8	38.9	38.9	38.9	57.6	19.7	10.6	53.7	5.2	2.7																				
Level of Service	C	C	C	D	D	D	E	B	B	D	A	A																				
Approach Delay (s)	34.8	34.8	34.8	38.9	38.9	38.9	57.6	19.7	10.6	53.7	5.2	2.7																				
Approach LOS	C	C	C	D	D	D	E	B	B	D	A	A																				
Intersection Summary	<table border="1"> <tr> <td>HCM Average Control Delay</td> <td>17.1</td> <td>HCM Level of Service</td> <td>B</td> </tr> <tr> <td>HCM Volume to Capacity ratio</td> <td>0.65</td> <td></td> <td></td> </tr> <tr> <td>Actuated Cycle Length (s)</td> <td>83.3</td> <td>Sum of lost time (s)</td> <td>12.0</td> </tr> <tr> <td>Intersection Capacity Utilization</td> <td>68.9%</td> <td>ICU Level of Service</td> <td>C</td> </tr> <tr> <td>Analysis Period (min)</td> <td>15</td> <td></td> <td></td> </tr> </table>												HCM Average Control Delay	17.1	HCM Level of Service	B	HCM Volume to Capacity ratio	0.65			Actuated Cycle Length (s)	83.3	Sum of lost time (s)	12.0	Intersection Capacity Utilization	68.9%	ICU Level of Service	C	Analysis Period (min)	15		
HCM Average Control Delay	17.1	HCM Level of Service	B																													
HCM Volume to Capacity ratio	0.65																															
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	12.0																													
Intersection Capacity Utilization	68.9%	ICU Level of Service	C																													
Analysis Period (min)	15																															
c Critical Lane Group																																

Philip Rowell & Associates

Puunene Baseyard Case34m

HCM Signalized Intersection Capacity Analysis  
 1: KAMAINA ROAD & MOKULELE HIGHWAY

8/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																				
Lane Configurations																																
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900																				
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0																				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Flt. Protected	0.95	0.97	0.98	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.85																				
Flt. Flow (prot)	1745	1745	1745	1368	1805	3539	1205	1410	3574	1615	1615	1615																				
Flt. Permitted	0.76	0.86	0.86	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00																				
Satd. Flow (perm)	1370	1370	1370	1138	1805	3539	1205	1410	3574	1615	1615	1615																				
Volume (vph)	19	0	11	152	0	248	2	1521	44	64	1536	9																				
Peak-hour factor, PHF	0.79	0.92	0.69	0.90	0.92	0.90	0.50	0.95	0.90	0.90	0.95	0.56																				
Adj. Flow (vph)	24	0	16	169	0	276	4	1601	49	71	1617	16																				
RTOR Reduction (vph)	0	11	0	0	74	0	0	0	25	0	0	7																				
Lane Group Flow (vph)	0	29	0	0	371	0	4	1601	24	71	1617	9																				
Heavy Vehicles (%)	0%	0%	0%	28%	0%	23%	0%	2%	34%	28%	1%	0%																				
Turn Type	Perm	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Perm	Prot	Perm	Perm																				
Protected Phases	4	4	4	8	8	8	5	2	2	1	6	6																				
Permitted Phases	4	4	4	8	8	8	5	2	2	1	6	6																				
Actuated Green, G (s)	25.0	25.0	25.0	25.0	25.0	25.0	0.8	40.7	40.7	3.9	43.8	43.8																				
Effective Green, g (s)	25.0	25.0	25.0	25.0	25.0	25.0	0.8	40.7	40.7	3.9	43.8	43.8																				
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.31	0.01	0.50	0.50	0.05	0.54	0.54																				
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0																				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0																				
Lane Grp Cap (vph)	420	420	420	366	366	366	18	1765	601	67	1918	867																				
v/s Ratio Prot	0.03	0.03	0.03	c0.37	c0.37	c0.37	0.00	c0.45	0.04	c0.05	c0.45	0.01																				
v/c Ratio	0.07	0.07	0.07	1.01	1.01	1.01	0.22	0.91	0.04	1.06	0.84	0.01																				
Uniform Delay, d1	20.1	20.1	20.1	28.3	28.3	28.3	40.1	18.7	10.5	38.8	16.0	8.8																				
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																				
Incremental Delay, d2	0.1	0.1	0.1	50.4	50.4	50.4	6.2	8.3	0.1	127.4	4.7	0.0																				
Delay (s)	20.1	20.1	20.1	78.7	78.7	78.7	46.3	27.0	10.6	166.3	20.7	8.8																				
Level of Service	C	C	C	D	D	D	E	B	B	F	C	A																				
Approach Delay (s)	20.1	20.1	20.1	78.7	78.7	78.7	46.3	27.0	10.6	166.3	20.7	8.8																				
Approach LOS	C	C	C	D	D	D	E	B	B	F	C	A																				
Intersection Summary	<table border="1"> <tr> <td>HCM Average Control Delay</td> <td>32.6</td> <td>HCM Level of Service</td> <td>C</td> </tr> <tr> <td>HCM Volume to Capacity ratio</td> <td>1.07</td> <td></td> <td></td> </tr> <tr> <td>Actuated Cycle Length (s)</td> <td>81.6</td> <td>Sum of lost time (s)</td> <td>16.0</td> </tr> <tr> <td>Intersection Capacity Utilization</td> <td>80.5%</td> <td>ICU Level of Service</td> <td>D</td> </tr> <tr> <td>Analysis Period (min)</td> <td>15</td> <td></td> <td></td> </tr> </table>												HCM Average Control Delay	32.6	HCM Level of Service	C	HCM Volume to Capacity ratio	1.07			Actuated Cycle Length (s)	81.6	Sum of lost time (s)	16.0	Intersection Capacity Utilization	80.5%	ICU Level of Service	D	Analysis Period (min)	15		
HCM Average Control Delay	32.6	HCM Level of Service	C																													
HCM Volume to Capacity ratio	1.07																															
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	16.0																													
Intersection Capacity Utilization	80.5%	ICU Level of Service	D																													
Analysis Period (min)	15																															
c Critical Lane Group																																

Philip Rowell & Associates

Puunene Baseyard Case3pm

HCM Signalized Intersection Capacity Analysis  
 1: KAMA'AINA ROAD & MOKULELE HIGHWAY

8/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vchpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.60	1.00	1.00	0.95	1.00	0.95	1.00	0.85	1.00	0.95	1.00	0.95
Lane Util. Factor	0.95	1.00	0.85	1.00	0.95	1.00	0.85	1.00	0.95	1.00	0.95	1.00
Fit Protected	1756	1357	1205	1805	3505	1292	1410	3438	1615			
Satd. Flow (prot)	0.78	0.75	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Fit Permitted	1424	1071	1205	1805	3505	1292	1410	3438	1615			
Satd. Flow (perm)	3	0	1	36	0	64	9	1371	155	274	1301	22
Volume (vph)	0.38	0.92	0.25	0.90	0.92	0.90	0.56	0.95	0.90	0.90	0.95	0.50
Peak-hour factor, PHF	8	0	4	40	0	71	16	1443	172	304	1369	44
Adj. Flow (vph)	0	4	0	0	0	71	0	0	79	0	0	10
RTOR Reduction (vph)	0	8	0	0	0	40	0	16	1443	93	304	1369
Lane Group Flow (vph)	0%	0%	0%	33%	0%	34%	0%	3%	25%	28%	5%	0%
Heavy Vehicles (%)	Perm	Perm	Perm	Perm	Perm	Perm	Prot	Perm	Prot	Perm	Prot	Perm
Turn Type	4	8	5	2	2	1	6	2	2	1	6	6
Protected Phases	4	8	5	2	2	1	6	2	2	1	6	6
Permitted Phases	4	8	5	2	2	1	6	2	2	1	6	6
Actuated Green, G (s)	5.7	5.7	0.0	1.4	44.7	44.7	19.9	63.2	63.2	63.2	63.2	63.2
Effective Green, g (s)	5.7	5.7	0.0	1.4	44.7	44.7	19.9	63.2	63.2	63.2	63.2	63.2
Actuated g/C Ratio	0.07	0.07	0.00	0.02	0.54	0.54	0.24	0.77	0.77	0.77	0.77	0.77
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	74	0	31	1904	702	341	2640	1240			
vs Ratio Prot	0.01	c0.04	0.01	c0.41			c0.22	0.40	0.03			
vs Ratio Perm	0.08	0.54	0.00	0.52	0.76	0.13	0.89	0.52	0.03			
Uniform Delay, d1	35.9	37.0	41.1	40.1	14.6	9.3	30.2	3.7	2.3			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	7.8	0.0	13.7	2.9	0.4	24.0	0.7	0.0			
Delay (s)	36.2	44.9	41.1	53.9	17.5	9.7	54.1	4.4	2.3			
Level of Service	D	D	D	D	B	A	D	A	A			
Approach Delay (s)	36.2	42.5	17.0				13.2					
Approach LOS	D	D	D				B					

**Intersection Summary**

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
C Critical Lane Group			

Appendix F  
 Level-of-Service Worksheets for 2015 Background Plus  
 Project Conditions with Mitigation

HCM Signalized Intersection Capacity Analysis  
 1. KAMAHAINA ROAD & MOKULELE HIGHWAY

8/30/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Flt. Protected	1745	1410	1313	1805	3538	1205	1410	3574	1615			
Satd. Flow (prot)	0.80	0.73	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt. Permitted	1445	1085	1313	1805	3538	1205	1410	3574	1615			
Satd. Flow (perm)	0.11	0.152	0.248	0.2	0.521	0.44	0.64	1.536	0.9			
Peak-hour factor, PHF	0.79	0.69	0.90	0.92	0.90	0.50	0.95	0.90	0.90	0.95	0.56	
Adj. Flow (vph)	24	0	169	0	276	4	1601	49	71	1617	16	
RTOR Reduction (vph)	0	13	0	0	276	0	0	21	0	0	0	
Lane Group Flow (vph)	0	27	0	0	169	0	4	1601	28	71	1617	10
Heavy Vehicles (%)	0%	0%	0%	28%	0%	23%	0%	2%	34%	28%	1%	0%
Turn Type	Perm	Perm	Perm	NA	Prot	Prot	Perm	Prot	Perm	Prot	Perm	Perm
Protected Phases	4	8	8	5	2	1	6	6				
Permitted Phases	4	8	8	5	2	1	6	6				
Actuated Green, G (s)	14.1	14.1	0.0	0.9	41.1	41.1	5.1	45.3	45.3			
Effective Green, G (s)	14.1	14.1	0.0	0.9	41.1	41.1	5.1	45.3	45.3			
Actuated g/C Ratio	0.20	0.20	0.00	0.01	0.57	0.07	0.63	0.63	0.63			
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp. Cap (vph)	282	212	0	22	2012	665	99	2239	1012			
vs Ratio Prot	0.03	c0.16	0.00	c0.45	0.04	0.04	c0.05	0.45	0.01			
vs Ratio Perm	0.10	0.80	0.00	0.18	0.80	0.04	0.72	0.72	0.01			
Uniform Delay, d1	23.9	27.7	36.1	35.3	12.3	6.9	32.9	9.2	5.1			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.1	18.5	0.0	4.0	3.4	0.1	21.8	2.1	0.0			
Delay (s)	24.0	46.2	36.1	39.3	15.7	7.0	54.7	11.3	5.1			
Level of Service	C	D	D	D	B	A	D	B	A			
Approach Delay (s)	24.0	40.0	15.5	13.0	13.0	13.0	13.0	13.0	13.0			
Approach LOS	C	D	D	B	B	B	B	B	B			

Intersection Summary	
HCM Average Control Delay	17.3 HCM Level of Service B
HCM Volume to Capacity ratio	0.79
Actuated Cycle Length (s)	72.3
Intersection Capacity Utilization	70.7% ICU Level of Service C
Analysis Period (min)	15
c. Critical Lane Group	

Appendix G  
 Level-of-Service Worksheets for Project Entrances

HCM Unsignalized Intersection Capacity Analysis  
 2: QUARRY ACCESS ROAD & SOUTH FIREBREAK ROAD

9/18/2011

10/10/2011



Movement	WB	WB	NB	NB	SB	SB
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	0	20	80	0	37	392
Peak Hour Factor	0.92	0.96	0.90	0.92	0.92	0.90
Hourly flow rate (vph)	0	21	89	0	40	436
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
CM capacity (veh/h)						
Direction, Lane #	WB 1	NB 1	SB 1	SB 1	WB 1	SB 1
Volume Total	21	89	476			
Volume Left	0	0	40			
Volume Right	21	0	0			
cSH	811	1700	1284			
Volume to Capacity	0.03	0.05	0.03			
Queue Length 95th (ft)	2	0	2			
Control Delay (s)	9.6	0.0	1.0			
Lane LOS	A	A	A			
Approach Delay (s)	9.6	0.0	1.0			
Approach LOS	A	A	A			
<b>Intersection Summary</b>						
Average Delay	1.1		1.1			
Intersection Capacity Utilization	39.3%		39.3%			
Analysis Period (min)	15		15			
ICU Level of Service	A		A			

HCM Unsignalized Intersection Capacity Analysis  
 Philip Rowe & Associates  
 Puunene Baseyard  
 Case31a

Movement	WB	WB	NB	NB	SB	SB
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	0	28	372	0	6	100
Peak Hour Factor	0.92	0.70	0.90	0.92	0.67	0.90
Hourly flow rate (vph)	0	40	413	0	12	111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol						
tC, single (s)						
tC, 2 stage (s)						
tF (s)						
p0 queue free %						
CM capacity (veh/h)						
Direction, Lane #	WB 1	NB 1	SB 1	SB 1	WB 1	SB 1
Volume Total	40	413	123			
Volume Left	0	0	12			
Volume Right	40	0	0			
cSH	585	1700	1060			
Volume to Capacity	0.07	0.24	0.01			
Queue Length 95th (ft)	5	0	1			
Control Delay (s)	11.6	0.0	0.9			
Lane LOS	B	A	A			
Approach Delay (s)	11.6	0.0	0.9			
Approach LOS	B	B	B			
<b>Intersection Summary</b>						
Average Delay	1.0		1.0			
Intersection Capacity Utilization	28.6%		28.6%			
Analysis Period (min)	15		15			
ICU Level of Service	A		A			

HCM Unsignalized Intersection Capacity Analysis  
 Philip Rowe & Associates  
 Puunene Baseyard  
 Case31b

HCM Unsignalized Intersection Capacity Analysis  
 2: INDUSTRIAL PARK ACCESS ROAD & SOUTH FIREBREAK ROAD

9/23/2011

Movement	WBL	WBR	NBT	NBR	SBL	SBR
<b>Lane Configurations</b>	Stop	Free	Free	Free	Free	Free
Sign Control	0%	0%	0%	0%	0%	0%
Grade	0	80	20	0	392	37
Volume (veh/h)	0	80	20	0	392	37
Peak Hour Factor	0.92	0.90	0.96	0.92	0.90	0.92
Hourly flow rate (vph)	0	89	21	0	436	40
<b>Pedestrians</b>						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX platoon unblocked						
VC conflicting volume	932	21			21	
vC1 stage 1 cont vol						
vC2 stage 2 cont vol	932	21			21	
vCU unblocked vol	6.4	6.5			4.3	
IC, 2 stage (s)						
IF (s)	3.5	3.5			2.4	
p0 queue free %	100	91			70	
cM capacity (veh/h)	207	994			1458	
<b>Direction Lane #</b>	WB 1	NR 1	SB 1			
Volume Total	89	21	476			
Volume Left	0	0	436			
Volume Right	89	0	0			
CSH	994	1700	1458			
Volume to Capacity	0.09	0.01	0.30			
Queue Length 95th (ft)	7	0	32			
Control Delay (s)	9.0	0.0	8.0			
Lane LOS	A	A	A			
Approach Delay (s)	9.0	0.0	8.0			
Approach LOS	A	A	A			
<b>Intersection Summary</b>						
Average Delay			7.9			
Intersection Capacity Utilization			41.9%			ICU Level of Service A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 4: QUARRY ACCESS ROAD & INDUSTRIAL PARK ACCESS ROAD

9/23/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
<b>Lane Configurations</b>	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Sign Control	0	37	0	0	20	0	0	80	0	0	392	0
Volume (vph)	0	37	0	0	20	0	0	80	0	0	392	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.93	0.70	0.92	0.90	0.92	0.92	0.90	0.92
Hourly flow rate (vph)	0	40	0	0	22	0	0	89	0	0	436	0
<b>Direction Lane #</b>	EB 1	WB 1	NR 1	SB 1								
Volume Total (vph)	40	22	89	436								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadi (s)	0.73	1.19	0.42	0.42								
Departure Headway (s)	6.0	6.5	5.0	4.6								
Degree Utilization, x	0.07	0.04	0.12	0.56								
Capacity (veh/h)	549	506	690	761								
Control Delay (s)	9.4	9.7	8.7	13.4								
Approach Delay (s)	9.4	9.7	8.7	13.4								
Approach LOS	A	A	A	B								
<b>Intersection Summary</b>												
Delay				12.3								
HCM Level of Service				B								
Intersection Capacity Utilization				30.6%								ICU Level of Service A
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

2: INDUSTRIAL PARKACCESS ROAD & SOUTH FIREBREAK ROAD

10/10/2011



Movement	WBL	WBR	NBL	NBR	SBL	SBY
Lane Configurations	Stop	Free	Free	Free	Free	Free
Sign Control	Stop	0	0	0	0	0
Grade	0%	0%	0%	0%	0%	0%
Volume (veh/h)	0	372	28	0	100	0
Peak Hour Factor	0.92	0.90	0.70	0.92	0.90	0.67
Hourly flow rate (vph)	0	413	40	0	111	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274	40	40			
vC1, stage 1 cont vol						
vC2, stage 2 cont vol						
vCu, unblocked vol	274	40	40			
IC, single (s)	6.4	6.5	4.3			
IC, 2 stage (s)						
IF (s)	3.5	3.5	2.4			
p0 queue free %	100	57	92			
p0 capacity (veh/h)	660	969	1434			
Direction, Lane #	WBL	NBL	NBR	SBL	SBY	
Volume Total	413	40	123			
Volume Left	0	0	111			
Volume Right	413	0	0			
cSH	969	1700	1434			
Volume to Capacity	0.43	0.02	0.08			
Queue Length 95th (ft)	54	0	6			
Control Delay (s)	11.4	0.0	7.0			
Lane LOS	B	A	A			
Approach Delay (s)	11.4	0.0	7.0			
Approach LOS	B	A	A			
Intersection Summary						
Average Delay			9.7			
Intersection Capacity Utilization			42.3%			ICU Level of Service A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
Phillip Rowell & Associates

Putumane Baseyard  
Case4PM

HCM Unsignalized Intersection Capacity Analysis

4: QUARRY ACCESS ROAD & INDUSTRIAL PARKACCESS ROAD

10/10/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBY	EBR
Lane Configurations	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Sign Control	0	B	0	0	0	0	0	0	0	0	0	0
Volume (vph)	0.92	0.67	0.92	0.90	0.70	0.90	0.92	0.90	0.90	0.67	0.90	0.92
Peak Hour Factor	0	12	0	0	0	0	0	0	0	0	0	0
Hourly flow rate (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EBL	WBL	NBL	NBT	SBL							
Volume Total (vph)	12	40	413	111								
Volume Left (vph)	0	0	0	0	0							
Volume Right (vph)	0	0	0	0	0							
Head (s)	0.32	0.49	0.42	0.42								
Departure Headway (s)	5.6	5.7	4.6	4.9								
Degree Utilization, %	0.02	0.06	0.53	0.15								
Capacity (veh/h)	579	573	770	701								
Control Delay (s)	8.7	9.1	12.7	8.8								
Approach Delay (s)	8.7	9.1	12.7	8.8								
Approach LOS	A	A	B	A								
Intersection Summary												
Delay			11.6									
HCM Level of Service			B									
Intersection Capacity Utilization			29.6%									ICU Level of Service A
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
Phillip Rowell & Associates

Putumane Baseyard  
Case4PM

**Responses to Comments from State of Hawaii Department of Transportation**  
 Comment Letter Dated August 4, 2011

Comment	Response
<p>1. A traffic assessment must be prepared for our review and approval. The assessment should determine the trips generated by the project, and any other relevant existing and future developments and trip-generators in the area, and the impact of those trips on the intersection of Kamaaina Road and Mokuiele Highway and propose mitigation measures, as required. It should take into account ambient traffic from other existing uses that use Kamaaina Road.</p>	<p>Acknowledged. The TIAR projections include traffic generated by all known projects in the northern portion of Kihui in addition to traffic associated with the Hawaiian Cement quarry operations that use Kamaaina Road. The TIAR also contains recommendations to mitigate the project's traffic impacts at the intersection of Mokuiele Highway at Kamaaina Road.</p>
<p>2. Since there may be a possibility that some project traffic might use the Maui Raceway Park roadways as a shortcut to Mokuiele Highway, the assessment should have a discussion of measures to be taken to minimize that possibility.</p>	<p>The project will have no right of access to Maui Raceway Park roads. Additionally, there will be a drainage swall between the project lots and the property line adjacent to the park. This will prevent any traffic connection between the project and the park. This is noted in the project description (Chapter 1) and the discussion of project trip distribution (Chapter 4)</p>

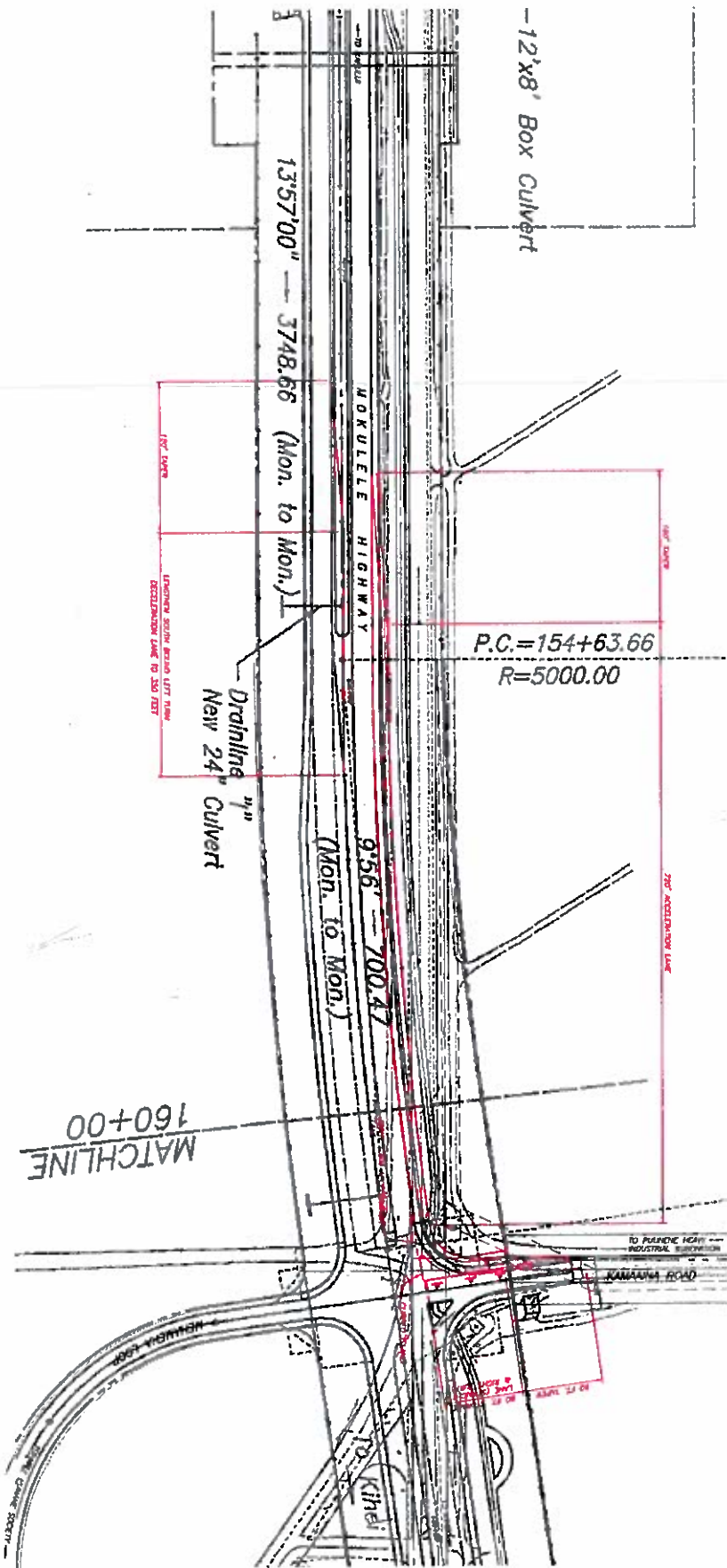
**Appendix H**  
**Agency Early Consultation Comments and Responses**

**Responses to Comments from County of Maui Police Department**  
 Comment Letter Dated July 28, 2011

Comment	Response
<p>1. At the entry/exit points of the property, proper lighting and line of sight will be critical of vehicular and pedestrian safety.</p>	<p>Acknowledged.</p>
<p>2. Vehicles traveling east to west on Kamaaina Road (downhill) are required to stop at a posted stop sign, however the stop sign is very close to the sugar cane and will need to be further from the cane to be more visible. This section of the roadway is also used by Hawaiian Cement trucks and HC&amp;S vehicles. Some of these vehicles such as loaded cement trucks and can hauling trucks are very large, heavy and require greater distances to stop.</p>	<p>The TIAR contains a recommendation regarding maintenance to sight distances and visibility of traffic control devices. The number of heavy vehicles was estimated and included on the analysis of the study intersections.</p>



**Appendix I**  
**Engineer's Drawing of Proposed Mitigation Improvements**  
**at Intersection of Mokulele Highway at Kama'aina Road**  
**and Mehamaha Loop**



MOKULELE HIGHWAY GEOMETRICS PLAN

MATCHLINE  
160+00

**PUUNENE HEAVY INDUSTRIAL SUBDIVISION**  
 T.M.K.: (2) 3-8-08: 19  
 PUUNENE, MAUI, HAWAII  
**MOKULELE HIGHWAY GEOMETRICS PLAN**

DATE: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 SCALE: 1" = 40' 0"



NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/1/08
2	REVISED	
3	REVISED	
4	REVISED	
5	REVISED	
6	REVISED	
7	REVISED	
8	REVISED	
9	REVISED	
10	REVISED	

**APPENDIX R**  
Early Consultation  
Letters

## LIST OF CONSULTED PARTIES

The following 34 parties were consulted during the early consultation phase for the preparation of the Draft Environmental Assessment. A typical early consultation letter, as well as comment letters and responses to substantive comments are included in the following sections.

### **Federal Agencies (3)**

Mr. George Young, Chief  
Regulatory Branch  
U.S. Army Engineer District, Honolulu  
Fort Shafter, HI 96858-5440

Ms. Ranae Ganske-Cerizo, District Conservationist  
Natural Resources Conservation Service  
U.S. Dept. of Agriculture  
77 Ho'okele Street, Suite 2020  
Kahului, HI 96732

Mr. Loyal Mehrhoff, Field Supervisor  
Pacific Islands Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
300 Ala Moana Blvd., Room 3-122, Box 50088  
Honolulu, HI 96850

### **State Agencies and Branches (16)**

Mr. Russell Kokubun, Chairperon  
Office of the Chairperson  
Hawai'i Department of Agriculture  
1428 S. King Street  
Honolulu, HI 96814

Mr. Jesse Souki, Executive Director  
Office of Planning  
Hawai'i Dept. of Business, Economic  
Development & Tourism  
P. O. Box 2359  
Honolulu, HI 96804

Mr. Alapaki Nahale-a, Chairperon  
Office of the Chairperson  
Hawai'i Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, HI 96809

Mr. Wilfred Nagamine, Chief  
Clean Air Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Suite 203  
Honolulu, Hawaii 96814

Mr. Alec Wong, Chief  
Clean Water Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 301  
Honolulu, HI 96801-3378

Mr. Jeff Eckerd, Acting Chief  
Indoor & Radiological Health Branch  
Hawai'i Dept. of Health  
591 Ala Moana Blvd.  
Honolulu, HI 96813

Ms. Joanna Seto, Chief  
Safe Drinking Water Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 308  
Honolulu, HI 96814-4920

Mr. Steven Chang, Chief  
Solid & Hazardous Waste Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 212  
Honolulu, HI 96814

Mr. Marshall Lum, Acting Chief  
Wastewater Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 309  
Honolulu, HI 96814-4920

Ms. Patti Kitkowski, Chief  
Maui District Health Office  
Hawai'i Dept. of Health  
54 High Street  
Wailuku, HI 96793

Mr. Morris Atta, Administrator  
Land Division  
Hawai'i Dept. of Land & Natural Resources  
1151 Punchbowl Street, Room 220  
Honolulu, HI 96809

Mr. Daniel Ornellas, District Land Agent  
Maui Land Division  
Hawai'i Dept. of Land & Natural Resources  
54 High Street, Room 101  
Wailuku, HI 96793

Mr. Clyde W. Namu`o, Administrator  
Office of Hawaiian Affairs  
State of Hawai'i  
711 Kapi`olani Blvd., Suite 500  
Honolulu, HI 96813

Ms. Pua Aiu, Administrator  
State Historic Preservation Division  
Hawai'i Dept. of Land & Natural Resources  
Kakuhihewa Bldg, Room 555  
601 Kamokila Blvd  
Kapolei, HI 96707

Mr. Edwin Sniffen, Administrator  
Highways Division  
Hawai'i Dept. of Transportation  
869 Punchbowl Street, Room 513  
Honolulu, HI 96813

Mr. Ferdinand Cajigal, District Engineer  
Maui Highways Division  
Hawai'i Dept. of Transportation  
650 Papapala Drive  
Kahului, HI 96732

**County Agencies (8)**

Mr. Kyle Ginoza, Director  
Maui Dept. of Environmental Management  
2200 Main Street, Suite 175  
Wailuku, HI 96793

Mr. Paul Haake, Captain  
Fire Prevention Bureau  
Maui Dept. of Fire & Public Safety  
313 Manea Place  
Wailuku, HI 96793

Mr. Glenn Correa, Director  
Maui Dept. of Parks & Recreation  
700 Halia Nakoia Street  
Wailuku, HI 96793

Mr. William Spence, Director  
Maui Dept. of Planning  
250 S. High Street  
Wailuku, HI 96793

Mr. Gary Yabuta, Chief  
Maui Police Department  
55 Mahalani Street  
Wailuku, HI 96793

Mr. David Goode, Director  
Maui Dept. of Public Works  
200 S. High Street  
Wailuku, HI 96793

Ms. Jo Anne Johnson, Director  
Maui Dept. of Transportation  
2145 Kaohu Street, Suite 102  
Kahului, HI 96732

Mr. David Taylor, Director  
Maui Dept. of Water Supply  
200 S. High Street  
Wailuku, HI 96793

**Other Consulted Parties (7)**

Mr. Grant Chun, Vice President  
A&B Properties, Inc.  
P.O. Box 156  
Kahului, HI 96732

Mr. David Gomes, General Manager  
Hawaiian Cement  
P.O. Box 488  
Kahului, HI 96733

Mr. Rick Volner, Jr., General Manager  
Hawaiian Commercial & Sugar Company  
P.O. Box 266  
Pu`unene, HI 96784

Mr. Gordon Yadao, Section Manager  
Network Engineering & Planning  
Hawaiian Telcom, Inc.  
60 S. High Street  
Wailuku, HI 96793

Mr. Dan Takahata, Manager  
Engineering Division  
Maui Electric Company, Ltd.  
P.O. Box 398  
Kahului, HI 96733-6898

Kihei Community Association  
P.O. Box 662  
Kihei, HI 96753

LeSea Broadcasting Corp.  
61300 South Ironwood  
P.O. Box 12  
South Bend, IN 46624



***Typical Early  
Consultation  
Letter***



June 23, 2011

Mr. William Spence, Director  
Department of Planning  
County of Maui  
200 S. High Street  
Waikuku, HI 96793

**SUBJECT:** Early Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'uhene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Spence,

On behalf of the land owner, CMBY 2011 Investment, LLC, Chris Hart & Partners will be preparing a Draft Environmental Assessment (EA) for a proposed heavy industrial subdivision in the vicinity of the Old Pu'uhene Airport on the island of Maui.

**Project Location and Land Use**

The subject parcel is located about 1.4 miles east of Makulele Highway in the vicinity of the Old Pu'uhene Airport. See Location Maps. The approximately 86-acre site is currently vacant and undeveloped. Access from Makulele Highway to the site is provided by Kama'aina Road, a paved two-lane roadway under State jurisdiction. Kama'aina Road also provides access to a Hawaiian Cement quarry and HC&S sugarcane fields in the surrounding area.

The subject property lies in the *State Agricultural District* and is designated for *Agricultural* uses by the Kihui-Makana Community Plan and Maui County zoning. The parcel also falls within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan (2030).

Proposed Pu'uhene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
June 23, 2011  
Page 2

**Surrounding Land Uses**

The subject parcel is bounded by Kama'aina Road to the north, sugarcane fields on the east and south, and the Old Pu'uhene Airport to the west. Other land uses in the area include an HC&S irrigation reservoir (north), the Hawaiian Cement quarry (east), and a Hawaii National Guard Armory (west).

The Old Pu'uhene Airport area is designated for *Project District 10 (PD 10)* use by the Kihui-Makana Community Plan (1998). PD 10 was created by the County of Maui with the objective of establishing a master-planned, expansion area that would meet future recreational needs and provide space for industrial activities, including government facilities, whose locations are best suited away from urban areas. Existing land uses within PD 10 include the National Guard Armory and facilities for drag racing, dirt bike racing, go-kart racing, autocross racing, oval (dirt) track racing and an area for flying radio-controlled model aircraft.

The lands surrounding the subject parcel lie in the *State Agricultural District* and are designated for *Agricultural* uses by the Kihui-Makana Community Plan and Maui County zoning except for the Old Pu'uhene Airport area which is designated PD 10 by the community plan. PD 10 also falls within the proposed Urban Growth Boundaries for the *draft* Maui Island Plan.


**Proposed Action**

The Applicant plans to subdivide the subject parcel into 28 fee-simple, heavy industrial lots ranging from approximately 0.63 acre to 13.41 acres in size. See Preliminary Site Plan.

Preliminarily, the proposed subdivision would include an internal subdivision road, a private water system (with separate potable and irrigation/fire protection systems), an enhanced individual wastewater (septic) system, an onsite drainage system, landscape plantings, and connections for electrical and telephone systems. The proposed action is a "lot only" subdivision project and does not include site work or the construction of any buildings or other improvements on the subdivided lots as these improvements will be the sole responsibility of future lot owners.

In order to legally access the subject parcel from Makulele Highway, the Applicant has submitted a Request for Grant of Easement to the State Department of Land and Natural Resources in order to use Kama'aina Road for access and utility purposes. In addition to the portion of Kama'aina Road (30 feet wide) that extends from Makulele Highway to the subject parcel, the Applicant's request includes a 26-foot wide strip of land across three adjacent State parcels on the south side of Kama'aina Road. See Easement Map.

Thank you for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Gilem Tindaki  
Planner

Enclosures  
cc: Blanca Lafolette, PRL

Land Use and Environmental Reviews

In order to implement the proposed project, the Applicant will be seeking a District Boundary Amendment (from the *State Agricultural to the State Urban District*), a Community Plan Amendment (from *Agricultural to Heavy Industrial*), and a Change in Zoning (from *Agricultural to M-2 or M-3, Heavy Industrial*).

Since the proposed action will involve a community plan amendment and the use of State lands (Kama'aina Road and a 26-foot wide strip of land across three adjacent State parcels), an environmental assessment (EA) will be prepared in accordance with Chapter 94B, Hawaii's Revised Statutes and Title 11, Chapter 200, Hawaii's Administrative Rules. The State Land Use Commission will be serving as the accepting authority for the EA and environmental review process.

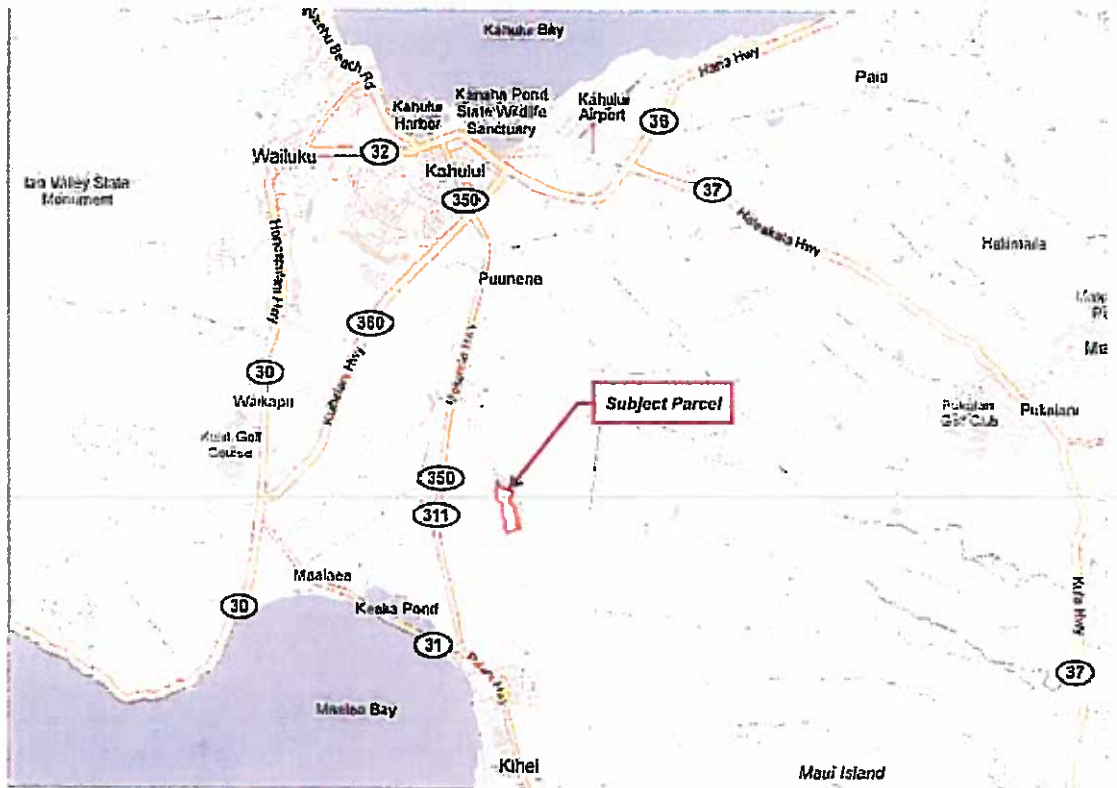
EA Content

Subjects to be discussed in the Draft EA include:

- Physical Environment:
  - Surrounding Land Uses
  - Topography & Soils
  - Air Quality
  - Noise Characteristics
  - Flora & Fauna
  - Flood Hazard Areas
  - Archeological & Cultural Resources
  - Scenic/Open Space Resources
- Public Services:
  - Solid Waste Disposal
  - Police and Fire Protection
  - Educational & Recreational Resources
  - Health Services
- Social & Economic Environment:
  - Population & Economy
- Infrastructure:
  - Water
  - Drainage
  - Wastewater
  - Roadways
  - Electrical and Telephone Systems
- Government Laws, Plans & Controls
  - State Land Use Law
  - Maui County General Plan
  - Kula-Makana Community Plan
  - Maui County Zoning
  - Hawaii Coastal Zone Management Program
- Flora
  - Fauna
- Air Quality
  - Noise
- Archeology
  - Cultural Resources
- Parcel History
  - Agriculture
  - Market Conditions
- Local Economy
  - Groundwater Resources
- Drainage

Studies covering the following subjects will be prepared and included in the Draft EA:

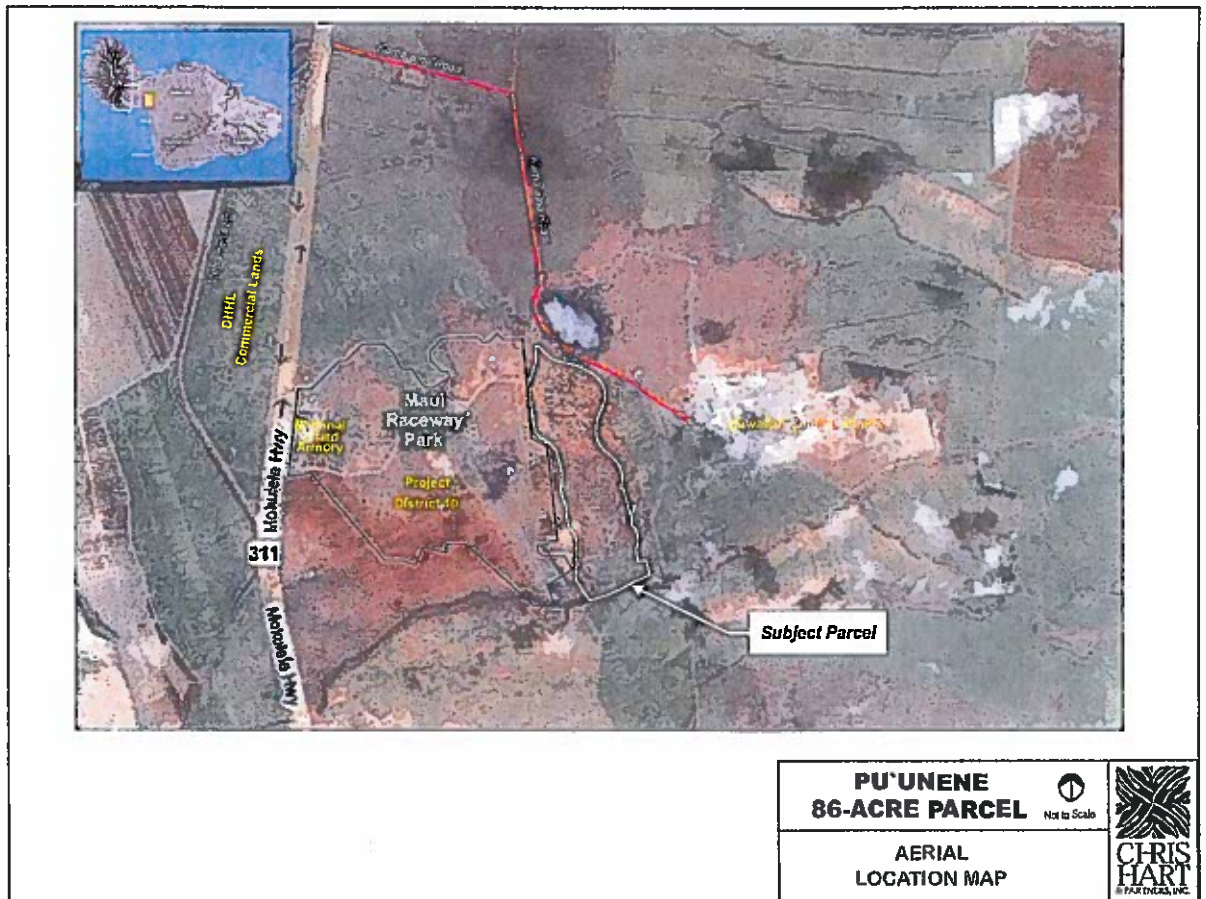
In conjunction with the early consultation process for the preparation of the Draft EA, we would appreciate receiving your written comments on the proposed action by July 29, 2011.



**PU'UNENE  
86-ACRE PARCEL** Not to Scale

**GEOGRAPHIC  
LOCATION MAP**

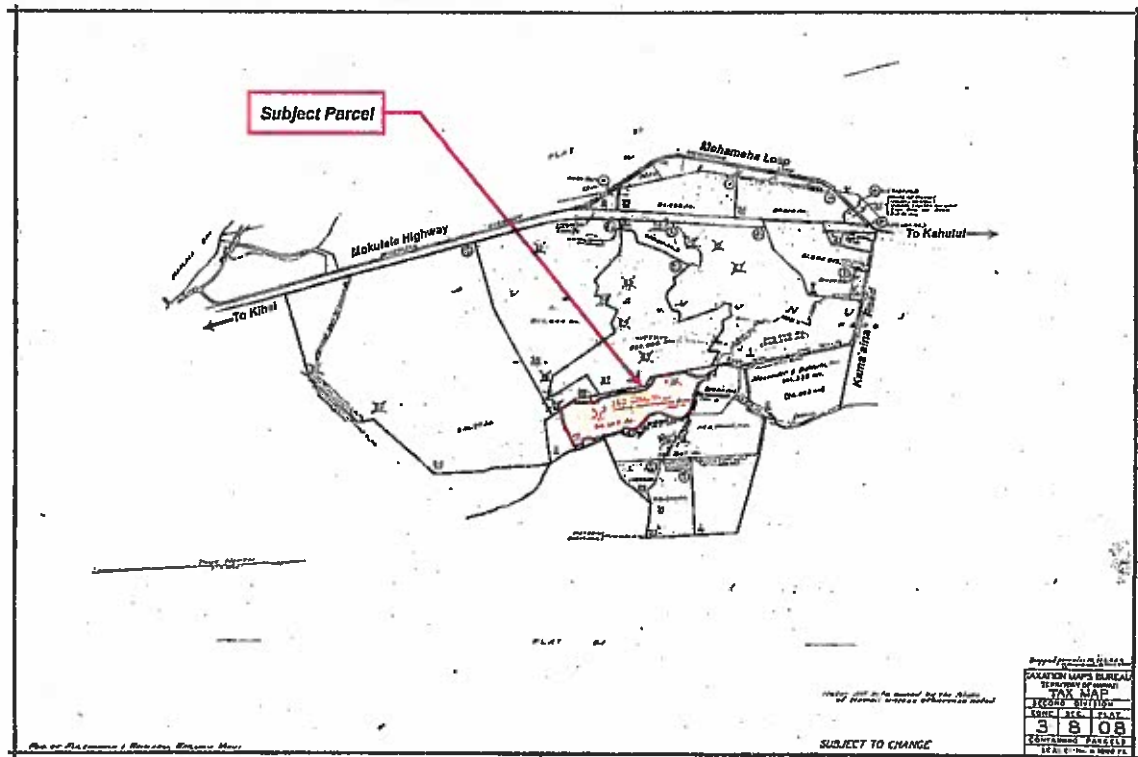
**CHRIS HART**  
© 2017 CH2M HILL



**PU'UNENE  
86-ACRE PARCEL** Not to Scale

**AERIAL  
LOCATION MAP**

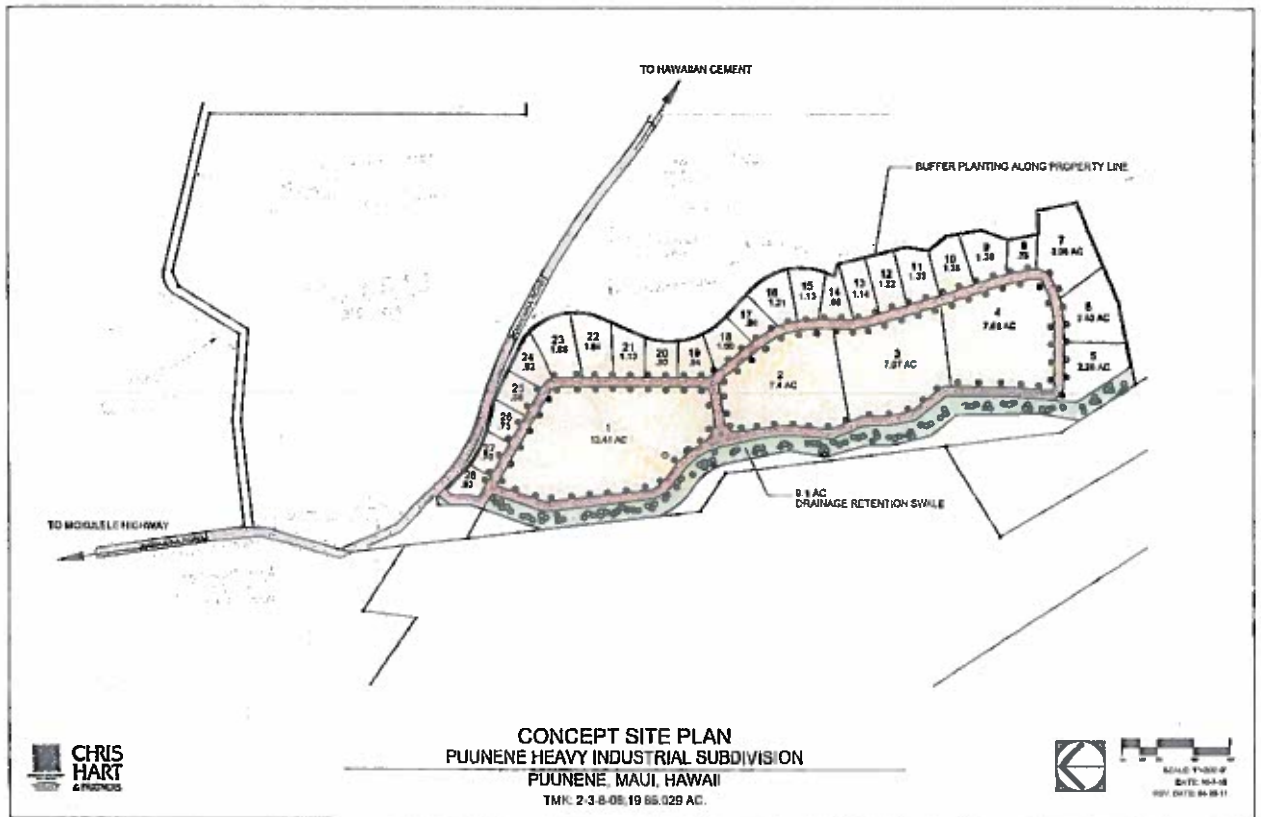
**CHRIS HART**  
© 2017 CH2M HILL



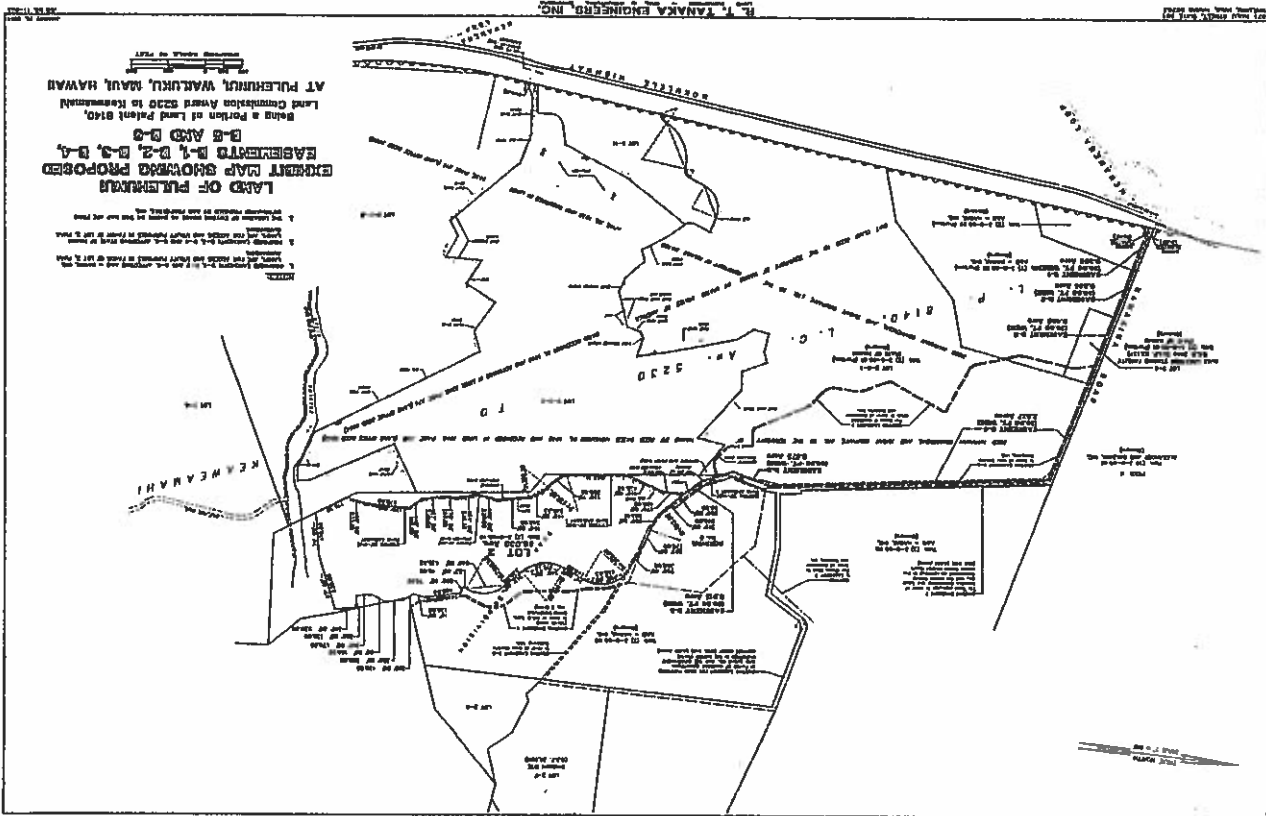
**PU'UNENE  
86-ACRE PARCEL**

TMK PARCEL  
LOCATION MAP

Chris Hart & Partners, Inc.



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***Comment and  
Response Letters***



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96804-3378

July 5, 2011

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 N., Market Street  
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

SUBJECT: EARLY CONSULTATION FOR THE PREPARATION OF A DRAFT  
ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED  
PU'UHENE HEAVY INDUSTRIAL SUBDIVISION  
PU'UHENE, MAUI, HAWAII  
TMK (2) 3-8-008:019

The Safe Drinking Water Branch (SDWB) has reviewed the subject document and has the following comments:

1. The description of the project does not clearly identify the source of drinking water for the project. Please clearly identify the source of drinking water.
2. This project qualifies as a public water system. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, entitled "Rules Relating to Potable Water Systems."
3. All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements in accordance with HAR Title 11, Chapter 20, Section 29.5, entitled "Capacity demonstration and evaluation."
4. Projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of HAR Title 11, Chapter 20, Section 29, entitled "Use of new sources of raw water for public water systems." This section requires that all new public water system

LORITA J. FURDY, A.C.S.W., M.P.H.  
MANAGER OF HEALTH

cc: Glenn  
10/05/10

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JUL - 6 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

Mr. Glenn Tadaki  
July 5, 2011  
Page 2

sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

5. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.
6. All sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.
7. Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification in accordance with HAR Title 11, Chapter 20, Section 30, entitled "New and modified public water systems." These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.
8. All public water systems must be operated by certified distribution system and water treatment plant operators as defined by HAR Title 11, Chapter 11-25 entitled, "Rules Pertaining to Certification of Public Water System Operators."
9. All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing drinking water system to meet irrigation or other needs must be carefully designed and operated to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the drinking water system. The two systems must be clearly labeled and physically separated by



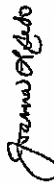
air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the drinking water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with HAR Title 11, Chapter 21 entitled "Cross-Connection and Backflow Control" is also required.

10. All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai'i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water sources.

11. For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

If there are any questions, please call Jennifer Mikaido at (808) 586-4258.

Sincerely,



JOHANNA L. SETO, P.E., CHIEF  
Safe Drinking Water Branch  
Environmental Management Division

JN:slm

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Landscape Architecture  
City & Regional Planning

September 1, 2011

Ms. Joanna L. Seto, P.E., Chief  
Safe Drinking Water Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 308  
Honolulu, HI 96814-4920

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pt'ūneue Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Ms. Seto,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your  
letter dated July 5, 2011.

1. The Draft EA will include information about the source of drinking water for the proposed project.
2. The public water system for the proposed project will comply with Title 11, Chapter 20, HAR entitled "Rules Relating to Potable Water Systems".
3. The capacity requirements of the public water system for the proposed project will comply with Section 11-20-29.5, HAR relating to "Capacity demonstration and evaluation".
4. The public water system for the proposed project will comply with provisions of Section 11-20-29, HAR relating to "Use of new sources of raw water for public water systems". In addition, the land owner understands that the Director of Health must approve all new public water system sources prior to its use.

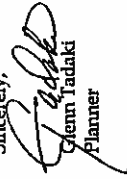
115 N. Market Street, Wahiālu, Maui, Hawai'i 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chipmaui.com](http://www.chipmaui.com)

Proposed Pt'ūneue Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 1, 2011  
Page 2

5. Pursuant to Section 11-20-29, HAR, the land owner acknowledges that an engineering report must be submitted to the Safe Drinking Water Branch (SDWB) for anyone proposing to use a new, natural water source to supply a public water system. As set forth in Subsection 11-20-29 (b) (5), all potential sources of contamination must be identified and control measures for reducing potential contamination must be evaluated. In addition, the land owner understands that a water quality analysis for all regulated contaminants must be submitted to the SDWB to evidence compliance with all drinking water standards.
6. The land owner acknowledges that all public water system sources are subject to a source water assessment which will delineate a water source protection area.
7. The land owner understands that any new public water system must be approved by the Director of Health before construction can commence pursuant to Section 11-20-30, HAR pertaining to "New and modified public water systems".
8. The public water system for the proposed project will be operated in accordance with Title 11, Chapter 25, HAR entitled "Rules Pertaining to Certification of Public Water System Operators".
9. The land owner understands that separate drinking water and non-potable systems need to be carefully designed and operated to prevent any cross-connections and potential backflow and that the dual system must be clearly labeled and physically separated to avoid drinking water contamination. The design and operation of the dual system for the proposed project shall comply with the provisions of Title 11, Chapter 21, entitled "Cross-connection and Backflow Control".
10. The land owner acknowledges that all projects within a water source protection area that propose a potentially contaminating activity could affect an existing water source for a public water supply and that appropriate measures will need to be undertaken to prevent or reduce the potential for contamination of the drinking water source.
11. Copies of the SDWB's letter and contact information have been provided to the land owner and the appropriate project consultants.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Ojomo, P.E.  
Martin Luna, Esq.

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DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT  
FORT SHAFTER, HAWAII 96858-5440

REPLY TO  
ATTENTION OF:

July 6, 2011

RECEIVED

JUL - 8 2011

CHINIS HART & PARTNERS  
Landscape Architects

Regulatory Branch

Chris Hart & Partners, Inc.  
Attn: Glenn Tadaki  
115 N. Market Street  
Wailuku, HI 96793-1717

POH-2011-00179

*CG* *John* *10/05/11*

Dear Mr. Tadaki:

We have received your request for the Department of the Army (DA) to review and comment on the proposed Pu'uene Heavy Industrial Subdivision in Kohala, Island of Maui. We have assigned the project the reference number POH-2011-00179. Please cite the reference number in any correspondence with us concerning this project. We have completed our review of the submitted document and have the following comments:

Section 10 of the Rivers and Harbors Act of 1899 (Section 10) requires that a DA permit be obtained for certain structures or work in or affecting navigable waters of the United States (U.S.), prior to conducting the work. Navigable waters of the U.S. are those waters subject to the ebb and flow of the tide shoreward to the Mean High Water Mark (MHW) and the Ordinary High Water Mark (OHWM) for non-tidal waters, and/or other waters identified as navigable by the Honolulu District. In addition, Section 10 permit is required for structures of work outside this limit if they affect the course, capacity, or condition of the water body.

Section 404 of the Clean Water Act of 1972 (Section 404) requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work. The area of the U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 extends to the Mean Higher High Water Mark (MHHWM) for tidal waters or the Ordinary High Water Mark (OHWM) for non-tidal waters, and to the upland boundary of any adjacent wetlands. Section 404 also regulates discharges of dredged material incidental to certain activities such as grading, mechanized land-clearing, ditching or other excavation activity, survey activities, and the installation of certain pile-supported structures.

Based on the information provided, the project site appears to be absent of navigable waters subject to Corps jurisdiction. Therefore, Section 10 authorization may not be required. However, there is insufficient information provided to determine if the proposed project will involve activities under Section 404. Fill material, permanent or temporary, may include, but is not limited to: rock, dirt, sandbags, silt fences or concrete. To avoid unintentional violation to federal regulation and law, we advise you to contact our office prior to conducting any activity that may result in the discharge of dredged and/or fill material. Section 404 authorization may be required for this action.

When developing the Environmental Assessment, we recommend you conduct a thorough aquatic resource survey, describing information regarding any potential water bodies, including wetlands, drainage ditches, gulches, stream, etc., on-site, especially those that may be impacted by the proposed project. The survey should include descriptions of aquatic features proposed for impact, flow duration and the flow path of each feature into navigable waters.

We recommend you contact the Corps to determine if any of the proposed work constitutes a "discharge of fill" and submit an application with associated drawings that meet our drawing recommendations found at <http://www.poh.usace.army.mil/EC-R/EC-R.htm>. Click on "Apply for a Permit" on the right-hand side, and then click on "Fee - Sect 404 Clean Water Act Drawings." Providing photographs of the parcel would also expedite our review. As a reminder, only the Corps has authority to determine if any of these features are or are not waters of the U.S. and, potentially subject to regulations. A request for an approved JD can be submitted prior to, or concurrently with, an application for the proposed work.

Thank you for giving us the opportunity to review this proposal and for your cooperation with our regulatory program. Should you have any questions regarding our Regulatory Program or the permit application process, please contact Ms. Deserie Bala at (808) 438-9258 or via email at [Deserie.M.Bala@usace.army.mil](mailto:Deserie.M.Bala@usace.army.mil).

Sincerely,

George P. Young, P.E.  
Chief, Regulatory Branch



**CHRIS  
HARI**  
& PARTNERS, INC.

Landscape Architecture  
City & Regional Planning

September 14, 2011

Mr. George Young, P.E., Chief  
Regulatory Branch  
U.S. Army Engineer District, Honolulu  
Fort Shafter, HI 96858-5440

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'umene Heavy Industrial Subdivision; TMK (2) 3-8-008:019; Reference No. POH-2011-00170

Dear Mr. Young,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 6, 2011.

As noted in your letter, the proposed project may not require a Section 10 Permit since the subject parcel does not contain navigable waters that are subject to Corps jurisdiction.

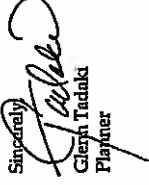
We understand that it could not be determined if the proposed project would involve any activities that would be subject to Section 404 based on the information that was provided. Please note, however, that a preliminary engineering report (PER) is being prepared and will be included in the Draft EA. The PER should provide the Corps with enough information to determine if the proposed project would be subject to Section 404 requirements.

The subject parcel does not contain any water bodies or aquatic resources. Notwithstanding this, the Draft EA will include a discussion of any nearby water bodies and aquatic resources that could potentially be affected by the proposed project.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Proposed Pu'umene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 14, 2011  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Playner

cc: Blanca Lafolette, PRL  
Stacy Obama, P.E.  
Martin Luna, Esq.



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3278  
HONOLULU, HI 96804-3278

July 12, 2011

Mr. Glen Tadaki  
Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

**SUBJECT:** Early Consultation Request for the Draft Environment Assessment  
Pu'uene Heavy Industrial Subdivision  
Pu'uene, Maui, Hawaii  
TMK: (2) 3-8-008:019

The Department of Health, Clean Water Branch (CWB), has reviewed the document, received June 30, 2011, regarding the subject project and offers these comments. Please note that our review is based solely on the document for the subject project and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://hawaii.gov/health/environmental/env-planning/induse/CWB-standardcomment.pdf>

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Anti-degradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

Mr. Glen Tadaki  
July 12, 2011  
Page 2

LORETTA J. FURUY, A.C.S.W., R.P.H.  
Assistant Director

07007PSW.11

RECEIVED

JUL 14 2011

CHINA HAIT & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn  
10/052

07007PSW.11

a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

- b. Hydrolensing water.
- c. Construction dewatering effluent.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI forms may be picked up at our office or downloaded from our website at <http://hawaii.gov/health/environmental/water/cleanwater/forms/feep-index.html>

3. For other types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at <http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/ndiv-index.html>

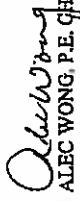
4. Please call the Army Corps of Engineers at (808) 438-9258 to determine which Department of the Army (DA) permit(s) shall be required for the subject project. Permits may be required for work performed in, over, and under navigable waters of the United States. Projects requiring a DA permit also require a Section 401 Water Quality Certification (WQC) from our office.

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

Mr. Glen Tadaki  
July 12, 2011  
Page 3  
07007PSW.11

If you have any questions, please visit our website at <http://hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,

  
ALEC WONG, P.E. CHIEF  
Clean Water Branch

SW:ml

C: Mr. Roland Asakura, CWB, Maui District Health Office (w/o encls.) [via e-mail only]

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**CHRIS  
HART**  
A PARTNERS, P.C.

Landscape Architecture  
City & Regional Planning

September 8, 2011

Mr. Alec Wong, P.E., Chief  
Clean Water Branch  
Hawaii Dept. of Health  
919 Ala Moana Blvd., Room 301  
Honolulu, HI 96801-3378

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu'unene Heavy  
Industrial Subdivision, TMK (2) 3-8-008-019

Dear Mr. Wong,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 12, 2011.

1. The land owner understands that the proposed project must comply with the applicable provisions of Chapter 11-54, HAR entitled "Water Quality Standards".
2. A National Pollutant Discharge Elimination System (NPDES) permit for general coverage will be obtained prior to the commencement of construction for discharges (storm water runoff) related to construction activities, including clearing, grading, and excavation that results in the disturbance of one or more acres of total land area.
3. The proposed project will not involve the other types of discharges listed in Item No. 2 of your letter nor will it involve discharges (storm water runoff) into Class 1 (inland) or Class AA (marine) waters.
4. An early consultation letter was sent to the U.S. Army Corps of Engineers. In response, the Corps stated that the proposed project may not require a Section 10 Permit since the project site does not contain navigable waters that are subject to its jurisdiction. Based on the information that was provided, the Corps could not determine if the proposed project would involve activities that would require a

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008-019  
September 8, 2011  
Page 2

Section 404 Permit, such as the discharge (placement) of dredged or fill material into waters of the U.S., including wetlands.

5. Notwithstanding other permit requirements, the land owner understands that all project-related discharges must comply with the State's Water Quality Standards as set forth in Chapter 11-54, HAR.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Stacy Okomo, P.E.  
Martin Luna, Esq.





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

July 11, 2011

RECEIVED

JUL 12 2011

CHRIS HART & PARTNERS, INC.  
LANDSCAPE ARCHITECTURE & PLANNING

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Waikuku, HI 96793


Dear Mr. Tadaki:

This correspondence is in response to your request for comments for the Early Consultation for the Preparation of the Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision; TMK (2) 3-8-008-019.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control

Should you have any questions, please contact me at (808) 586-4701.

Sincerely,  
  
 Jeffrey M. Eckerd  
 Acting Program Manager  
 Indoor and Radiological Health Branch

In Reply, Please Refer to  
FILE #

CC: Glenn 101056



CHRIS HART & PARTNERS, INC.

Landscape Architecture  
City & Regional Planning  
September 7, 2011

Mr. Jeffrey M. Eckerd, Acting Program Manager  
Indoor & Radiological Health Branch  
Hawaii Dept. of Health  
591 Ala Moana Blvd.  
Honolulu, HI 96813

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision; TMK (2) 3-8-008-019


Dear Mr. Eckerd,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 11, 2011.

Project-related activities will comply with the applicable provisions of Chapter 11-46, HAR pertaining to "Community Noise Control".

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
 Glenn Tadaki  
 Planner

cc: Blanca Lafolette, PRL  
Yoichi Ebisu, P.E.  
Martin Luna, Esq.

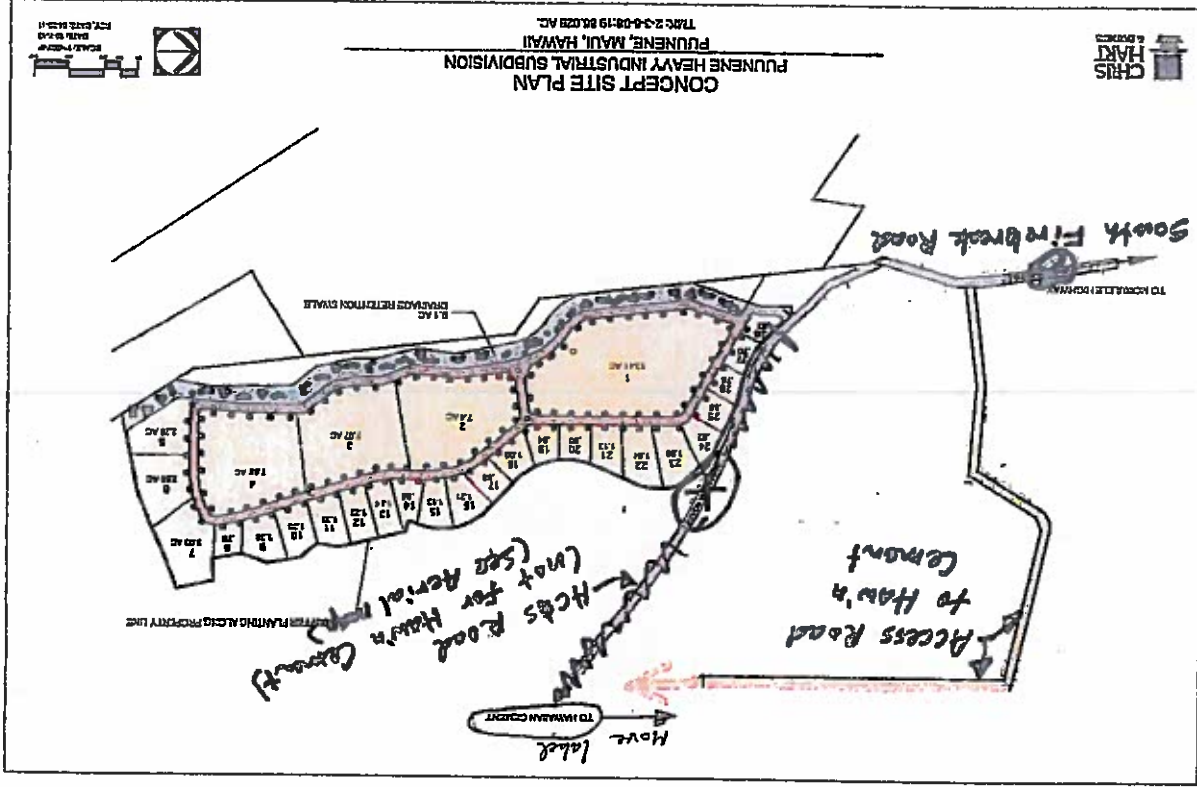
From: Moore, Randall at HCS [rmoore@hcsugar.com]  
Sent: Wednesday, July 13, 2011 10:26 AM  
To: Glenn Tadaki  
Subject: Puunene heavy industrial Subdivision

Attachments: Puunene Heavy Industrial Subdiv\_2011\_map001.pdf  
Glenn,

See the three maps with my comments. We will review your letter and may provide additional comments.

Thank you.  
Randall Moore  
HAWAIIAN COMMERCIAL & SUGAR COMPANY  
877-6968 office

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This message, including any attachments, is intended for the use of the party to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure. If you are not the intended recipient, any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please contact the sender immediately by reply e-mail, and delete the original and any copies of this message. It is the sole responsibility of the recipient to ensure that this message and any attachments are virus free.  
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Mr. Randall Moore, Manager  
Agricultural Engineering Services  
Hawaiian Commercial & Sugar Company  
P.O. Box 266  
Pu'uene, HI 96784

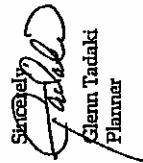
**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'uene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Moore,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your e-mail dated July 13, 2011.

The information you provided to us (e.g., road names, land ownership) has been used to update our maps and plans.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Martin Luna, Esq.

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STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 5070  
HONOLULU, HI 96821-5070

LORETTA J. EDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

Project Approval File

LUD-238 008 019-10721  
Early Cons. Prop. DEIA  
Puunene Heavy Ind Subd

July 13, 2011

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Waialuku, Hawaii 96793-1717

Dear Mr. Tadaki:

Subject: Early Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Puunene Heavy Industrial Subdivision at Off Mokulele Highway, Pulehuanui, Waialuku, Maui, Hawaii TMK (2) 3-8-008: 019 86 acre parcel

RECEIVED

JUL 13 2011

CHRIS HART & PARTNERS, LLC  
Landscape Architecture Division  
C. Hart  
101056

Thank you for allowing us the opportunity to review the above subject project which requests comments on the Early Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Puunene Heavy Industrial Subdivision at off Mokulele Highway. We have the following comments and information on the above subject property.

The subject project is located in the critical wastewater disposal area as determined by the Maui Wastewater Advisory Committee. We do not have any individual wastewater system (IWS) information on file. It is also not connected to the County sewer service system.

We have no objections as long as the domestic and non-domestic wastewater generated by the project is handled by wastewater systems that comply with our chapter 11-62, Hawaii Administrative Rules.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4284 or fax to (808) 586-4300.

Sincerely,

SINA PRUDER, P.E., ACTING CHIEF  
Wastewater Branch

L:Kicle

cc: DOH-WWB's Maui Staff - Mr. Roland Tejero

Ms. Sina Pruder, Acting Chief  
Wastewater Branch  
Hawaii Dept. of Health  
919 Ala Moana Blvd., Room 309  
Honolulu, HI 96814-4920

SUBJECT: Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Puunene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Ms. Pruder,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 13, 2011.

All wastewater plans for the proposed project will comply with the applicable provisions of Chapter 11-62, HAK pertaining to "Wastewater Systems".

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Otono, P.E.  
Martin Luna, Esq.

ALAN M. ARAKAWA  
MAYOR



**COUNTY OF MAUI**  
DEPARTMENT OF FIRE AND PUBLIC SAFETY  
FIRE PREVENTION BUREAU  
313 MANEA PLACE • WAILUKU, HAWAII 96793  
(808) 244-9161 • FAX (808) 244-1365

JEFFREY A. MURRAY  
CHIEF  
ROBERT M. SHIMADA  
DEPUTY CHIEF

RECEIVED

JUL 20 2011

CHRIS HART & PARTNERS, INC.  
LANDSCAPE ARCHITECTURE AND PLANNING

CC: 9/16/11 10/10/11

July 15, 2011

Chris Hart & Partners, Inc.  
C/O Glenn Tadaki  
115 North Market Street  
Wailuku, HI 96793

RE : (EA) Proposed Heavy Industrial Subdivision  
(2) 3-8-008: 019

Dear Glenn,

Thank you for allowing the Department of Fire & Public Safety the opportunity to comment on this proposed subdivision. Our comments are as follows:

- 1) Fire apparatus access and water supply for fire protection shall meet the following:
  - Water supply for fire protection shall have a minimum flow of 2500 gallons per minute for a two-hour duration. Fire hydrants shall be placed on the service road to all parcels with hydrant spacing a maximum of 250 feet between hydrants.
  - Service roads to proposed properties shall have a clear width of 20 feet. Any dead-end roads or cul-de-sacs shall have a clear width of 32 ft., and if greater than 150 ft. in length, shall be provided with an approved fire apparatus turn-around. All turns and required turnarounds shall have an outside turning radius of 40.5 feet. The maximum grade for the service roads shall not be greater than 12%.
  - Once buildings are proposed, there shall be at least one hydrant within 300 feet of any building to be constructed.

- 2) Because this subdivision is being created within an area subject to wildland fires, a minimum 30' buffer zone should be created along the East and South boundary to minimize the effects potential wildfires; the North and West boundaries are buffered by roads and the drainage swale. This buffer zone, as well as the drainage swale, should be maintained free of dry, overgrown brush. This responsibility must be placed upon the developer, at first, and then subsequently the members of the subdivision through a recorded agreement.

(EA) Proposed Heavy Industrial Subdivision  
(2) 3-8-008: 019

Page 2

Item 1 was addressed in the submitted documents. If the proposed project is allowed, the developer will be responsible for providing approved fire apparatus access and water supply for fire protection.

The reasoning behind item 2 is simple. Developers should share in the responsibility of protecting their developments from the threat of wildfires when these developments are proposed within areas with the potential for wildland fires. Once tenants are occupying these lots, they'll be concerned about wildland fires. These buffer zones allow the creation and self-maintenance of defensible space.

If there are any questions or comments feel free to contact me at 244-9161. Thank you for your attention to fire prevention and public safety.

Sincerely,

Paul Hoeks  
Captain, Fire Prevention Bureau  
313 Manea Place  
Wailuku, HI 96761



**CHRIS  
HARTE  
& PARTNERS, INC.**

Landscape Architecture  
City & Regional Planning

September 14, 2011

Mr. Paul Haake, Captain  
Fire Prevention Bureau  
Maui Dept. of Fire & Public Safety  
313 Maonea Place  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu'uone Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Haake,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your  
letter dated July 15, 2011.

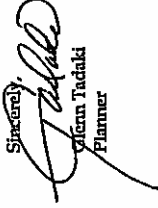
1. The land owner acknowledges that the minimum flow rate for fire protection is  
2,500 gallons per minute for a two-hour period and that fire hydrants shall be  
placed no more than 250 feet apart along the internal subdivision (service) road.  
It is also understood that all turns and any required turnarounds must have an  
outside turning radius of 40.5 feet and that the grade of the service road shall not  
exceed 12 percent. Once buildings are proposed, individual lot owners will be  
responsible for ensuring that there is at least one hydrant within 300 feet of any  
building to be constructed on their property.

2. As noted in your letter, the subject property is located in an area that is  
vulnerable to wildfires. To guard against potential wildfire incursions, the  
establishment of a buffer zone along the perimeter of the site is being examined.  
The maintenance of such a buffer zone would initially rest with the land owner  
until the association of lot owners assumes this responsibility. Language to this  
effect would be included in the Covenants, Conditions & Restrictions (CC&Rs)  
for the project.

Proposed Pu'uone Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 14, 2011  
Page 2

Thank you for providing us with your comments and for participating in the early  
consultation process. A copy of the Draft EA will be provided to you for review when it  
becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Yicern Tadaaki  
Planner

cc: Blanca Lafalette, PRL  
Stacy Okomo, P.E.  
Martin Luna, Esq.



RECEIVED

JUL 18 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architects and Planners  
cc: Glenn 10/052

July 15, 2011

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96783

Dear Mr. Tadaki,

Subject: Early Consultation for the Proposed Puunene Heavy Industrial Subdivision  
Off Mokualele Highway  
Kahului, Maui, Hawaii  
Tax Map Key: (2) 3-6-008: 019

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Thank you for allowing us to comment on the Early Consultation for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) may be requiring access and electrical easements for our facilities to serve the subject project site. The existing area is currently served from our Maalaea Substation. Since the project's anticipated electrical demand may have a substantial impact to our system, we highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as practical so that service can be provided on a timely basis. MECO may need to complete system upgrades along with securing a new substation site to accommodate the anticipated electrical load.

Should you have any questions or concerns, please call me at 871-2341.

Sincerely,

Kyle Tamori  
Staff Engineer





Landscape Architecture  
City & Regional Planning

September 6, 2011

Mr. Kyle Tamori, Staff Engineer  
Engineering Division  
Maui Electric Company, Ltd.  
P.O. Box 398  
Kahului, HI 96733-6898

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu'uene Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Tamori,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 15, 2011.

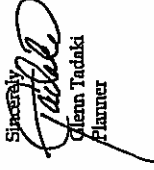
The land owner acknowledges that access and electrical easements (in favor of MECCO) may be required in order to serve the subject parcel and that electrical system upgrades and a new substation site may be needed to accommodate the anticipated electrical load.

Electrical demand requirements and a project time schedule will be submitted (by the project's electrical consultant) at such time in the future that an application for subdivision approval is filed with the County of Maui.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 6, 2011  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafollette, PRL  
Stacy Obomo, P.E.  
Martin Luna, Esq.



Chris Hart & Partners, Inc.  
Landscape Architecture  
City & Regional Planning  
September 1, 2011

Mr. Glenn T. Correa, Director  
Maui Dept. of Parks & Recreation  
700 Halia Nakaon Street  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Correa,

On behalf of the land owner, CMBY 2011 Investment, LLC, we acknowledge the receipt of your letter dated July 19, 2011 and understand that the Parks Department has no comments at this time.

A copy of the Draft EA will be provided to you for review when it becomes available. Thank you for providing us with your comments and for participating in the early consultation process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
*Glenn Tadaki*  
Glenn Tadaki  
Planner

cc: Blanca Lafollette, PRL  
Martin Luna, Esq.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph: 808-242-1955 • Fax: 808-242-1850  
www.chpmatui.com

GLENN T. CORREA  
Director  
PATRICK T. MATSUI  
Deputy Director  
(808) 270-7230  
FAX (808) 270-7834

RECEIVED

JUL 20 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn 10/05/11



DEPARTMENT OF PARKS & RECREATION  
700 Halia Nakaon Street, Unit 2, Wailuku, Hawaii 96793

July 19, 2011

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, HI 96793

Dear Mr. Tadaki:

**SUBJECT:** Early Consultation for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision  
TMK: (2) 3-8-008:019  
Pu'unene, Maui, Hawaii

Thank you for the opportunity to review and comment on the subject project.

The Department of Parks & Recreation has no comment at this time and looks forward to reviewing the Draft Environmental Assessment when it is available.

Please feel free to contact me or Robert Halvorson, Chief of Planning & Development, at (808) 270-7931, should you have any questions.

Sincerely,

*Glenn T. Correa*  
GLENN T. CORREA  
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning & Development

GTC:RH:ca

S:\PLANNING\GIS\County Reviews\EA & EIS Reviews\Puunene Industrial Subdiv DEA Prop.doc

ALAN M. ARAKAWA  
Mayor  
DAVID C. GOODE  
Director  
ROWENA M. DAGDAG-ANDAYA  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
DEVELOPMENT SERVICES ADMINISTRATION  
250 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

RALPH M. NAGAMINE, L.S., P.E.  
Development Services Administration  
CARY YAMASHITA, P.E.  
Engineering Division  
BRIAN HASHIRO, P.E.  
Highways Division

July 20, 2011

Mr. Glenn Tadaki, Planner  
CHRIS HART & PARTNERS, INC.  
115 North Market Street  
Wailuku, Maui, Hawaii 96793-1717

Subject: EARLY CONSULTATION FOR THE PREPARATION  
OF A DRAFT ENVIRONMENTAL ASSESSMENT FOR  
THE PUUNENE HEAVY INDUSTRIAL SUBDIVISION  
TMK (2) 3-8-008:019

Dear Mr. Tadaki:

We reviewed the subject application and have no comments at this time.

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely,  
  
David C. Goode  
Director of Public Works

Is: SLUCACZ\temp\_puunene\_heavy\_indus\_subdiv\_dea\_35008019\_ls.wpdoc  
xc: Highways Division  
Engineering Division

cc: Glenn  
6/20/11  
RECEIVED

JUL 25 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning



Landscape Architecture  
City & Regional Planning  
September 1, 2011

Mr. David C. Goode, Director  
Maui Dept. of Public Works  
200 S. High Street  
Wailuku, HI 96793

SUBJECT: Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Puunene Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Goode,

On behalf of the land owner, CMBY 2011 Investment LLC, we acknowledge the receipt of your letter dated July 20, 2011 and understand that the Public Works Department has no comments at this time.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Martin Luna, Esq.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
www.chprmaui.com

ALAN M. ARAKAWA  
Mayor



DEPARTMENT OF WATER SUPPLY

COUNTY OF MAUI  
200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
www.mauiwater.org

July 20, 2011

Mr. Glen Tadaki  
Chris Hart and Partners  
115 N. Market Street  
Wailuku, Hawaii 96793

Re: LD.: Early Consultation for the Preparation of a Draft EA  
T.M.K. (2) 3-8-008: por. 019  
Project Name: Pu'uene Heavy Industrial Subdivision

Dear Mr. Tadaki:

Thank you for the opportunity to comment on this EA early consultation.

Source Availability and Consumption

The proposed project's water system will be private. Anticipated water use is approximately 127,456 gpd, based on Department of Water Supply (DWS) system standards; however, in the event DWS water is needed, there is currently no additional source available according to system standards on the Central Maui System. Should meters be needed, the DWS may delay issuing them until new sources are on line.

System Infrastructure

The project site is not currently served by the DWS system. The nearest DWS waterline is an 8-inch line approximately 4,000 feet to the northwest, and the next closest line is a 6-inch line approximately 4,060 feet to the west. The proposed private water system will consist of separate potable and irrigation/fire protection systems. The applicant will be required to provide fire protection service according to system standards, certified by the stamp of a professional engineer or architect.

Kahului and Pala Aquifers Pollution Prevention

This project overlies Kahului and Pala aquifers. One potential type of tenant, junk/scraps/salvage yards, are considered to have high contamination potential for groundwater resources. Potential contaminants include: Barium, Benomyl, Benzene, Boric Acid, Chlorpyrifos, Chromated Copper Arsenite, Copper, Dieldrin, 1,2-Dichloroethylene, Diquat, Diazinon, Epoxy, Ethylene Glycol, Glyphosate, Isopropanol, Lead, Manganese, Nickel, Nitric Acid, Nitrosamine, Polychlorinated Biphenyls, Phosphates, Sulfate, Simazine, Trichloroethylene or TCE, 1,1,2,2-Tetrachloroethane, or Perchloroethylene (Perc), Tin, and Waste oils.

"By Water All Things Find Life"

DAVID TAYLOR, P.E.  
Director

PAUL J. MEYER  
Deputy Director

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JUL 27 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

Chris Hart 10/05/10  
w/ attachment

Mr. Glen Tadaki  
Page 2

In order to better ensure protection of potentially affected aquifers, please refer to the following attached BMP documents including recommended measures for implementation: 1) *Summary of Best Management Practices for Trucking & Towing Baseyards*; and 2) *Auto wrecking Best Management Practices*. We recommend implementing the following BMPs during project construction.

1. Evaluate the site for the best grading method that will create the least amount of debris and sediment loss.
2. Minimize disturbance to the smallest area possible.
3. Retain natural ground cover until the last possible date. Stabilize denuded areas by sodding or planting native species as soon as possible. Use high seeding rates to ensure rapid stand establishment.
4. Use appropriate methods to minimize soil erosion and trap sediments.
5. Avoid fertilizers and biocides, or apply only during periods of low rainfall to minimize chemical run-off.
6. Keep run-off on site.

Conservation

To alleviate demand on the Central Maui system, and for landscaping suggestions, please refer to the following attachments: 3) *A Checklist of Water Conservation Ideas for Industrial and Large Landscapes*; and 4) our draft planning brochure, "Saving Water in the Yard-What and How to Plant in your Area." We also recommend that the applicant implement the following conservation measures, where appropriate:

1. Use Brackish or Reclaimed Water for irrigation and dust control during construction/demolition where available. Reclaimed water is available at the Kahului Sewage Treatment Plant.
2. Use Climate-adapted Plants: We recommend using native climate-adapted plants for landscaping. Native plants adapted to the area conserve water and protect the watershed from degradation due to invasive alien species. The project is located in Plant Zone 3 (see attached planning brochure).
3. Prevent Over-Watering By Automated Systems: If an automated watering system will be used, provide rain-sensors on all automated irrigation controllers. Check and reset controllers at least once a month to reflect the monthly changes in evapo-transpiration rates at the site. As an alternative, provide the more automated, soil-moisture sensors on controllers.
4. Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets, and hose bibs. Water conserving washing machines, ice-makers and other units are also available. Toilets should be high-efficiency models that use 1.28 gallons per flush or less. Urinals should be high-efficiency models that use 0.5 gallons per flush or less. Showerheads, if any, should have a flow rate of 2 gpm at 60 psi or less in all units.

## Summary of Best Management Practices for Trucking & Towing Baseyards

**GOAL:** Often large quantities of hazardous materials are handled on baseyards. These include transmission, power steering, hydraulic and brake fluids, as well as fuel, oil, antifreeze, refrigerants, mercury, lead, sulphuric acid and solvents. These may be indiscriminately distributed all over the recycling yards causing extensive non-point source pollution of groundwater and surface runoff water. These BMPs attempt to consolidate, contain and collect these diffuse sources into manageable point sources which can be treated.

- Bathroom sink faucets with fixtures should not exceed 1 gpm at 60 psi, and more efficient models are available.
- 5. Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. The applicant should establish a regular maintenance program.
- 6. Consider *submetering* or *individual metering*: research into water use efficiency indicates that one of the most effective conservation measures is metering. Although the applicant does not propose to use county water, individual meters or submeters may be a useful tool for minimizing unnecessary consumption.

Should you have any questions, please contact our Water Resources and Planning Division at 244-8550.

Sincerely,

  
David Taylor, Director  
bab

cc: Engineering Division

Attachments:

1. Summary of Best Management Practices for Trucking & Towing Baseyards
2. Autowrecking Best Management Practices
3. A Checklist of Water Conservation Ideas for Industrial and Large Landscapes
4. Plant Brochure: "Saving Water in the Yard-What and How to Plant in your Area"

### REQUIRED BEST MANAGEMENT PRACTICES:

- Assign at least one person to be specifically responsible for pollution prevention and clean up. Provide training to staff regarding the importance of pollution prevention and dealing with pollution as it occurs.
- Do not store leaking vehicles in the receiving area; move them to the dismantling area immediately or put drip pans under them. Use pumps to transfer toxic fluids.
- Remove all fluids, batteries, mercury switches, radiators, un-deployed air-bags, refrigerants, fuel tanks, tires, lead battery cables and lead tire balancing weights before crushing. Collect and recycle used antifreeze, oil, tires and batteries. Crimp lines or use special plastic plugs to close off all cut fluid lines to prevent drips and leaks. Remove and drain oil and fuel filters. Stand used oil filters in a drip pan for at least a day to drain. Use oil adsorbent to clean up spills. Collect the drained oil in proper containers for recycling. Recycle the metal parts of the oil filter after it is drained.
- Clean up all spills and leaks anywhere on the site immediately with appropriate adsorbent and deal with the waste properly to prevent contaminating the ground or surface runoff water. When spills do occur, dry cleanup methods shall be used.
- Areas where leaks may occur or fluids are stored are to be roofed to prevent stormwater flooding of the containment area. The containment area shall be raised above ground level so that storm runoff does not spill over the berm and overwhelm the collection sumps. Provide areas where leaks may occur or fluids are stored with impervious pavement, berms, curbs or other means of spill containment; use spill control equipment and connect to spill collection sumps. Construct dikes or berms capable of holding 25% of the total stored fluids volume, or 110% of the largest container, to contain spills. Maintain all sumps, drip pans and fluid containment structures regularly and properly empty sludge and accumulated fluids.
- Use unbreakable, inert storage containers with sealed lids, and label each container to store solvents, lead, lead-acid batteries, mercury switches, oil filters, lead weights and battery cables and sodium azide air-bag propellants. Mercury must be stored in a tightly sealed container since it is volatile and highly toxic. Store batteries upright and stack them no more than 5 high.
- Provide fluid storage containers with level indicators on them. Store oily rags in a fire-proof container with a lid and in a separate location. Store fuels and other highly inflammable fluids in a separate area.
- Provide steam cleaning or pressure washing facilities with zero-discharge recycling systems equipped with oil/water separators. Provide parts cleaning areas with walls or curtains to prevent spray drift.

REFERENCE: <http://www.naims.org/bcise/bmphiome.html>

## AUTO WRECKING BEST MANAGEMENT PRACTICES (BMP's)

LAND USE TYPE: Commercial/Industrial

LAND USE: Auto wrecking

**CONCERN:** Distribution of hydraulic and brake fluids, fuel, oil, antifreeze, refrigerants, mercury, lead, sulphuric acid and solvents.

**GOAL:** Contain and collect diffuse pollutant sources into manageable point sources to be treated.

**SUGGESTED PRACTICES:** Recycling automobiles involves handling large quantities of often hazardous materials including transmission, power steering, hydraulic and brake fluids, fuel, oil, antifreeze, refrigerants, mercury, lead, sulphuric acid and solvents. These tend, at present, to be indiscriminately distributed all over the recycling yards causing extensive non-point source pollution of groundwater and surface runoff water. These BMP's attempt to consolidate, contain and collect these diffuse sources into manageable point sources which can be treated.

Concrete or asphalt pads may not be impervious surfaces since they tend to crack with age unless they are installed on a packed, built up, graveled base. For this reason a steel tray may be better in some locations, especially where it is a retrofit installation. Oil, antifreeze, tires and the plastic, lead and acid from batteries can all be recycled, reused or incorporated into new products.

### Site Layout

For efficiency, and to prevent contamination of areas not specifically designed for certain activities, the recycling site should be segregated into specific areas especially equipped for vehicle receiving, holding, dismantling, cleaning, inventory flow, parts storage, core storage, fuel storage, special waste storage, crushing, sales, shipping, receiving and the office. There should be a logical relationship between these areas so that an incoming vehicle and its parts flow smoothly and as efficiently as possible from area to area and eventually out of the site as crushed hulks for scrap metal.

### Vehicle Receiving

This is where incoming vehicles are stored temporarily prior to dismantling or transfer to the hulk storage area; this should be relatively short term storage to deal with vehicles arriving in batches faster than they can be dismantled. Incoming vehicles are often damaged and leaking fluids.

### Vehicle Dismantling

This is where vehicles are dismantled which involves draining all the fluids some of which will spill and must be contained.

### Special Wastes

There are some components of vehicles which pose special hazards and must be stored securely until disposed of. These include switches with mercury in them, air-bags with sodium azide propellants, lead-acid batteries, tires and oily rags.

**Parts Cleaning**  
This involves manual removal of heavy grease and oil followed by solvent-based, steam-cleaning or pressure washing of parts before they are stored for sale.

**Fluid Storage**  
Fluids include, but are not restricted to, gasoline, diesel fuel, motor oil, transmission oil, power steering fluid, brake fluid, hydraulic fluid, differential fluid, antifreeze, windshield washer fluid, refrigerants, battery acid, cleaning solvents and contaminated water. Some of these are reused, some are special waste and some are wasted.

**Hulk Storage**  
This is where the car body is stored once all fluids have been drained, mercury switches and batteries removed, core and valuable parts have been removed and there is no more possibility of toxic contaminants reaching the ground. The hulk is stored until body and frame members are needed for sale or the hulk is crushed and sold as scrap. It must be clean and free of fluids and toxic materials at this point and therefore a gravel pad in the open is adequate.

### Vehicle Crusher

All fluids must be removed before crushing but there will always be some residuals which will be released upon crushing.

### Storage of the Core and Liquid containing Parts

Core parts are parts that can be remanufactured or rebuilt and thus always have intrinsic value unless seriously damaged. These parts are removed and stored prior to being sold and will usually contain fluids and lubricants.

### Storage of Parts for Sale

These are parts for sale directly to customers as opposed to parts for sale to remanufacturers, and may have a lengthy shelf life. They may also have fluids in them.

Best management practices for the auto industry, specific to auto wreckers, include such actions as:  
-Cleaning up all spills and leaks anywhere on the site immediately with appropriate adsorbent and dealing with the waste properly to prevent contaminating the ground or surface runoff water.

-Training provided to staff with regard to the importance of pollution prevention and how to recognize and deal with pollution as it occurs.

-Assigning at least one person at each site as specifically responsible for pollution prevention and clean up.

-Maintaining all sumps, drip pans and fluid containment structures regularly and emptying sludge and accumulated fluids.

-Providing areas where leaks may occur or fluids are stored with impervious pavement, berms, curbs or other means of spill containment, equipped with spill control equipment and connected to spill collection sumps.

-Roofing areas where leaks may occur or fluids are stored to prevent stormwater flooding of

the containment area, which should be raised above ground level such that storm runoff does not spill over the berm and overwhelm the collection sumps.

- Sweeping all floors before washing them and sweeping away from gutters and catch basins.
- Using oil adsorbent to clean up spills and picking up adsorbent as soon as possible before tracking the waste around.
- Keeping storage time in the receiving area to a minimum and moving vehicles to the dismantling area and draining fluids as soon as possible.
- Avoiding storage of leaking vehicles in the receiving area, moving them to the dismantling area immediately or putting drip pans under them.
- Crimping lines, or using special plastic plugs, to close off all cut fluid lines to prevent drips and leaks.
- Having refrigerants removed by licensed contractors with the proper equipment to prevent any leakage to the atmosphere.
- Removing all refrigerants with approved equipment which allows no losses and recycling all refrigerants with appropriate reclamation agencies.
- Removing and draining oil and fuel filters.
- Standing used oil filters in a drip pan for at least a day to drain; to facilitate draining puncture the dome end or the antidrains back valve to break the vacuum.
- Collecting the drained oil in proper containers for recycling.
- Recycling the metal parts of the oil filter after it is drained.
- Collecting and recycling used antifreeze.
- Using pumps to transfer fluids like gasoline rather than pouring from open trays and pans.
- Using unbreakable, inert storage containers with sealed lids and label each container to store lead-acid batteries, mercury switches, oil filters, lead weights and battery cables and sodium azide air-bag propellants; mercury, especially, must be stored in a tightly sealed container since it is volatile and highly toxic storing batteries upright and stacking them no more than 5 high.
- Collecting and recycling old batteries.
- Avoiding storage of lead in a moist atmosphere for an extended period of time.
- Storing oily rags in a fire-proof container with a lid and in a separate location where there will be no fire hazard.
- Storing small quantities of tires in a fashion and location approved by the local fire inspector.
- Collecting and recycling old tires.
- Providing parts cleaning areas with walls or curtains to prevent spray drift.
- Providing steam cleaning or pressure washing facilities with zero-discharge recycling systems equipped with oil/water separators.
- Using parts cleaning solvents as little as possible.
- Keeping solvents in closed containers.
- Considering changing to non-petroleum-based solvent cleaning methods such as terpene based solvents or alkaline detergents in ultra sonic tanks, heated dip tanks, agitating tanks or jet spray washers.
- Avoiding discharge of the waste water to municipal sewers due to the pre-treatment costs of cleaning the water before it meets discharge regulations.
- Avoiding use of underground storage tanks; these lead to very expensive clean up costs when they eventually corrode and leak causing extensive ground and water pollution.

- Using unbreakable, inert, fluid storage containers with sealed lids, labeling each container and using double-walled containers or secondary containment for large quantities of fluids.
- Constructing dikes or berms capable of holding 25% of the total stored fluids volume, or 110% of the largest container, to contain spills; generally more smaller tanks are more economical and safer than one large one.
- Storing fuels and other highly inflammable fluids in a separate area to meet local fire department regulations.
- Providing fluid storage containers with level indicators on them to prevent overfilling and spillage.
- Avoiding the stacking of waste fluid containers.
- Removing all fluids, batteries, mercury switches, radiators, un-deployed air-bags, refrigerants, fuel tanks, tires, lead battery cables and lead tire balancing weights before crushing.

REFERENCE: <http://www.nalms.org/bc/iss/bmp/home.html>

# A Checklist of Water Conservation Ideas For



*This checklist provides water conservation tips successfully implemented by industrial and commercial users. This list has been revised from the original copy first published and distributed by the Los Angeles Department of Water and Power and the Water Efficiency Manual by the North Carolina Department of Environment and Natural Resources.*

## → START A WATER CONSERVATION PROGRAM

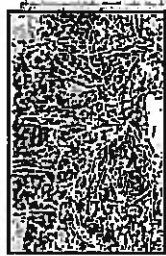
- Increase employee awareness of water conservation.
- Install signs encouraging water conservation in employee and customer restrooms.
- When cleaning with water is necessary, use budgeted amounts.
- Read water meter weekly to monitor success of water conservation efforts.
- Assign an employee to monitor water use and waste.
- Seek employee suggestions on water conservation, put suggestion boxes in prominent areas.
- Determine the quantity and purpose of water being used.
- Determine other methods of water conservation.
- Conduct contests for employees (e.g., posters, slogans, or conservation ideas).

## → PLANNING AND DESIGN

- Consider the following:
  - Physical conditions (drainage, soil type, sun/shade etc.) and the use of the site (foot traffic, recreation, viewing, etc.)

- Creating shade areas, which can be 20 degrees cooler than non-shaded areas, decreasing evaporation.

- Grass areas only where needed; avoid small areas under 10 feet wide.
- Permeable materials such as porous concrete or permeable paving methods.
- Grading and directing surface run-off and rainfall gutters to landscaped areas as opposed to drainageways that exit the property.



- Incorporate high water demanding plants at the bottom of slopes, and maintain the use of existing trees, plants, and wildlife in the area during planning.
- Minimize the use of impermeable surfaces to lessen runoff and resulting stormwater pollution.
- Identify water source points.
- Develop a schematic of all water entry points (know where your faucets, time clocks, solenoids, booster pumps, sprinklers and bubblers are located).

- Identify capacity of each water-carrying unit and frequency of use.
- Determine specific use for each entry source.

## → ANALYZE AND IMPROVE SOIL CONDITIONS

- Test the soil quality, nutrients and absorptive capacity, and then select plants based on findings. Adjust the pH level if necessary.
- Use organic matter (compost, mulch or manure) to increase the soil's water holding capacity. This helps improve water distribution and lowers levels of evaporation.
- When improving the soil of a given area, remember to treat a larger area around the planting to allow ample space for root systems.
- Prevent heavy construction equipment from compacting soil in areas around trees or other sensitive habitats.

## → PLANT SELECTION

- Choose native, climate-appropriate species.
- Consider plants' water demand, pest tolerance, soil nutrient and drainage requirements.

## → INTERIOR AREAS

- Discontinue continuous flow.
- Use ponded water where available.
- Adjust flows to reduce discharge of water.



- Install water-saving devices to decrease water consumption - restrooms (toilet dams and flappers), faucets (aerators), cooling systems.

- Retrofit toilets with high efficiency models that use 1.28 gallons per flush or less.

- Retrofit urinals with high efficiency models that use 0.5 gallons per flush.
- Install showerheads with a flow rate of 1.5 gpm at 60 psi or less in all units.
- Retrofit bathroom sink faucets with fixtures that do not exceed 1 gpm at 60 psi.
- Use recycling systems for chillers and cooling towers.
- Consider installing energy-and-water-efficient air conditioning equipment.

## → MAINTENANCE PROCEDURES

- Sweep materials from floor instead of washing down, whenever possible.
- Instruct clean-up crews to use less water where appropriate.
- Check water supply system for leaks.
- Repair dripping faucets and continuously-running or leaking toilets.

## → DESIGN CRITERIA FOR TURF AND LANDSCAPE AREAS

- Contact the Department of Water Resources or your local water supplier about possible landscape water auditor classes for managers.
- Hire a landscape architect with water conservation and xenscape experience.
- Use turf only where actually necessary. Immediate picnic areas/outside lunch areas and gold course target areas (greens, tees, landing areas).
- Turfgrass should be cut to the maximum recommended height for its type (generally a minimum of two inches to a maximum of four inches) for most efficient water use.
- Use only low-water use plant material in non-turf areas.



**Maui County's Landscape  
and  
Gardening Handbook**



**Water Conservation  
in the Landscape**

Department of Water Supply  
200 South High Street  
Wailuku HI 96793  
[www.mauliwater.org](http://www.mauliwater.org)

*By Water All Things Find Life*

**Three Reasons to Xeriscape  
Saves Water  
Saves Time  
Saves Money**



Department of Water Supply  
200 South High Street  
Wailuku HI 96793  
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*By Water All Things Find Life*

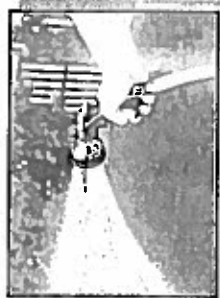
- o Drip irrigation and microsprays place water at the base of the plant. This reduces evaporation and saves water by not soaking the entire ground surface. This works for trees, shrubs, and groundcovers.



- o Use automatic irrigation systems monitored by moisture probes (i.e. tensiometer sj, and rain shut-off devices to cut power off during rain.
- o Design dual watering systems with sprinklers for turf and low-volume irrigation for plants, trees, and shrubs. Operate sprinkler system before sunrise and after sunset. Amount of irrigation can be determined by the evapotranspiration rate, which DWR can help you determine.
- o Use property-treated waste water for irrigation where available.

#### ➔ EXTERIOR AREAS

- o Regular aeration of clay soils will improve water holding capabilities and prevent runoff.
- o Discontinue using water to clean sidewalks, tennis courts, pool decks, driveways, and parking lots.
- o Make sure irrigation water does not run onto streets or into alleys. Adjust sprinklers to water only plants and not sidewalks or roads.
- o Use the same size nozzle when replacement is needed. Sprinklers should be replaced with the same brand of sprinklers. Spray heads are aligned with grade.



- o Replace worn spray nozzles.
- o Regulate pressure properly for system demands.

- o Make sure rotors or spray heads are mounted correctly. Replace with proper unit for the job.
- o Post a current controller schedule inside the door of the controller.
- o Check for leaking valves.
- o Adjust the operating time (run times) of the sprinklers to meet appropriate seasonal or monthly requirements.
- o Check plant leaves and take soil samples to confirm proper system functioning.
- o Look into alternative sources for irrigation water (i.e. the use of wells as opposed to city water, condensate, storm water retention ponds, or cisterns, non-contact cooling water).
- o Use dedicated water meters to monitor landscaping water use.
- o Have a catchment/distribution uniformity test performed on-site to determine how evenly water is applied when sprinklers are in use.

*For more information, contact*  
**Maul County Department of Water Supply**  
**Water Resources and Planning Division**  
 59 Kanoa Street Wailuku, HI 96793  
 Telephone: (808) 244-8550  
 FAX: (808) 244-6701

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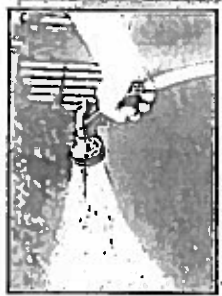
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*For more information, contact*  
**Maul County Department of Water Supply**  
**Water Resources and Planning Division**  
 59 Kanoa Street Wailuku, HI 96793  
 Telephone: (808) 244-8550  
 FAX: (808) 244-6701



Landscape Architecture  
City & Regional Planning  
September 26, 2011

Mr. David Taylor, P.E., Director  
Maui Dept. of Water Supply  
200 S. High Street  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'uhene Heavy Industrial Subdivision; TMK (2) 3-4-008:019

Dear Mr. Taylor,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 20, 2011.

**Source Availability and Consumption.** The private water system for the proposed project will be developed in accordance with Department of Health requirements for potable water systems. Notwithstanding this, the land owner understands that no additional source is currently available if water from the County system is needed and that the issuance of water meters (if needed) may be delayed until new sources are brought on line.

**System Infrastructure.** Fire protection service for the proposed project will be provided in accordance with system standards and certified by a professional engineer or architect.

**Pollution Prevention.** To minimize infiltration and runoff from industrial operations, Best Management Practices, including those mentioned in your letter, will be considered and appropriate measures implemented.

**Conservation.** Water conservation measures, such as those identified in your letter, will be evaluated during the project's detailed design and engineering phase and appropriate measures will be implemented.

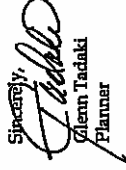
115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chipmouli.com](http://www.chipmouli.com)

Proposed Pu'uhene Heavy Industrial Subdivision  
TMK (2) 3-4-008:019  
September 26, 2011  
Page 2

Copies of your letter have been provided to the appropriate project consultants for their information and consideration.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafollette, PRL  
Tom Nance, TNWRB  
Stacy Oloro, P.E.  
Martin Lane, Esq.

ALAN M. ARAKAWA  
Mayor  
WILLIAM R. SPENCE  
Director  
MICHELE CHOUTEAU McLEAN  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PLANNING

July 25, 2011

RECEIVED  
JUL 26 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn  
10/056

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

**SUBJECT: REQUEST FOR COMMENT ON EARLY CONSULTATION FOR THE PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED PU'UNENE HEAVY INDUSTRIAL SUBDIVISION LOCATED IN THE VICINITY OF THE OLD PU'UNENE AIRPORT, MAUI, HAWAII; TMK: (2) 3-8-008-019 (RFC 2011/0103)**

The Department of Planning (Department) is in receipt of the above-referenced document for the proposed Pu'unene Heavy Industrial Subdivision. The Department understands the proposed action includes the following:

- The Applicant is the CMBY 2011 Investment, LLC with Chris Hart & Partners, Inc. acting as the Applicant's Consultant;
- The Applicant is proposing to subdivide an 86-acre vacant and undeveloped site adjacent to the Old Pu'unene Airport into 28 fee-simple, heavy industrial lots ranging from 0.63 acre to 13.41 acres in size;
- The proposed project is located adjacent to Project District 10 (Old Pu'unene Airport area - 561 acres) as outlined in the Kihai-Makana Community Plan dated March 6, 1998;
- The proposed project is located within the Proposed Urban Growth Boundary for the DRAFT Maui Island Plan;
- The proposed project will require the Applicant to seek a District Boundary Amendment (from the State Agricultural to the State Urban District) from the State of Hawaii Land Use Commission, a Kihai-Makana Community Plan Amendment (from Agricultural to Heavy Industrial) from the County of Maui, and a Change in Zoning (from Agricultural to M-2 or M-3, Heavy Industrial) from the County of Maui;

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
MAIN LINE (808) 270-7735; FACSIMILE (808) 270-7634  
CURRENT DIVISION (HRA) 270-8205; LONG RANGE DIVISION (808) 270-7214; ZONING DIVISION (808) 270-7253

Mr. Glenn Tadaki, Planner  
July 25, 2011  
Page 2

- As the proposed project will involve a County of Maui Community Plan Amendment and the use of State of Hawaii lands (Kama'aina Road and a 26-foot wide strip of land across three adjacent State parcels), an EA must be prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR); and
  - The Accepting Authority of the EA will be the State Land Use Commission.
- Based on the foregoing, the Department provides the following comments with regards to the scope of work for the proposed Pu'unene Heavy Industrial Subdivision and related District Boundary Amendment, Community Plan Amendment, and Change in Zoning:

1. Clearly outline on all exhibits and charts the project area in relation to the Proposed Urban Growth Boundary for the Draft Maui Island Plan;
2. Explain in detail in a tabular form, the proposed actions and responsibilities of the Applicant to complete such actions such as an internal subdivision road, private water system, private wastewater system, on-site drainage system, landscape plantings, communications and power connections, etc. as compared to the responsibility of each individual future lot owner; provide a time-line for project development outlining each infrastructure action step and who is responsible for such action, e.g., when will project site and individual lot drainage and roadways be completed and who will be responsible, and
3. Outline road, infrastructure, landscape, and design connections of the proposed project to the overall Pu'unene Master Plan including the proposed Maui Regional Public Safety Complex, the proposed public park, the proposed public event space, the Motocross site, etc.

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt of the Department's Current Division at [kurt.wollenhaupt@mauicounty.gov](mailto:kurt.wollenhaupt@mauicounty.gov) or at (808) 270-1789 or Planning Supervisor David Yamashita of the Department's Long Range Division at [david.yamashita@mauicounty.gov](mailto:david.yamashita@mauicounty.gov) or at (808) 270-8290.

Sincerely,

WILLIAM SPENCE  
PLANNING DIRECTOR

Mr. Glenn Tadaki, Planner  
July 25, 2011  
Page 3

cc: Clayton I. Yoshida, AICP, Planning Program Administrator  
Aaron H. Shimoto, PE, Planning Program Administrator (2)  
John F. Summers, Planning Program Administrator  
Kurt F. Wollhaupt, Staff Planner  
David Yamashita, Planning Supervisor  
Project File  
General File

WRS:KFV:sa  
K:\WP\_DOCS\PLANNING\RFC\2011\0103\_Puunene Heavy Industrial Subdivision\PuuneneSubCommandLetter.DOC

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Landscape Architecture  
City & Regional Planning  
September 20, 2011

Mr. William Spence, Director  
Maui Dept. of Planning  
250 S. High Street  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'uunene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Spence,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 25, 2011.

1. The subject parcel's location within the proposed Urban Growth Boundary for the (draft) Maui Island Plan will be shown in the Figures for the Draft EA.
2. The subdivision improvements that will be the responsibility of the land owner will be identified in the Draft EA, as well as the future lot owners' responsibilities for the separate development of their lots.

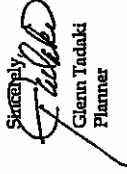
The process of obtaining all the necessary land use entitlements for the subject parcel could take two to three years. After completing this process, the land owner plans to subdivide the property and create the heavy industrial subdivision. It is important to note that the actual number and size of the subdivision's lots, and the timeframe for filing the application for subdivision approval, will be heavily influenced by prevailing market conditions at the time the land owner is ready to proceed. Given the extent of the entitlement process, as well as variable market factors and uncertain economic conditions in the future, a detailed schedule for the implementation of the future subdivision's various infrastructure systems cannot be discerned at this time.

Proposed Pu'uunene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 20, 2011  
Page 2

3. The Draft EA will discuss any pertinent infrastructure, landscape, and design connections between the proposed project and the Pu'uunene (Airport) Master Plan to the extent that current information about the Master Plan is readily available to the public.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc Blanca Lafolette, PRL  
Stacy Olomo, P.E.  
Martin Luna, Esq.



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
MAUI DISTRICT HEALTH OFFICE  
54 HIGH STREET  
WAILUKU, HAWAII 96793

LORETTA J. FURDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

LORREN W. PANK, M.D., M.P.H.  
DISTRICT HEALTH OFFICER

RECEIVED

JUL 27 2011

CHRIS HART & PARTNERS, INC.  
LANDSCAPE ARCHITECTS & SITES

cc: Glenn 1/10/11

July 26, 2011

Mr. Glenn Tudaki  
Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tudaki:

**Subject:** Early consultation for the Preparation of a Draft Environmental Assessment for the Proposed Pu'uenene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Thank you for the opportunity to review this project. We have the following comments to offer:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.
2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. The Indoor & Radiological Health Branch should be contacted at 808 586-4700.

It is strongly recommended that the Standard Comments found at the Department's website: <http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html> be reviewed, and any comments specifically applicable to this project should be adhered to.

Mr. Glenn Tudaki  
July 26, 2011  
Page 2

Should you have any questions, please call me at 808 984-8230 or E-mail me at [patricia.kitkowski@doh.hawaii.gov](mailto:patricia.kitkowski@doh.hawaii.gov).

Sincerely,

Patti Kitkowski  
District Environmental Health Program Chief

c BPO



**CHRIS  
HARTE**  
& PARTNERS, INC.

Landscape Architecture  
City & Regional Planning

September 7, 2011

Ms. Patti Kitkowski, Chief  
Maui District Health Office  
Hawaii's Dept. of Health  
54 High Street  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu'uone Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Ms. Kitkowski,

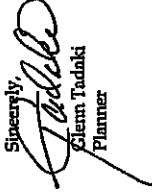
On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 26, 2011.

1. The proposed project will comply with applicable National Pollutant Discharge Elimination System (NPDES) permit requirements for construction activities.
2. Should noise from construction activities exceed the allowable daytime threshold (70 dBA) for industrial-zoned districts, the contractor shall obtain a Community Noise Permit from the Indoor and Radiological Health Branch pursuant to Chapter 11-46, HAR pertaining to "Community Noise Control".

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Proposed Pu'uone Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 7, 2011  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tuduaki  
Planner

cc: Bianca Lafolette, FRL  
Stacy Olomo, P.E.  
Yoichi Ebisu, P.E.  
Martin Luna, Esq.



PHONE (808) 594-1888



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

FAX (808) 594-1885

RECEIVED

AUG 11 2011

CHRIS HART & PARTNERS, INC.  
LANDSCAPE ARCHITECTURE AND PLANNING

*Cl. Glenn*

HRD1115837

*10/052*

July 27, 2011

Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, Hawaii 96793-171

Re: Pre-Draft Environmental Assessment Consultation  
Punaluene Heavy Industrial Subdivision  
Island of Maui

Aloha e Glenn Tadaki,

The Office of Hawaiian Affairs (OHA) is in receipt of your June 23, 2011 letter seeking comments ahead of a draft environmental assessment (DEA) which will be prepared to support the subdivision of an 86-acre tax map key (TMK) parcel into 28 fee-simple lots ranging in size from 0.63 acres to 13.41 acres in size and the development of a heavy industrial subdivision (project) in Kihui on the Island of Maui.

Based on the information contained within your letter, the project area is situated within the State Land Use Agricultural District and is currently designated for agricultural uses by County of Maui zoning and the Kihui-Makani Community Plan. The State Land Use Commission District Boundary Amendment (Agricultural to Urban), the subsequent County of Maui Change in Zoning (Agricultural to M-2 Heavy Industrial) and amendment to the Kihui-Makani Community Plan (Agricultural to Heavy Industrial) and the use of lands (Kama'aina Road) under the control of the State of Hawaii which are required to facilitate this project are all "triggers" which require preparation of this DEA pursuant to Chapter 343, Hawaii Revised Statutes.

The project area appears to be situated within a larger area which was subject to intensive sugarcane cultivation during historic and modern times and is currently surrounded by existing land uses which include the Maui Raceway Park, a Hawaiian Cement quarry, a Hawaiian Commercial & Sugar Company (HC&S) irrigation water reservoir and HC&S sugarcane fields.

Your letter indicates that the landowner of the 86-acre TMK parcel and project proponent, CMBY 2011 Investment, LLC only intends to only develop basic subdivision infrastructure and utilities with individual lot owners being responsible for their own improvements. The DEA should discuss whether uses which are allowable under M-2 Heavy

Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
July 27, 2011  
Page 2 of 2

Industrial County of Maui Zoning, but are declared "special uses" and require a use permit issued by the Maui County Council pursuant to §19.26.020(2B), Maui County Code are anticipated within the project. Should these "special uses" be anticipated, the DEA should then comprehensively discuss how project infrastructure (wastewater and onsite drainage systems) intend to contain chemicals and materials and prevent them from entering adjacent irrigation water systems or adversely impact the overall quality of the South Maui watershed (watershed) and groundwater.

OHA notes that the Kealia Pond National Wildlife Refuge (NWR) serves as a "settling basin" for the entire watershed and is subject to intermittent flooding during the winter months. It is possible, that any chemicals or pollutants which enter the watershed end up in the NWR adversely impacting native species and near shore marine water quality.

We look forward to reviewing the DEA and providing additional comments at that time. Please provide one electronic copy and one hardcopy of the DEA to OHA via: Compliance Program when it becomes available. Should you have any questions, please contact Keola Lindsey at 594-0244 or keola@oha.org.

'O wau iho no mc ka 'oia 'i'o,

*Clyde W. Nāmu'o*

Clyde W. Nāmu'o  
Chief Executive Officer

C: OHA- Maui COC



Landscape Architecture  
City & Regional Planning  
September 14, 2011

Mr. Clyde W. Namu`o, Chief Executive Officer  
Office of Hawaiian Affairs  
State of Hawaii`i  
711 Kapi`olani Blvd., Suite 500  
Honolulu, HI 96813

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu`uhene Heavy  
Industrial Subdivision; TMK (?) 3-8-008-019

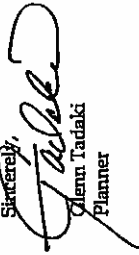
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Dear Mr. Namu`o,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 27, 2011.

The Draft EA will identify land uses that are permitted under existing M-2, Heavy Industrial zoning including those uses that are declared "special uses". While "special uses" are not anticipated at this time, the Draft EA will examine the potential effect of pollutants on adjacent and downstream properties and include a discussion of appropriate mitigation measures as warranted.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, FRL  
Stacy Oromo, P.E.  
Martin Luna, Esq.

115 N. Market Street, Wahi`uku, Maui, Hawaii 96793-1717 • Ph 808-242-1855 • Fax 808-242-1856  
[www.chipmaui.com](http://www.chipmaui.com)



ALAN M. ARAKAWA  
MAYOR

OUR REFERENCE  
YOUR REFERENCE

**POLICE DEPARTMENT**  
COUNTY OF MAUI

55 MAHALANI STREET  
WAILUKU, HAWAII 96793  
(808) 244-6400  
FAX (808) 244-6411

July 28, 2011



GARY A. YABUTA  
CHIEF OF POLICE  
CLAYTON N.Y.W. TOM  
DEPUTY CHIEF OF POLICE

**COPY**

TO : GARY YABUTA, CHIEF OF POLICE, COUNTY OF MAUI  
VIA : CHANNELS  
FROM : RONALD BENNETT, POLICE OFFICER, VISITOR ORIENTED POLICE  
SUBJECT : RESPONSE TO AN EARLY CONSULTATION REQUEST FOR:  
PROPOSED PU'UNENE HEAVY INDUSTRIAL SUBDIVISION;  
TMK (2) 3-8-008:019

This TO-FROM is submitted as a response to a request for early consultation comments by Chris Hart and Partners, Inc. Planner Glen Tadaki regarding:

SUBJECT : EARLY CONSULTATION REQUEST FOR THE PROPOSED  
PU'UNENE HEAVY INDUSTRIAL SUBDIVISION;  
TMK # : (2)3-8-008:019

*RESPONSE DE. BENNETT'S  
ASSESSMENT AND RECOMMENDATION  
DE. YABUTA'S  
07/29/11*

**RESPONSE:**

In regards to pedestrian and vehicular movement, the focus of this early consultation is based on the documents submitted regarding the proposed development. In review of the proposal and the pending request for property easements along Kamaaina road I would like to offer general safety concerns at this time and provide detailed suggestions upon the final Environmental Assessment draft.

In regards to public safety, a concern is at the entry/exit points of the property. At the entry/exit area, proper lighting and line of sight will be critical to vehicular and pedestrian safety.

Another area of concern is the portion of Kamaaina road where the access road into the proposed property would intersect. This area will also need proper lighting and line of sight distance. During a site visit it was noticed that vehicles traveling east to west on Kamaaina road (downhill) are required to stop at a posted stop sign, however the stop sign is very close to the sugar cane and will need to be further away from the cane to be more visible. This section of the roadway is also used by Hawaiian Cement trucks and HC&S vehicles. Some of these vehicles such as loaded Cement trucks and Cane hauling trucks are very large, heavy and require greater distances to stop.

Very truly yours,

*[Signature]*

Assistant Chief Victor K. Ramos  
for:  
Gary A. Yabuta  
Chief of Police

Enclosures

c: William Spence, Maui County Dept. of Planning

These general concerns are all I have to offer for the early consultation of the Draft Environmental Assessment.

I would like to reserve further comment for the final draft.

*See Appendix  
SUBJECT w/ COMMENTS  
[Signature]  
7/27/11*

*cc: Glen 10/05/11*

**RECEIVED**


AUG 02 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

Respectfully submitted,

  
Ofc. Ronald I. BENNETT 12177  
Visitor Oriented Police  
072611 @ 1100 Hours

RECOMMEND OFF. BENNETT'S  
CONCERNS BE TAKEN  
INTO CONSIDERATION.

  
7-27-11 @ 0445

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Landscape Architecture  
City & Regional Planning

September 27, 2011

Mr. Gary A. Yabuta, Chief  
Maui Police Department  
55 Mahalahi Street  
Wailuku, HI 96793

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision; TMK (2) 3-8-008-019

Dear Mr. Yabuta,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 28, 2011.

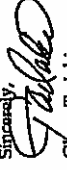
1. The land owner acknowledges that proper lighting and sight distances at the access points for the proposed project are important for vehicle and pedestrian safety.
2. The traffic study for the proposed project will include recommendations for maintaining site distances and the visibility of traffic control devices.

The number of heavy vehicles (e.g., cement trucks, cane haulers) was estimated and has been included in the analysis of the study intersections.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008-019  
September 27, 2011  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Phillip Rowell, P.E.  
Stacy Olomo, P.E.  
Martin Lama, Esq.



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

RECEIVED

AUG 04 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
CC: Glenn 10/05/11

August 3, 2011

Chris Hart & Partners, Inc.  
Attention: Mr. Glenn Tadaki  
115 N. Market Street  
Waialuku, HI 96793-1717

Dear Mr. Tadaki

SUBJECT: Proposed Puhonue Heavy Industrial Subdivision;  
TMK: (2) 3-8-008-019

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from (a) Engineering Division and (b) Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Darlene Nakamura at 587-0417. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosures



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809



WILLIAM L. REA, JR.  
GOVERNOR OF HAWAII

July 5, 2011

MEMORANDUM

TO:

- DLNR Agencies:
  - Div. of Aquatic Resources
  - Div. of Boating & Ocean Recreation
  - Engineering Division
  - Div. of Forestry & Wildlife
  - Div. of State Parks
  - Commission on Water Resource Management
  - Office of Conservation & Coastal Lands
  - Land Division - Maui District
  - Historic Preservation

FROM: Charlene Unoaki, Assistant Administrator  
SUBJECT: Proposed Puhonue Heavy Industrial Subdivision  
LOCATION: Island of Maui  
APPLICANT: Chris Hart & Partners on behalf of CMBY 2011 Investment, LLC

RECEIVED RECEIVED  
LAND DIVISION  
2011 JUL - 8 10 56 - 8 D 2 31  
DEPT. OF LAND AND NATURAL RESOURCES  
STATE OF HAWAII

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 26, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- ( ) We have no objections.
- ( ) We have no comments.
- (v) Comments are attached.

Signed:   
Date: 7/6/11



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

WILLIAM L. HUI, JR.  
GOVERNOR OF HAWAII  
COMMISSIONER OF LAND AND NATURAL RESOURCES

RECEIVED  
COMMISSION ON WATER  
RESOURCES  
2011 JUL -5 AH 10: 16

July 5, 2011

**MEMORANDUM**

**TO:**  
 DLNR Agendas:  
 Div. of Aquatic Resources  
 Div. of Boating & Ocean Recreation  
 Engineering Division  
 Div. of Forestry & Wildlife  
 Div. of State Parks  
 Commission on Water Resource Management  
 Office of Conservation & Coastal Lands  
 Land Division -Maui District  
 Historic Preservation

**FROM:** Charlene Unoki, Assistant Administrator  
**SUBJECT:** Proposed Puhiene Heavy Industrial Subdivision  
**LOCATION:** Island of Maui  
**APPLICANT:** Chris Hart & Partners on behalf of CMBY 2011 Investment, LLC

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 26, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: \_\_\_\_\_  
Date: \_\_\_\_\_

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/Charlene Unoki  
REC:Early Consultation/DEAP/maui-subdivision  
Maui-546

**COMMENTS**

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone \_\_\_\_\_
- Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The Flood Insurance Program does not have any regulations for developments within Flood Zone X.
- Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is \_\_\_\_\_
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Bisam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinances may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:  
 Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Su Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.  
 Mr. Carter Romero at (808) 961-8943 of the County of Hawaii, Department of Public Works.  
 Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.  
 Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.

- The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water services from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
Other: \_\_\_\_\_

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed:   
Date: 7/4/11  
Charlene Unoki, CHIEF ENGINEER

MAIL ROOM  
LAND DIVISION  
2011 JUL 11 A 9 42  
DEPT. OF LAND & NATURAL RESOURCES  
STATE OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96822

July 8, 2011

TO: Russell Tsuji, Administrator  
Land Division

FROM: William M. Tam, Deputy Director  
Commission on Water Resource Management

SUBJECT: Puemane Heavy Industrial Subdivision (2B lot) Draft EA Early Consult

FILE NO.: N/A  
TRK NO.: (2) 3-8-008-019

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the internet at <http://www.hawaii.gov/dlnr/cwrwm>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demands on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.eia.gov/energyefficiency/leed.php>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dlnr/development/leed.php>.

DRF-1A 06/19/2008

Russell Tsuji, Administrator  
Page 2  
July 8, 2011

- 6. We recommend the use of alternative water sources, whenever practicable.
- 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at [http://hawaii.gov/dlnr/cwrwm/resources\\_permits.htm](http://hawaii.gov/dlnr/cwrwm/resources_permits.htm).

- 8. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water.
- 9. A Well Construction Permit(s) is (are) required any well construction work begins.
- 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 11. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 12. Ground water withdrawals from this project may affect streamflows, which may require an in-stream flow standard amendment.
- 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 15. A Permit to Amend the Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER:

This 88-acre development proposal is located on the Maalea-facing slope of Haleakala at the end of the Haku Ditch and along Lower Kioi Road. It proposes to have a private water system. Existing well No. 4827-01 appears to be on this property; its status and any uses are unknown. The location overlaps the boundary between the Kahala and Palis Aquifer Systems; while sustainable yield for Kahala is far over subscribed due to high artificial recharge, the Palis Aquifer sustainable yield of 7 mgd is not artificially augmented in this location. The site is about 2000 feet downgradient from an unused Hawaiian Cement Well successfully pump-tested at 250 gpm.

If there are any questions, please contact Charley Co at 587-0218.

DRF-1A 06/19/2008





Landscape Architecture  
City & Regional Planning  
October 5, 2011

Mr. Russell S. Tsuji, Administrator  
Land Division  
Hawai'i Dept. of Land & Natural Resources  
1151 Punchbowl Street, Room 220  
Honolulu, HI 96809

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'uene Heavy Industrial Subdivision; TMK (2) 3-8-008-019

Dear Mr. Tsuji,

On behalf of the land owner, CMBY 2011 Investment LLC, we are responding to your letter dated August 3, 2011.

1. The land owner acknowledges that the subject parcel is located in Flood Zone "X", an area of minimal flood hazard.
2. Copies of the Draft EA will be furnished to the Departments of Water and Planning and information about the project can be incorporated into the County's Water Use and Development Plan.
3. The use of low-flow water fixtures (e.g., faucets, hose bibbs, showerheads, toilets) is required by Section 16.20.675 of the Maui County Code. Water conservation measures, such as those identified in your letter, will be evaluated during the project's design and engineering phase and appropriate measures will be included in the Covenants, Conditions and Restrictions for the project to ensure that future lot owners utilize water-efficient practices in their activities.
4. To minimize impacts from storm water runoff, the proposed project will comply with applicable regulatory requirements for storm water management. For example, Best Management Practices (BMPs) are required for all activities

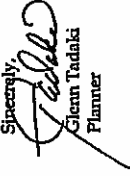
Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008-019  
October 5, 2011  
Page 2

involving grading, grubbing, and stockpiling activities pursuant to Chapter 20.08 of the Maui County Code (*Soil Erosion and Sedimentation Control*). In addition, National Pollutant Discharge Elimination System permits for general coverage stipulate BMPs for all discharges (storm water runoff) associated with construction activities, including clearing, grading, and excavation that results in the disturbance of one or more acres of total land area.

5. To the extent that it is feasible and such sources are available, the use of alternative water sources will be examined during the project's detailed design and engineering phase.
6. The Draft EA will include information about the source of drinking water for the proposed project.
7. The Draft EA will include a Groundwater Resource and Water System Assessment as well as information about existing Well No. 4927-01.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Otomo, P.E.  
Martin Luna, Esq.



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122, Box 50088  
Honolulu, Hawaii 96850



In Reply Refer To:  
2011-TA-0384

Mr. Glenn Tadaki  
Planner  
Chris Hart and Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793-1717

Subject: Technical Assistance for Proposed Punene Heavy Industrial Subdivision Project,  
Maui

AUG 03 2011

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AUG 05 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
C.C. GLEN 10/25/11

Mr. Glenn Tadaki

mainpilo (*Capparis sandwicensis*), larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nathoecetrum latifolium*). We recommend you have a qualified biologist survey the project area for the presence of tree tobacco or other host plants during the wettest portion of the year (usually November to April). If moth host plants are found on site, please coordinate with our office for further assistance.

- The threatened Newell's shearwater (*Puffinus newelli*) and endangered Hawaiian petrel (*Pterodroma sandwichensis*); collectively known as seabirds, may traverse the project area when flying between the ocean and mountain nesting sites during their breeding season (March through December). Artificial lighting, such as street lights and flood lights, can adversely impact seabirds by causing disorientation and collision with utility lines, buildings, fences, or vehicles. In addition, exhausted birds have been known to "fall out" and become grounded. Too weak to fly, these birds become vulnerable to depredation by feral predators such as dogs, cats, and mongoose. We recommend that all construction activities take place only during daytime hours to avoid incidence of seabird injury or fatality. It is also our recommendation that all lighting outdoor lighting be shielded with the bulb pointed directly at the ground. If feasible, motion sensor lights should be installed to further reduce ambient lighting.

We hope this information assists you in preparing a DEA. If you have any questions concerning the recommendations included in this letter, please contact Ian Bordenave, Fish and Wildlife Biologist, at (808) 792-9400 for further assistance.

Sincerely,

Amy Loyd Meinhoff  
Field Supervisor

Dear Mr. Tadaki:  
The U.S. Fish and Wildlife Service (Service) received your letter on July 5, 2011, requesting early coordination for the preparation of a draft Environmental Assessment (DEA) for the proposed Punene Heavy Industrial Subdivision on Maui. The approximately 86-acre proposed project site is located about 1.4 miles east of Mokuale Highway in the vicinity of the old Punene Airport. Access from Mokuale Highway to the site is provided by Kamaaina Road, a paved two lane road which also provides access to the nearby Hawaiian Cement quarry and surrounding agricultural fields. The proposed project includes subdivision of the parcel into 28 lots and construction of an internal road, water and wastewater system, electrical and telephone connections, and landscaping. This response is in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended [16 U.S.C. 1531 et seq].

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program, three protected species may be in the vicinity of the proposed project. Therefore, we recommend biological surveys be conducted for the following species and results of the surveys be included in the DEA.

- The endangered Hawaiian goose (*Branta sandwicensis*, nemo) has been observed in the vicinity of Mokuale Highway and Kamaaina Road. We recommend a biologist familiar with nest behavior survey the area prior to the initiation of any work to determine if nests are using this site for foraging, loafing or nesting. Furthermore, all on-site project personnel should be apprised that nests may be in the vicinity of the project any time during the year and nests should be avoided at all times.
- The endangered Blackburn's sphinx moth (*Manduca blackburni*) may breed and feed within the proposed project area. Adult moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), ilico (*Plumbago zeylanica*), and



Landscape Architecture  
City & Regional Planning  
September 14, 2011

Mr. Loyal Meinhoff, Field Supervisor  
Pacific Islands Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
300 Ala Moana Blvd., Room 3-122, Box 50088  
Honolulu, HI 96850

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft  
Environmental Assessment (EA) for the Proposed Pu'uene Heavy  
Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Meinhoff,

On behalf of the land owner, CMBY 2011 Investment LLC, we are responding to your letter dated August 3, 2011.

1. A biological survey has been conducted and will be included in the Draft EA. No native land birds (including the *neke*), were observed during the survey. As indicated in your letter, we understand that *neke* have been observed in the vicinity of Mokuale Highway and Kama'aina Road, and a biologist who is familiar with *neke* behavior should survey the area to determine if *neke* are using the site for foraging, loafing or nesting prior to the initiation of any work (your input regarding the exact number of days for such a survey would be appreciated). With regard to the foregoing, all onsite personnel will be informed that *neke* may be present in the area and should be avoided at all times.

2. A botanical survey was also conducted and will be included in the Draft EA. None of the plants that were observed during the survey is a rare or threatened species or a potential candidate for listing. Although a few small tree tobacco plants were observed, the survey area does not appear to be an optimum area for Blackburn Sphinx Moth host plants.

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
September 14, 2011  
Page 2

3. Exterior building, parking, and walkway lights will be appropriately shielded or directed downward to minimize impacts to seabirds (e.g., Newell shearwater, dark rumped petrel) which may become disoriented when traversing the project area.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc Blanca Lafolette, PRL  
Phil Bruner  
Maya LeGrande  
Martin Luna, Esq.



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
889 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5087

GLENN M. OKIMOTO  
DIRECTOR

Deputy Directors  
JANE T. BUTAV  
FORD M. FUCHSBAUM  
FRANK GRUENE  
JACQUE LINDSAY

EMERGENCY SERVICES TO:  
HWY-PS  
2,9145

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AUG 05 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn  
101056

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

**Subject:** Early Consultation, Draft Environmental Assessment  
Proposed Punahoa Heavy Industrial Subdivision, CMBY 2011 Investment, LLC  
Pulehimi, Wailuku, Maui, TWK. (2) 3-8-008: 019

Thank you for the opportunity to review the proposed subdivision of an 86 acre parcel, located to the east of the Old Punahoa Airport, into 28 lots of varying sizes, zoned for heavy industrial use, and to be sold in fee-simple. The project will provide an internal road, private water, private wastewater, and onsite drainage systems, landscaping, and connections for electrical and telephone service. Lot development will be the responsibility of the individual lot owners.

Access to the project will be over a easement from DLNR along Kamaaina Road, which connects to Mokuiele Highway, a State facility. The intersection of Kamaaina Road and Mokuiele Highway is signalized and channelized (on Mokuiele Highway) with left-turn lanes.

We have the following comments:

1. A traffic assessment must be prepared for our review and approval. The assessment should determine the trips generated by the project, and any other relevant existing and future developments and trip-generators in the area, and the impact of those trips on the intersection of Kamaaina Road and Mokuiele Highway and propose mitigation measures, as required. It should take into account ambient traffic from other existing uses that use Kamaaina Road.
2. Since there may be a possibility that some project traffic might use the Maui Raceway Park roadways as a shortcut to Mokuiele Highway, the assessment should have a discussion of measures to be taken to minimize that possibility.

Mr. Glenn Tadaki  
Page 2  
August 4, 2011

HWY-PS  
2,9145

If there are any questions, please contact Ken Taisuguchi, Engineering Program Manager, Highways Division, Planning Branch at (808) 587-1830.

Very truly yours,

GLENN M. OKIMOTO, P.L.D.  
Director of Transportation



**CHRIS  
HART  
& PARTNERS, INC.**  
Landscapes Architecture  
City & Regional Planning  
September 27, 2011

Mr. Glenn M. Okimoto, Ph.D., Director  
Hawai'i Dept. of Transportation  
869 Punchbowl Street  
Honolulu, HI 96813

**SUBJECT:** Early Consultation Comments for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pu'unene Heavy Industrial Subdivision; TMK (2) 3-8-008-019

Dear Mr. Okimoto,

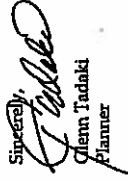
On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated August 4, 2011.

1. A traffic impact assessment report (TIAR) will be included in the Draft EA for the proposed project. The TIAR will contain traffic projections including traffic generated by all known projects in the north Kihikihi area, as well as traffic on Kama'aina Road associated with Hawaiian Cement's quarry operations. The TIAR will also include recommendations to mitigate any project-related traffic impacts at the intersection of Mokuale Highway and Kama'aina Road.
2. The TIAR will note that the proposed project will have no right of access to Maui Raceway Park roads and that the proposed drainage retention swale along the western boundary of the subject parcel precludes any traffic connection between the subject parcel and Maui Raceway Park.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008-019  
September 27, 2011  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, FRL  
Phillip Rowell, P.E.  
Stacy Obono, P.E.  
Martin Luna, Esq.



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Ref. No. P-13388

**RECEIVED**

August 31, 2011

SEP - 1 2011

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawai'i 96793-1717

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

*Glenn 101050*

NEL ABERCROMBIE  
GOVERNOR  
RICHARD C. LEE  
COMMISSIONER  
MARY ALLEN  
DIRECTOR  
JESSIE K. BOURG  
DIRECTOR  
OFFICE OF PLANNING

Telephone: (808) 847-2446  
Fax: (808) 847-2824

Dear Mr. Tadaki:

**Subject:** Early Consultation for Preparation of a Draft Environmental Assessment  
Proposed Pu'uene Heavy Industrial Subdivision  
CMBY 2011 Investments, LLC  
TMK (2) 3-8-008: 019  
Pulehuanui, Wailuku, Island of Maui

The Office of Planning (OP) appreciates the opportunity to provide comments for the preparation of an Environmental Assessment (EA) for the subject proposal, for which a petition will be filed to reclassify approximately 86 acres of land from the State Agricultural District to the State Urban District. We wish to inform you of the issues and criteria on which OP bases its review of petitions and their supporting environmental review documents.

OP represents the State as a mandatory party in district boundary amendment proceedings before the State Land Use Commission (LUC), pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), and Chapter 15-15, Hawai'i Administrative Rules (HAR). In this capacity, OP consults with State and other agencies and coordinates and prepares the State's position on petitions.

In developing its position, OP evaluates whether the project meets the LUC decision-making criteria in Section 205-17, HRS, as well as its conformance with the Coastal Zone Management objectives and policies in Section 205A-2, HRS. In addition, OP reviews proposals with respect to the State Administration's priorities in implementing the goals of the Hawai'i State Plan, Chapter 226, HRS. These priorities are set out in the Administration's New Day Comprehensive Plan, which is available at <http://hawaii.gov/about/a-new-day>.

We welcome early consultation with our Office to discuss how the draft EA and petition will address these issues and criteria—particularly areas of State concern in Section 205-17, HRS—and best practices that could or will be incorporated in the proposed project to address

Mr. Glenn Tadaki  
Page 2  
August 31, 2011

State priority guidelines for sustainability, enacted under Act 181 on July 5, 2011. A copy of Act 181 is enclosed for your convenience.

We strongly recommend that petitioners and preparers communicate with affected State agencies early in the preparation of a draft EA/EIS. In reviewing draft and final EA/EISs, OP looks for documentation of consultation with State agencies and any recommended or agreed-to mitigation related to impacted State programs and resources. It is particularly important to consult with the State Department of Transportation (DOT) regarding the preparation of any Traffic Impact Analysis Report (TIAR) that DOT will be reviewing and accepting, and the State Department of Agriculture when reclassifying agricultural lands, particularly agricultural lands with high productivity ratings.

Attachment A provides a list of issues based on LUC decision-making criteria, which OP examines in its review and are commonly raised in LUC deliberations on petitions for district boundary amendments. The draft EA should identify and discuss potential project impacts related to these issues, and provide recommendations for the avoidance, minimization, or mitigation of potential adverse impacts that may result from the project.

The following matters were noted in OP's preliminary scan of the proposed project and should be addressed in the draft and final EA.

- 1. Agricultural lands, uses, and infrastructure.** The project lands are immediately adjacent to agricultural lands and agricultural water infrastructure (reservoir and irrigation ditches). What is the potential for stormwater runoff and/or industrial spills or releases onto adjoining agricultural land uses or into irrigation waters, and how this will be avoided or mitigated? What is the potential for conflicts or interference with agricultural activity on adjoining lands?
- 2. Water resources.** Water resource demand from industrial users and the impact of industrial activities and potential discharges of industrial effluent on groundwater and surface water resources need to be addressed thoroughly.
- 3. Wastewater treatment and disposal.** The project proposes to use an "enhanced individual wastewater septic system." Selection of an appropriate system for industrial users who may need to dispose of industrial effluent is critical in terms of avoiding adverse impacts to ground and surface waters. Will the system serve individual lots or the 28 industrial lots, and how will compliance with State Department of Health rules for industrial effluent treatment and disposal be ensured?
- 4. Stormwater management and drainage.** How will runoff and potential industrial spills and releases into groundwater, surface waters, irrigation water

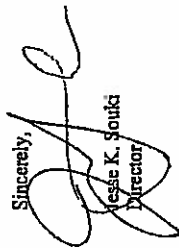
Mr. Glenn Todaki  
Page 3  
August 31, 2011

systems, and downstream waters be avoided, minimized, or mitigated? Will there be water quality treatment for stormwater and runoff? Who will be responsible for long-term maintenance of stormwater management systems?

5. Access easements. A timeframe for obtaining the access easements and a discussion of progress in acquiring the easements should be provided.

The Office of Planning looks forward to receiving the draft EA for the proposed project. If you have any questions or wish to schedule a meeting with our Office, please call Ruby Edwards in the Land Use Division at (808) 587-2817.

Sincerely,



Jesse K. Souki  
Director

Enclosures

c.: Ms. Bianca Lafollette, OMB 2011 Investment, LLC

Attachment A  
Issues of Concern in District Boundary Amendment Proceedings  
Based on LUC Decision-Making Criteria

The following issues are commonly discussed and analyzed for project proposals in petitions and their supporting environmental assessments (EAs) or environmental impact statements (EISs) prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS). This list reflects the range of issues the State Land Use Commission (LUC) must take into consideration in its decision-making under Chapter 205, HRS, and Chapter 15-15, Hawaii Administrative Rules (HAR). This list is not exhaustive or complete.

1. **Water Resources.** Groundwater and surface water resource protection and water quality are critical State issues. A thorough evaluation of these resources includes identifying and discussing: (a) estimated water demand by types of land use; (b) proposed potable and non-potable water sources to be used for the project and measures to reduce water demand and promote water reuse in the project; (c) whether the proposed project is within a designated Water Management Area; (d) the impact of the project on the sustainable yield and water quality of affected aquifers and surface water sources; (e) permits or other approvals required for proposed water source use; and (f) the consistency of the project and impact of the project in terms of proposed water use and system improvements and priorities contained in the County water use and development plan, prepared pursuant to the State Water Code, Chapter 174C, HRS.
  2. **Agricultural Lands.** Article XI, Section 3, of the Hawaii State Constitution provides that "[t]he State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency, and assure the availability of agriculturally suitable lands." Protecting agriculture is a policy objective in the Hawaii State Plan, Chapter 226, HRS, and in the State Administration's New Day Comprehensive Plan, which is available at <http://hawaii.gov/sow/about/newday>. Agricultural activity in the vicinity of the proposed project should be identified, and the impact of urban use or conversion of project lands on existing and future agricultural use and the viability of agricultural use of adjoining agricultural lands needs to be examined. Please discuss how the proposed project meets policy objectives to promote and protect agriculture, particularly in cases where the lands have high agricultural value.
  3. **Affordable Housing.** Increasing the supply of affordable housing is a critical State and County issue. Every County has an affordable housing policy and both the Hawaii State Plan, Chapter 226, HRS, and the State Administration's New Day Comprehensive Plan identify affordable housing as a policy priority. Please discuss specifically how the proposed project will meet State and County affordable housing policy objectives, to include a discussion of how the project's proposed residential product types will be allocated among the market and various affordable housing target populations, and the expected price ranges for the different product types.
  4. **Cultural, Archaeological, and Historic Resources.** If archaeological or historic properties or artifacts, including native Hawaiian burials, are identified in an archaeological inventory survey on the property, the EA/EIS should discuss how the petitioner has consulted with the State Historic Preservation Division (SHPD), what plans will be prepared to monitor or protect identified resources, and how the petitioner intends to comply with Chapter 6E, HRS, related to historic preservation. SHPD has information and guidance available at <http://hawaii.gov/dnr/hpd/hpnparts.htm>.
- The EA/EIS document should identify any cultural resources and cultural practices associated with the property, including visual landmarks, if applicable, and discuss the impact of the proposed project on identified cultural resources and practices as well as proposed mitigation measures. While a cultural impact assessment is not a content requirement for EAs under Chapter 343, HRS, the LUC is obligated under Article XII, Section 7 of the Hawaii State Constitution to protect the reasonable exercise of customarily and traditionally exercised native Hawaiian rights. Thus, the LUC requires information as to the presence of cultural resources and cultural practices associated





for Sustainable Building Design in Hawaii, and the Department of Health's, Health Community Design Smart Growth Checklist ([http://hawaii.gov/health/environmental/env\\_planning/landsusechecklist.pdf](http://hawaii.gov/health/environmental/env_planning/landsusechecklist.pdf)), and nationally, the U.S. Green Building Council's (U.S. GBC) Leadership in Energy and Environmental Design (LEED) rating systems, which offers guidelines and checklists for this purpose. Additional resources can be found at [http://hawaii.gov/dbest/top/land\\_use.htm](http://hawaii.gov/dbest/top/land_use.htm).

Development Timetable. The LJC requires that projects seeking reclassification be substantially completed within ten years or seek incremental approvals, pursuant to Section 15-15-50, H.A.R. The EA/EIS and/or petitioner should provide a schedule of development for each phase of the total project and a map showing the location and timing of each phase or increment of development. Regarding infrastructure (e.g., highway improvements), the petitioner should discuss how improvements will be completed to ensure that mitigation coincides with the impact created by the proposed project.

15.

11. **Conformance with County Plan Designations and Urban Growth or Rural Community Boundaries.** Act 26, Session Laws of Hawaii 2008, reaffirmed the Land Use Commission's duty to consider any proposed reclassification with respect to the Counties' adopted general, community, or development plans. If the proposed project is not consistent with the County plans or lies outside a County urban growth or rural community boundary, the EA/EIS should provide an analysis and discussion of the following:

- a. **Alternative Sites Considered.** Describe and discuss alternative sites that were considered for the project, and discuss why the project could not be accommodated on lands within the urban growth or rural community boundary, if the county plan delineates such boundaries, or on land already designated by the county for similar uses.
- b. **Impact on Surrounding Lands.** Discuss what the impacts of changing the county plan designation or extending the urban growth or rural community boundary would have on the surrounding lands.
- c. **Significant Public Benefit.** Discuss what, if any, public benefits are provided by the proposed project above that already required under existing approval and permitting requirements.

d. **Plan Amendment.** Provide a timeframe for application for and approval of any required plan amendment.

12. **Environmental Health Hazards.** The EA/EIS should discuss the potential for the project or project users to generate hazardous materials or release possible contaminants to the air, soil, or water, as well as measures to be taken to ensure that environmental and public health and safety will be protected during construction and after buildout. The EA/EIS should also identify and discuss any potential health and environmental threats that may be present due to site-specific contamination from past or current use. If contaminants of concern are identified for the project site, OP recommends that the petitioner consult with the State Department of Health's Hazard Evaluation and Emergency Response Office as to measures to be taken to address possible or actual contamination at the site.

13. **Solid Waste Management.** The EA/EIS should quantify the volume of solid waste likely to be generated by the project by types of users, and describe the impact the project will have on the County's existing and planned capacity for managing solid waste as represented in the County's solid waste management plan. The EA/EIS should discuss specific mitigation measures to be taken to reduce solid waste generation and ensure that recycling and reuse are incorporated within the project area by residential, commercial, and institutional users.

14. **Sustainability Analysis.** Sustainability and smart growth are themes that run through the Hawaii State Plan, Chapter 226, HRS, and the State Administration's New Day Comprehensive Plan. With the enactment of Act 181 on July 5, 2011 adopting new priority guidelines for sustainability in the Hawaii State Plan, OP will be reviewing proposed projects with respect to their adoption of sustainable building and development practices that will increase the sustainability of proposed projects and their long-term environmental, social, and economic benefits to Hawaii's residents and communities. OP encourages petitioners to use the EA/EIS process to identify and incorporate sustainable design and development practices, including green building practices, in the design, siting, and construction of proposed projects. To this end, we recommend that petitioners consider developing a sustainability plan that would guide the development and operation of projects to minimize the long-term resource impacts of proposed projects. Recent LJC petitions have included sustainability plans in support of their request for reclassification.

There are a growing number of resources available to develop a sustainability framework for proposed projects, including locally, the Office of Environmental Quality Control's, *Guidelines*

# A BILL FOR AN ACT

RELATING TO SUSTAINABILITY.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. During the 2005 Special Session, the  
 2 legislature adopted Act 8, Special Session Laws of Hawaii 2005  
 3 (Act 8), to create the Hawaii 2050 task force to review the  
 4 Hawaii state plan and the State's planning process. The office  
 5 of the auditor was required to prepare and submit to the  
 6 legislature the Hawaii 2050 sustainability plan. In enacting  
 7 Act 8, the legislature expressed its belief that government is  
 8 responsible for resolving daily and immediate issues and public  
 9 needs, while providing guidance to assure a sustainable future  
 10 and outlook.

11 The creation of the Hawaii 2050 sustainability plan comes  
 12 as the State faces a growing number of pressing issues,  
 13 including the steady deterioration of public infrastructure, the  
 14 lack of affordable housing, a continued reliance on a service-  
 15 based economy, the vulnerability of Hawaii in a volatile global  
 16 energy market, possible interruptions in travel and to critical  
 17 food supplies, threats to fragile island ecosystems, ever-  
 18 increasing numbers of residents, and an increasing number of

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1 visitors over the long term. These issues all raise questions  
 2 about the long-term limits of growth in the State and highlight  
 3 the need to begin planning and acting to assure Hawaii's future.  
 4 Clearly, a policy framework to establish sustainability as  
 5 a state priority and ensure a coordinated and coherent approach  
 6 to fulfilling the long-range vision for a sustainable Hawaii is  
 7 needed. The mission of the Hawaii 2050 task force and the  
 8 objectives of the Hawaii 2050 sustainability plan focus on the  
 9 revitalization of the State's long-term planning process to  
 10 better guide the future development of Hawaii. Addressing and  
 11 solving issues critical to Hawaii's way of life and natural  
 12 resources require coordinated community efforts to produce  
 13 comprehensive, long-range planning policies and actions.  
 14 In 2008, the legislature adopted Act 225, Session Laws of  
 15 Hawaii 2008 (Act 225), directing the University of Hawaii at  
 16 Manoa college of social sciences public policy center to review  
 17 the Hawaii 2050 sustainability plan and provide a definitive  
 18 framework for policy makers including defined data, data  
 19 sources, and benchmarks for each of the major goals.  
 20 The purpose of this Act is to establish sustainability as a  
 21 state priority by implementing the recommendation of the social  
 22 sciences public policy center to incorporate the Hawaii 2050

2011-2319 SB283 CD1 SMA.doc

1 sustainability plan definitions, guiding principles, and goals,  
2 into chapter 226, Hawaii Revised Statutes.

3 SECTION 2. Chapter 226, Hawaii Revised Statutes, is  
4 amended by adding a new section to part III to be appropriately  
5 designated and to read as follows:

6 "~~§226-~~ Sustainability. Priority guidelines and  
7 principles to promote sustainability shall include:

8 (1) Encouraging balanced economic, social, community, and  
9 environmental priorities.

10 (2) Encouraging planning that respects and promotes living  
11 within the natural resources and limits of the State;

12 (3) Promoting a diversified and dynamic economy;

13 (4) Encouraging respect for the host culture;

14 (5) Promoting decisions based on meeting the needs of the  
15 present without compromising the needs of future  
16 generations;

17 (6) Considering the principles of the ahupuaa system; and

18 (7) Emphasizing that everyone, including individuals,  
19 families, communities, businesses, and government, has  
20 the responsibility for achieving a sustainable  
21 Hawaii."

1 SECTION 3. Section 226-2, Hawaii Revised Statutes, is  
2 amended by adding three new definitions to be appropriately  
3 inserted and to read as follows:

4 "Ahupuaa" means a traditional native Hawaiian resource and  
5 behavioral management system that ensures respect for the air,  
6 land, water, and other scarce natural resources that make life  
7 sustainable from the mountains to the sea.

8 "Kanaka maoli" means native Hawaiians.

9 "Sustainability" means achieving the following:

10 (1) Respect of the culture, character, beauty, and history  
11 of the State's island communities;

12 (2) Striking a balance between economic, social,  
13 community, and environmental priorities; and

14 (3) Meeting the needs of the present without compromising  
15 the ability of future generations to meet their own  
16 needs."

17 SECTION 4. Section 226-102, Hawaii Revised Statutes, is  
18 amended to read as follows:

19 "§226-102 Overall direction. The State shall strive to  
20 improve the quality of life for Hawaii's present and future  
21 population through the pursuit of desirable courses of action in  
22 [state] six major areas of statewide concern which merit priority

- 1 attention: economic development, population growth and land
- 2 resource management, affordable housing, crime and criminal
- 3 justice, [ased] quality education[-], and principles of
- 4 sustainability."
- 5 SECTION 5. The university of Hawaii public policy center,
- 6 in consultation with the office of planning, shall submit a
- 7 status and progress report to the legislature no later than
- 8 December 21, 2011, that identifies the progress made in
- 9 implementing the sustainability guidelines and principles set
- 10 forth in this Act and any recommendations for legislation or
- 11 other actions to facilitate the full implementation of the
- 12 sustainability guidelines and principles set forth in this Act.
- 13 SECTION 6. Statutory material to be repealed is bracketed
- 14 and stricken. New statutory material is underscored.
- 15 SECTION 7. This Act shall take effect on July 1, 2011.

Report Title:  
Sustainability; State Planning

Description:  
Incorporates the definitions and guiding principles of the  
Hawaii 2050 sustainability plan into the Hawaii state planning  
act. (CDI)

*The summary description of legislation appearing on this page is for informational purposes only and is  
not legislation or evidence of legislative intent.*



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**

255 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

NEIL ABERCROMBIE  
DIRECTOR  
RICHARD W. WEAVER  
DEPUTY DIRECTOR  
MARY ALICE EVANS  
DEPUTY DIRECTOR  
JESSIE W. BOSTON  
DEPUTY DIRECTOR  
OFFICE OF PLANNING

Telephone: (808) 587-2848  
FAC (808) 587-2824

Ref. No. P-13389

August 31, 2011

Ms. Blanca Lafolette  
CMBY 2011 Investment, LLC  
c/o Pacific Rim Land  
1300 Holopono Street, Suite 201  
Kihui, Hawaii 96753

Dear Ms. Lafolette:

**Subject:** Early Consultation for the Preparation of a Draft Environmental Assessment  
Proposed Pu'unene Heavy Industrial Subdivision  
CMBY 2011 Investment, LLC  
TMK (2) 3-8-008: 019  
Pulehunui, Waiuku, Island of Maui

The Office of Planning (OP) received a request for early comments regarding the proposed project, which will require a petition to reclassify approximately 86 acres of land from the State Agricultural District to the State Urban District for a 28-lot heavy industrial subdivision. We wish to inform you of the issues and criteria that are taken into account in our evaluation of requests for reclassification, and invite you to meet with us to discuss how your proposal will address these concerns and contribute to the achievement of State goals for sustainability.

This request is made in anticipation of district boundary amendment proceedings before the State Land Use Commission (LUC), pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), and Chapter 15-15, Hawai'i Administrative Rules (HAR). OP represents the State as a mandatory party in proceedings before the LUC for amendments to district boundaries involving land areas greater than fifteen acres, pursuant to Section 205-4(e), HRS.

OP is required by Section 15-15-55, HAR, to file the State's position statement 30 days after a petition for a district boundary amendment is deemed "property filed" by the LUC. In developing its position, OP evaluates whether the project meets the LUC decision-making criteria in Section 205-17, HRS, as well as its conformance with the Coastal Zone Management objectives and policies in Section 205A-2, HRS. In addition, OP expects petitioners to review their proposals with respect to the State Administration's priorities in implementing the goals of the Hawai'i State Plan, Chapter 226, HRS. These priorities are set out in the Administration's New Day Comprehensive Plan, which is available at <http://hawaii.gov/about/a-new-day>.

Ms. Blanca Lafolette  
Page 2  
August 31, 2011

The LUC decision-making criteria in Section 205-17, HRS, include consideration of the following:

1. The extent to which the proposed reclassification conforms to the goals, objectives, and policies of Chapter 226, HRS, the Hawai'i State Plan, and relates to State Plan priority guidelines and State Functional Plans adopted pursuant to the State Plan. The Hawai'i State Plan is a broad policy document that guides the activities, programs, and decisions of State and local agencies.  
Please note that Act 181, enacted on July 5, 2011, sets forth priority guidelines and principles in Part III of Chapter 226, HRS, to promote sustainability in the State. Petitioners will need to demonstrate how their project proposals will address the priority guidelines for sustainability. Act 181 is available at [http://www.capitol.hawaii.gov/session2011/bills/GM1285\\_PDF](http://www.capitol.hawaii.gov/session2011/bills/GM1285_PDF).
2. The extent to which the proposed reclassification conforms to the applicable district standards in Sections 15-15-18 through 15-15-21, HAR, and Chapter 205, HRS;
3. The impact of the proposed reclassification on the following areas of State concern: (a) preservation or maintenance of important natural systems or habitats; (b) maintenance of valued cultural, historical, or natural resources; (c) maintenance of other natural resources relevant to Hawai'i's economy, including agricultural resources; (d) commitment of State funds and resources; (e) provision for employment opportunities and economic development; and (f) provision for housing opportunities for all income groups, particularly the low-, low-moderate, and gap groups;
4. The standards and criteria for the reclassification or rezoning of important agricultural lands in Section 205-50, HRS; and
5. The County general plan and all community, development, or community development plans adopted pursuant to the County general plan, as they relate to the land that is the subject of the reclassification petition.

Attachment A provides a list of issues based on LUC decision-making criteria, which OP examines in its review and are commonly raised in LUC deliberations on petitions for district boundary amendments.

We encourage and welcome early consultation with our Office to discuss how a petition will address these issues and criteria—particularly the areas of State concern in Item 3 above—and best practices that could or will be incorporated in the proposed project to address State

Ms. Blanca Lafolette  
Page 3  
August 31, 2011

priority guidelines for sustainability. A short list of resources related to best practices can be found at the OP website at [http://hawaii.gov/dbest/op/land\\_use.html](http://hawaii.gov/dbest/op/land_use.html).

We also strongly recommend that petitioners consult with affected State agencies early in the project formulation process; and that they continue to do so in the preparation of any environmental compliance documents required under Chapter 343, HRS, so that potential impacts to resources, facilities, and services managed or provided by the State and appropriate mitigation measures are identified in petitions and their environmental compliance documents.

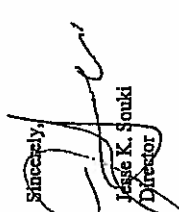
OP will be circulating your petition when it is filed along with your environmental compliance documents to affected State agencies. In its review, OP looks for petitioner documentation of consultation with State agencies and any recommended or agreed-to mitigation related to impacted State programs and resources. This is particularly important with respect to consultation with the State Department of Transportation (DOT) regarding the preparation of any Traffic Impact Analysis Report (TIAR) that DOT will be reviewing and accepting. In addition, we recommend consulting with the State Department of Agriculture when reclassifying agricultural lands, particularly agricultural lands with high productivity ratings.

Finally, we recommend consulting with the County Planning Department in the affected County regarding consistency of the proposed project with County plans. OP is not inclined to recommend approval of a petition that is inconsistent with adopted County general plans and community/development plans.

The degree to which your petition and the supporting environmental documents address these concerns will weigh heavily in OP's evaluation of the proposed request and the development of the State's position on the petition. The petitioner's responsiveness to these concerns will also strongly influence the kinds of conditions, if any, OP will recommend to the LUC to ensure conformance with Chapter 205, HRS, should the petition be approved.

The Office of Planning looks forward to receiving information about how the petition and proposed project will address potential impacts and mitigation measures related to these issues. If you have any questions or wish to schedule a meeting with our Office, please call Ruby Edwards in the Land Use Division at (808) 587-2817.

Sincerely,

  
Jesse K. Souki  
Director

Enclosure

c: / Mr. Glenn Todaki, Chris Hart & Partners, Inc.

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Landscape Architecture  
City & Regional Planning

October 12, 2011

Mr. Jesse K. Souki, Director  
Office of Planning  
Hawai'i Dept. of Business, Economic  
Development & Tourism  
P. O. Box 2359  
Honolulu, HI 96804

**SUBJECT:** Office of Planning Early Consultation Comments (Ref. Nos. P-13388 and P-13389) for the Preparation of a Draft Environmental Assessment (EA) for the Proposed Pū'ūhene Heavy Industrial Subdivision; TMK (2) 3-8-008:019

Dear Mr. Souki,

In response to my request for early consultation comments, Blanca Lafollette (land owner's representative) and I received separate letters from the Office of Planning (OP). The letters, which were dated August 31, 2011, informed us of the issues and criteria that OP employs when reviewing land use petitions and their supporting environmental review documents.

On behalf of the land owner, CMBY 2011 Investment, LLC, this letter responds to the letters sent to Ms. Lafollette (Ref. No. P-13389) and me (Ref. No. P-13388) as both letters were very similar in substance.

State Laws

The land owner understands that the proposed project will be evaluated in context of Section 205-17, HRS (*Land Use Commission Decision-making Criteria*), Section 205A-2, HRS (*Coastal Zone Management Program; Objectives and Policies*), and Chapter 226, HRS (*Hawai'i State Planning Act*) and that best management practices for addressing State sustainability guidelines pursuant to Act 181 (2011) will be examined as well.

115 N. Market Street, Waikuku, Maui, Hawaii 95793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
www.chiphmaui.com

Proposed Pū'ūhene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
October 12, 2011  
Page 2

Early Consultation

As part of the early consultation process for the preparation of the Draft EA, letters requesting comments on the proposed project were sent to various federal, state, and county agencies, including the State Department of Transportation and the State Department of Agriculture.

Potential Impacts and Mitigation

The Draft EA will identify and discuss potential project-related impacts and include recommendations to minimize harm to the environment.

Agricultural Land, Uses, and Infrastructure

The Draft EA will contain a Preliminary Engineering Report (PER) which will evaluate existing topographic, soil, and drainage conditions and include a preliminary drainage plan for managing stormwater runoff. In addition, potential impacts from surface runoff and appropriate mitigation measures will be discussed in the Draft EA.

Water Resources

The Draft EA will include a Groundwater Resource and Water System Assessment. Potential impacts to water resources and appropriate mitigation measures will also be discussed in the Draft EA.

Wastewater Treatment and Disposal

Information about the "enhanced individual wastewater (septic) system" will be included in the PER for the proposed project. The proposed project is a "lot-only" subdivision. As such, the land owner will be responsible for the subdivision's basic wastewater infrastructure (e.g., sublots, transmission lines, central leach field). Each future lot owner will be responsible for the wastewater system improvements on his own lot (e.g., septic tank, sewerlines, stubout connection). All wastewater system improvements for the project, including provisions for installation, operation, and disposal, are required to comply with Chapter 11-62, HAR (*Wastewater Systems*).

Stormwater Management and Drainage

As previously noted, the PER for the proposed project will examine existing topographic, soil, and drainage conditions and include a preliminary drainage plan for managing surface runoff. In addition, potential impacts from stormwater runoff and appropriate mitigation measures will be discussed in the Draft EA. Provisions for the maintenance of the subdivision's drainage system will be included in the Covenants, Conditions and Restrictions for the project. After completion, it is anticipated that the

lot owner's association will be responsible for the long-term maintenance of the project's drainage system.


Access Easements

A Request for Use of State Lands (for the access easements) was filed with the State Department of Land and Natural Resources in February 2011. If the access easements are not granted within five (5) years, Alexander & Baldwin, Inc. will provide alternate access easements to the subject parcel.

Copies of your comment letters have been provided to the appropriate project consultants.

Thank you for providing us with your comments and for participating in the early consultation process. A copy of the Draft EA will be provided to you for review when it becomes available.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaaki  
Planner

cc: Blanca Lafolette, PRL  
Stacy Otomo, P.E.  
Tom Nance, TNWRE  
Martin Luna, Esq.

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**APPENDIX S**  
Draft EA Comment  
Period

## **DRAFT EA REVIEW PROCESS**

The notice of availability of the Draft Environmental Assessment appeared in the June 8, 2012 edition of the Environmental Notice, a bi-monthly document published by the State Office of Environmental Quality Control. An electronic copy of the Draft EA was also posted on the OEQC website. The statutory public comment period for the Draft EA expired on July 9, 2012.

On June 26, 2012, the Maui Planning Commission convened and commented on the Draft EA. The MPC is serving as the accepting authority for the environmental review process. In addition, an article about the Draft EA was published in the July 2, 2012 edition of the Maui News. Based on coordination with Maui Planning Department, copies of the Draft EA were distributed to the following government agencies, organizations, and other parties as part of the environmental review process.

### **Federal Agencies (3)**

Mr. George Young, P.E., Chief  
Regulatory Branch  
**U.S. Army Engineer District, Honolulu**  
Fort Shafter, HI 96858-5440

Ms. Ranae Ganske-Cerizo, District Conservationist  
Natural Resources Conservation Service  
**U.S. Dept. of Agriculture**  
77 Ho`okele Street, Suite 2020  
Kahului, HI 96732

Mr. Loyal Mehrhoff, Field Supervisor  
Pacific Islands Fish and Wildlife Office  
**U.S. Fish and Wildlife Service**  
300 Ala Moana Blvd., Room 3-122, Box 50088  
Honolulu, HI 96850

### **State Agencies and Branches (18)**

Mr. Russell Kokubun, Chairperon  
Office of the Chairperson  
**Hawai'i Department of Agriculture**  
1428 S. King Street  
Attention: Mr. Earl Yamamoto  
Honolulu, HI 96814

Mr. Richard C. Lim, Director  
**Hawai`i Dept. of Business, Economic  
Development & Tourism**  
P. O. Box 2359  
Honolulu, HI 96804

Mr. Daniel Orodener, Executive Director  
Land Use Commission  
**Hawai`i Dept. of Business, Economic  
Development & Tourism**  
Honolulu, HI 96804-2359

Mr. Jesse K. Souki, Director  
Office of Planning  
**Hawai`i Dept. of Business, Economic  
Development & Tourism**  
P. O. Box 2359  
Honolulu, HI 96804

Mr. Alapaki Nahale-a, Chairperon  
Office of the Chairperson  
**Department of Hawaiian Home Lands**  
P.O. Box 1879  
Honolulu, HI 96805

Mr. Wilfred Nagamine, Chief  
Clean Air Branch  
**Hawai`i Dept. of Health**  
919 Ala Moana Blvd., Suite 203  
Honolulu, Hawaii 96814

Mr. Alec Wong, P.E., Chief  
Clean Water Branch  
**Hawai`i Dept. of Health**  
919 Ala Moana Blvd., Room 301  
Honolulu, HI 96801-3378

Mr. Jeffrey M. Eckerd, Acting Program Manager  
Indoor & Radiological Health Branch  
**Hawai`i Dept. of Health**  
591 Ala Moana Blvd.  
Honolulu, HI 96813

Ms. Joanna L. Seto, P.E., Chief  
Safe Drinking Water Branch  
**Hawai`i Dept. of Health**  
919 Ala Moana Blvd., Room 308  
Honolulu, HI 96814-4920

Mr. Steven Chang, Chief  
Solid & Hazardous Waste Branch  
**Hawai'i Dept. of Health**  
919 Ala Moana Blvd., Room 212  
Honolulu, HI 96814

Mr. Marshall Lum, Acting Chief  
Wastewater Branch  
**Hawai'i Dept. of Health**  
919 Ala Moana Blvd., Room 309  
Honolulu, HI 96814-4920

Ms. Patti Kitkowski, Program Chief  
Maui District Health Office  
**Hawai'i Dept. of Health**  
54 High Street  
Wailuku, HI 96793

Mr. Russell S. Tsuji, Land Administrator  
Land Division  
**Hawai'i Dept. of Land & Natural Resources**  
1151 Punchbowl Street, Room 220  
Honolulu, HI 96809

Mr. Daniel Ornellas, District Land Agent  
Maui Land Division  
**Hawai'i Dept. of Land & Natural Resources**  
54 High Street, Room 101  
Wailuku, HI 96793

Mr. Clyde W. Namu`o, Chief Executive Officer  
**Office of Hawaiian Affairs**  
State of Hawai'i  
711 Kapi`olani Blvd., Suite 500  
Honolulu, HI 96813

Ms. Jenny Pickett, Maui Archaeologist  
Maui District Office  
**State Historic Preservation Division**  
130 Mahalani Street  
Wailuku, HI 96793

Mr. Dean Nakagawa, Administrator  
Statewide Transportation Planning Office  
**Hawai'i Dept. of Transportation**  
200 Rodgers Blvd.  
Honolulu, HI 96819

Mr. Ferdinand Cajigal, District Engineer  
Maui Highways Division  
**Hawai'i Dept. of Transportation**  
650 Papapala Drive  
Kahului, HI 96732

**County Agencies (8)**

Mr. Kyle Ginoza, Director  
**Maui Dept. of Environmental Management**  
2200 Main Street, Suite 175  
Wailuku, HI 96793

Mr. Paul Haake, Captain  
Fire Prevention Bureau  
**Maui Dept. of Fire & Public Safety**  
313 Manea Place  
Wailuku, HI 96793

Mr. Glenn T. Correa, Director  
**Maui Dept. of Parks & Recreation**  
700 Halia Nakoa Street  
Wailuku, HI 96793

Mr. Aaron Shinmoto, Administrator  
Zoning Administration  
& Enforcement Division  
**Maui Dept. of Planning**  
250 S. High Street  
Wailuku, HI 96793

Mr. Gary A. Yabuta, Chief  
**Maui Police Department**  
55 Mahalani Street  
Wailuku, HI 96793

Mr. David C. Goode, Director  
**Maui Dept. of Public Works**  
200 S. High Street  
Wailuku, HI 96793

Ms. Jo Anne Johnson, Director  
**Maui Dept. of Transportation**  
2145 Kaohu Street, Suite 102  
Kahului, HI 96732

Mr. David Taylor, P.E., Director  
**Maui Dept. of Water Supply**  
200 S. High Street  
Wailuku, HI 96793

**Other Parties (9)**

Mr. Gordon Yadao, Section Manager  
Network Engineering & Planning  
**Hawaiian Telcom, Inc.**  
60 S. High Street  
Wailuku, HI 96793

Mr. Dan Takahata, Manager  
Engineering Division  
**Maui Electric Company, Ltd.**  
P.O. Box 398  
Kahului, HI 96733-6898

Mr. Grant Chun, Vice President  
**A&B Properties, Inc.**  
P.O. Box 156  
Kahului, HI 96732

Mr. David Gomes, General Manager  
**Hawaiian Cement**  
P.O. Box 488  
Kahului, HI 96733

Mr. Randall Moore, Manager  
Agricultural Engineering Services  
**Hawaiian Commercial & Sugar Company**  
P.O. Box 266  
Pu'unene, HI 96784

**Kihei Community Association**  
P.O. Box 662  
Kihei, HI 96753

**LeSEA Broadcasting Corporation**  
61300 South Ironwood  
South Bend, IN 46614

**Kihei Public Library**  
35 Waimahaihai Street  
Kihei, HI 96753

**Maui Planning Commission**  
c/o: Maui Dept. of Planning  
250 S. High Street  
Wailuku, HI 96793

Letters commenting on the Draft EA and letters responding to those comments are included in the following section.

***Comment and  
Response Letters***

ALAN M. ARAKAWA  
MAYOR



JEFFREY A. MURRAY  
CHIEF  
ROBERT M. SHIMADA  
DEPUTY CHIEF

**COUNTY OF MAUI**  
DEPARTMENT OF FIRE AND PUBLIC SAFETY  
FIRE PREVENTION BUREAU

313 MANEA PLACE • WAILUKU, HAWAII 96793  
(808) 244-9161 • FAX (808) 244-1363

RECEIVED

JUN 11 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

CC: glenn  
161036

Date : June 7, 2012

To : Chris Hart & Partners  
C/O Kurt F. Wollenhaupt  
115 Market Street  
Wailuku, HI 96793

Subject : (EA), (CPA), (DBA), and (CIZ) for the  
Pu'uunene Heavy Industrial Subdivision  
Near Mokuale Highway  
(CPA 2012/0002) (CIZ 2012/0005) (EA 2012/0001)  
TMK: (2) 3-8-008:019

Dear Kurt,  
Below are our requirements for our "Heavy Industrial Subdivisions". We have no comment at this time, yet these requirements will be enforced during the subdivision and building permit processes.

Water supply for fire protection shall have a minimum flow of 2500 gallons per minute for a two hour duration. Fire hydrants shall be placed on the service road to all parcels with hydrant spacing a maximum of 250 feet between hydrants.

Service roads to proposed properties shall have a clear width of 20 feet. Any dead-end roads or cul-de-sacs shall have a clear width of 32 ft., and if greater than 150 ft. in length, shall be provided with an approved fire apparatus turn-around.

All turns and required turnarounds shall have an outside turning radius of 40.5 feet. The maximum grade for the service roads shall not be greater than 12%.

Once construction of buildings are planned, there shall be at least one hydrant within 300 feet of any building to be constructed.

If you have any questions, please call 808-244-9161 ext 25 or fax 808-244-1363.

Sincerely,  
  
Lt. K. Davis



Landscape Architecture  
City & Regional Planning  
June 19, 2012

Mr. K. Davis, Lieutenant  
Fire Prevention Bureau  
Maui Dept. of Fire & Public Safety  
313 Manea Place  
Wailuku, HI 96793

SUBJECT: Comments on the Pu'uunene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Davis,

In response to your letter dated June 7, 2012, we would like to note that the proposed project will be developed in accordance with the fire protection requirements set forth in your letter.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Fataki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Stacy Otoro, P.E.



RECEIVED  
JUN 13 2012

Chris Hart & Partners, Inc.  
Network Engineering - Maui Planning  
OSP Engineering - Maui  
60 South Church Street  
Wailuku, HI 96793  
Phone 808 242-5112  
Fax 808 242-4989

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: glenn  
101056

June 7, 2012

Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, HI 96793

Attention: Glenn Tadaki, Consultant

Subject: Draft EA / CPA / DBA / CIZ for the Puunene Heavy Industrial Subd.  
TMK: (2)3-8-008:019 (CPA 2012/002) (CIZ 2012/0005) (EA 2012/0001)

Dear Glenn,

Thank you for allowing us to review and comment on the subject project. Your plans have been received and put on file.

Hawaiian Telcom, Inc. has no comment, nor do we require any additional information at this time.

Should you require further assistance, please call me at 242-5107.

Sincerely,



Tom Hutchison  
OSP Engineer

cc: Kurt Wollenhaupt, Staff Planner, COM  
Gerry Saguto, Section Manager

BICS File No. 1107-033 (3030)

Honolulu Main office:  
PO Box 2200 - Honolulu, HI 96811



CHRIS HART & PARTNERS, INC.  
Landscape Architecture  
City & Regional Planning  
June 19, 2012

Mr. Tom Hutchison, OSP Engineer  
Network Engineering and Planning  
OSP Engineering - Maui  
Hawaiian Telcom  
60 South Church Street  
Wailuku, HI 96793

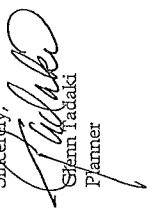
SUBJECT: Comments on the Puunene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Hutchison,

Pursuant to your letter dated June 7, 2012, we understand Hawaiian Telcom has no comments nor do you require any additional information at this time.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,



Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Stacy Otomo, P.E.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
www.chpmaui.com



ALAN M. ARAKAWA  
MAYOR

OUR REFERENCE  
YOUR REFERENCE

**POLICE DEPARTMENT**  
COUNTY OF MAUI

55 MAHALANI STREET  
WAILUKU, HAWAII 96783  
(808) 244-6400  
FAX: (808) 244-6411

June 18, 2012

MEMORANDUM

TO : KURT F. WOLLENHAUPT, STAFF PLANNER  
DEPARTMENT OF PLANNING

FROM : GARY A. YABUTA, CHIEF OF POLICE

SUBJECT : PERMIT NO.: CPA 2012/0002, CIZ 2012/0005, EA  
2012/0001  
TMK : (2) 3-8-008:019  
Name : DEA for Community Plan Amendment  
Applicant : Dept. of Planning

DEPT OF PLANNING  
COUNTY OF MAUI  
RECEIVED

12 JUN 19 AM 11:44

No recommendation or comment to offer.

Refer to enclosed comments and/or recommendations.

Thank you for giving us the opportunity to comment on this project.

*Gary A. Yabuta*

Assistant Chief Victor K. Ramos  
For: GARY A. YABUTA  
Chief of Police

Enclosure

KTW



GARY A. YABUTA  
CHIEF OF POLICE

CLAYTON N.Y.W. TOMI  
DEPUTY CHIEF OF POLICE

TO : GARY YABUTA, CHIEF OF POLICE, COUNTY OF MAUI

VIA : CHANNELS

FROM : JHUN-LEE CASIO, POLICE OFFICER III, COMMUNITY POLICING

SUBJECT : RESPONSE TO A REQUEST FOR COMMENTS REGARDING:  
DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE  
COMMUNITY PLAN AMENDMENT (CPA), DISTRICT BOUNDARY  
AMENDMENT (DBA), AND CHANGE IN ZONING (CIZ) FOR THE  
PU'UNENE HEAVY INDUSTRIAL SUBDIVISION, LOCATED  
APPROXIMATELY ONE (1) MILE SOUTHEAST OF THE  
INTERSECTION OF MOKULELE HIGHWAY, MEHAMEHA LOOP,  
AND KAMA'AINA ROAD, MAUI, HAWAII: TMK (2) 3-8-008:019,  
(CPA 2012/0002) (CIZ 2012/0005) (EA 2012/0001) *of Gary A. Yabuta*

This communication is submitted as a response to a request for comments by Kurt Wollenhaupt, County of Maui Department of Planning, Staff Planner regarding.

APPLICANT : CMBY 2011 INVESTMENT, LLC

TAX MAP KEY : (2) 3-8-008: 019

LOCATION : Approximately 1.0 mile southeast of the intersection of Mokulele Highway, Mehameha Loop, and Kama'aina Road

DESCRIPTION : The subject property encompasses 86.03 acres of vacant lot belonging to CMBY 2011 INVESTMENT, LLC proposing to change the zone from Agricultural to Heavy Industrial.

RESPONSE:

In review of the submitted documents, concerns from the police perspective are upon the safety of pedestrian and vehicular movement.

The proposed land development plan for the proposed heavy industrial subdivision currently calls for subdividing the 86 acres subject parcel to provide 28 developable lots on 66 acres of land including 10 lots ranging in size from 0.5 acre to 1 acre, five lots ranging from over 1 acre to 2 acres, and the remaining 13 lots ranging from over 2 acres to 20 acres in size.

Although the closest residential projects is located approximately 2.3 miles south of the project (North Kihei), extreme efforts should be made to minimize noise, dust, and debris so not to inhibit those whose health and well being may be affected. Adequate traffic control devices and personnel should also be utilized to minimize the impacts to pedestrian and vehicular movement by the heavy equipment and vehicles traveling in and out of the area.

It is the duty of the project manager to examine the impact of vehicular movement within the area while work is conducted on this project.

The planned project for future development is expected to increase vehicular traffic along Mokulele Highway and Kama'aina Road for traffic movement. It also increase calls for service for Police Officers. It is also important to consider proper and adequate lighting during evening, late night, and early morning hours during construction and after the project is completed. Congregation of the unlawful element, whether it is by status offense or by criminal offense tends to occur in poorly lit areas that are easily accessible and away from the general population.

This type of congregation usually leads to offenses such as Curfew Violations, Underage Drinking, Drug offenses, Littering, and Criminal Property Damage. Although this concern would fall upon police services, by providing adequate lighting and minimizing the opportunities for this type of behavior to occur would not only benefit the Police, but the Business' and the County as a whole as damages to these areas would be expected to be less than if these areas had inadequate lighting. For these reasons, it is strongly suggested that proper lighting for this new heavy industrial project be provided in order for not only the safety of vehicular movement but for crime prevention and deterrence as well.

Considerations should be taken as the future development is located between the beat boundary of District I (Wailuku) and District VI (Kihei), which would further tax the responding officers.

**CONCLUSION:**

There are no objections to the planned future development at this time, from the police standpoint, in regards to pedestrian and vehicular movement. However, consideration is requested for sufficient lighting to be installed for not only the safety of vehicular movement, but for crime prevention and deterrence as well.

Respectfully submitted,

*[Signature]*

Juan-lee Casio E#12935  
Police Officer III / Community Policing  
06/14/12 @ 0845 hrs.

AS OFFICER CASIO NOTED,  
FUTURE DEVELOPMENT IN  
THIS AREA WILL FURTHER  
TAX OFFICERS AS THIS AREA  
IS LOCATED AT THE DISTRICT  
BOUNDARIES.

*[Signature]* June 14, 2012

NOTED:  
*[Signature]*  
C.I.A. 10 @ 1055

NOTES: Concern with this location is that  
by the design, especially the perimeter  
into residential environment. *[Signature]*



Landscape Architecture  
City & Regional Planning  
June 28, 2012

Mr. Gary A. Yabuta, Chief  
Maui Police Department  
55 Mahalani Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Yabuta,

We acknowledge the receipt of your letter dated July 18, 2012 and are responding to your comments.

During and after construction of the project, proper and adequate lighting will be utilized for crime prevention and deterrence and to ensure safe vehicular movement.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
*[Signature]*  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT  
FORT SHAFTER, HAWAII 96858-5440

REPLY TO  
ATTENTION OF:

June 19, 2012

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JUN 22 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn  
101050

Regulatory Branch

File Number POH-2011-00179

Chris Hart & Partners, Inc.  
Attn: Glenn Tadaki  
115 N. Market Street  
Wailuku, HI 96793

**NO PERMIT REQUIRED**

Dear Mr. Tadaki:

This responds to your letter dated May 1, 2012 requesting review comments for the proposed Pu'uene Heavy Industrial Subdivision in Kahului, Island of Maui. We have assigned this project the reference number **POH-2011-00179**. Please cite this reference number in any future communications with this office regarding this project.

We have completed our review of the submitted documents pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). For your information, Section 10 requires that a Department of the Army (DA) permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging, or other activity occurring in, over, or under or affecting navigable waters of the U.S. For tidal waters, the shoreward limit of the Corps' jurisdiction extends to the Mean High Water Mark (MHWM). Section 404 requires that a DA permit be obtained for the discharge (placement) of dredged and/or fill material into waters of the U.S., including wetlands. For tidally influenced waters, in the absence of adjacent wetlands, the shoreward limit of the Corps' jurisdiction extends to the High Tide Line, which in Hawai'i may be approximated by reference to the Mean Higher High Water Mark (MHHWMM). For non-tidal waters, the lateral limits of the Corps' jurisdiction extend to the Ordinary High Water Mark or the approved delineated boundary of any adjacent wetlands.

Based on the information you submitted, the project area does not consist of any navigable water of the U.S. subject to the Corps' regulatory jurisdiction. Additionally, this proposed land development project would not involve the placement and/or discharge of dredged and/or fill material into waters of the U.S.; including wetlands. Therefore, a **DA permit is not required**.

This determination does not relieve you of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work.

Thank you for giving us the opportunity to review this proposal and providing us with the opportunity to comment. Should you have any questions, please contact Ms. Michelle Lazaro at (808) 835-4307, or through email at [Michelle.K.Lazaro@usace.army.mil](mailto:Michelle.K.Lazaro@usace.army.mil). You are encouraged to

provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

George P. Young, P.E.  
Chief, Regulatory Branch



**CHRIS  
HART**  
& PARTNERS, INC.

Landscape Architecture  
City & Regional Planning

June 28, 2012


Mr. George P. Young, P.E., Chief  
Regulatory Branch  
U.S. Army Engineer District, Honolulu  
Fort Shafter, HI 96858-5440

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008-019; Reference No. FOH-2011-00179

Dear Mr. Young,

Pursuant to your letter dated June 19, 2012, we understand that a Department of the Army permit is not required for the proposed project since it does not involve any navigable waters of the U.S. subject to the Corp's jurisdiction nor would it involve the placement and/or discharge of dredged and/or fill material into waters of the U.S., including wetlands.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Stacy Otono, P.E.



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3376  
HONOLULU, HI 96801-3376

In reply, please refer to:  
File #

LUD-2 3 8 008 019-ID1007  
DEA Puunene Heavy Ind Subd

*cc: glenn*  
*101056*

June 19, 2012

Mr. Glenn Tadaiki, Consultant  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Maui, Hawaii 96793-1717

Dear Mr. Tadaiki:

Subject: Draft Environmental Assessment – Puunene Heavy Industrial Subdivision  
at the intersection of Mokulele Highway, Mehamaha Loop and  
Kamaaina Road, Kihui, Maui, Hawaii 96753  
TMK (2) 3-8-008: 019 86.03 acres

Thank you for allowing us the opportunity to comment on the Draft Environmental Assessment for the  
Puunene Heavy Industrial Subdivision. We have the following comments to offer.

The Wastewater Branch will not allow the use of multiple enhanced septic tanks to discharge into a  
central leach field. A separate soil absorption system, such as a leach field, must be provided for  
each proposed septic tank system. In addition, the septic tank system shall be constructed in  
accordance with applicable provisions of Hawaii Administrative Rules, chapter 11-62, "Wastewater  
Systems." If a sewer collector system is proposed for the subject project, a wastewater treatment  
plant shall be constructed in accordance with chapter 11-62, HAR, for the treatment and disposal of  
the wastewater.

All wastewater plans must conform to applicable provisions of the chapter 11-62, HAR. We do  
reserve the right to review the detailed wastewater plans for conformance to applicable rules.  
Should you have any questions, please contact the Planning & Design Section of the Wastewater  
Branch at phone 984-8232 on Maui or to our Oahu office at (808) 586-4294 or fax to (808) 586-4300.

Sincerely,

MARSHALL LUM, P.E., ACTING CHIEF  
Wastewater Branch

LM:mt

cc: DOH's Environmental Planning Office – Ms. Laura McIntyre  
DOH-WWP's Maui Staff – Mr. Roland Tjano  
County of Maui – Department of Planning – Mr. Kurt Wollenhaupt

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JUN 21 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

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Landscape Architecture  
City & Regional Planning  
July 3, 2012

Mr. Marshall Lum, P.E., Acting Chief  
Wastewater Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 309  
Honolulu, HI 96814-4920

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Lum,

Thank you for providing us with your comments on the Draft EA. In response to your letter dated June 19, 2012 we would like to note the following.

We recently contacted the department's Maui Wastewater Branch and verified that wastewater from multiple septic tanks can no longer be discharged into a central leach field pursuant to current DOH policy.

In light of the foregoing, the wastewater treatment plan for the proposed subdivision will be modified to call for the installation of an aerobic treatment unit and leach field on each developable lot. Based on our discussion with Wastewater Branch staff, aerobic treatment units are permissible and can be used within 1,000 feet of a drinking water well.

The cost and installation of this individual wastewater system will be borne by individual lot owners when their lots are developed in the future. Each lot owner will also be responsible for compliance with Chapter 11-62, H.A.R. pertaining to "Wastewater Systems".

Thank you for providing us with your comments and for participating in the environmental review process.

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 3, 2012  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Stacy Ofomo, P.E.  
Tom Nance, TNWRE



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96804-3378

June 25, 2012

Mr. Kurt F. Wollenhaupt, Staff Planner  
County of Maui, Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Wollenhaupt:

Thank you for your submittal requesting comments to the Draft Environmental Assessment (DEA) for the CPA, DBA, and CIZ for the Pu'uene Heavy Industrial Subdivision at TMK: (2) 3-8-008:019, Maui, Hawaii.

Based on our review, we have no additional comments at this time.

Should you have any questions, please contact me at (808) 586-4701.

Sincerely,

Jeffrey M. Eckerd  
Program Manager  
Indoor and Radiological Health Branch

In reply, please refer to:  
File:



Landscape Architecture  
City & Regional Planning  
June 28, 2012

Mr. Jeffrey M. Eckerd, Program Manager  
Indoor & Radiological Health Branch  
Hawai'i Dept. of Health  
P.O. Box 3378  
Honolulu, HI 96801-3378

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Eckerd,

As noted in your letter dated June 25, 2012, we understand that the Indoor and Radiological Health Branch has no additional comments at this time.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Yoichi Ebisu, P.E.





STATE OF HAWAII  
DEPARTMENT OF HEALTH  
SAFE DRINKING WATER BRANCH  
919 ALA MOANA BLVD., ROOM 308  
HONOLULU, HI 96814-4920

In reply, please refer to:  
File:  
Punene.LDC

June 26, 2012

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED  
PU'UNENE HEAVY INDUSTRIAL SUBDIVISION  
PU'UNENE, MAUI, HAWAII

The Safe Drinking Water Branch (SDWB) acknowledges receipt of the Draft Environmental Assessment (EA) dated April 2012, and expresses our appreciation for the opportunity to comment on the proposed project.

Please refer to our previous comments provided in the SDWB letter, dated July 5, 2011, submitted in response to your previous request for review and comment on the subject project.

If you have any questions, please call Craig Watanabe, of the SDWB Engineering Section, at (808) 586-4258.

Sincerely,

JOANNA L. SETO, P.E., CHIEF  
Safe Drinking Water Branch  
Environmental Management Division

CW:cb

c: Mr. Kurt Wollenhaupt  
Staff Planner  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

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JUN 28 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

CG: Glenn  
101056

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Landscape Architecture  
City & Regional Planning

July 3, 2012

Ms. Joanna L. Seto, P.E., Chief  
Safe Drinking Water Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 308  
Honolulu, HI 96814-4920

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Ms. Seto,

Thank you for your Draft EA comment letter dated June 26, 2012 which refers to the Safe Drinking Water Branch's previous letter dated July 5, 2011 (see attached). In response to these comments we would like to reiterate the following.

1. Information about the source of drinking water for the proposed project has been included in the Draft EA. Refer to Appendix O, Groundwater Resources and Water System Assessment.
2. The public water system for the proposed project will comply with Title 11, Chapter 20, HAR entitled "Rules Relating to Potable Water Systems".
3. The capacity requirements of the public water system for the proposed project will comply with Section 11-20-29.5, HAR relating to "Capacity demonstration and evaluation".
4. The public water system for the proposed project will comply with provisions of Section 11-20-29, HAR relating to "Use of new sources of raw water for public water systems". In addition, the land owner understands that the Director of Health must approve all new public water system sources prior to its use.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chipmaui.com](http://www.chipmaui.com)

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 3, 2012  
Page 2

5. Pursuant to Section 11-20-29, HAR, the land owner acknowledges that an engineering report must be submitted to the Safe Drinking Water Branch (SDWB) for anyone proposing to use a new, natural water source to supply a public water system. As set forth in Subsection 11-20-29 (b) (5), all potential sources of contamination must be identified and control measures for reducing potential contamination must be evaluated. In addition, the land owner understands that a water quality analysis for all regulated contaminants must be submitted to the SDWB to evidence compliance with all drinking water standards.
6. The land owner acknowledges that all public water system sources are subject to a source water assessment which will delineate a water source protection area.
7. The land owner understands that any new public water system must be approved by the Director of Health before construction can commence pursuant to Section 11-20-30, HAR pertaining to "New and modified public water systems".
8. The public water system for the proposed project will be operated in accordance with Title 11, Chapter 25, HAR entitled "Rules Pertaining to Certification of Public Water System Operators".
9. The land owner understands that separate drinking water and non-potable systems need to be carefully designed and operated to prevent any cross-connections and potential backflow and that the dual system must be clearly labeled and physically separated to avoid drinking water contamination. The design and operation of the dual system for the proposed project shall comply with the provisions of Title 11, Chapter 21, entitled "Cross-connection and Backflow Control".
10. The land owner acknowledges that all projects within a water source protection area that propose a potentially contaminating activity could affect an existing water source for a public water supply and that appropriate measures will need to be undertaken to prevent or reduce the potential for contamination of the drinking water source.
11. Copies of the SDWB's July 5, 2011 letter and contact information were previously provided to the land owner and the appropriate project consultants.

Thank you for providing us with your comments and for participating in the environmental review process.

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII

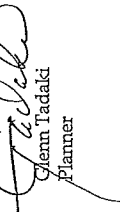


LORETTA J. FUDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

Please feel free to call me at (808) 242-1955 should you have any questions.

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P. O. BOX 3378  
HONOLULU, HI 96804-3378

In reply, please refer to:  
File #  
SDHB

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafollette, PKL  
Tom Nance, TNWRE  
Stacy Otomo, P.E.

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, Hawaii 96793-1717

Dear Mr. Tadaki:

SUBJECT: EARLY CONSULTATION FOR THE PREPARATION OF A DRAFT  
ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED  
PU'UNENE HEAVY INDUSTRIAL SUBDIVISION  
PU'UNENE, MAUI, HAWAII  
TMK (2) 3-8-008:019

The Safe Drinking Water Branch (SDWB) has reviewed the subject document and has the following comments:

1. The description of the project does not clearly identify the source of drinking water for the project. Please clearly identify the source of drinking water.
2. This project qualifies as a public water system. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, entitled "Rules Relating to Potable Water Systems."
3. All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial and financial capacity to enable the system to comply with safe drinking water standards and requirements in accordance with HAR Title 11, Chapter 20, Section 29.5, entitled "Capacity demonstration and evaluation."
4. Projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of HAR Title 11, Chapter 20, Section 29, entitled "Use of new sources of raw water for public water systems." This section requires that all new public water system

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Landscape Architecture and Planning

cc: Glenn 101056

sources be approved by the Director of Health prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

5. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the State Laboratories Division of the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

6. All sources of public water systems must undergo a source water assessment which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the source of drinking water.

7. Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director of Health prior to construction of the proposed system or modification in accordance with HAR Title 11, Chapter 20, Section 30, entitled "New and modified public water systems." These projects include treatment, storage and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.

8. All public water systems must be operated by certified distribution system and water treatment plant operators as defined by HAR Title 11, Chapter 11-25 entitled, "Rules Pertaining to Certification of Public Water System Operators."

9. All projects which propose the use of dual water systems or the use of a non-potable water system in proximity to an existing drinking water system to meet irrigation or other needs must be carefully designed and operated to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the drinking water system. The two systems must be clearly labeled and physically separated by

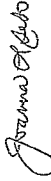
air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the drinking water supply. In addition backflow devices must be tested periodically to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption of non-potable water. Compliance with HAR Title 11, Chapter 21 entitled "Cross-Connection and Backflow Control" is also required.

10. All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawaii Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

11. For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other public water system programs, please contact the Safe Drinking Water Branch at 586-4258.

If there are any questions, please call Jennifer Nikaide at (808) 586-4258.

Sincerely,



JOANNA L. SETO, P.E., CHIEF  
Safe Drinking Water Branch  
Environmental Management Division

JN:slm

NEIL ABERKROMBIE  
Governor



LAND USE COMMISSION  
Department of Business, Economic Development & Tourism  
State of Hawaii

DANIEL E. ORODENKER  
Executive Officer

Mr. Kurt Wollenhaupt  
July 2, 2012  
Page 2

July 2, 2012

Mr. Kurt Wollenhaupt  
Department of Planning  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Wollenhaupt:

Subject: Draft Environmental Assessment (DEA)  
Pu'unene Heavy Industrial Subdivision  
Pu'unene, Maui, Hawaii  
Tax Map Key: 3-8-08: 19

We have reviewed the DEA for the subject project and have the following comments to offer:

- 1) We suggest that a list of acronyms used throughout the DEA be included following the Table of Contents for ease of reference.
- 2) In Chapter I, Project Overview, page 3, the State Land Use Classification of the Site Area is incorrectly identified as "Urban." As stated elsewhere in the DEA, the correct State land use designation of the Site Area is "Agricultural."
- 3) In accordance with section 11-200-10(4), Hawai'i Administrative Rules (HAR), the DEA should include a general description of the action's technical, economic, social, and environmental characteristics. We note that Chapter II, Description of the Property and Proposed Action, Section D, Description of the Proposed Action, Paragraph 2, Proposed Action, of the DEA describes the number and size of the proposed lots as well as the remaining

acreage devoted to drainage facilities and the internal roadway system. Figure 5 of the DEA is identified for reference. However, Figure 5 does not depict the location, size, and configuration of these individual lots relative to the subdivision footprint. Although we acknowledge that the actual number and size of the lots will be impacted by market conditions, we believe that Figure 5 should be amended to provide a more detailed representation of the land development plan to better correspond with the written description provided in the above paragraph.

4) In accordance with section 11-200-10(6), HAR, the DEA should identify and summarize the impacts and alternatives considered. We note that there is no discussion in the DEA on the existing civil defense facilities in the area and on the potential impacts on such facilities from the project. We request that the Final EA address this matter, including any plan to fund and construct adequate civil defense measures (sirens) to serve the Petition Area as may be required by the State Department of Defense, Office of Civil Defense.

We also note that no inventory and assessment of arthropods on the property was conducted. Although the location of the property may not require that a comprehensive arthropod study be conducted, we request that this matter be addressed in the interest of full environmental disclosure.

Finally, the DEA does not include an analysis of the potential impacts and possible mitigation measures for cable television systems as it does for electrical and telephone services.

With respect to the discussion on alternatives, we acknowledge that Chapter II, Description of the Property and Proposed Action, Section E, Alternatives, of the DEA addresses various alternatives; however, this discussion does not appear to be an objective evaluation in that the alternatives presented are primarily discussed in a negative context relative to the proposed development. Please also include a discussion of the potential benefits of the alternatives, including the extent to which the

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PACIFIC RIM LAND, INC  
MAUI - HAWAII

alternatives could avoid some or all of the short and long-term adverse environmental effects.

- 5) In the DEA, there are numerous references to the term *potable water* and *non-potable water*. We request that they be replaced by the terms *drinking water* and *non-drinking water*, respectively. We have been advised that although potable water has generally been used to mean drinking water, the State Department of Health (DOH) uses the latter term specifically to indicate water for human consumption that is derived from surface water and/or groundwater and is regulated by the DOH pursuant to chapter 11-20, HAR.

We have no further comments to offer at this time. Thank you for the opportunity to comment on the subject DEA.

Should you have any questions, please feel free to call Bert Samuwatari of our office at 587-3822.

Sincerely,



Daniel E. Orodener  
Executive Officer

c: Glenn Tadaki

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Landscape Architecture  
City & Regional Planning

July 31, 2012

Mr. Daniel Orondenker, Executive Director  
Land Use Commission  
Hawai'i Dept. of Business, Economic  
Development & Tourism  
P.O. Box 2359  
Honolulu, HI 96804

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Orondenker,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 2, 2012.

1. A list of the acronyms that were used throughout the Draft EA has been compiled and will be inserted after the Table of Contents in the Final EA.
2. The State land use classification that was erroneously identified on page 3 of the Draft EA has been corrected.
3. The Final EA will include an additional Figure showing the location, size, and configuration of the individual lots relative to the subdivision's footprint.
4. In commenting on the Draft EA, the Land Use Commission indicated, "We note that there is no discussion in the DEA on the existing civil defense facilities in the area and on the potential impacts on such facilities from the project. We request that the Final EA address this matter, including any plan to fund and construct adequate civil defense measures (streets) to serve the Petition Area as may be required by the State Department of Defense, Office of Civil Defense". In response to your comments, we contacted Hawai'i State Civil Defense, provided them with the preceding comments, and asked that they review and comment on the Draft EA. Although comments from

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 31, 2012  
Page 2

State Civil Defense are currently pending, the Final EA will address their comments as well as the foregoing comments from the Land Use Commission.

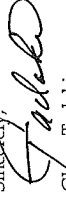
In response to your comments, the Final EA will include a report documenting the findings of an Arthropod Study. The primary objective of the study, which involved a field survey conducted by Robert W. Hobby on July 16, 2012, was to inventory all arthropod species in the project area. A total of 13 arthropods were recorded, representing seven Orders of spiders and insects. No rare or endangered insects were observed including the endangered Blackburn's sphinx moth (*Manduca blackburnii*). None of the moth's preferred host plants, the tree tobacco (*Nicotiana glauca*) were found, and no adult moths, eggs or larvae were seen.

A discussion of existing cable television service in the project area as well as potential impacts and mitigation measures will be included in the Final EA.

The Final EA will include a discussion of the potential benefits of the alternatives, including the extent that the alternatives could avoid short and long-term adverse impacts.

5. The terms "potable water" and "non-potable water" will be respectively replaced with the terms "drinking water" and "non-drinking water".

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Hamner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
MAUI DISTRICT HEALTH OFFICE  
54 HIGH STREET  
WAILUKU, HAWAII 96793

LORETTA J. FUDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

LOREN W. PANG, M.D., M.P.H.  
DISTRICT HEALTH OFFICER

Mr. William R. Spence  
July 2, 2012  
Page 2

July 2, 2012

Mr. William R. Spence  
Director  
Department of Planning  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Attention: Mr. Kurt F. Wollenhaupt

Dear Mr. Spence:

**Subject:** Draft Environmental Assessment for the  
Community Plan Amendment, District  
Boundary Amendment, and Change in Zoning  
for the Puunene Heavy Industrial Subdivision  
Chris Hart & Partners, Inc.  
CPA 2012/0002, CZ 2012/0005, EA 2012/0001  
(?) 3-8-008:019  
**Project Location:** One (1) mile southeast of the intersection of  
Mokulele Highway, Mehamaha Loop and  
Kamaaha Road  
**Project Description:** Change in Zoning (CIZ) for Puunene Heavy  
Industrial Subdivision

Thank you for the opportunity to review this project. We have the following comments  
to offer.

1. National Pollutant Discharge Elimination System (NPDES) permit  
coverage may be required for this project. The Clean Water Branch  
should be contacted at 808-586-4309.

2. The proposed subdivision cannot exceed 50 lots if 10,000 square foot lots  
are used. Should the subdivision exceed the allowable 50 lots, a private  
wastewater treatment plant is required or the project must connect to the  
County sewer system.

*C.C. Glenn*  
*10/05/12*  
**RECEIVED**

JUL 03 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

3. The noise created during the construction phase of the project may exceed  
the maximum allowable levels as set forth in Hawaii Administrative Rules  
(HAR), Chapter 11-46, "Community Noise Control." A noise permit may  
be required and should be obtained before the commencement of work.  
The Indoor & Radiological Health Branch should be contacted at  
808-586-4700.

It is strongly recommended that the Standard Comments found at the Department's  
website: <http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html> be  
reviewed, and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please call me at 808-984-8230 or E-mail me at  
[patricia.kitkowski@doh.hawaii.gov](mailto:patricia.kitkowski@doh.hawaii.gov).

Sincerely,

*Patricia Kitkowski*  
Patricia Kitkowski

District Environmental Health Program Chief

c Glenn Tadaki, Chris Hart & Partners, Inc.  
EFO





Landscape Architecture  
City & Regional Planning

July 5, 2012

Ms. Patti Kitkowski, Chief  
Maui District Health Office  
Hawai'i Dept. of Health  
54 High Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Ms. Kitkowski,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 2, 2012.

1. The proposed project will comply with applicable National Pollutant Discharge Elimination System (NPDES) permit requirements for construction activities.
2. Preliminarily, the proposed project would create 28 developable lots ranging from 0.5-acre to 20-acres in size. It is highly unlikely that the total number of lots will exceed that amount. Based on recent discussions with your department's Wastewater Branch, the wastewater treatment plan for the proposed subdivision will be modified to call for the installation of an aerobic treatment unit and leach field on each developable lot. Based on our discussion with Wastewater Branch staff, aerobic treatment units are permissible and can be used within 1,000 feet of a drinking water well.
3. Should noise from construction activities exceed the allowable daytime threshold (70 dBA) for industrial-zoned districts, the contractor shall obtain a Community Noise Permit from the Indoor and Radiological Health Branch pursuant to Chapter 11-46, HAR pertaining to "Community Noise Control".

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 5, 2012  
Page 2

Thank you for providing us with your comments and for participating in the environmental review process.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Stacy Otomo, P.E.  
Yoichi Ebisu, P.E.




**CHRIS  
HART**  
& PARTNERS, INC.

Landscape Architecture  
City & Regional Planning

July 5, 2012

**AGENCY TRANSMITTAL RESPONSE e-FORM**  
FOR DEPARTMENT OF PLANNING, COUNTY OF MAUI

June 13, 2012

<b>AGENCY NAME</b>	Department of Environmental Mgmt.   PHONE: 270-8230
<b>PROJECT:</b>	Draft EA for Community Plan Amendment (CPA) District Boundary Amendment (DBA), and Change in Zoning (CIZ) of the Puunene Heavy Industrial Subdivision located approx. one mile southeast of Mokuiele Hwy., Mehamaha Loop & Kama'aha Rd. intersection, Maui, HI JUL -3 P4:18
<b>APPLICANT:</b>	2-3-8-008-019, CPA 2012/0002, CIZ 2012/0005, EA 2012/0001
<b>PERMIT NO:</b>	See Above
<b>PROJECT DESCRIPTION:</b>	
<b>WASTEWATER RECLAMATION DIVISION COMMENTS</b>	<input type="checkbox"/> COMMENTS/RECOMMENDATIONS <input checked="" type="checkbox"/> NO COMMENTS
<b>SOLID WASTE DIVISION COMMENTS</b>	<input type="checkbox"/> COMMENTS/RECOMMENDATIONS <input checked="" type="checkbox"/> NO COMMENTS
<b>Signed:</b>	
<b>Print Name:</b>	Michael M. Miyamoto, Deputy Director
<b>Date</b>	July 3, 2012

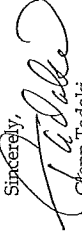
Mr. Michael Miyamoto, Deputy Director  
Maui Dept. of Environmental Management  
2200 Main Street, Suite 175  
Wailuku, HI 96793

**SUBJECT:** Comments on the Puunene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Miyamoto,

Pursuant to your comments dated July 3, 2012, we understand the Department of Environmental Management has no comments at this time.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Stacy Otomo, P.E.  
Tom Nance, TNWRE

RECEIVED



JUL 0 9 2012  
PACIFIC RIM LAND, INC.  
MAUI - MAUI

**CITIZENS FOR TRUTH AND JUSTICE**  
**MAUI COUNTY**

"Civil disobedience is not our problem. Our problem is civil obedience. Our problem is that numbers of people all over the world have obeyed the dictates of their government and have gone to war, and millions have been killed because of this obedience. Our problem is that people are obedient all over the world in the face of poverty and starvation and spidritv, and war, and cruelty. Our problem is that people are obedient while the jails are full of petty thieves, and all the while the grand thieves are running the country. That's our problem."

POST OFFICE BOX 791071  
PA'IA, MAUI, HAWAII, U. S. OCCUPIED TERRITORY 96779  
TELEPHONE/FAX (808) 573-2350, E-MAIL [FLYGAD2000@YAHOO.COM](mailto:FLYGAD2000@YAHOO.COM)

Pete Muñoz, Director  
Sam Miguel, Executive Director-Citizen Affairs

Kenneth K. Yasso, District Director  
Richard J. Cherry, Media Advisor

3 July 2012

Blanca Lafolette  
In C/o:  
CMBY 2011 Investment LLC,  
P.O. Box 220, Kihei,  
HAWAIIAN ISLANDS, U. S. OCCUPIED TERRITORY 96793

Re: 86-Acre Heavy Industrial Subdivision

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Greetings:

We are requesting information from you folks if you made any inquiries with the Legal Kingdom of Hawai'i Government on your proposed building and construction endeavor in the Pu'unene area of Maui, as described above.

We and many folks would appreciate hearing from you in regards to this inquiry.

Sincerely,  
*Sam Miguel*  
Sam Miguel, Executive Director-Citizen Affairs

A Non-Profit Citizen Advocacy Group @



Landscape Architecture  
City & Regional Planning  
July 16, 2012

Mr. Sam Miguel, Executive Director  
Citizen Affairs  
Citizens for Truth and Justice - Maui County  
P.O. Box 791071  
Paia, HI 96779

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019; Reference No. POH-2011-00179

Dear Mr. Miguel,

On behalf of CMBY 2011 Investment, LLC, we are responding to your letter dated July 3, 2012 and find that no inquiry had been made with the Legal Kingdom of Hawaii's Government.

It should be noted, however, that the Office of Hawaiian Affairs (OHA) and the State Department of Hawaiian Home Lands were consulted during the preparation of the draft environmental assessment, and that preparation of the Cultural Impact Assessment (CIA) involved consultation with the State Historic Preservation Division, the Maui County Cultural Resources Commission, the Maui Planning Department, the Central Maui Hawaiian Civic Club, Hale Mahaolu, and Mr. Kimokeo Kapahulehua. In addition, CIA Notices were published three times in the *Honolulu Star-Advertiser* and the *Maui News* during July 2011 and in the August 2011 edition of OHA's monthly newspaper, *Ka Wai Ola*.

Information about the proposed project can be found on the following website.

[http://oecq.doh.hawaii.gov/Shared%20Documents/EA and EIS Online Library/Maui/2010s/2012-06-08-DEA-Pu%20unene-Heavy-Industrial-Subdivision.pdf](http://oecq.doh.hawaii.gov/Shared%20Documents/EA%20and%20EIS%20Online%20Library/Maui%2010s/2012-06-08-DEA-Pu%20unene-Heavy-Industrial-Subdivision.pdf)

Thank you for expressing your interest in this project and for participating in the environmental review process.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph: 808-242-1955 • Fax: 808-242-1956  
[www.chipmaui.com](http://www.chipmaui.com)

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 16, 2012  
Page 2

Please feel free to call Blanca Lafolette at (808) 270-5940 or me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

163 Kuli Pu'u Street  
Kihei, HI 96753-7164  
July 4, 2012

Mr. Kurt Wollenhaupt  
Maui County Planning Department  
250 S. High Street  
Wailuku, HI 96793

**Subject: *Draft Environmental Assessment for the Pu'unene Heavy Industrial Subdivision***  
**(TMK No. (2) 3-8-008: 019)**

Dear Mr. Wollenhaupt:

Thank you for the opportunity to review the *Draft Environmental Assessment for the Pu'unene Heavy Industrial Subdivision* (DEA). After reviewing the DEA and its traffic impact analysis report (TIAR), it is evident that the EA has not been prepared in accordance with Chapter 11-200, Hawaii Administrative Rules (HAR), since it does not address the cumulative effects and short-term effects of construction traffic. Furthermore, the Pu'unene Heavy Industrial Subdivision (Project) may have significant traffic impacts and other impacts in related issue areas (e.g. noise, air quality) not disclosed in the EA, since the TIAR has not analyzed the highest trip generating use allowed in the M-2 zone under the County of Maui's current zoning policy.

General Comments to the DEA

1. HAR §11-200 -12 states, "In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action."

The EA does not comply with HAR §11-200-12 because it fails to consider the following:

- Cumulative effects
- Short-term effects

HAR §11-200-2 defines cumulative impacts as, "an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The DEA fails to address cumulative effects of traffic and consequently other related issue areas.

In order to assess the project's potential cumulative impacts, a future scenario including all reasonably foreseeable projects must be analyzed. Such a future scenario is usually the horizon year of a travel forecast which has all reasonably foreseeable projects assumed as land use inputs in the model. However, the TIAR only provides one analysis scenario, an Opening Year (Year 2015) scenario in which the entire Project is assumed constructed. The Opening Year scenario may disclose direct traffic impacts but would not disclose cumulative traffic impacts. An additional analysis scenario farther in the future should be provided in the TIAR to analyze cumulative impacts.

In addition to not analyzing and disclosing potential cumulative traffic impacts, the DEA fails to address short term impacts caused by construction traffic for the Project. The DEA should be revised to address these potential short term impacts.

2. The Project may have significant impacts not disclosed in the DEA because the TIAR did not analyze the highest trip generating use allowed the proposed zone. Currently the County of Maui allows any use permitted in the B-1, B-2, or B-3 District in the M-2 Industrial zone ("pyramid zoning") and does not limit the amount of these business uses in the M-2 zone. The DEA's TIAR analyzed the Project as if the site were developed as an industrial park; however, an industrial park is a much lower trip generator than many uses allowed in the B-1, B-2, or B-3 Districts, such as commercial retail. In the event the Project were developed such that the site's trip generation exceeds that assumed in the TIAR, significant traffic impacts may result that were not disclosed in the DEA's TIAR. To eliminate the possibility of having undisclosed impacts, the TIAR should be revised to assume the site is comprised entirely of commercial retail.

Alternatively, if the applicant does not wish to revise the TIAR, then the Project Description in the DEA MUST be revised to state the maximum traffic that the Project would generate (average daily trips, a.m. peak hour inbound trips, a.m. peak hour outbound trips, p.m. peak hour inbound trips, p.m. peak hour outbound trips) as assumed in the TIAR. This maximum trip generation MUST be a condition of the forthcoming permit issued by the County of Maui, and the trip generation of the site MUST be monitored by the County of Maui as the site develops to ensure compliance with this permit condition. Otherwise, if the Project is not conditioned on trip generation, then "pyramid zoning" would invalidate the environmental assessment since the project could develop as a different use with higher traffic volumes. Developing with a different use and higher traffic volumes than stated in the TIAR would also violate the Hawaii Environmental Protection Act (HEPA) because the environmental impacts of traffic may not be fully disclosed to the public and the decision maker at the time of project approval.

Specific Comments to the DEA

3. Page 13 of the DEA states subdivision construction is expected to begin in 2016 with an estimated construction period of about 30 months, and subsequent lot build-out period for the subdivision is expected to last approximately 10 years. However,

- Page 29 of the DEA states Project traffic will result in an increase of 0.3 DNL by 2015 which makes no sense if construction is not to begin until 2016.

- Page 80 of the DEA states, "there is no estimate as to when the actual development of the lots will be completed. Therefore, 2015 was used as an estimated project completion date." Additionally, the TIAR assumes the entire subdivision is constructed in Year 2015.

This discrepancy should be resolved so all information presented in the DEA is consistent.

4. Page 126 of the DEA indicates that the proposed action is not expected to have an adverse effect upon the public's health and welfare. The Project as proposed may increase the potential for vehicle crashes for the following two reasons:

A) The length of the southbound left turn pocket at Mokelele Highway and Kama'aina Road may not be designed long enough to accommodate the left turn demand at this location since an average vehicle length of only 25 feet was used in the TIAR to calculate the length of this left hand turn pocket. A longer average vehicle length should be used in the calculation given the high percentage of heavy vehicles anticipated to use the Project site. According to the American Association of State Highway and Transportation Officials (AASHTO), heavy vehicles are forty, fifty, and even sixty or more feet in length (see Attachment A). In the event the left turn pocket is designed too short, vehicles may spill out into the through lanes of traffic, thereby increasing the potential for rear end collisions.

B) The Maui County Police Department had requested that the sugar cane be cut as necessary to ensure adequate corner sight distance and adequate visibility is maintained for traffic signal indications. However, the EA's TIAR simply states that areas near intersections, "...should be monitored to ensure that the sugar cane growth does not impede sight distance and that visibility of traffic control devices is maintained." Given that the Project will increase traffic to these intersections, the Project should be responsible for maintaining the height of the sugar cane so that adequate sight distance is provided; otherwise, the Project may have an adverse impact on public health and safety due to the potential increase in vehicle crashes. The DEA should be revised to state that the Project shall be responsible for maintaining adequate sight distance at intersections and safe stopping distance for traffic signal indications per AASHTO requirements. Additionally, the Project, when it receives its permit from Maui County, should be conditioned to this requirement.

5. The following comment does not address the adequacy of the DEA but should be addressed when the document is finalized: Many pages of the DEA's appendices are scanned upside down. All pages of the electronic version of the DEA should be scanned upright so that a reader of the electronic document need not have to rotate the pages, over and over, to view it.

Comments to the TIAR (Appendix Q of the DEA):

6. The TIAR should be signed and stamped by a Licensed Professional Engineer from the State of Hawaii to ensure that an individual knowledgeable in the area of transportation engineering completed the work, or reviewed the document and agrees with the content of the document.

7. The study area is insufficient to determine whether the Project has any significant traffic impacts. Figure 8 of the TIAR shows in the a.m. peak hour the Project would generate 192 inbound trips from the north and 149 inbound trips from the south along Mokelele Highway at Mokelele Highway and Kama'aina Road. Per the Institute of Transportation Engineer (ITE) *Transportation Impact Analysis for Site Development*, an additional 100 vehicles per hour can change the level of service or appreciably increase the volume-to-capacity ratio of an intersection approach. (See Attachment B.) Therefore, the study area should be expanded on Mokelele Highway, north and south of the intersection of Mokelele Highway and Kama'aina Road, to ensure the project has no significant traffic impacts to other intersections along Mokelele Highway.

8. The TIAR should indicate the average daily trips (ADT) anticipated from the Project. Based on trip rates published in *Trip Generation, 8th Edition: An ITE Informational Report*, an industrial park is estimated to generate 62.11 trips per acre on an average weekday. (See Attachment C.) Using the equation 65.92 acres x 63.11 trips/acre, the proposed 65.92 net acre industrial park is estimated to generate 4,160 ADT. This data value should be included in the TIAR.

9. The Year 2015 scenario only includes other projects from the central and north Kihei area. Projects from Kahului that would be expected to add traffic to Mokelele Highway, such as A & B's *Maui Business Park*, should also be included.

10. An HCM arterial analysis should be performed for Mokelele Highway for all study scenarios (Opening Day and Horizon Year) and this analysis and its results should be provided to determine whether the project would have a significant impact on the capacity of Mokelele Highway.

11. To determine whether the proposed Project has any cumulative traffic impacts, the TIAR should provide another study scenario with a year coinciding with the Horizon Year of the most recent approved travel forecast for Maui County.

12. Page 8 of the TIAR states counts for the intersection of Mokelele Highway and Kama'aina Road were conducted on Friday, August 12, 2011. Monday and Friday counts are typically lower than mid-week counts; therefore, traffic counts should only be gathered on Tuesday, Wednesday, or Thursday. The Project may have a significant traffic impact at this intersection that is not disclosed in the DEA, since the Friday counts used may be lower than the average weekday count resulting in an inaccurate baseline.

13. Page 10 of the TIAR states, "Level-of-service D is typically considered acceptable for peak hour conditions in urban areas." The Project site is in a rural area. Clarify what level-of-service is typically considered acceptable for peak hour conditions in rural areas.

14. Page 13 of the TIAR indicates that in the assessment of future background conditions, roadway improvements that are part of the related projects are assumed. There is no guarantee that the other roadway improvements will be constructed by the time the Project is operational or occupied; only roadway improvements that are currently assured by permit and bond should be assumed in the Opening Year (Year 2015) scenario.

15. Page 31 of the TIAR states the average length of a vehicle assumed in the calculation of the length of the southbound left turn pocket on Mokulele Highway at the intersection of Mokulele Highway and Kama'aina Road is 25 feet. However, a longer length should be used in this calculation since (according to the TIAR) 25% of the vehicles using the site are anticipated to be heavy vehicles.

16. The last paragraph on Page 31 of the TIAR describes the deceleration lane calculation and states, "The storage length calculations are described above." However, what is described above is the storage lane calculations for left turn lanes, not deceleration lanes. Clarify how the lengths of deceleration lanes were calculated.

17. Page 32 of the TIAR states that it is recommended that areas adjacent to Kama'aina Road, South Firebreak Road and Lower Kihei Road should be monitored to ensure that the sugar cane growth does not impede sight distances and that visibility of traffic control devices is maintained. The Project should provide sight visibility easements for any areas on the Project site at intersections. Additionally, the Project should maintain the cane fields at a height no greater than 36' to ensure proper visibility is provided. The TIAR should be revised to state the Project shall cut down the sugar cane as necessary on the Project site or within the public right-of-way to maintain corner sight distance at intersections per requirements of AASHTO. The TIAR should also be revised indicating that the Project shall maintain the visibility of traffic control devices so that safe stopping distance for heavy vehicles is provided per requirements of AASHTO.

18. Appendix H of the TIAR: The TIAR's responses to the Maui Police Department's comments concerning public safety are unsatisfactory. The Project should take responsibility for providing adequate street lighting and should be responsible for maintaining the height of the cane fields if the cane fields lie within public right-of-way or within the Project site.

Final Remarks:

In conclusion, the DEA fails to comply with HAR §11-200 -12 because it fails to disclose cumulative traffic impacts and short-term traffic impacts. Further, the DEA may fail to disclose significant impacts because the highest trip generating use allowed in the M-2 Industrial Zone was not analyzed. Therefore, it cannot be concluded at this time that a Finding of No Significant Impact (FONSI) is the appropriate environmental determination for this project.

Thank you once again for providing me the opportunity to review and comment on the DEA. I hope you find these comments helpful in producing a legally defensible environmental document.

Sincerely,



Victoria A. Huffman, P.E.

cc: Glenn Tadaki, Chris Hart & Partners (electronic copy)  
Blanca Lafolette, CMBY 2011 Investment, LLC (electronic copy)





## 2. Initiating Transportation Impact Studies

### Guidelines for Studies

In considering the transportation aspects of land development, it is important to determine early in the process if and when a transportation impact study is needed.

Transportation impact studies are currently being addressed in a variety of ways by jurisdictions throughout North America. A cross sampling of data collected by ITE shows the following situations or thresholds that commonly trigger a requirement for a transportation impact analysis:

- When development will generate a specified number of daily trips (the data collected by ITE found examples of 500, 750, 1,000, 2,000 and 3,000 vehicle trips per day, with 1,000 vehicle trips per day predominating);
- When development will generate a specified number of peak-hour trips (examples include 20, 30, 50, 75, 100, 150, 200 and 500 vehicle trips per peak hour, with peak-hour trips in the 50-100 range predominating);

A trip is defined as a single or one-directional travel movement with either the origin or the destination of the trip inside the study site.

- When a specified amount of acreage is being rezoned (examples include a wide variety of acreage based on type of land use; see Florida Department of Transportation 1997 and Georgia Department of Community Affairs 2002 for specific examples);
- When development contains a specified number of dwelling units or amount of square footage (examples include a wide variety of units and square footages based on type of land use; see Florida Department of Transportation 1997 and Georgia Department of Community Affairs 2002 for specific examples);
- When financial assessments are required and the extent of impact must be determined;

- When the development will require a significant amount of transportation improvements;
- When a previous transportation impact analysis for a site has been deemed out of date;
- At the judgment or discretion of staff, based upon unusual circumstances; or
- When development will occur in a sensitive area.

There is little consistency in specific threshold quantities for the first four criteria. Study requirements should be related to the cause of transportation needs and impacts, such as trips generated during peak or design hours.

A quantitative threshold for requiring a site transportation impact study should be established by each agency based on local needs, issues and policies. The threshold level may vary among agencies in response to local conditions and priorities. *In lieu of other locally preferred thresholds*, it is suggested that a transportation impact study be conducted whenever a proposed development will generate 100 or more added (new) trips during the adjacent roadway's peak hour or the development's peak hour. This site trip generation threshold is appropriate for the following reasons:

- An additional 100 vehicles per hour can change the level of service or appreciably increase the volume-to-capacity ratio of an intersection approach; and
  - Left- or right-turn lanes may be needed to satisfactorily accommodate site traffic without adversely affecting through (non-site) traffic.
- It should be noted, however, that many jurisdictions in more densely populated areas tend to use lower thresholds for initiating a transportation impact analysis. These thresholds fall in the range of 30 to 100 peak-hour trips.

Judgment must also enter into the process. In some cases, although a development might generate fewer trips than the established threshold, a localized

Attachment B  
1 of 2

Transportation Impact Analyses for Site Development

ite  
Institute of Transportation Engineers

An ITE Recommended Practice

**Industrial Park  
(130)**

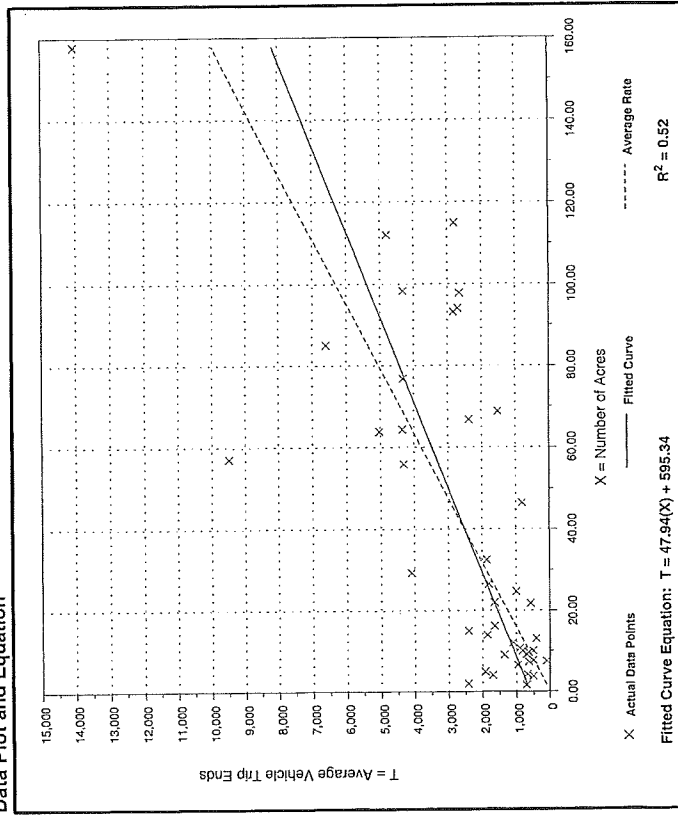
Average Vehicle Trip Ends vs: Acres  
On a: Weekday

Number of Studies: 43  
Average Number of Acres: 39  
Directional Distribution: 50% entering, 50% exiting

**Trip Generation per Acre**

Average Rate	Range of Rates	Standard Deviation
63.11	13.87 - 1272.63	62.04

**Data Plot and Equation**



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Landscape Architecture  
City & Regional Planning

August 9, 2012

Ms. Victoria Huffman  
c/o: 163 Kuli Pu'u Street  
Kihei, HI 96753-7164

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Ms. Huffman,

On behalf of the Applicant (CMBY 2011 Investment, LLC), and with input from the project's traffic engineer, we are responding to your letter dated July 4, 2012.

1. Cumulative and secondary effects are discussed in Chapter VIII of the Draft EA entitled, *Chapter 343, HRS Significance Criteria*. An expanded discussion of cumulative and secondary effects will be included in the Final EA.

The Final EA will also include a discussion about the cumulative effect of traffic.

Construction of the proposed project will primarily involve site work and the installation of subdivision infrastructure. After mobilization, construction equipment, materials and vehicles will be stored and secured onsite. As such, construction-related traffic impacts are expected to be minimal.

2. The trip generation analysis is not based on zoning but is predicated on the anticipated land uses for the proposed project. The Covenants, Conditions, and Restrictions for the subdivision will include language which will preclude the commercial uses that are currently allowed under existing *M-2, Heavy Industrial District* zoning. It should be noted that a proposed bill for *M-3, Restricted Industrial District* zoning, which specifically excludes general retail and office uses, is currently being reviewed by the County Council. Should the bill be

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph: 808-242-1955 • Fax: 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

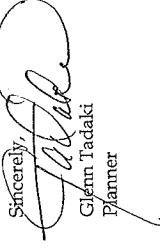
adopted by the Council, the Change-in-Zoning application will be revised to reflect the change from M-2 to M-3 zoning.

3. Based on preliminary estimates in 2011, the construction of the project was anticipated to commence approximately four to five years from that time (*i.e.*, 2015 at the earliest).
- 4 (A) The length of the left-turn storage lane was estimated using the procedure described in *A Policy on Geometric Design of Highways and Streets* published by the American Association of State Highway and Transportation Officials (AASHTO). An average vehicle length of 25 feet is the accepted vehicle length. It should also be noted that the storage length is in addition to the deceleration lane. No overlapping of storage length and deceleration length is allowed in the State of Hawaii. In addition, the definition of a heavy vehicle includes smaller vehicles, not just large trailer trucks as implied. The vehicle classification count did not segregate the heavy vehicles into separate categories as it is not required in the level-of-service analysis.
- 4 (B) The sugar cane fields adjacent to the intersections are owned by Hawaiian Commercial & Sugar Company (HC&S) and are not under the control of the Applicant. Notwithstanding this, the Applicant will work with HC&S to help minimize potential impacts to sight distance. As part of the subdivision application and review process, a driveway sight distance analysis and worksheet (for the subdivision driveway) will be submitted to the Department of Public Works for review and approval to ensure that adequate sight distance is provided.
5. All appendices in the Final EA shall be uniformly scanned to optimize viewing.
6. The State of Hawaii does not stipulate that traffic engineers must sign and stamp their reports with a seal. Hawaii County and Maui County have asked that traffic reports be signed and stamped albeit Maui County has not asked traffic engineers to do so.
7. The next significant intersection south of Kama'ama Road is at North Kihei Road, while the next intersection to the north is the access road for the Central Maui Baseyard. Both intersections operate at good levels-of-service based on the traffic engineer's knowledge of the area, the conclusions of other recent traffic studies, and a reconnaissance of the area as part of the project's traffic study.
8. The total daily traffic a project will generate is not applicable for the level-of-service as all the level-of-service analyses examine peak hour conditions.

9. At the time the project's traffic study was prepared, 2015 was the appropriate horizon year. Maui Business Park will not be generating any significant traffic until after 2015.
10. The intersection of Mokuale Highway at Kama'aina Road is not impacted by conditions at adjacent intersections due to its location. There is no progression with adjacent intersections because of the distances. Therefore, an arterial analysis is not warranted.
11. The horizon year was selected based on the anticipated completion of the project at the time the traffic study was prepared. It should be noted that past projects of this type on the island of Maui have been fully occupied in a very short time. The background projects were assumed to be built out and fully occupied. Therefore, extending the horizon year would only affect the background growth rate.
12. This a global statement that may be true in some areas of the mainland but not in Hawai'i. Wednesday afternoon traffic is not counted in the State of Hawai'i as public schools let out early on Wednesdays. As further information, the Hawai'i County Public Works Department requires that all traffic counts in the Kona area be performed on Fridays.
13. Traffic counts performed on other weekdays can be used if they can be correlated with adjacent intersections. The PM count was performed on a Thursday afternoon and the AM count was performed the following Friday morning. Both were compared with counts at North Kihei Road, the next significant and signalized intersection south of Kama'aina Road, which were performed on a Tuesday approximately one year earlier. The counts were comparable.
14. Since there is no established standard, Level-of-Service D has been used. The project area is included in the proposed Urban Growth Boundaries for the *draft* Maui Island Plan and is not a rural area compared to rural areas on the mainland.
15. The development projects that were included in the assessment of future background conditions are reasonably foreseeable future actions and are not proximate to or in the vicinity of the proposed project.
16. See response to 4(A).
17. Acceleration and deceleration lane lengths are not calculated. The deceleration lane lengths shown in Table 13 of the traffic study are taken from the existing intersection plans as indicated by Note (1) at the bottom of the table. The storage lengths are the lengths calculated in Table 12.

17. See response to 4(B).
18. The response is consistent with previous traffic studies and will be revised as necessary if the Maui Police Department, Planning Department, and Public Works Department are unsatisfied.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Phillip Rowell, P.E.  
Blanca Lafolette, PRL

ALAM M. ARAKAWA  
Mayor  
WILLIAM R. SPENCE  
Director  
MICHELE CHOUTEAU McLEAN  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PLANNING

July 6, 2012

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 N. Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

**SUBJECT:** MAUI PLANNING COMMISSION COMMENTS ON DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE COMMUNITY PLAN AMENDMENT (CPA), DISTRICT BOUNDARY AMENDMENT (DBA) AND CHANGE IN ZONING (CIZ) FOR THE PU'UNENE HEAVY INDUSTRIAL SUBDIVISION, LOCATED APPROXIMATELY ONE (1) MILE SOUTHEAST OF THE INTERSECTION OF MOKULELE HIGHWAY, MEHAMEHA LOOP, AND KAMA'AINA ROAD, KIHEI, ISLAND OF MAUI, HAWAII; TMK: (2) 3-8-008:019 (CPA 2012/0002) (CIZ 2012/0005) (EA 2012/0001)

At a regular meeting held on June 26, 2012, the Maui Planning Commission reviewed the above-referenced document and provided the following comments:

1. Review and comment on potential resource protection and security measures to be enacted during the construction of the project to prevent criminal or nuisance behavior (e.g., theft, vandalism, loitering, etc.) from occurring on the project site.
2. Review and comment on potential fiscal mechanisms (e.g., surety bond, insurance policy, etc.) that could be put into place in order to ensure that corrective action would and could be undertaken by the developer and/or Lot Owners Association should the project's private water supply experience a catastrophic failure resulting in ground water contamination. Such protective fiscal mechanisms would be used to ensure the County of Maui does not become by default the financially responsible party to provide water to the project site.
3. Review and comment on how potential landowners and business owners can be encouraged to promote energy generation and conservation on the project site.

Please provide written responses to the above comments in the Final Environmental Assessment.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
MAIN LINE (808) 270-7735; FACSIMILE (808) 270-7634  
CURRENT DIVISION (808) 272-8205; LONG RANGE DIVISION (808) 270-7244; ZONING DIVISION (808) 270-7253

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CHRIS HART & PARTNERS, INC.  
Landscaping, Architecture and Planning

cc: Glenn 10/05/12

Mr. Glenn Tadaki, Planner  
July 6, 2012  
Page 2

Should you require further clarification, please contact Staff Planner Kurt Wollenhaupt at kurt.wollenhaupt@mauicounty.gov or at (808) 270-1789.

Sincerely,

CLAYTON I. YOSHIDA, AICP  
Planning Program Administrator

for WILLIAM SPENCE  
Planning Director

xc: Aaron H. Shinmoto, PE, Planning Program Administrator (PDF)  
John F. Summers, Planning Program Administrator (PDF)  
David Yamashita, Planning Supervisor (PDF)  
Kurt F. Wollenhaupt, Staff Planner (PDF)  
Ms. Bianca Lafollette, Project Coordinator  
Project File  
General File

WRS:CIY:KFW:m  
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Landscape Architecture  
City & Regional Planning

July 19, 2012

The Honorable Chairman and Members of the  
Maui Planning Commission  
c/o: Maui Dept. of Planning  
250 S. High Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CZ 2012/0005  
TMK (2) 3-8-008:019

Dear Chairman Hiranaga and Commissioners,

Thank you for reviewing the Draft EA at your meeting on June 26, 2012 and for providing us with your comments via the Maui Planning Department's letter dated July 6, 2012. In response to the Commission's comments we would like to note the following.

1. Appropriate lighting and security measures will be utilized during and after construction of the project for crime prevention and deterrence and to ensure safe vehicular movement. Existing security measures include perimeter fencing around the property and locked entry gates at roads providing access to the site.
2. The State Department of Health (DOH) adopted comprehensive rules in 1999 following a U.S. Environmental Protection Agency mandate that requires all new private water systems to demonstrate appropriate technical, managerial, and financial capacity in order to receive DOH approval for construction and operation. This approval process, which is set forth by Section 11-20-29.5 (*Capacity Demonstration and Evaluation*) of the Hawai'i Administrative Rules for the DOH, greatly strengthened the capabilities of new small private water systems as compared to older private systems that were not subject to these rigorous standards.

Briefly, the requirements ensure that the water system is constructed to current County and DOH standards and has access to an adequate water source(s) both as to quality and quantity. Professional operation of the system by a private

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[www.chiprmaui.com](http://www.chiprmaui.com)

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 19, 2012  
Page 2

water system operations company using DOH certified operators, and ownership by an association that is solely responsible for all legal, and financial aspects of the system are among the requirements. Fiscal management by a professional financial management company and maintenance of adequate reserve funds to address emergencies and replacements ensure that financial requirements can be met. A developer funded cash reserve is required and can be returned to the developer only after the water association has successfully developed its own financial reserves. Recorded covenants on each parcel serviced by the system, provide the water association with the ability to levy assessments to meet operational needs so that the system remains within regulatory requirements. Ultimately, the water association has the ability to lien properties serviced by the system to provide the resources to maintain the system in compliance with all applicable regulatory requirements. Additional information on the DOH Capacity Development Program can be found at: <http://hawaii.gov/health/environmental/water/sdwb/pdf/Governor%20Report.pdf>

3. Lot owners will be encouraged to utilize energy generation and energy conservation measures when developing their parcels in the future. Examples of such measures include, but are not limited to: the use of windmills or photovoltaic panels to generate electricity, and the use of solar water heating systems, energy-efficient lighting and appliances, fiberglass insulation, double-glazed windows, skylights, and extended roof eaves (to minimize heat gain through windows) to conserve energy.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Harold Edwards, ITC  
Tom Nance, TNWRE  
Stacy Otomo, P.E.



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**  
235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
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NEL LABERGROMBIE  
GOVERNOR  
RICHARD B. BENTLEY  
DIRECTOR  
MARY ALICE EVANS  
DEPUTY DIRECTOR  
JESSE K. SOUKI  
DIRECTOR  
OFFICE OF PLANNING

Telephone: (808) 587-2846  
Fax: (808) 587-2824

Mr. William Spence  
Page 2  
July 9, 2012

Ref. No. P-13650

July 9, 2012

Mr. William Spence, Director  
Department of Planning  
County of Maui  
250 South High Street  
Wailuku, Hawaii 96793

Attention: Mr. Kurt F. Wollenhaupt

Dear Mr. Spence:

**Subject:** Draft Environmental Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Amendment (DBA), and Change in Zoning (CIZ) for the Pu'urene Heavy Industrial Subdivision, Located Approximately One (1) Mile Southeast of the Intersection of Mokulele Highway, Mehameha Loop, and Kama'aina Road, Maui Hawaii, TMK: (2) 3-8-008; 019 (CPA 2012/0002) (CIZ 2012/0005) (BA2012/0001)

Thank you for the opportunity to review and comment upon the Draft EA to allow the development of the Pu'urene Heavy Industrial Subdivision, located approximately one mile southeast of the intersection of Mokulele Highway, Mehameha Loop and Kama'aina Road. The developer proposes to develop the approximately 86-acre area with 28 lots, drainage areas, and internal roadways. We note that the applicant also intends to file for a Land Use District Boundary Amendment to reclassify the land from the State Agricultural District to the Urban District. According to the EA, a Finding of No Significant Impact (FONSI) is warranted. OP notes that the following comments and concerns regarding the EA do not preclude OP from other concerns that may be brought out during subsequent Land Use Commission proceedings.

1. **Compatibility with Surrounding Land Uses.** The proposed area is surrounded on three sides with land owned by the State Department of Land and Natural Resources and the Department of Hawaiian Home Lands. These departments are working together with the Department of Public Safety and the Department of Accounting and General Services to master plan this area of over 1,000 acres. The proposed area is also adjacent to land that has an Executive Order to the County of Maui. The uses within all of these areas should be compatible with each other. We understand the applicant's interest in developing a heavy industrial subdivision, however, we have

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CC: *Alan 101056*

CHIEF OF PLANNING  
LAND USE COMMISSION AND PLANNING

2. **Waterbirds.** The proposed heavy industrial subdivision will be situated adjacent to a reservoir located north, in which waterbird species have been observed. We also note that the project area is about 1.75 miles away from the Kealia Pond National Wildlife Refuge. According to the EA, stormwater runoff will be directed to the west side of the property within a series of retention basins. Also, according to the fauna study, no endangered waterbirds were found on the project site, however, its proximity to the Kealia Pond Refuge and the adjacent reservoir suggests that water birds might fly over and/or otherwise utilize this area while traveling within and among the water bodies within the entire region. This should be noted in the EA.

3. **Nene Goose.** The EA also notes that the endangered Nene Goose has been seen around the Mokulele Highway area. According to the EA, a survey has not yet been completed to determine whether the Nene is utilizing the project site, but a survey may be done at a later time. Such a survey should be included as part of this EA.

4. **Hawaiian Bat.** The EA also notes that while a survey has been done for the Hawaiian Bat, the consultant's recommendation that the trees in the project area not be cut down or disturbed between the months of April and August should be cited as a mitigation measure.

Thank you for the opportunity to review this document. If you have any questions, please contact Lorene Maki of our Land Use Division at (808) 587-2888.

Sincerely,  
  
Jesse K. Souki  
Director

c: ✓ Chris Hart & Partners, Inc.  
Attention: Mr. Glenn Tadaki, Consultant



Landscape Architecture  
City & Regional Planning

July 30, 2012

Mr. Jesse K. Souki, Director  
Office of Planning  
Hawai'i Dept. of Business, Economic  
Development & Tourism  
P. O. Box 2359  
Honolulu, HI 96804

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Souki,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 9, 2012.

1. In response to your comments, we contacted the Department of Hawaiian Home Lands (DHHL) to ascertain the status of master planning the State lands in the vicinity of the Old Pu'unene Airport. As you are aware, the DHHL is one of the key State agencies involved in this master planning effort.

The DHHL owns a 646-acre parcel to the south of the proposed Pu'unene Heavy Industrial Subdivision. This land has been zoned for *General Agricultural* use by the DHHL which allows it to be used for Agricultural homesteads (i.e., farm lots). As noted by the DHHL, this parcel is neither conducive for residential use or farm dwellings because of prevailing dust and wind conditions. Although, its location has not yet been determined, the DHHL has plans to set aside a 100-acre portion of the site for the future development of a private wastewater treatment plant (WWTP). The DHHL has held a series of meetings with lessees to gather their input for the future development of the parcel. Although preliminary, the time frame for the development of the DHHL parcel is projected to be at least five to seven years from now.

The Department of Public Safety's plans for the future Maui Prison have been delayed due to the lack of government funding and the absence of infrastructure (i.e., water, sewer) to support this project. More recently, the County of Maui has recommended that the future Prison be moved from its proposed location near Mokulele Highway to a new site (on State lands) approximately one mile east of the highway.

Existing heavy industrial uses in the area include the Hawaiian Cement quarry, 0.2 mile to east, and the Central Maui Baseyard, 1.3 miles to the north. The Subject Parcel is situated east of, and adjacent to Project District 10 (PD 10). As indicated by the Kihai-Makena Community Plan (1998), "The objective of this project district is to establish a master planned recreational and industrial (emphasis added) expansion area to meet future recreational needs and to provide areas for industrial (emphasis added) activities, including government facilities, whose locations are better suited away from urban areas. In its description of PD 10, the Community Plan also states that "Approximately 125 acres, including and adjacent to the Hawaiian Cement site, should be utilized for heavy industrial use." In addition, the Subject Parcel is located within the proposed Urban Growth Boundaries for the draft Maui Island Plan which indicates that the Subject Parcel "represents a logical expansion of industrial land use in the area" and that "The area's location, midway between Kihai and Kahului, make it an ideal site to serve the island's long term heavy industrial land use needs."

The Subject Parcel is ideally situated for heavy industrial activities given existing and future land uses in the area, its separation and distance from residential and commercial development, its convenient and centralized location for customers and suppliers, and its proximity to transportation facilities at Kahului Harbor and the Kahului Airport. In addition, the use of the Subject Parcel for heavy industrial purposes is consistent with existing heavy industrial uses in the area and is compatible with land uses for the site that are set forth by the draft MIP and the Community Plan.

2. As a follow-up to your comments, the Final EA shall note that water birds might fly over the Subject Parcel or utilize the proposed drainage basins along the west site of the site as they travel between various water bodies within the region including the adjacent irrigation reservoir and the Kealia Pond National Wildlife Refuge.

3. In response to your comments, the Final EA will include a report documenting the findings of a survey for the *neze* (Hawaiian Goose). The survey, which was conducted by Robert W. Hobdy on July 16, 2012, notes that the Subject Parcel is not irrigated and is located in one of the driest regions on Maui. This area experiences long, hot and dry summers during which the grasses and

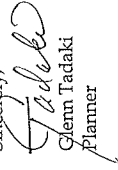


herbaceous plants become seared and withered. Even in a substantial wet season, the vegetation is tough and the greenery is fleeting. The report finds that nothing in this environment would equate to preferred habitat for *nene* or attract them to feed or breed here. The fact that no *nene* were observed during the survey was an expected outcome, consistent with the existing environmental resources.

4. Pursuant to your comments, the Final EA will include the recommendation that trees in the project area not be cut down or disturbed between the months of April and August to mitigate potential impacts to the Hawaiian Hoary Bat.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,



Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

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

LORETTA J. EDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

in reply, please refer to:  
D010528

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JUL 12 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

CC: Glenn 10/052

July 9, 2012

Mr. Glenn Tadaki  
Consultant  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

**SUBJECT: Draft Environmental Assessment  
and Change in Zoning for the Pu'unene Heavy Industrial Subdivision  
TMK: (2) 3-8-008-019  
Pu'unene, Island of Maui, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document transmitted by letter, dated May 1, 2012, and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

Mr. Glenn Tadaki  
July 9, 2012  
Page 2  
07006PMT.12

2. The Ma'alaea Beach, Pacific Ocean waters is identified as a Category 5 waters in the Clean Water Act, Section 303(d) list of impaired water bodies in Chapter IV of the 2006 State of Hawaii Water Quality Monitoring and Assessment Report. Priority 5 waters are described as surface waters where available data and/or information indicate that at least one (1) of the designated use is not being supported or is threatened. The Ma'alaea Beach, Pacific Ocean waters is presently identified as not attaining the applicable water quality criteria for turbidity and chlorophyll *a*. Accordingly, the subject project should include considerations toward ensuring the protection and improvement of the Ma'alaea Beach, Pacific Ocean waters.

3. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

- a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes area used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.
- b. Construction dewatering effluent.
- c. Hydrotreating water effluent.
- d. Storm associated with industrial activity.

You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

4. For types of wastewater not listed in Item 3 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. The NPDES application forms may be picked up at our office or downloaded from our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html>.

5. Please call the Army Corps of Engineers at (808) 438-9258 to determine if the subject project will require a Department of the Army (DA) permit(s). Permits may be required for work performed in, over, and under navigable waters of the United States. Projects requiring a DA permit also require a Section 401 Water Quality Certification (WQC) from our office.
6. Please note that all discharges related to the project construction or operation activities, whether or not a NPDES permit coverage and/or 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at <http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,



ALEC WONG, P.E., CHIEF  
Clean Water Branch

MTJst

c: Mr. Kurt Wollenhaupt, County of Maui, Department of Planning  
Mr. Roland Asakura, CWB-Maui, Kauai District Health Office [via email only]

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**CHRIS  
HART  
& PARTNERS, INC.**

Landscape Architecture  
City & Regional Planning

July 19, 2012

Mr. Alec Wong, P.E., Chief  
Clean Water Branch  
Hawai'i Dept. of Health  
919 Ala Moana Blvd., Room 301  
Honolulu, HI 96801-3378

**SUBJECT:** Comments on the Pu'uhene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CJZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Wong,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 9, 2012.

1. The proposed project will comply with the applicable provisions of Chapter 11-54, HAR entitled "Water Quality Standards" and Chapter 11-55, HAR titled "Water Pollution Control".

The proposed project will also be developed in accordance with the standards set forth by:

- a. Section 11-54-1.1, HAR (*General Policy of Water Quality Anti-degradation*).
- b. Section 11-54-3, HAR (*Classification of Water Uses*).
- c. The water quality criteria set forth in Sections 11-54-4 through 11-54-8, HAR.

2. Regardless of the magnitude of a storm event, no surface water (runoff), is expected to reach Ma'alea Beach. Studies have indicated that the mud caprock along the southern two-thirds of Ma'alea Bay prevents groundwater discharge

along the shoreline, forcing it further offshore where it is thoroughly mixed to background ocean water levels. As a result, any impact to groundwater flowing beneath the project site and flowing south toward Ma'alea Bay will not adversely impact the beach's water quality, including its turbidity and chlorophyll *a* levels.

3. The land owner acknowledges that a National Pollutant Discharge Elimination System (NPDES) is required for discharges into Class A or Class 2 State waters.
  - a. Prior to the commencement of construction, an application for an NPDES permit for storm water associated with construction activities will be submitted to the Clean Water Branch (CWB) for review and approval.
  - b. No dewatering activities are anticipated at this time. However, if such work is required, an application for a NPDES permit for dewatering activities will be submitted to the CWB for review and approval.
  - c. If necessary, an application for an NPDES permit for hydro-testing water effluent will be submitted to the CWB for review and approval.
  - d. An application for an NPDES permit for storm water associated with industrial activity will be submitted to the CWB for review and approval as required.
4. The proposed project will not involve discharges into Class 1 or Class AA State waters
5. The U.S. Army Corps of Engineers (USACE) was consulted during the preparation of the Draft EA. A copy of the Draft EA was subsequently furnished to the Corps of Engineers for their review and comment. In a letter dated June 19, 2012 (see attached), the Corps indicated that a Department of the Army permit is not required for the proposed project since it does not involve any navigable waters of the U.S. subject to USACE jurisdiction nor would it involve the placement and/or discharge of dredged and/or fill material into waters of the U.S., including wetlands.
6. Notwithstanding other permit requirements, the land owner understands that all project-related discharges must comply with the State's Water Quality Standards as set forth in Chapter 11-54, HAR.

Thank you for providing us with your comments and for participating in the environmental review process.

RECEIVED

JUN 22 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
R.C. Glenn  
101050

DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT  
FORT SHAFTER, HAWAII 96888-8440

June 19, 2012

File Number POH-2011-00179



REPLY TO  
ATTENTION OF:

Regulatory Branch

Chris Hart & Partners, Inc.  
Attn: Glenn Tadaki  
115 N. Market Street  
Wailuku, HI 96793

**NO PERMIT REQUIRED**

Dear Mr. Tadaki:

This responds to your letter dated May 1, 2012 requesting review comments for the proposed Pu'uene Heavy Industrial Subdivision in Kahului, Island of Maui. We have assigned this project the reference number **POH-2011-00179**. Please cite this reference number in any future communications with this office regarding this project.

We have completed our review of the submitted documents pursuant to Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and Section 404 of the Clean Water Act (Section 404). For your information, Section 10 requires that a Department of the Army (DA) permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to undertaking any construction, dredging, or other activity occurring in, over, or under or affecting navigable waters of the U.S. For tidal waters, the shoreward limit of the Corps' jurisdiction extends to the Mean High Water Mark (MHW/M). Section 404 requires that a DA permit be obtained for the discharge (placement) of dredged and/or fill material into waters of the U.S., including wetlands. For tidally influenced waters, in the absence of adjacent wetlands, the shoreward limit of the Corps' jurisdiction extends to the High Tide Line, which in Hawai'i may be approximated by reference to the Mean Higher High Water Mark (MHHW/M). For non-tidal waters, the lateral limits of the Corps' jurisdiction extend to the Ordinary High Water Mark or the approved delineated boundary of any adjacent wetlands.

Based on the information you submitted, the project area does not consist of any navigable water of the U.S. subject to the Corps' regulatory jurisdiction. Additionally, this proposed land development project would not involve the placement and/or discharge of dredged and/or fill material into waters of the U.S.; including wetlands. Therefore, a **DA permit is not required**.

This determination does not relieve you of the responsibility to obtain any other permits, licenses, or approvals that may be required under County, State, or Federal law for your proposed work.

Thank you for giving us the opportunity to review this proposal and providing us with the opportunity to comment. Should you have any questions, please contact Ms. Michelle Lazaro at (808) 835-4307, or through email at *Michelle.K.Lazaro@usace.army.mil*. You are encouraged to

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008-019  
July 19, 2012  
Page 3

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Otomo, P.E.

provide comments on your experience with the Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,



George P. Young, P.E.  
Chief, Regulatory Branch

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6/21/12

WILLIAM L. ALA, JR.  
CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSIONER FOR WATER RESOURCES MANAGEMENT



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



June 7, 2012

MEMORANDUM

- DLNR Agencies:
- Div. of Aquatic Resources
  - Div. of Boating & Ocean Recreation
  - Engineering Division
  - Div. of Forestry & Wildlife
  - Div. of State Parks
  - Commission on Water Resource Management
  - Office of Conservation & Coastal Lands
  - Land Division - Maui District
  - Historic Preservation

TO:

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Draft Environment Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Amendment (DBA) and Change in Zoning (CIZ) for the Pu'uhene Heavy Industrial Subdivision

LOCATION: Pulehuni & Waikapu, Island of Maui; TMK: (2) 3-8-008:019

APPLICANT: County of Maui, Department of Planning

2012 JUN -8 AM 11:22

WILLIAM L. ALA, JR.  
CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSIONER FOR WATER RESOURCES MANAGEMENT



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



July 9, 2012

Chris Hart & Partners, Inc.  
Attention: Mr. Glenn Tadaki  
115 N. Market Street  
Wailuku, HI 96793-1717

Department of Planning  
County of Maui  
Attention: Mr. Kurt Wollenhaupt, Staff Planner  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki and Mr. Wollenhaupt:

SUBJECT: Draft Environment Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Amendment (DBA) and Change in Zoning (CIZ) for the Pu'uhene Heavy Industrial Subdivision

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the Commission of Water Resource Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

CC: Glenn 10/6/56  
RECEIVED

JUL 18 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 5, 2012.

Only one (1) copy of the CD is available for your review in Land Division office, Room 220.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachment

- ( ) We have no objections.
- ( ) We have no comments.
- ( ) Comments are attached.

Signed: \_\_\_\_\_  
Date: \_\_\_\_\_

cc: Central Files

cc: Central Files



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96899

July 2, 2012

WILLIAM J. ALJA, JR.  
WILLIAM D. BAFOUR, JR.  
SUAMER ERDMAN  
LOHETTA J. FLOYD, A.C.S.W., M.P.H.  
TED YAMAMURA  
WILLIAM M. TAM  
STEPHANIE CHAN

TO: Russell Tsuji, Administrator  
Land Division

FROM: William M. Tam, Deputy Director  
Commission on Water Resource Management

SUBJECT: CMBY 2011 Piuene Heavy Industrial Subdivision DEAs, CPA, SLUGS  
Pulehunui and Waikapu, Maui

FILE NO.: N/A  
TMK NO.: (2) 3-8-008:019

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the internet at <http://www.hawaii.gov/dnr/cwrm/>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/p2/index.html>.

Russell Tsuji, Administrator  
Page 2  
July 2, 2012

- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/cbeed/czm/initiative/led.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

- 8. Additional information and forms are available at [http://hawaii.gov/dnr/cwrm/resources\\_permits.htm](http://hawaii.gov/dnr/cwrm/resources_permits.htm). The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 9. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 10. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 11. There is (are) well(s) located on or adjacent to this project, if wells are not planned to be used and will be abandoned by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 12. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 13. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 14. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 15. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 16. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER:

The estimated water requirements for this project are 0.119 mgd potable and 0.305 mgd non-potable (total = 0.424 mgd). Existing County sources serving this area are already at maximum capacity. Estimated natural sustainable yield of the underlying Kahului Aquifer System Area is 1.0 mgd, which is augmented by return irrigation flow from extensive sugar cultivation. This is the last remaining sugar plantation in the State, it is not clear how long it will last. The sustainable yield of this aquifer is estimated with moderate confidence, due to uncertainty concerning upgradient aquifer system areas. The document makes a higher estimate. This may be too optimistic. Imported surface water from East Maui and Na Wai Eha areas have an immediate impact and artificially increase the sustainable yield above the natural estimate of 1.0 mgd. The project proposes to drill three wells to meet the estimated demand, and install reverse osmosis treatment facilities for the potable fraction.

There are too many unanswered questions at this point to fully analyze the situation

If there are any questions, please contact Charley Ice at 587-0218.





Landscape Architecture  
City & Regional Planning

July 30, 2012

Mr. Russell Y. Tsuji, Administrator  
Land Division  
Hawai'i Dept. of Land & Natural Resources  
P.O. Box 621  
Honolulu, HI 96809

**SUBJECT:** Comments on the Pu'uhene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Tsuji,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your letter dated July 9, 2012 which transmitted the Commission on Water Resource Management's (CWRM) comments on the Draft EA.

- Copies of the Draft EA have been furnished to the Maui Planning Department and Maui Department of Water Supply so that information about the proposed project can be incorporated into the County's Water Use and Development Plan.
- A copy of the Draft EA has also been provided to the Hawai'i Department of Agriculture and will help the department incorporate the reclassification of agricultural lands and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan.
- Best Management Practices prepared in accordance with Maui County Code, Chapter 20.08 (*Soil Erosion and Sedimentation Control*) will be submitted to the Maui Department of Public Works for review and approval prior to the issuance of grubbing and grading permits. In addition, since site work for the project will exceed one acre, a National Pollutant Discharge Elimination System Permit will be obtained from the Hawai'i Department of Health's Clean Water Branch for the discharge of storm water associated with construction activities.

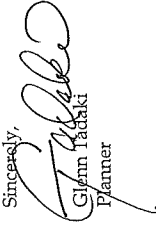
115 N. Market Street, Wailuku, Maui, Hawai'i 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
www.chpmaui.com

Proposed Pu'uhene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 30, 2012  
Page 2

- Alternative water sources will be considered for use to the extent that they are available and practicable.
- The proposed project shall comply with the State's Water Quality Standards as set forth in Chapter 11-54, HAR.
- In their *Letter of Assurance* dated July 2, 2012, the CWRM informed the land owner that the Well Construction and Pump Installation Permits for Well Nos. 4927-02 and 4927-03 are ready to be issued.
- The CWRM's 1.0 million gallons per day (MGD) sustainable yield is based exclusively on rainfall-recharge on less than half of the Kahului Aquifer's total area. Other sources of the aquifer's recharge (natural and man-made) are substantially larger: underflow from Haleakala, surface runoff from Haleakala, underflow from the West Maui Mountains, surface runoff from the West Maui Mountains, leakage from the East Maui and Wahe'e Ditch systems, and irrigation return from HC&S sugar cane fields. Historically, these sources of recharge have supported pumpage from the aquifer of 45 MGD for many decades. Present pumpage is still in excess of 25 MGD, most of it by HC&S.

The total estimated groundwater use for the proposed project is about 0.5 MGD. The location of this draft is miles from the nearest wells and will have no impact on these wells. If HC&S no longer cultivates sugar cane, a substantial amount of that aquifer's recharge would be reduced or eliminated altogether. However, it would also mean that about 25 MGD of pumpage from the aquifer would also cease. The wells for the proposed project are well positioned, with respect to the aquifer's natural sources of recharge, to continue to be viable.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Otomo, P.E.

ALAN M. AFRAKAWIA  
Meyer



DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI  
200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
www.mauewater.org

DAVID TAYLOR, P.E.  
Director

PAUL J. MEYER  
Deputy Director

RECEIVED

JUL 12 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
CC: *gmm 10/1/12*

July 9, 2012

Mr. Glen Tadaki  
Chris Hart and Partners  
115 N. Market Street  
Wailuku, Hawaii 96793

Re: I.D.: Draft Environmental Assessment (EA)  
TMK: (2) 3-8-008; por: 019  
Project Name: Pu unene Heavy Industrial Subdivision

Dear Mr. Tadaki:

Thank you for the opportunity to comment on this Draft Environmental Assessment.

Although we previously submitted comments for the Early Consultation for the Preparation of a Draft EA on July 20, 2011, we have a few additional comments on this next phase in the EIS process: the Draft EA.

**Water Use and Development Plan (WUDP) Final Candidate Strategy Report**

The WUDP has recommended consideration be given to implementing a general hierarchy of water use priorities. The plan provides an example derived from existing law and practical considerations (page 103), in which "Industrial" use ranks priority 10 of 12. How will the EIS address the potential for the proposed project to impact higher priority present and proposed future water user/uses in the area by pumping an estimated 127,456 gpd from Kahului Aquifer and/or Paia Aquifer?

Brackish water desalination is recommended as a final candidate strategy in the WUDP. How might the implementation of the proposed project impact the potential for brackish water desalination in the area, for: 1) present users; 2) future users; 3) public uses; and 4) private uses?

**Over-pumping of Kahului Aquifer**

Although we note the proposed water system will be private, the aquifer over which part of the project lies--the Kahului Aquifer--is currently being over-pumped by over 2500% according to the Commission on Water Resources Management (CWRM) 2008 Water

Mr. Glen Tadaki  
Page 2

Resources Protection Plan (page 6-14). Pumpage in the Paia Aquifer System Area also exceeds permitted allocations by over 200%; however, a substantial quantity of return irrigation recharge in the Central Aquifer Sector Area has not been factored into the established sustainable yields of these two aquifers. How will the EA address the issues of irrigation recharge and the uncertain amount of surface water imported into Kahului Aquifer from outside the Aquifer, in order to address concerns that further significant withdrawals will not result in a detrimental effect to other users and potential future uses?

Should you have any questions, please contact Alex Buttarro at our Water Resources and Planning Division at 463-3103.

Sincerely,

David Taylor, Director  
bab

cc: Engineering Division

*"By Water All Things Find Life"*



Landscape Architecture  
City & Regional Planning

July 23, 2012

Mr. David Taylor, P.E., Director  
Maui Dept. of Water Supply  
200 S. High Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Taylor,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your Draft EA comment letter dated July 9, 2012.

1. The proposed project plans to use the underlying brackish groundwater and will not be utilizing a potable water supply. In addition, there are no existing or proposed *other* higher priority water uses of groundwater in this part of the Kahului Aquifer. For these reasons, we feel that the proposed use is in conformance with the Water Use and Development Plan. This use is further supported by the approval of well construction and pump installation permits for the proposed project by the State Commission of Water Resource Management (CWRM). Refer to the attached *Letter of Assurance* from CWRM for CMBY Well Nos. 4927-02 and 4927-03.

2. The CWRM's 1.0 million gallons per day (MGD) sustainable yield is based exclusively on rainfall-recharge on less than half of the aquifer's total area. Other sources of the aquifer's recharge (natural and man-made) are substantially larger: underflow from Haleakala, surface runoff from Haleakala, underflow from the West Maui Mountains, surface runoff from the West Maui Mountains, leakage from the East Maui and Waie'e Ditch systems, and irrigation return

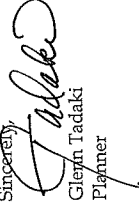
115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph: 808-242-1955 • Fax: 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

Proposed Pu'uene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 23, 2012  
Page 2

from HC&S sugar cane fields. Historically, these sources of recharge have supported pumpage from the aquifer of 45 MGD for many decades. Present pumpage is still in excess of 25 MGD, most of it by HC&S.

The total estimated groundwater use for the proposed project is about 0.5 MGD. The location of this draft is miles from the nearest wells and will have no impact on these wells. If HC&S no longer cultivates sugar cane, a substantial amount of that aquifer's recharge would be reduced or eliminated altogether. However, it would also mean that about 25 MGD of pumpage from the aquifer would also cease. The wells for the proposed project are well positioned, with respect to the aquifer's natural sources of recharge, to continue to be viable.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Gleya Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL  
Tom Nance, TNWRE  
Stacy Otomo, P.E.



WILLIAM J. AULA, JR.  
Commissioner  
WILLIAM S. BEFOUR, JR.  
Chairman  
LORETTA J. FIDDY, A.C.S.W., M.P.H.  
NEAL S. FUJIMURA  
TED YAMAGUCHI  
WILLIAM M. TAM  
Deputy Director

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
HONOLULU, HAWAII 96809

RECEIVED

July 2, 2012

JUL 0 9 2012

4927-2&3.10a

PACIFIC RIM LAND, INC.  
MAUI - MAHI

Ms. Blanca Lafolette  
CMBY 2011 Investment, LLC  
P.O. Box 220  
Kihei, HI 96753

Dear Ms. Lafolette:

Letter of Assurance for Well No. 4927-02 & 03

We have completed the review process for your well Construction/Pump Installation Permit application(s) and the permit(s) are ready to be issued. However, in accordance with the State Water Code, §174C-84(a), the permit can only be issued to a licensed contractor and, to date, one has not been identified for your well(s).

Once you have selected a licensed contractor, please have the contractor sign and return to the Commission a copy of the original application, upon which a permit will be immediately issued provided that the following conditions are met:

1. The contractor has no outstanding issues with the Commission.
2. There are no significant changes to the application.
3. There have been no significant changes to applicable laws, rules or regulations since the application date.
4. There have been no significant changes to hydrogeologic conditions since the application date.

Also, attached for your information are copies of comments from reviewing agencies.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0218 or toll-free at 984-2400 (Maui), extension 70218.

Sincerely,

WILLIAM M. TAM  
Deputy Director

Cl:ss  
Enclosure

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UNIVERSITY  
of HAWAII  
MĀNOA

FAX TRANSMITTAL SHEET

RECEIVED

JUL 10 2012

ENVIRONMENTAL CENTER  
University of Hawaii  
2500 Dolé Street, Krauss Annex 19, Honolulu, HI 96822  
Telephone: (808) 956-7361 Fax: (808) 956-3980  
CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
*U. Glenn 10/05/12*

DATE: 07/09/2012

FROM: David Penn  
956-3974

TO: Maui Planning Commission (Kurt Wollenhaupt)  
(808) 270-7634

Chris Hart & Partners (Glenn Tadaki)  
(808) 242-1956

State of Hawaii Office of Environmental Quality Control (OEQC)  
586-4186

SUBJECT: Draft Environmental Assessment  
Punnene Heavy Industrial Subdivision, Maui

July 09, 2012  
EA: 00330

Maui County Planning Commission  
c/o Maui County Planning Department  
250 S. High Street  
Wailuku, HI 96793  
VIA FAX TO: (808) 270-7634

Dear Commissioners,

**Draft Environmental Assessment  
Punnene Heavy Industrial Subdivision  
Punnene, Maui**

CMBY 2011 Investment, LLC proposes to transform 86 acres of unused agricultural land into a 28 lot heavy industrial subdivision by constructing overhead and underground electrical transmission lines; eleven acres of internal roadways; a master drainage system, including a nine acre retention basin; a master wastewater system, including a common leach field; and a water system drawing 423,650 gallons per day of nonpotable groundwater and treating over 1/4 of it for potable use. Potential activities within the proposed subdivision would include industrial uses that are permitted under M-2 zoning, as well as 1) energy systems, power plants, substations, and major utility facilities; 2) heavy equipment storage, servicing, and sales; 3) land fill, solid waste processing, and disposal; 4) biofuel product manufacturing and wholesale storage of biofuels; and 5) recycling process facilities.

This review of the Punnene Heavy Industrial Subdivision Draft Environmental Assessment (DEA) is a service activity of the University of Hawaii's Environmental Center to help determine and maintain the optimum quality of the environment. It is not intended to represent the official views of the University of Hawaii. The objectives of our review process are to enhance environmental consciousness, encourage cooperation and coordination, and facilitate public participation. These comments were drafted with the assistance of Karl Kim, UHM Urban and Regional Planning, and Sara Bolduc, Environmental Center.

**General Comments**

On its face, at full build-out, the proposed action would involve land cover change and industrial activity that could have a significant effect on on-site and off-site environmental quality. Therefore, it may be useful for the DEA to provide greater detail about the specific types of industrial activities that could occur, such as quantifying the likely effects of each type of activity with regard to toxic releases, waste disposal, pollutant loading, and utility demands. Such detail would provide a technical basis for identifying the sum effect of alternative patterns

EA: 00330  
Page 2

of industrial activity, assessing the range of potential for environmental degradation (including spills, emergencies, and natural disasters), and comparing degradation potential across a broader set of alternatives (e.g. no action and full build-out under existing agricultural zoning). We are particularly concerned about (1) the treatment and disposal of stormwater and wastewater associated with the above-listed industrial activities, including brine produced by water supply desalination, (2) the quality of downstream receiving waters, including sensitive Class 1 inland waters and Class AA marine waters and marine sanctuary; (3) regional aquifer dynamics, particularly in conjunction with anticipated effects of additional pumping and sea level rise; and (4) island-wide electrical power demand and supply.

Without more rigorous analysis of planned activities, potential effect, mitigative effect, and secondary and cumulative impacts, there may be considerable uncertainty about the appropriateness of Maui County Planning Department's anticipated finding of no significant effect. The overarching rationale for this finding appears to be the applicant's assertions that adherence to zoning ordinances and permit conditions, along with the implementation of best management practices, will prevent significant environmental degradation. If this supposition were true, then existing environmental quality, statewide, would be higher than its current state. Although these kinds of environmental management tools can help to control and reduce environmental impacts, they are not designed to provide absolute protection against significant, secondary, and cumulative effects.

Specific Comments

*1. Supporting Information and Rationale for Conclusions*

Many of the facts and conclusions presented in the main text of the DEA refer to a particular appendix for supporting information. These references would be more useful for reviewers if they included specific page numbers indicating exactly where to find the supporting information in a technical appendix. Otherwise, the large size of the document and the lack of tools for navigating the electronic version increases the difficulty of reviewing the proposed action in a thorough and timely manner.

*2. Description of the Proposed Action, Existing Environment, Potential Impacts, and Mitigation Measures*

The description of the proposed action provides limited information about the types, density, and intensity of industrial activities that would occur. Much of the potential impact depends not just on the land use, but the nature of the industrial activities proposed on the site.

**a. Climate, topography, and soils:** How can the applicant be certain that site work for the proposed project would involve minimal grubbing and grading (p. 20) when the development of an individual lot would be the responsibility of the lot owner? Would grading restrictions be included in the subdivision covenants and enforced by the association of lot owners?

EA: 00330  
Page 3

**b. Water bodies:** Although there may be no wetlands, streams, ponds or other water bodies on the subject parcel, there are some sensitive areas in proximity - notably the HC&S reservoir/dam, Kealia Pond National Wildlife Refuge, and the Hawaiian Humpback Whale National Marine Sanctuary. It is important for the DEA to characterize watershed context and waterbody status in the area surrounding the proposed action and to show how pre- and post-construction drainage patterns interact with downstream receiving waters. The Environmental Planning Office of the State Department of Health previously developed a set of standard comments that address these assessment issues (available from the Environmental Center on request). Also, the proposed nine acre retention basin would be a significant addition to the local water environment that would require ongoing maintenance. For example, how would the potential use of the retention basin by endangered waterbirds be managed, what would be the composition of the sediment that accumulates in the basin, and where would the accumulated material be deposited after it is dredged/removed for maintenance purposes?

**c. Noise, air quality:** How can noise and air quality impacts be measured when uses have not been identified? The DEA maintains that "there is insufficient information regarding any of the uses or activities that may be located within the proposed heavy industrial subdivision to perform any quantitative impact assessments" (p. 33). In such a case, it may be useful for the applicant to provide quantitative information about the known noise and emission outputs for a range of industrial uses and activities that could occupy the site, which should be readily available in the professional, scientific, and gray literature (such as project planning documents and environmental impact analyses and audits for similar subdivisions).

**d. Solid and hazardous waste:** What materials would be used in the production processes that would be permitted within the proposed subdivision, including hazardous materials? What types of management activities would be necessary to reduce the risk of environmental harm stemming from exposure to these materials?

**e. Water:** It would be useful for the main text of the DEA to describe the relationship of proposed water use with the state water resources protection plan and the county water use and development plan, including projections for overall use and fragility of the source aquifer over the life cycle of the proposed project. How would the proposed changes in land cover and human activity affect aquifer recharge?

**f. Wastewater:** Under existing regulations, the statement that "lot owners must submit their IWS plans to the DOH for review and approval" (page 76) implies that each lot would contribute no more than 1,000 gallons of domestic wastewater per day to the community disposal system (each field). The fact that the proposed development involves buildings other than dwellings means that the disposal system would handle no more than 15,000 gallons of domestic wastewater per day. How much non-domestic wastewater would be generated within the proposed heavy industrial subdivision on a daily basis, and how would it be collected, treated, and disposed?

Does "aerobic-type IWS" (page 76) mean the same thing as "household aerobic unit" (DOH regulations)? Who would be responsible for compliance with DOH regulations concerning the operation and maintenance of each aerobic unit, the individual lot owner or the

EA: 00330  
Page 4

association of lot owners? Would this affect the probability of significant impacts from malfunctioning treatment units?

**Drainage:** It is important to realize that county drainage standards are designed to protect against flood damage, and do not guarantee attainment of state water quality standards. In this regard, it may be useful for the DEA to explore the relationship between proposed drainage plans and the proposals and recommendations of a recent study sponsored by the State Department of Business, Economic Development, and Tourism, *Final Report Stormwater Impact Assessment Project*, available at [http://www.state.hi.us/dbed/cem/resource/Stormwater\\_Impact\\_Assessment\\_Project.pdf](http://www.state.hi.us/dbed/cem/resource/Stormwater_Impact_Assessment_Project.pdf).

The report includes a Proposed Methodology for Stormwater Cumulative Impact Assessment and a Recommended EIS Stormwater Cumulative Impact Methodology. For watershed context assistance, see Appendix C: Sensitive Watersheds, Watershed Sensitivity Reference.

**8. Energy consumption and carbon footprint:** The maximum potential energy demand includes both lot and industry specific uses and subdivision uses (e.g. common area lighting, water and wastewater pumping, water treatment). It would be useful for the DEA to specify the potential magnitude of this demand and explain what sources of electrical power would be tapped to fill this demand. What would be the relationships between energy demand and generation within the proposed subdivision and state and county energy plans?

### 3. *Alternatives Analysis*

The alternatives analysis identifies several options for land use and human activity and explains why each would not be feasible or desirable by virtue of private business reasons and opinions about public needs. However, it would be useful for the analysis to also address the potential variation in environmental effects among these alternatives.

### Housekeeping

#### 4. *Accepting Authority and Determining Agency*

The DEA states that "the Maui Planning Commission will serve as the accepting authority for the environmental review process" (page 2). We suggest revising this section of the DEA to conform more precisely with the governing regulatory language. "'Accepting authority" means the final official or agency that determines the acceptability of the EIS document," and does not pertain to the DEA and the environmental review process in general. Haw. Admin. R. § 11-200-2. As indicated on page 8 of the DEA, it appears that Maui County cannot issue an approval for the proposed action until after the State Land Use Commission (LUC) approves the proposed district boundary amendment. Therefore, why isn't the LUC "the agency initially receiving and agreeing to process the request for an approval?" § 11-200-4.

#### 5. *Length of Document*

The length of the DEA, nearly 800 pages, and the technical complexity of much of its content (e.g. the Environmental Site Assessment and Supplemental Data), increases the difficulty

EA: 00330  
Page 5

of thoroughly reviewing the document within the thirty day regulatory window. Although we advocate a comprehensive approach to environmental impact analysis, much of the information presented within the DEA is marginally substantive and overly repetitive. The Final Report on Hawaii's Environmental Review System (Kim et al. 2010), available at [http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc\\_Documents/Final-Report-on-Hawaii-Environmental-Review-System-2010.pdf](http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc_Documents/Final-Report-on-Hawaii-Environmental-Review-System-2010.pdf), noted that "EAs increasingly resemble EISs as the distinction between EAs and EISs is becoming blurred" (page 50). This document is a prime example of this "blur," and may by its sheer size alone indicate that an EIS may be required for the proposed action.

### 6. *Reviewer Assistance*

The Final Report on Hawaii's Environmental Review System (Kim et al., 2010) noted that "the use of more technologically sophisticated systems could . . . improve the quality of participation" in the system (page 75), and recommended integrating new communication technology into the system (page 81). In order to assist reviewers and facilitate public participation, we suggest that the digital version of an environmental review document incorporate several user-friendly features for content access and readability, including:

- comprehensive bookmarks for navigating the file, which correspond directly with the sections, tables, figures, appendices, etc. shown in the document's table of contents;
- vertical page orientation throughout the document, such that a reader need not rotate a page before reading it on-screen; and
- searchable text, as specifically suggested in Kim et al. (2010), see page 81.

Thank you for considering our review of the Draft Environmental Assessment for Punnoe Industrial Subdivision. Please contact me at 956-3974 to discuss our comments, and send us one hard copy of the Final Environmental Assessment when published.

Sincerely,



David Penn  
Assistant Specialist

copy: Chris Hart & Partners (Glenn Tadaaki)  
State of Hawaii Office of Environmental Quality Control (OEQC)  
Chittaranjan Ray, Interim Director  
Karl Kim  
Sara Bolduc



Landscape Architecture  
City & Regional Planning

August 16, 2012

Mr. Chittaranjan Ray, Interim Director  
Environmental Center  
University of Hawai'i  
2500 Dole Street, Krauss Annex 19  
Honolulu, HI 96822

**SUBJECT:** Comments on the Pu'uene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CLZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Ray,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to the Center's July 9, 2012 comment letter written by David Penn.

Response to General Comments

Because heavy industrial uses on each lot will be determined by future lot owners, the effects of each type of industrial activity cannot be quantified at this time as the specific types of activities that would occur within the subdivision are unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all Federal, State, or County laws, including, but not limited to, regulations governing health, safety, and the environment. An association of subdivision lot owners shall be formed and, among its duties, will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawai'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures

are prescribed. If a regulatory permit is granted, specific terms of compliance are set forth to ensure that the permitted use will not adversely affect the environment. Failure to comply with the terms of the permit could result in enforcement action including penalties or revocation of the permit.

Response to Specific Comments

1. Supporting Information and Rationale for Conclusions

Key information from documents contained in the Appendix was brought forward and summarized in the main body of the EA for the reader's convenience. Readers are encouraged to peruse any documents in the Appendix that are of specific interest to them.

2. Description of the Proposed Action, Existing Environment, Potential Impacts, and Mitigation Measures

Refer to the *Response to General Comments*

- a. *Climate, topography, and soils:* Site work for the subdivision's basic infrastructure (e.g. water, drainage, roadways) is expected to be minimal and will be the responsibility of the land owner. As lots within the subdivision are developed, each lot owner will be responsible for the site work on their lot. Provisions for the development of subdivision lots, including conformance with all applicable government requirements, shall be set forth in the CC&Rs and maintained by the association of subdivision lot owners.
- b. *Water bodies:* Regardless of the magnitude of a storm event, no surface water (runoff), is expected to reach Ma'alaea Beach. Studies have indicated that the mud caprock along the southern two-thirds of Ma'alaea Bay prevents groundwater discharge along the shoreline, forcing it further offshore where it is thoroughly mixed to background ocean water levels. As a result, any impact to groundwater flowing beneath the project site and flowing south toward Ma'alaea Bay will not adversely impact the beach's water quality, including its turbidity and chlorophyll *a* levels. Provisions for the maintenance of the drainage retention area will be included in the CC&Rs and responsibility for its upkeep shall rest with the association of subdivision lot owners.

- c. *Noise, air quality:* With regard to noise, worst case noise emissions from the proposed 28 subdivision lots, each continuously emitting 70 dBA (the maximum allowed under existing State noise regulations), were assumed in order to predict the resulting noise levels from the heavy industrial subdivision at the closest residential receptors. The results of the noise modeling indicated that worst case noise levels from the industrial subdivision could be between 3 and 29 dBA, and



well below 45 dBA at the closest residential receptors. Based on these noise modeling efforts, adverse noise impacts from onsite noise sources were not anticipated.

With regard to air quality, because future heavy industrial land uses on lots within the subdivision are unknown, the effects of each type of industrial activity cannot be quantified at this time. Some of the uses allowed by heavy industrial zoning could cause air pollution which could result in direct impacts on air quality. Given specific information about these land uses, potential air quality impacts from industrial sources can be estimated using computerized atmospheric dispersion models. It should be noted that before any facility with an air pollution source can be built anywhere in the State of Hawai'i, an application must be submitted to the State Department of Health, Clean Air Branch for a permit to construct the facility. Detailed information about any air pollution emissions must be included in the application. Depending on the expected emission rates, a detailed air quality impact assessment may be required prior to construction and must demonstrate that the facility will comply with all applicable air quality standards. As such, although an air quality impact assessment of project-related industrial emissions is not feasible at this time, an assessment may be required in the future depending on the specific nature of heavy industrial activity within the subdivision.

d. *Solid and hazardous waste*: Refer to the *Response to General Comments*

e. *Water*: Copies of the Draft EA were furnished to the Maui Planning Department and Maui Department of Water Supply so that information about the proposed project can be incorporated into the County's Water Use and Development Plan. A copy of the Draft EA was also provided to the Hawai'i Department of Agriculture and will help the department incorporate the reclassification of agricultural lands and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan. The proposed subdivision plans to use the underlying brackish groundwater and will not be utilizing a potable water supply. In addition, there are no existing or proposed other higher priority water uses of groundwater in this part of the Kahului Aquifer. For these reasons, we feel that the proposed use is in conformance with the County's Water Use and Development Plan. This use is further supported by the July 2, 2012 approval of well construction and pump installation permits for the subdivision by the State Commission of Water Resource Management (CWRM) for Well Nos. 4927-02 and 4927-03. The CWRM's 1.0 million gallons per day (MGD) sustainable yield is based exclusively on rainfall-recharge on less than half of the aquifer's total area. Other sources of the aquifer's recharge (natural and man-made) are substantially larger: underflow from Haleakala, surface runoff from Haleakala, underflow from the West Maui Mountains, surface runoff from the West Maui Mountains, leakage from the East Maui and Waiehe Ditch systems,

and irrigation return from HC&S sugar cane fields. Historically, these sources of recharge have supported pumpage from the aquifer of 45 MGD for many decades. Present pumpage is still in excess of 25 MGD, most of it by HC&S. The total estimated groundwater use for the proposed project is about 0.5 MGD. The location of this draft is miles from the nearest wells and will have no impact on these wells. If HC&S no longer cultivates sugar cane, a substantial amount of that aquifer's recharge would be reduced or eliminated altogether. However, it would also mean that about 25 MGD of pumpage from the aquifer would also cease. The wells for the proposed project are well positioned, with respect to the aquifer's natural sources of recharge, to continue to be viable.

f. *Wastewater*: Refer to the *Response to General Comments*. Also, in commenting on the Draft EA, the State Department of Health (DOH), Wastewater Branch indicated that wastewater from multiple septic tanks can no longer be discharged into a central leach field pursuant to current DOH policy. As such, the wastewater treatment plan for the proposed subdivision will be modified to call for the installation of an aerobic treatment unit and leach field on each developable lot which is permitted by the DOH and can be used within 1,000 feet of a drinking water well. The cost and installation of this individual wastewater system will be borne by individual lot owners when their lots are developed in the future. Each lot owner will also be responsible for compliance with Chapter 11-62, HAR pertaining to "Wastewater Systems". Provisions for the development of subdivision lots, including compliance with all applicable regulatory standards, shall be included in the CC&Rs and enforced by the association of subdivision lot owners.

*Drainage*: The proposed project will comply with all applicable provisions of Chapter 11-54, HAR entitled "Water Quality Standards" and Chapter 11-55, HAR titled "Water Pollution Control". The land owner acknowledges that a National Pollutant Discharge Elimination System (NPDES) is required for discharges into Class A or Class 2 State waters. Prior to the start of construction, an application for an NPDES permit for storm water associated with construction activities will be submitted to the DOH, Clean Water Branch (CWB) for review and approval. No construction dewatering effluent or hydro-testing water effluent is anticipated at this time. However, if such work is required, NPDES permits for these activities will be obtained from the CWB. In addition, an application for an NPDES permit for storm water associated with industrial activity will be submitted to the CWB for review and approval if necessary. The proposed project will not involve discharges into Class 1 or Class AA State waters.

g. *Energy consumption and carbon footprint*: Electrical demand requirements will be submitted (by the project's electrical consultant) at such time in the future that an application for subdivision approval is filed with the County of Maui. In addition to sustainable practices, subdivision lot owners will be encouraged to

implement and utilize energy generation and energy conservation measures during lot development and onsite operations.

3. Alternatives Analysis

The Final EA will examine the potential environmental effects of the various alternatives.

Housekeeping

4. Accepting Authority and Determining Agency

To conform more precisely to HAR 11-200-2, the Final EA will indicate that the Maui Planning Commission is the Approving Agency for the environmental review process. The State Land Use Commission (SLUC) initially agreed to serve as the Approving Agency. However, since the Executive Director's position was going to be vacated at the time (due to retirement) and because the timeframe for the selection of a successor was indeterminate, the Maui Planning Commission, with the concurrence of the SLUC, agreed to serve as the Approving Agency.

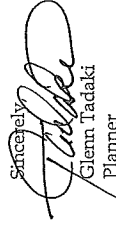
5. Length of Document

Thank you; your comments have been duly noted.

6. Reviewer Assistance.

Thank you; your comments have been duly noted.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

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NEL ABRICROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
LAND DIVISION  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 631  
HONOLULU, HAWAII 96809



WILLIAM L. ALA, JR.  
CHAIRMAN  
COMMISSION ON WATER RESOURCES  
COMMISSION ON WATER RESOURCES MANAGEMENT

RECEIVED

JUL 11 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn  
10/056

July 10, 2012

Chris Hart & Partners, Inc.  
Attention: Mr. Glenn Tadaki  
115 N. Market Street  
Wailuku, HI 96793-1717

Department of Planning  
County of Maui  
Attention: Mr. Kurt Wollenhaupt, Staff Planner  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki and Mr. Wollenhaupt:

SUBJECT: Draft Environment Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Amendment (DBA) and Change in Zoning (CIZ) for the Pu'uhene Heavy Industrial Subdivision

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on July 9, 2012, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji  
Land Administrator

Enclosure(s)  
cc: Central Files

NEL ABRICROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
LAND DIVISION  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809



WILLIAM L. ALA, JR.  
CHAIRMAN  
COMMISSION ON WATER RESOURCES  
COMMISSION ON WATER RESOURCES MANAGEMENT

June 7, 2012

MEMORANDUM

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Maui District
- Historic Preservation

TO:

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Draft Environment Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Amendment (DBA) and Change in Zoning (CIZ) for the Pu'uhene Heavy Industrial Subdivision

LOCATION: Pulehuni & Waikepu, Island of Maui; TMK: (2) 3-8-008:019

APPLICANT: County of Maui, Department of Planning

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by July 5, 2012.

Only one (1) copy of the CD is available for your review in Land Division office, Room 220.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachment

- We have no objections.
- We have no comments.
- Comments are attached.

Signed:   
Date: 6/27/12

cc: Central Files

RECEIVED  
LAND DIVISION

2012 JUL -9 A 9 34

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII



Landscape Architecture  
City & Regional Planning

July 18, 2012

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

LD/LydiaMorikawa  
REF.:DEADistrictBndryAmendmentP'uunene  
Maui,576

COMMENTS

- We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.
- Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone \_\_\_\_\_.
- Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is \_\_\_\_\_.
- Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyan-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 387-0267.
- Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:
  - Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Shaw-Kim at (808) 768-8296 of the City and County of Honolulu, Department of Planning and Permitting.
  - Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
  - Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
  - Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.

- The applicant should include water demands and infrastructure required to meet project needs.
- Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- he applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update
- Additional Comments: \_\_\_\_\_
- Other: \_\_\_\_\_

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 387-0258.

Signed:   
CARY S. CHANG, CHIEF ENGINEER  
Date: 6/22/12


Mr. Russell Y. Tsuji, Administrator  
Land Division  
Hawai'i Dept. of Land & Natural Resources  
P.O. Box 621  
Honolulu, HI 96809

SUBJECT: Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Tsuji,

Thank you for your letter dated July 10, 2012 which transmitted the Engineering Division's comments on the Draft EA. Pursuant to their comments, we acknowledge that the subject parcel is located in Flood Zone X, an area of minimal flood hazard, and that the National Flood Insurance Program does not have regulations for developments within Zone X.

Thank you for providing us with you comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Blanca Lafolette, PRL  
Stacy Otomo, P.E.



GLENN T. CORREA  
Director  
PATRICK T. MATSUI  
Deputy Director  
(808) 270-7230  
FAX (808) 270-7934

**DEPARTMENT OF PARKS & RECREATION**  
700 Hall's Nekoa Street, Unit 2, Wailuku, Hawaii 96793

July 10, 2012

Kurt Wollenhapt, Staff Planner  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Wollenhapt:

**SUBJECT: PUUNENE HEAVY INDUSTRIAL SUBDIVISION**  
TMK (2) 3-8-008:019  
CPA 2012/0002, CIZ 2012/0005, EA 2012/0001

Thank you for the opportunity to review the Draft Environmental Assessment for the subject project. Our Department is interested in discussing with the applicant a water source for the Maui Raceway Park's potable water needs.

Please feel free to contact me or Karla Peters, CIP Coordinator, at 270-7981, should you have any questions.

Sincerely,

GLENN T. CORREA  
Director of Parks and Recreation

c: Glenn Tadaki, Christ Hart & Partners, Inc.  
Robert Halvorson, Chief of Planning and Development

GTC:RH:kp

*cc: Glenn 10/052*

**RECEIVED**

JUL 16 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architects and Planning

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Landscape Architecture  
City & Regional Planning

August 8, 2012

Mr. Glenn T. Correa, Director  
Maui Dept. of Parks and Recreation  
700 Hale a Nakoa Street, Unit 2  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'uhene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Correa,

On behalf of the land owner, CMBY 2011 Investment, LLC, we acknowledge the receipt of your July 10, 2012 letter commenting on the Draft EA. Since the receipt of your letter, the land owner met with Patrick Matsui, Robert Hallvorson, and Karla Peters on August 6 to discuss the department's interest in a water source for the Maui Raceway Park (MRP).

As discussed during the meeting, an existing  $\frac{3}{4}$ -inch meter provides water for the MRP. The Parks Department would like a larger 1-1/2 inch meter but were informed by the Water Department that the larger meter is unavailable. As such, the Parks Department has been interested in pursuing other potential water sources for the MRP.


In addition to the MRP, the private water system for the proposed project was also discussed. The land owner offered to enter into further discussions with the Parks Department to help develop a water system (on a fair share basis) that would serve the MRP. However, since no County funds are available for the pro-rata development of such a system, the Parks Department will likely refocus its efforts to obtain the larger water meter.

Thank you for providing us with your comments and for participating in the environmental review process.

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

Proposed Pu'uhene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
August 8, 2012  
Page 2

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafollette, PRL  
Stacy Otomo, P.E.

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JUL 13 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning



July 10, 2012

Mr. Kurt Wollenhaupt, Staff Planner  
County of Maui  
Department of Planning  
250 South High Street  
Wailuku, Hawaii 96793

Subject: Draft Environmental Assessment (EA) for the Community Plan Amendment (CPA), District Boundary Admendment (DBA), and Change in Zoning for the Pu'unene Heavy Industrial Subdivision  
Tax Map Key: (2) 3-8-008:019  
Kihei, Maui, Hawaii


Dear Mr. Wollenhaupt,

Thank you for allowing us to comment on the Environmental Assessment for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) would like to highly encourage the customer's electrical consultant to submit electrical drawings to us as soon as practical to address and coordinate any possible relocations of our facilities. Please also refer to our MECO letter addressed to Mr. Glenn Tadaki of Chris Hart & Partners, Inc. and July 15, 2011, in response to a prior request for this project.

Should you have any questions or concerns, please call Keicie Kawamura at 872-3246.

Sincerely,

  
Ray Okazaki  
Supervisor, Engineering

c: Mr. Glenn Tadaki, Consultant, Christ Hart & Partners, Inc.

RECEIVED

JUL 18 2011

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning  
cc: Glenn 10/05/11



July 15, 2011

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki,

Subject: Early Consultation for the Proposed Puunene Heavy Industrial Subdivision  
Off Mokulele Highway  
Kahului, Maui, Hawaii  
Tax Map Key: (2) 3-8-008: 019

Thank you for allowing us to comment on the Early Consultation for the subject project.

In reviewing our records and the information received, Maui Electric Company (MECO) may be requiring access and electrical easements for our facilities to serve the subject project site. The existing area is currently served from our Maalaea Substation. Since the project's anticipated electrical demand may have a substantial impact to our system, we highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as practical so that service can be provided on a timely basis. MECO may need to complete system upgrades along with securing a new substation site to accommodate the anticipated electrical load.

Should you have any questions or concerns, please call me at 871-2341.

Sincerely,



Kyle Tamori  
Staff Engineer




Landscape Architecture  
City & Regional Planning

July 16, 2012

Proposed Pu'uhene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
July 16, 2012  
Page 2

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

Mr. Ray Okazaki, Supervisor  
Engineering Division  
Maui Electric Company, Ltd.  
P.O. Box 398  
Kahului, HI 96733-6898

**SUBJECT:** Comments on the Pu'uhene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CJZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Okazaki,

Thank you for your Draft EA comment letter dated July 10, 2012 which also refers to a previous MECO letter dated July 15, 2011 (see attached).

In response to your letter of July 10, 2012, we would like to note that the land use approval process could take at least two years. Accordingly, electrical drawings for the project will be submitted after the entitlements have been granted and in conjunction with the filing of an application for subdivision approval. Coordination for any possible relocation of MECO facilities would also be undertaken during the same time frame.

With regard to your letter dated July 15, 2011, we would like to reiterate that access and electrical easements (in favor of MECO) may be required in order to serve the subject parcel and that electrical system upgrades and a new substation site may be needed to accommodate the anticipated electrical load.

Electrical demand requirements and a project time schedule will be submitted (by the project's electrical consultant) at such time in the future that an application for subdivision approval is filed with the County of Maui.

cc: Blanca Lafolette, PRL  
Stacy Otomo, P.E.



ALAN M. ARAKAWA  
Mayor

DAVID C. GOODE  
Director

ROWENA M. DAGDAG-ANDAYA  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
**DEVELOPMENT SERVICES ADMINISTRATION**  
250 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

RALPH M. NAGAMINE, L.S., P.E.  
Development Services Administration

CARY YAMASHITA, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

July 25, 2012

Mr. Glenn Tadaki, Consultant  
CHRIS HART & PARTNERS, INC.  
115 North Market Street  
Wailuku, Maui, Hawaii 96793

Subject: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE  
COMMUNITY PLAN AMENDMENT, DISTRICT BOUNDARY  
AMENDMENT AND CHANGE IN ZONING FOR THE PUUNENE  
HEAVY INDUSTRIAL SUBDIVISION  
TMK: (2) 3-8-008:019 CPA 2012/0002, CIZ 2012/0005, EA 2012/0001

Dear Mr. Tadaki:

We reviewed the subject application and have no comments at this time.

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely,  
  
David C. Goode  
Director of Public Works

IS: S:\LUCACZ\prop\_heavy\_industrial\_subdiv\_cpa\_ciz\_ea\_38008019\_is.wpd  
xc: Highways Division  
Engineering Division

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JUL 27 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning



**CHRIS HART & PARTNERS, INC.**

Landscape Architecture  
City & Regional Planning

July 30, 2012

Mr. David C. Goode, Director  
Maui Dept. of Public Works  
200 S. High Street  
Wailuku, HI 96793

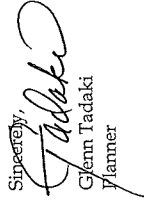
SUBJECT: Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Goode,

As a follow-up to your letter dated July 25, 2012, we understand that the Department of Public Works has no comments at this time.

Thank you for providing us with your comments and for participating in the environmental review process.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph. 808-242-1955 • Fax 808-242-1956  
www.chpmaui.com

ALAN M. ARAKAWA  
Mayor  
WILLIAM R. SPENCE  
Director  
MICHELE CHOUTEAU McLEAN  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PLANNING

July 25, 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

CC: *blenn* 10/05Z

*K-7/31/12*

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JUL 31 2012

Mr. Glenn Tadaki, Planner  
July 25, 2012  
Page 2

- As the proposed project will involve a County of Maui Community Plan Amendment and the use of State of Hawaii lands (Kama'aina Road and a 26-foot wide strip of land across three adjacent State parcels), an EA must be prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Hawaii Administrative Rules (HAR); and
  - The Accepting Authority of the EA will be the Maui Planning Commission.
- Based on the foregoing, the Department provides the following comments with regards to the scope of work for the proposed Pu'uhene Heavy Industrial Subdivision and related District Boundary Amendment, Community Plan Amendment, and Change in Zoning:
1. The Department recommends that the Applicant process the District Boundary Amendment with the State Land Use Commission PRIOR to a review of the Community Plan Amendment and Change in Zoning applications by the Maui Planning Commission.
  2. The Department understands the Applicant desires to pursue a rezoning to the PROPOSED M/3 - Industrial District designation and that legislation to enact an M-3 District is currently being reviewed by the County Council. Should the Council adopt this new district in a timely manner, the Applicant will revise their application to reflect a Change of Zoning application from *Agricultural to M-3, Industrial District*. The Maui Planning Commission will then consider the proposed request for *M-3, Industrial District* zoning.
  3. The proposed *M-3, Industrial District* allows a range of heavy industrial uses without the need for additional review by the Planning Commission and County Council under the County Special Use Permit application procedure. Consequently, should the *M-3, Industrial District* zoning be approved prior to review of the CPA and CZ by the Maui Planning Commission, the Department requests the Applicant review mitigation measures to reduce potential impacts of heavy industrial uses to surrounding lands and resources, including a review of procedures to address industrial emergencies.

Mr. Glenn Tadaki, Planner  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

**SUBJECT: REQUEST FOR COMMENT ON DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE COMMUNITY PLAN AMENDMENT (CPA), DISTRICT BOUNDARY AMENDMENT (DBA), AND CHANGE IN ZONING (CIZ) FOR THE PU'UHENE HEAVY INDUSTRIAL SUBDIVISION, LOCATED APPROXIMATELY ONE (1) MILE SOUTHEAST OF THE INTERSECTION OF WOKULELE HIGHWAY, WEHAMEHA LOOP, AND KAMA'AINA ROAD, ISLAND OF MAUI, HAWAII; TMW: (2) 3-8-008-019 (CPA 2012/0002) (CIZ 2012/0005) (EA 2012/0001)**

The Department of Planning (Department) is in receipt of the above-referenced document for the proposed Pu'uhene Heavy Industrial Subdivision. The Department understands the proposed action includes the following:

- The Applicant is the CMBY 2011 Investment, LLC with Chris Hart & Partners, Inc. acting as the Applicant's Consultant;
- The Applicant is proposing to subdivide an 86-acre vacant and undeveloped site adjacent to the Old Pu'uhene Airport into approximately 28 fee-simple, heavy industrial lots;
- The proposed project is located adjacent to Project District 10 (Old Pu'uhene Airport area - 561 acres) as outlined in the Kihel-Makena Community Plan dated March 6, 1998;
- The proposed project is located within the *Proposed Urban Growth Boundary* for the draft Maui Island Plan;
- The proposed project will require the Applicant to seek a District Boundary Amendment (from the *State Agricultural* to the *State Urban District*) from the State of Hawaii Land Use Commission, a Kihel-Makena Community Plan Amendment (from *Agriculture to Heavy Industrial*) from the County of Maui, and a Change in Zoning (from *Agricultural to M-2, Heavy Industrial*) from the County of Maui;

250 SOUTH-HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
MAIN LINE (808) 270-7735; FACSIMILE (808) 270-7634  
CURRENT DIVISION (808) 270-8205; LONG RANGE DIVISION (808) 270-7214; ZONING DIVISION (808) 270-7255



August 8, 2012

Mr. William Spence, Director  
Maui Dept. of Planning  
250 South High Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Spence,

On behalf of the Applicant, CMBY 2011 Investment, LLC, we are responding to your letter dated July 25, 2012.

1. The Applicant shall process the District Boundary Amendment with the State Land Use Commission prior to the Maui Planning Commission's review of the Community Plan Amendment and Change in Zoning.
2. The proposed bill for M-3, *Restricted Industrial District* zoning is currently being reviewed by the Council's Planning Committee. Should the bill be adopted by the Council in a timely manner, the Change in Zoning application will be revised to reflect the change to M-3 zoning.
3. Because heavy industrial uses will be determined by future lot owners, specific activities that would occur within the subdivision are presently unknown. Notwithstanding this, since heavy industrial uses have the potential to affect the environment, the Covenants, Conditions, and Restrictions (CC&Rs) for the proposed subdivision will require that all lot owners prepare and implement Best Management Practices (BMPs) and emergency response plans that are specific to the heavy industrial use on their lots. The CC&Rs will also stipulate that lot owners must comply with all Federal, State, or County laws, including, but not limited to, regulations governing health, safety, and the environment. An

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

Proposed Pu'unene Heavy Industrial Subdivision  
TMK (2) 3-8-008:019  
August 8, 2012  
Page 2

association of subdivision lot owners shall be formed and, among its duties, will be responsible for reviewing the development plans of each lot owner and for ensuring compliance with the CC&Rs.

In Hawaii'i, a use or activity including a potential pollution source is subject to the regulatory review and approval process in which detailed information about the use or activity is evaluated, potential impacts are identified, and appropriate mitigation measures are prescribed. If a regulatory permit or approval is granted, specific terms of compliance are set forth depending on the nature of the potential impacts.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

NEL ABERCROMBIE  
GOVERNOR  
MAJOR GENERAL DARRYL D. M. WONG  
DIRECTOR OF CIVIL DEFENSE

DOUG MAYNE  
VICE DIRECTOR OF CIVIL DEFENSE



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



PHONE (808) 733-4300  
FAX (808) 733-4287

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AUG - 3 2012

CHRIS HART & PARTNERS, INC.  
Landscape Architecture and Planning

cc: Glenn 101052

August 2, 2012

Mr. Glenn Tadaki  
Chris Hart & Partners, Inc.  
115 North Market Street  
Wailuku, Hawaii 96793

Dear Mr. Tadaki:

Pu'unene Heavy Industrial Subdivision  
Draft Environmental Assessment (DEA), TMK: 9-1-016:142

Thank you for the opportunity to comment on the subject project.

We strongly recommend one (1) omni-directional 121 db(c) siren be installed for coverage of the proposed development. State Civil Defense will work with the developer on placement of these additional sirens.

We defer to the appropriate State and federal agencies as to the protection of any cultural, historical, and archeological elements of the property.

If you have any questions, please call Ms. Havinne Okamura, Hazard Mitigation Planner, at (808)733-4300, extension 556.

Sincerely,

DOUG MAYNE  
Vice Director of Civil Defense



Landscape Architecture  
City & Regional Planning

August 7, 2012

Mr. Douglas Mayne, Vice Director  
Hawai'i State Civil Defense  
3949 Diamond Head Road  
Honolulu, HI 96816-4495

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Mayne,

On behalf of the developer, CMBY 2011 Investment LLC, we would like to thank you for your August 2, 2012 letter commenting on the Draft EA.

In response to your comments, the developer will work with State Civil Defense to install one (1) omni-directional 121 db(c) siren to provide coverage for the project area.

Thank you for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Bert Saruwatari, SLUC  
Blanca Lafolette, PRL

ALAN M. ARAKAWA  
Mayor  
WILLIAM R. SPENCE  
Deputy Mayor  
MICHELE CHOUTEAU McLEAN  
Deputy Director

COUNTY OF MAUI  
DEPARTMENT OF PLANNING

TRANSMITTAL (Agency Reminder)

August 6, 2012

STATE AGENCIES	
<input checked="" type="checkbox"/>	DBEDT
<input checked="" type="checkbox"/>	Dept. of AG, Honolulu
<input checked="" type="checkbox"/>	Dept. of Hawaiian Home Lands
<input checked="" type="checkbox"/>	Dept. of Health, Honolulu, CWB
<input checked="" type="checkbox"/>	Dept. of Health, Honolulu, SHHB
<input checked="" type="checkbox"/>	DNR-Land, Maui
<input checked="" type="checkbox"/>	DNR-SHPD
<input checked="" type="checkbox"/>	DOT, Maui
<input checked="" type="checkbox"/>	DOT, Statewide Planning Office (s)
<input checked="" type="checkbox"/>	Office of Hawaiian Affairs
OTHER	
<input checked="" type="checkbox"/>	A&B Properties, Inc.
<input checked="" type="checkbox"/>	Hawaiian Cement
<input checked="" type="checkbox"/>	Kihei Community Association
<input checked="" type="checkbox"/>	LeSEA Broadcasting Corporation

COUNTY AGENCIES	
<input checked="" type="checkbox"/>	Dept. of Transportation
<input checked="" type="checkbox"/>	ZAED, Zoning & Enforcement Division
FEDERAL AGENCIES	
<input checked="" type="checkbox"/>	USDA, NRCS
<input checked="" type="checkbox"/>	Fish & Wildlife

**PROJECT NAME:** PUPUNE HEAVY INDUSTRIAL SUBDIVISION  
**APPLICANT:** CMBY 2011 Investment, LLC  
**STREET ADDRESS:** Approximately One-Mile Southeast of the Intersection of Mokuleia Highway, Mahanaha Loop, and Kama'ama Road, Pu'unahe, Maui, Hawaii.  
**PROJECT DESCRIPTION:** Proposed Heavy Industrial Subdivision on an 86-Acre Parcel (2) 3-8-008-019  
**PERMIT NO.:** CPA 20120002, CIZ 20120005, EA 20120001

TRANSMITTED TO YOU ARE THE FOLLOWING:  
 Application(s) (Previously Transmitted)

THESE ARE TRANSMITTED AS CHECKED BELOW:  
 For your Comment and Recommendation

On May 1, 2012, a request for comment and recommendation was sent to your office regarding the above-referenced application(s). The deadline for response was on July 9, 2012; however, as of this date, the Department of Planning (Department) has not received a response from your agency. If comments have been transmitted, please disregard this reminder. If you have not responded, please address your comments and recommendations directly to me by August 23, 2012 or to Mr. Glenn Tadaki, Chris Hart & Partners, 115 N. Market Street, Waikuku, HI 96793. Please identify any comments you would like the Department to propose as conditions

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
 MAIN LINE (808) 270-7735; FACSIMILE (808) 270-7634  
 CURRENT DIVISION (808) 270-9205; LONG RANGE DIVISION (808) 270-7214; ZONING DIVISION (808) 270-7253

AGENCY NAME Pupune Heavy Industrial Subdivision	PHONE (808) 270-1775
--	-------------------------

Agency Reminder - PUPUNE HEAVY INDUSTRIAL SUBDIVISION (CPA 20120002) (CIZ 20120005) (EA 20120001)  
 August 8, 2012  
 Page 2

of project approval. Also, please provide any previous documentation pertinent to this application. A comment box is provided below to assist you. If no comment, please sign the "No Comment" box and fax to (808) 270-1775. Thank you for your time and assistance. For additional clarification, please contact Staff Planner Kurt Wollenhaupt at kurt.wollenhaupt@maui.mauicounty.gov or at (808) 270-1789.

Sincerely,

*Kurt Wollenhaupt*

Kurt Wollenhaupt, Staff Planner

cc: Clayton I. Yoshida, AICP, Planning Program Administrator (PDF)  
 Kurt F. Wollenhaupt, Staff Planner (PDF)  
 Glenn Tadaki, Chris Hart & Partners  
 Project File  
 General File

K:\BMP\_Docs\PLANNING\CPA20120002\_PUPUNE HEAVY INDUSTRIAL SUBDIVISION\Agency Reminder.doc

Signed: <i>[Signature]</i>	Date: 8-14-12
Print Name: <i>[Signature]</i>	Title: <i>[Signature]</i>

NO COMMENT

COMMENT/RECOMMENDATION BOX

08-14-12 09:59 AM



Landscape Architecture  
City & Regional Planning

August 15, 2012

Ms. Jo Anne Johnson, Director  
Maui Dept. of Transportation  
2145 Kaolu Street, Suite 102  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Ms. Johnson,

Pursuant to your department's comments dated August 14, 2012, we acknowledge that the Maui Department of Transportation has no comments at this time.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,

Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

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Glenn Tadaki

**From:** Gomes, David [David.Gomes@HAWAIIANCEMENT.com]

**Sent:** Tuesday, August 14, 2012 9:15 AM

**To:** Kurt Wollenhaupt (Kurt.Wollenhaupt@co.maui.hi.us)

**Subject:** Puunene Heavy Industrial Subdivision comments

Hi Kurt, I am in receipt of your letter asking if Hawaiian Cement has any comments or concerns we would like to submit. I understand our deadline is 8-22-12. I would like to respond by stating Hawaiian Cement has no comments or concerns about this project. Thank you for asking.

Dave Gomes  
General Manager  
Hawaiian Cement, MC&A Division  
808-871-7004  
808-877-7414 (fax)  
808-870-2949 (cell)  
dave.gomes@hawaiiancement.com



Landscape Architecture  
City & Regional Planning

August 15, 2012

Mr. David Gomes, General Manager  
Maui Concrete & Aggregate Division  
Hawaiian Cement  
P.O. Box 488  
Kahului, HI 96732

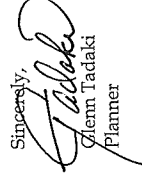
**SUBJECT:** Comments on the Pu`unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Gomes,

As a follow-up to your August 14, 2012 e-mail to Kurt Wollenhaupt, we understand that Hawaiian Cement has no comments at this time.

Thank you for providing us with your comments and for participating in the environmental review process.

Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph. 808-242-1955 • Fax 808-242-1956  
www.chpmaui.com

8/15/2012



August 22, 2012

Mr. Loyal Mehrhoff, Field Supervisor  
Pacific Islands Fish and Wildlife Office  
**U.S. Fish and Wildlife Service**  
Attention: Ian Bordenave  
300 Ala Moana Blvd., Room 3-122, Box 50088  
Honolulu, HI 96850

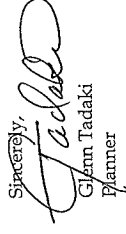
**SUBJECT:** Comments on the Pu'unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008-019; Reference No. POH-2011-00179

Dear Mr. Mehrhoff,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to the U.S. Fish and Wildlife Service's e-mailed comments dated August 21, 2012,

In accordance with the recommendations provided by the Fish and Wildlife Service, the cutting or trimming of trees and woody shrubs over 15 feet in height shall be avoided from June 1 through September 15 to mitigate potential impacts to the Hawaiian Hoary Bat.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Glenn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL

115 N. Market Street, Wailuku, Maui, Hawaii 96793-1717 • Ph 808-242-1955 • Fax 808-242-1956  
[www.chpmaui.com](http://www.chpmaui.com)

Glenn Tadaki

**From:** Ian\_Bordenave@fws.gov  
**Sent:** Tuesday, August 21, 2012 2:40 PM  
**To:** Glenn Tadaki  
**Cc:** Patrice\_Ashfield@fws.gov; Kurt.Wollenhaupt@co.maui.hi.us; blanca@pacifcormland.com  
**Subject:** Re: Fw: Pu'unene Heavy Industrial Subdivision - Draft EA  
**Attachments:** Draft EA excerpts for P. Ashfield.pdf; FINAL\_FLORA SURVEY\_Aug 2011.pdf; FINAL\_Faunal Survey\_20110808.pdf; Pertinent Draft EA comments & response letters for P. Ashfield .pdf

Aloha Glenn,

This is Ian Bordenave, I was the consulting biologist for the Technical Assistance letter that your office received from the Service (2011-TA-0384). I believe you and I spoke over the phone about a year ago regarding this project, too. Anyhow, I've gone through the biological surveys and the Flora and Fauna section of the Draft EA that you provided, and everything looks good except one small detail... Regarding the Hawaiian hoary bat (*Lasiurus cinereus semotus*), the latest guidance from the Service is to avoid cutting or trimming of trees and woody shrubs over 15 feet in height from June 1 through September 15. This recommendation was formulated by the Service using data from Tomich and Bonaccorso involving studies on lactation (Tomich) and fledging (Bonaccorso) corresponding to the vulnerable, non-volant period in the Hawaiian hoary bat's life history. Although no bats were observed during this latest round of surveys at the Puunene site, the range and foraging behavior attributed to the species raises the possibility that they may be present (albeit intermittently) during the spring, summer, and fall months in vegetation exceeding 15 feet in height. Though I understand that the comment period for the Draft EA is closed, incorporation of these recommendations into the Final EA and project Master Plan is nonetheless suggested.

Mahalo!

Ian Bordenave  
Biologist  
U.S. Fish and Wildlife Service  
Pacific Islands Field Office  
Ecological Services, Consultations & HCP  
300 Ala Moana Blvd., Suite 3-122  
Honolulu, HI 96850  
Phone: (808) 792-9453  
E-Mail: [ian\\_bordenave@fws.gov](mailto:ian_bordenave@fws.gov)

Patrice\_Ashfield@FWS/DOI  
08/21/2012 11:44 AM  
To: Ian\_Bordenave@FWS/DOI@FWS  
cc  
Subject: Fw: Pu'unene Heavy Industrial Subdivision - Draft EA

Patrice Ashfield  
Habitat Conservation and Section 7 Program Leader  
Pacific Islands Fish and Wildlife Office

8/21/2012



ALAN M. ARAKAWA  
Mayor

WILLIAM R. SPENCE  
Director

MICHELE CHOUTEAU McLEAN  
Deputy Director




COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

TRANSMITTAL  
August 23, 2012

MEMO TO: Clayton Yoshida; Planning Program Administrator (PDF via email)  
Current Planning Division

ATTN: Kurt Wollenhaupt, Staff Planner

FROM:  Aaron Shimamoto, Planning Program Administrator  
Zoning Administration and Enforcement Division

SUBJECT: **CIZ, CPA, & EA FOR THE PUUNENE HEAVY INDUSTRIAL SUBDIVISION  
PUUNENE, HAWAII**  
TMK: (2) 3-3-008:019  
CPA 2012/0002 & CIZ 2012/0005 & EA 2012/0001

TRANSMITTED TO YOU AS INDICATED:

(X) For Your Information

(X) For Necessary Action

Our comments are noted below. These comments are not intended to be specific conditions of project approval. But, if you feel that any of them warrant a condition you may incorporate them into your recommended conditions of project approval.

1. The above parcel contains the following designations:

- A. State Land Use Agriculture.
- B. Community Plan Agriculture.
- C. County Zoning Agriculture.
- D. Special Management Area = No.
- E. Flood Zone X.

2. We will provide specific subdivision comments when we receive a preliminary subdivision map from the applicant or Development Services Administration (DSA). Please note that we would want a map equal in quality and size to a preliminary subdivision plat that is submitted to DSA.

3. The Proposed Land Use Development Plan as shown on Figure 5 shows that the subdivision will be accessed by a single connection on the northern side of the subdivision and a drainage retention swale along the western side of the development.

A. Although a single connection to this subdivision may be fine for some time into the future, the neighboring parcels will eventually be developed, so this subdivision should be designed to allow for at least one additional connection to neighboring parcels (south, east, and/or west). As neighboring land is developed, this will help ensure better connectivity and linkages between neighboring land uses, provide an additional entry/exit for emergency purposes, and shorten commute times.

B. An option to ensure that an additional connection is reserved for this purpose would be to designate a future connection point as a "reserve strip". Section 18.016.100 of the Maui County Code states, "Reserve strips shall be required when the director determines such

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96753  
MAIN LINE (808) 270-7733; FACSIMILE (808) 270-7634

CURRENT DIVISION (808) 270-8295; LONG RANGE DIVISION (808) 270-7244; ZONING DIVISION (808) 270-7255

Clayton Yoshida  
August 23, 2012  
Page 2 of 2

strips to be necessary for the orderly future development of the community according to either the general plan or projected future development in the area surrounding the subdivision. The land composing such strips shall be reserved for future use and development under conditions approved by the director".

C. The edge of the drainage retention swale is an ideal location to incorporate a greenway that includes a pedestrian/bicycle pathway that is separate from any roadway. This would initially be used by workers and customers of the businesses within the subdivision and provide connectivity points to neighboring lots as they are developed along this drainage way.

D. The integration of a pedestrian/bikeway network (separate from roadways) within this proposed industrial subdivision including potential connections to neighboring parcels should be considered in this report. The submitted report does not seem to consider this in accordance with the County Wide Policy Plan or the Kihai-Makana Community Plan.

E. Conditions placed into the approved Change in Zoning addressing the above would help ensure that they are incorporated into the project.

4. The following items are copied from the County Wide Policy Plan (CWPP) and the Kihai-Makana Community Plan (KMCP) in support of the above comment.

A. CWPP, Promote Sustainable Land Use and Growth Management, Objective 3, Policy h: Ensure better connectivity and linkages between land uses.

B. CWPP, Promote Sustainable Land Use and Growth Management, Objective 4, Policy d: "Promote creative subdivision designs that implement best practices in land development, sustainable management of natural and physical resources, increased pedestrian and bicycle functionality and safety, and the principles of livable communities".

C. KMCP, Physical & Social Infrastructure, Transportation, Objectives and Policies: "Plan, design, and construct a pedestrian and bikeway network throughout the Kihai-Makana region which considers the utilization of existing stream beds, drainage ways, wetlands and public rights-of-way along coastal and inland areas."

D. KMCP, Land Use, Objectives and Policies: "Establish a system of parks, utility easements, shoreline areas, drainage ways and wetlands as an open space framework for the urban areas of the region, i.e. where structures exist or are planned to exist, and provide an integrated system of pedestrian and bicycle paths."

If you have any questions regarding this letter, please feel free to contact Paul Critchlow at [paul.critchlow@mauicounty.gov](mailto:paul.critchlow@mauicounty.gov) or at 270-5795.

XC: Paul Critchlow, Staff Planner (PDF via email)  
Kurt Wollenhaupt, Staff Planner (PDF via email)  
CPA 2012/0002, CIZ 2012/0005 & EA 2012/0001 (KIVA Related Documents & Project File)  
General File  
WFRS-AHS:FAC:PBC:ckk  
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Landscape Architecture  
City & Regional Planning

August 30, 2012

Mr. Aaron Shimamoto, Planning Program Administrator  
Zoning Administration and Enforcement Division  
Maui Planning Department  
250 S. High Street  
Wailuku, HI 96793

**SUBJECT:** Comments on the Pu`unene Heavy Industrial Subdivision  
EA 2012/0001, CPA 2012/0002, CIZ 2012/0005  
TMK (2) 3-8-008:019

Dear Mr. Shimamoto,

On behalf of the land owner, CMBY 2011 Investment, LLC, we are responding to your comment letter dated August 23, 2012.

1. The land owner concurs with the existing land use and flood zone information cited in your letter.
2. As noted in the Draft EA, the land development plan for the proposed heavy industrial subdivision is preliminary in nature and subject to change. The number, size, and layout of the lots within the subdivision will be largely influenced by economic conditions at the time the land owner is ready to file an application for preliminary subdivision approval and proceed with actual development of the project. Notwithstanding this, the preliminary plat map for the subdivision shall comply with the standards set forth by Chapter 18.08 of the Maui County Code regarding the preparation of preliminary plat maps.
- 3A. The land owner is willing to work with the County of Maui to identify an additional (access) connection to a neighboring parcel (e.g., Project District 10) to provide for future connectivity between land uses and to facilitate transportation and emergency access.
- 3B. Thank you; your comments regarding an optional "reserve strip" have been duly noted.

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3C. The size, shape, and layout of the lots, roadways, and drainage swale could change in response to market conditions at the time the application for preliminary subdivision approval is submitted. Notwithstanding this, the land owner will examine the feasibility of including a pedestrian and bicycle pathway along the edge of the grassed drainage swale during the preparation of the preliminary plat map.

3D. A separate, shared pedestrian and bicycle path on the east side of Mokuule Highway currently links Kahului with Kihei. Kama`aina Road, South Firebreak Road, and Lower Kihei Road are privately-owned roadways that fall under the control of the State of Hawai'i and A&B Hawai'i. In addition to the subject parcel, these roadways provide access to the Hawaiian Cement quarry and sugar cane fields in the area. Heavy trucks and machinery used for sugar cane cultivation/transport and concrete manufacture/delivery characterize traffic along these roadways. Integrating a pedestrian and bicycle network along or in proximity to roadways that are actively used for agricultural and heavy industrial purposes is contrary to the best interests of public safety and well being.

There are no "hard and fast" rules for determining the most appropriate type of bicycle facility for a particular location since roadway speeds, traffic volume, right-of-way width, presence of parking, adjacent land uses, and anticipated bicycle use must all be considered. Unless a change is warranted by future conditions, the streets within the subdivision will function as a "shared roadway" facility in order to accommodate bicycle traffic.

The time frame for the future development of neighboring lands is highly indeterminate and subject to the availability of funding, the establishment of infrastructure, and contingent upon securing the necessary land use approvals. As part of a comprehensive master-planning process, the State of Hawai'i is evaluating infrastructure needs for the future development of State and County lands in the vicinity of the Old Pu`unene Airport. The State Department of Hawaiian Home Lands (DHHL) owns a 646-acre parcel to the south of the subject parcel which it has zoned for Agricultural homesteads (i.e., farm lots) as dust and wind conditions make it unsuitable for residential or commercial use. The DHHL also has plans to develop a private wastewater treatment plant on a portion of their site. The Department of Public Safety's plans for the Maui Prison have been delayed due to the lack of government funding and the absence of infrastructure (i.e., water, sewer) to support this project. The County of Maui recently recommended that the Prison be moved from its proposed location in Project District 10 (Old Pu`unene Airport area) to State-owned land approximately one mile east of Mokuule Highway. The County's plans for PD 10 are pending the completion of an updated master plan, obtaining the necessary land use approvals for the project, and the availability of funding and

infrastructure. It is estimated that it could take at least 10 years or more before any ground-breaking construction commences on the State and County lands. Notwithstanding this, the land owner is willing to meet with neighboring property owners to discuss potential connections should the establishment of a pedestrian and bicycle network in the area be warranted in the future.

- 3E. Thank you; your comments have been duly noted.
- 4A. A major guiding principle for the development of any pedestrian and bicycle network is that it should connect to places that people want to go such as homes, schools, work, public services, shopping, and recreational areas. The lands within and in the vicinity of the subject parcel do not possess any of the basic elements that would justify the cost and development of a separate pedestrian and bicycle network on land that will be specifically utilized for purely heavy industrial activities and is geographically separate and spatially distant from other urban areas such as Kahului or Kihei which would benefit from such a network.

The subject parcel is located on the Central Maui plain in the vicinity of the Old Pu'umene Airport. As identified on Page 13 of the KMCP, the four communities that comprise this region are: 1) Ma'alaea, 2) Kihei, 3) Wailea, and 4) Makena. The KMCP describes Ma'alaea as "a quiet, residential community," Kihei as "the residential and commercial center of the region," Wailea as "a master-planned resort community," and Makena as containing "resort facilities, significant open spaces, and cultural landscapes while retaining rural village characteristics."

The north-south, linear development pattern in Kihei is directly tied to Pi'ilani Highway and South Kihei Road and the community's near total dependence on the automobile for travel within the region. To address this dependency and reduce traffic congestion, the KMCP encourages the establishment of a pedestrian and bicycle network since it would provide an alternate mode of transportation and improve travel in Kihei by connecting to places that people want to go.


While a pedestrian and bicycle network would provide connectivity within Kihei, it would not be as appropriate for a distant urban land use such as the proposed project whose location is better suited away from other urban areas.

Project District 10 (Old Pu'umene Airport area) lies to the west of the subject parcel and is the only land use in the area that has been included in the KMCP. Although the subject parcel and PD 10 were included in the KMCP region, it can

be argued that this area should have been included in the Waihuku-Kahului Community Plan region given its geographic location and proximity to Kahului, and its association with historic land use and development in Central Maui.

- 4B. The proposed project will comply with the applicable provisions of Title 18 of the Maui County Code (Subdivisions). Best Management Practices will be utilized in the design and development of the project.
- 4C. The subject parcel does not include any existing stream beds, drainageways, wetlands, and public rights-of-way along coastal and inland areas that would contribute to the development of a pedestrian and bicycle network for the Kihei-Makana region.
- 4D. While the proposed drainage swale along the west side of the subject parcel constitutes an area of open space, there are no parks, utility easements, shoreline areas, and wetlands on the property which would contribute to the establishment of an open space framework for the area.

Thank you for providing us with your comments and for participating in the environmental review process. Please feel free to call me at (808) 242-1955 should you have any questions.

Sincerely,  
  
Cjerrn Tadaki  
Planner

cc: Kurt Wollenhaupt, Maui Planning Department  
Blanca Lafolette, PRL