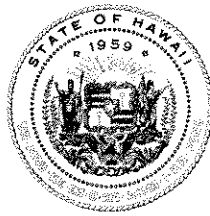
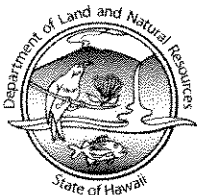


LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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HONOLULU, HAWAII 96809

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Ref. No: 06HD-183
Author: LD-WTM

MEMORANDUM

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Peter T. Young, Chairperson
Board of Land and Natural Resources

SUBJECT: Finding of No Significant Impact (FONSI) to the Environment for
Yamada and Sons Quarry on State Lands at Waiakea, South Hilo,
Hawaii; Tax Map Key: 3rd/ 2-1-13: 02

The Department of Land and Natural Resources, Land Division, has reviewed the comments received during the 30-day public review period and the applicant's responses to these comments for the above referenced environmental assessment. Accordingly, we have determined that this project will not have a significant environmental effect and have issued a FONSI determination. Please publish this notice in your next scheduled publication of the Environmental Notice.

We have enclosed a completed OEQC Bulletin Publication Form and four (4) copies of the final environmental assessment.

If you have any questions, please feel free to contact Wesley Matsunaga at the Hawaii District Land Office at (808) 974-6203. Thank you.

Enclosures

cc: Land Board Member
Central Files
District Files

FINAL ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS QUARRY

Portion of TMK (3rd) 2-1-13:02
Waiakea, South Hilo District, Hawai'i Island, State of Hawai'i

January 2007

Prepared for:

Yamada and Sons, Inc.
733 Kanoelehua Avenue
Hilo, Hawai'i 96720

and

Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawai'i 96813

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FINAL ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS QUARRY

Portion of TMK (3rd) 2-1-13:02
Waiakea, South Hilo District, Island of Hawai'i, State of Hawai'i

APPLICANT:

Yamada and Sons, Inc.
733 Kanoelehua Avenue
Hilo, Hawai'i 96720

APPROVING AGENCY:

Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawai'i 96813

CONSULTANT:

Geometrician Associates LLC
HC 2 Box 9575
Kea'au, Hawai'i 96749

CLASS OF ACTION:

Use of State Land

This document is prepared pursuant to:
The Hawai'i Environmental Protection Act,
Chapter 343, Hawai'i Revised Statutes (HRS)

TABLE OF CONTENTS

SUMMARY	ii
PART 1: PROJECT LOCATION, DESCRIPTION, AND E.A. PROCESS	1
1.1 Project Location	1
1.2 Project Description	2
1.3 Environmental Assessment Process	3
1.4 Public Involvement and Agency Coordination	5
1.5 Property Ownership	5
PART 2: ALTERNATIVES	6
2.1 No Action	6
2.2 Alternative Locations	6
PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION	7
3.1 Physical Environment	7
3.1.1 Geology, Soils and Geologic Hazards	7
3.1.2 Drainage, Water Features and Water Quality	8
3.1.3 Flora, Fauna, and Ecosystems	10
3.1.4 Air Quality, Noise and Scenic Resources	16
3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions	17
3.2 Socioeconomic and Cultural	18
3.2.1 Socioeconomic Characteristics	18
3.2.2 Cultural Setting	19
3.2.3 Archaeology and Historic Sites	21
3.3 Infrastructure	21
3.3.1 Utilities	21
3.3.2 Traffic and Parking	22
3.4 Secondary and Cumulative Impacts	23
3.5 Required Permits and Approvals	23
3.6 Consistency With Government Plans and Policies	23
3.6.1 Hawai'i State Plan	23
3.6.2 Hawai'i County Zoning and General Plan	23
3.6.3 Hawai'i State Land Use Law	24
PART 4: DETERMINATION	24
PART 5: FINDINGS AND REASONS	25
REFERENCES	27
LIST OF FIGURES	
FIGURE 1 Project Location	2
FIGURE 2 TMK Map	3
FIGURE 3 Airphoto	4
LIST OF TABLES	
TABLE 1 Yamada and Sons Quarry Area Plant Species List	11
TABLE 2 DLNR Step Quarry Expansion Area Plant Species List	14
TABLE 3 Selected Socioeconomic Characteristics	18
APPENDIX 1 Archaeological Report/Cultural Impact Assessment	
APPENDIX 2 Comments in Response to Pre-Consultation	
APPENDIX 3 Comments to Draft EA and Responses	

SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Yamada and Sons, Inc. ("Yamada and Sons") proposes to acquire a license to develop a 14.99-acre portion of a State property for use as a rock quarry. The project site is adjacent to existing quarries and is presently vacant and undeveloped. Yamada and Sons requires a new quarry because their existing quarry has nearly exhausted its supply of adequate quality material. The quarry would allow the manufacture of engineered products, including base course and components of asphalt and concrete, that are necessary for the construction of a wide variety and large number of Hawai'i County projects, both public and private. Yamada and Sons would acquire a license to with the Department of Land and Natural Resources for use of the site, and will pay royalties to the State for extraction of material. The proposed quarrying activities would be identical in nature to the ongoing quarrying activities located on adjacent parcels; rock would be excavated with heavy equipment when possible, and when impenetrable rock is encountered, drilling and blasting would be performed. Excavated rock would either be processed on-site, or at Yamada and Sons' baseyard located along Railroad Avenue near the project site. They anticipate that about 35,000 tons of material would be extracted per month, and with the excavation reaching a maximum depth of about 60 feet, the quarry is expected to have an active lifetime of roughly ten years or more.

Because the project would require clearing of land area greater than one acre, the applicant would obtain an NPDES permit and develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to contain sediment and storm water runoff from leaving the project site. Furthermore, construction equipment would be kept in good working condition to minimize the risk of fluid leaks that could enter runoff and groundwater. Significant leaks or spills, if they occur, would be properly cleaned up and disposed of at an approved site. Use of hazardous materials on the site, including materials used for blasting, would require a number of permits and licenses.

Surveys have determined that no significant biological, historic or cultural resources are present. If archaeological resources or burials are encountered during land-altering activities associated with construction, work in the immediate area of the discovery will be halted and the State Historic Preservation Division would be contacted. Also, in order to protect public safety the quarry will be "stepped" or terraced, a vegetative buffer will be maintained around the periphery of the site, and access routes to the interior of the site will be kept gated.

DLNR anticipates that in the future it may also decide to step a 100-foot strip on the southern boundary of the existing quarries to produce a better profile for future land uses after substantial quarrying is finished. This area is not part of the proposed Yamada and Sons quarry but is located nearby on a portion of TMK 2-1-13:148. If this area is step quarried, whether by DLNR or lessees, realignment of part of the Ammunition Dump Road would be required.

PART 1: PROJECT LOCATION, DESCRIPTION, AND ENVIRONMENTAL ASSESSMENT PROCESS

1.1 Project Location

Yamada and Sons, Inc. ("Yamada and Sons") proposes to acquire a license to develop as a rock quarry undeveloped State lands located adjacent to existing quarries near the South Hilo Sanitary Landfill (Figs. 1-2). The project site is a 14.99-acre portion of TMK 2-1-013:002, on the eastern edge of Hilo on the Island of Hawai'i, approximately one mile east of Kanoelehua Avenue (State Highway 11). Public road access is via Leilani Street, which connects to a County driveway informally called Ammunition Dump Road, which continues past the South Hilo Solid Waste Convenience Center and the South Hilo Sanitary Landfill to the project site. Yamada and Sons access the quarry via a shortcut driveway on Ammunition Dump Road that leads to their baseyard, which is located behind Railroad Avenue, thus avoiding traffic impacts on Leilani Street.

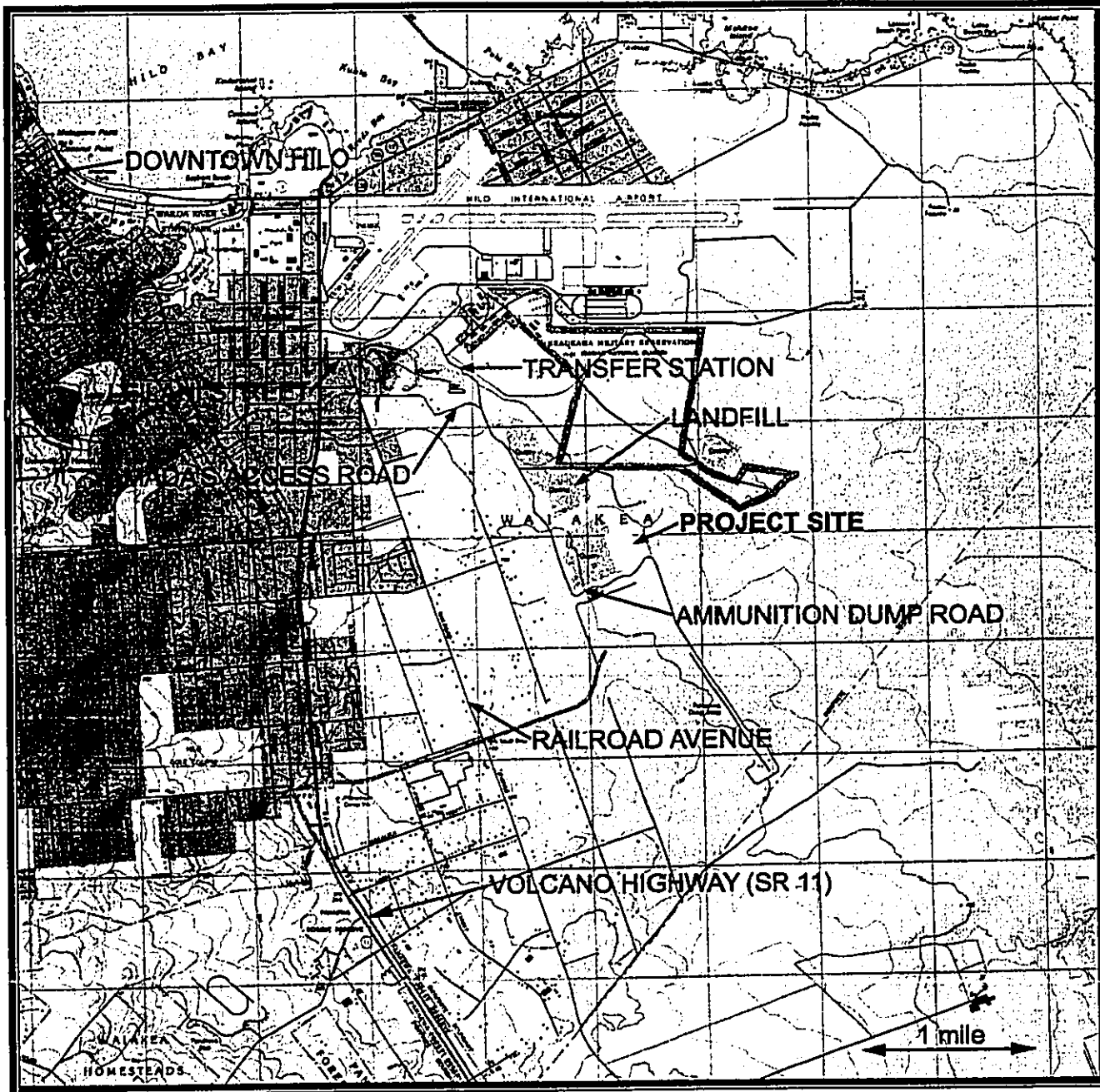
1.2 Project Description

Yamada and Sons requires a new quarry site in order to provide a source of raw material for the manufacture of products essential for the construction of a wide variety and large number of projects in Hawai'i County, both public and private, because adequate quality source rock will soon be exhausted at their existing quarry. These products include engineered construction materials such as base course, and components of asphalt and concrete.

Yamada and Sons would acquire a license with the Department of Land and Natural Resources for use of the site and would pay royalties to the State for extraction of material, the amount of which will be determined by an independent appraiser. The proposed quarrying activities would be identical in nature to the ongoing quarrying activities located on adjacent parcels; rock would be excavated with heavy equipment when possible, and when impenetrable rock is encountered, drilling and blasting would be performed. Excavated rock would be processed on-site or at Yamada and Sons baseyard located along Railroad Avenue near the project site. The applicant anticipates about 35,000 tons of material would be extracted per month, and with the excavation reaching a maximum depth of about 60 feet, the quarry is anticipated to have an active lifetime of roughly ten years or more years. The quarry will be "stepped" or terraced and a vegetative buffer will be maintained around the periphery of the site. Access routes to the interior of the site will be kept gated.

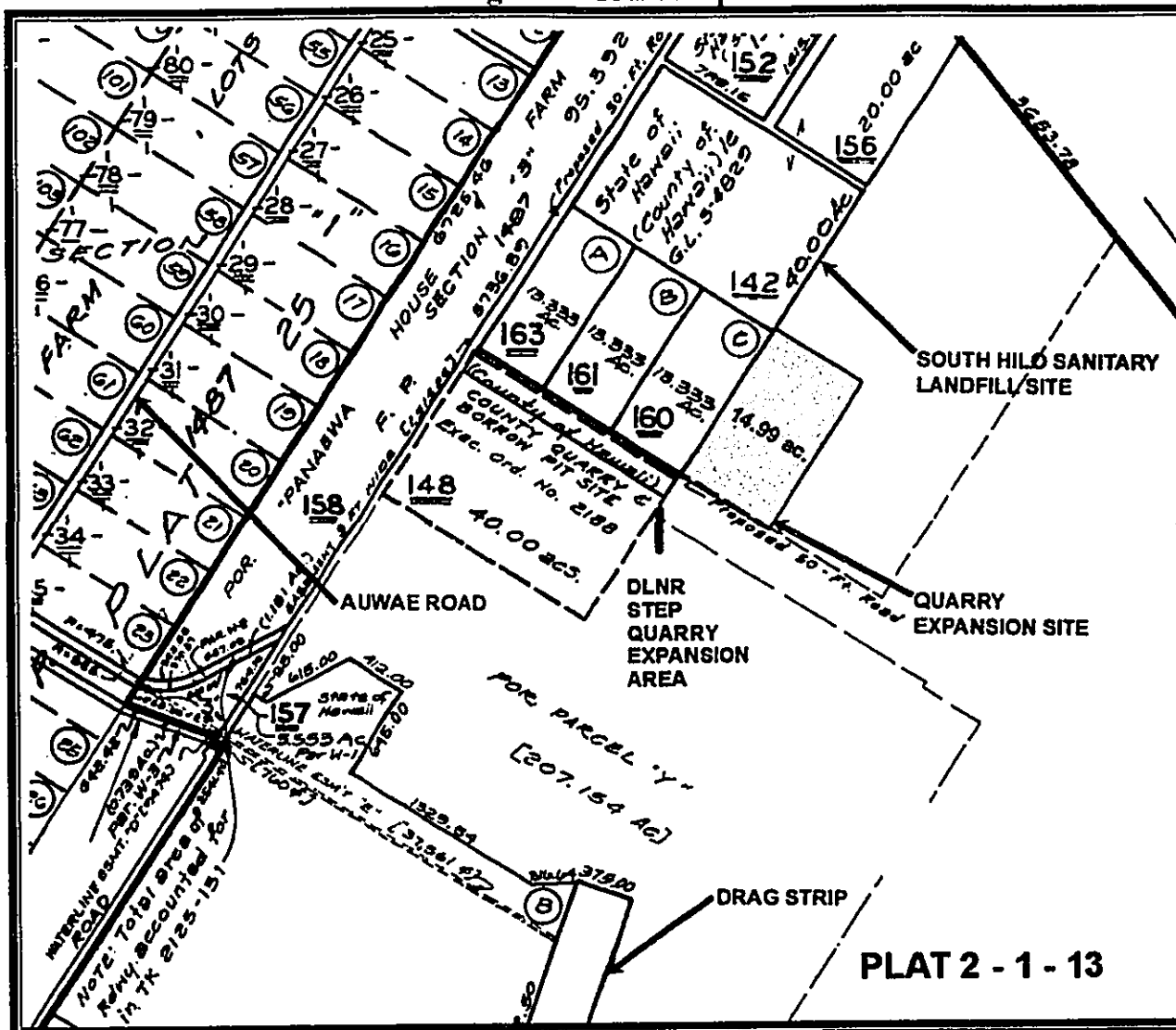
A related but independent action also covered in this EA is DLNR's plan at an unspecified time in the future to step down, or terrace, a 100 foot strip on the southern boundary of the existing quarries. This would produce a better profile for future land uses that might occur in the project area, after substantial quarrying in the project site has been accomplished. This area, termed in this EA the "DLNR step quarry expansion area", is not part of the proposed Yamada quarry but is located nearby on a portion of TMK 2-1-13:148 (Fig. 2). If this area is step quarried, realignment of the Ammunition Dump Road in this area would be required. Were this "stepping down" not to

Figure 1. Project Location



be performed, and other land uses came to occupy this area, the resulting steep drop at the edge of the quarry might be dangerous and render the site less useable. At the request of DLNR, the current EA has investigated the resources of this area along with those of Yamada's proposed license area in order to satisfy the requirements of Chapter 343, HRS, if and when DLNR decides to step quarry the DLNR step quarry expansion area.

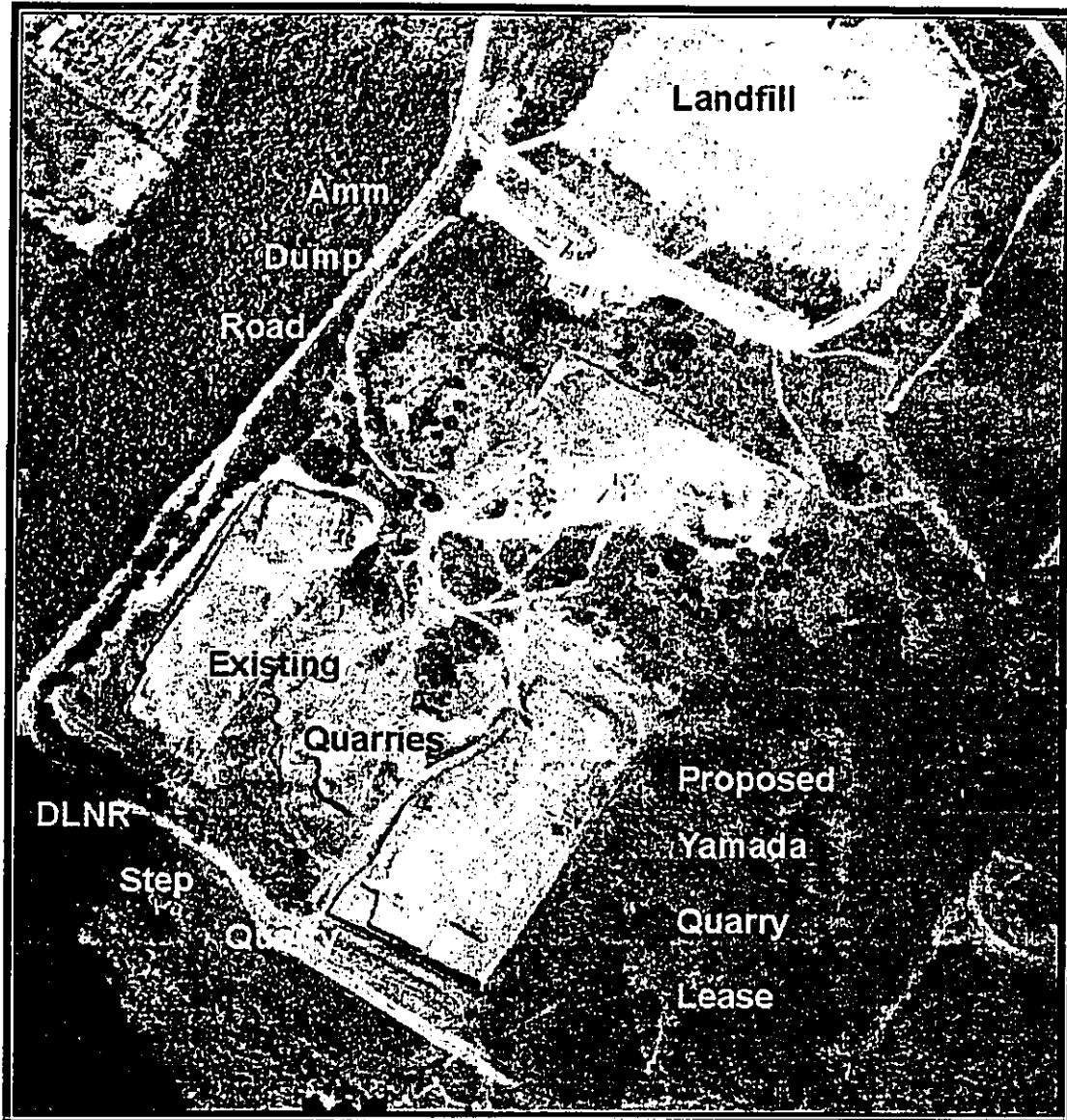
Figure 2. TMK Map



1.3 Environmental Assessment Process

This Environmental Assessment (EA) process is being conducted in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai'i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai'i. According to Chapter 343, an EA is prepared to determine impacts associated with an action, to develop mitigation measures for adverse impacts, and to determine whether any of the impacts are significant according to thirteen specific criteria. Part 4 of this document states the anticipated finding that no significant impacts are expected to occur;

Figure 3. Airphoto



Part 5 lists each criterion and discusses conformity of the project with each. If, after considering comments to the Draft EA, the Department of Land and Natural Resources (DLNR) concludes that, as anticipated, no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to occur. If the DLNR concludes that significant impacts are expected to occur as a result of the proposed action, and the applicant decides to proceed with the action, then an Environmental Impact Statement (EIS) must be prepared.

1.4 Public Involvement and Agency Coordination

The following agencies and organizations were consulted in development of this document.

State:

Department of Land and Natural Resources, Office of the Chairperson
Department of Land and Natural Resources, Historic Preservation Division
Department of Land and Natural Resources, Land Division, Hawai'i Island Office
Department of Health
Office of Hawaiian Affairs

County:

Planning Department
Department of Environmental Management
Department of Public Works
Police Department
Fire Department
Department of Water Supply
County Council
Department of Parks and Recreation

Private:

Panaewa Hawaiian Homes Community Association
Kanoelehua Industrial Area Association
Hawai'i Island Area of Commerce
Sierra Club

Copies of communications received during preconsultation are contained in Appendix 2.

Appendix 3 contains written comments on the Draft EA and the responses to these comments. Various places in the EA have been modified to reflect input received in the comment letters; additional or modified non-procedural text is denoted by double underlines, as in this paragraph.

1.5 Property Ownership

TMK 2-1-13:02 is a 2,553.423-acre State of Hawai'i property. The 14.99-acre project site is a portion of this property and will be subdivided out and worked as a quarry under a license from the State under agreement with the Department of Land and Natural Resources.

PART 2: ALTERNATIVES

2.1 No Action

Under the No Action Alternative, the quarry operation would not be undertaken. Yamada and Sons would, at some point, be unable to provide rock products, or would by necessity lease, license or buy another quarry site. Because quarrying is critical to their business, Yamada and Sons considers the No Action Alternative highly undesirable. While the No Action alternative would avoid direct and physical impacts to the project site, it would also likely cause shortages of products essential for construction of Hawai'i County projects, both public and private.

2.2 Alternative Locations

Because the proposed project site is highly suitable for the proposed use – known and acceptable rock type, adjacent to ongoing quarry operations, near their baseyard, and previously disturbed by grading – Yamada and Sons has not investigated other locations.

PART 3: ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Basic Geographic Setting

The proposed Yamada quarry area and the DLNR steep quarry expansion area are referred to in this EA as the *project site*. The term *project area* is used to describe the general environs of Waiakea, and, in some cases, Hilo.

The project site is located at approximately 90-100 feet in elevation about 3.5 miles southeast of downtown Hilo (see Fig. 1). The project site has mostly flat or gently undulating terrain. The project site was surface quarried in the year after the devastating tsunami of 1960 to provide fill for the Kaiko'o area of Hilo, where the State and County buildings now stand. Currently, the project site is covered primarily with secondary weedy forest and grassland. The average maximum daily temperature in this part of Hilo is approximately 75 degrees F., with an average minimum of 65 degrees, and annual rainfall averages about 130 inches (U.H. Hilo-Geography 1998:57).

Nearby land use is primarily industrial, with some vacant lands and public uses. Use include:

- Vacant and undeveloped land directly adjacent on the north, east, and south;
- Quarries of Jas W. Glover, Ltd., Yamada and Sons, Inc., and Kiyosaki Tractor Works, Inc., adjacent and to the west; beyond which are Department of Hawaiian Home Lands Panaewa Farm Lots.
- The South Hilo Sanitary Landfill, located nearby to the north and northwest, beyond which are the greenwaste mulching site, a scrap metal salvage facility, and the County's Hilo Convenience Center,
- Keaukaha Military Reservation of the Air National Guard, located nearby to the east and northeast, beyond which is the Hilo International Airport; and
- The Panaewa Drag Strip, approximately one mile south.

3.1 Physical Environment

3.1.1 Geology, Soils and Geologic Hazards

Environmental Setting

The project site is located on the lower flank of Mauna Loa volcano. The surface consists of basalt lava flows from Mauna Loa volcano of the Ka'u Basalt series of age 1,500 to 750 years old (Wolfe and Morris 1996). The basalt in the area has proven highly suitable for rock quarries.

The project site soil is classified as Papai extremely stony muck (rPAE), a well-drained, thin (i.e., less than 10" thick) extremely stony organic soil overlying 'a'a lava bedrock. These soils are found at elevations ranging from sea level to 1,000 feet and receive between 90 to 150 inches of annual rainfall. Permeability is rapid, runoff is slow, and the erosion hazard is slight (U.S. Soil

Conservation Service 1973). Areas with Papai soils are mostly covered in woodland, with some small areas used for pasture, orchards, and truck crops. The NRCS classifies this soil as class VII, meaning that it has very severe limitations for use for cultivation, and is therefore only useful as pastureland or woodland. The agricultural suitability of this soil is considered class E, very poor, by the University of Hawai'i Land Study Bureau's Soil Survey Report (University of Hawai'i 1965), the lowest possible rating. Notwithstanding these ratings, the project site lies within an area considered as in the State of Hawai'i's (ALISH) Agricultural Land of Importance classification as "Other Important Agricultural Land".

The entire Big Island is subject to geologic hazards, especially lava flows and earthquakes. The volcanic hazard as assessed by the United States Geological Survey in this area of Hilo is Zone 3 on a scale of ascending risk of Zone 9 to Zone 1 (Heliker 1990:23). The relatively high hazard risk is based on the fact that Mauna Loa is an active volcano. Volcanic hazard Zone 3 areas have had 1-5% of their land area covered by lava or ash flows since the year 1800, but are at lower risk than Zone 2 areas because of their greater distance from recently active vents and/or because the local topography makes it less likely that flows will cover these areas.

In terms of seismic risk, the entire Island of Hawai'i is rated Zone 4 Seismic Probability Rating (*Uniform Building Code, 1997 Edition, Figure 16-2*). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built. The project site does not appear to be subject to subsidence, landslides or other forms of mass wasting.

Impacts and Mitigation Measures

The project would remove whatever soil is left in the area, which has been subject to surface quarrying in the past and does not appear suitable for farming. The project site is susceptible to lava flow and seismic hazard. However, as much of East Hawai'i has similar hazard levels, geologic hazards impose no particular constraints on the proposed action and the project is not imprudent to undertake. All facilities will be built in conformance with the Uniform Building Code's seismic standards.

3.1.2 Drainage, Water Features and Water Quality

Existing Environment

Floodplain status for the project area has been determined by the Federal Emergency Management Agency (FEMA), which has mapped the area as part of the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM). A summary of applicable Special Flood Hazard Area (SFHA) designations in the Hilo area is as follows:

- Zone A: SFHAs subject to inundation by the 100-year flood. Because detailed hydraulic analyses have not been performed, no base flood elevation or depths are shown.
- Zone AE: SFHAs subject to inundation by the 100-year flood determined in a Flood Insurance Study by detailed methods. Base flood elevations are shown within these zones.

- Zone AH: SFHAs subject to inundation by 100-year shallow flooding (usually areas of ponding where average depths are between 1 and 3 feet. Base flood elevations derived from detailed hydraulic analyses are shown in this zone.
- Zone VE: the 100-year coastal, high hazard flood plain, incorporating storm surges. Base flood elevations derived from detailed hydraulic analyses are shown in this zone.
- Zone X: Areas identified in the community flood insurance study as areas of moderate or minimal hazard from the principal source of flooding in the area.

The Flood Insurance Rate Maps (FIRM) 885C and 895C (9/16/88) show that the entirety of the proposed project site is in Flood Zone X (FEMA 2006).

The Palai Stream drainage channel is located about a half mile southwest of the project site, and a levee was constructed to keep any flooding away from the quarry landfill area (Fig. 1). No natural streams, pools, springs, or wetlands are present within at least two miles.

Impacts and Mitigation Measure

Because of the limited scale of construction and the environmental setting, the risks for flooding or impacts to water quality are negligible. No impacts to stream banks, stream waters, wetlands, or any other waters of the U.S., will occur, as none are located near the project site.

Because the project would require more than an acre of land clearing, it is expected that the applicant will be required obtain an NPDES permit and develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to contain sediment and storm water runoff during quarrying activities. In order to minimize the potential for sedimentation and erosion, the contractor shall perform all earthwork and grading in conformance with Chapter 10, Erosion and Sediment Control, Hawai'i County Code. In order to properly manage storm water runoff, the SWPPP will describe the emplacement of a number of best management practices (BMPs) for the project. These BMPs may include measures such as the following:

- Minimization of soil loss and erosion by revegetation and stabilization of slopes and disturbed areas of soil, possibly using hydromulch, geotextiles, or binding substances, as soon as possible after working;
- Minimization of sediment loss by emplacement of structural controls possibly including silt fences, gravel bags, sediment ponds, check dams, and other barriers in order to retard and prevent the loss of sediment from the site;
- Minimizing disturbance of soil during periods of heavy rain;
- Phasing of the project to disturb the minimum area of soil at a particular time;
- Application of protective covers to soil and material stockpiles;
- Construction and use of a stabilized construction vehicle entrance, with designated vehicle wash area that discharges to a sediment pond;
- Washing of vehicles in the designated wash area before they egress the project site;
- Use of drip pans beneath vehicles not in use in order to trap vehicle fluids;

- Routine maintenance of BMPs by adequately trained personnel;
- Coordination of storm water BMPs and wind erosion BMPs whenever possible; and
- Significant leaks or spills, if they occur, shall be properly cleaned up and disposed of at an approved site.

The State Department of Health is being consulted as part of the EA process to verify permit requirements and mitigation measures.

3.1.3 Flora, Fauna and Ecosystems

Existing Environment

The natural vegetation of this part of Hilo was most likely lowland rain forest dominated by 'ohi'a (*Metrosideros polymorpha*) and hala (*Pandanus tectorius*) (Gagne and Cuddihy 1990). These original communities, however, have been destroyed or heavily degraded by cattle grazing, agriculture and clearing for farms and residences and other activities, and the vegetation of the project area is now either managed (i.e., farms, pasture or landscaped grounds) or adventive "communities" of various alien weeds. The Yamada quarry area was surface quarried in the past and contains mostly highly degraded alien vegetation. The DLNR step quarry expansion area is similar, but has a few natives at the southernmost fringe.

A walk-through botanical survey of the project site was performed by botanist Layne Yoshida on April 30, 2006. At the request of the DLNR, an area roughly 2,000 feet long by 100 feet wide extending southward from the existing quarries and the project site (i.e., the DLNR step quarry expansion area) was also surveyed on May 21, 2006 (see Section 1.1 above). Table 1 is a list of plant species detected in the proposed Yamada and Sons quarry area while Table 2 lists those detected in the DLNR step quarry expansion area. Many of the plants listed are cultivated and ornamental species used in landscaping. No listed, candidate or proposed endangered plant species (USFWS 2000) were found during the survey in either area. In terms of conservation value, no botanical resources requiring special protection are present.

Hawaiian Hawks (*Buteo solitarius*) and Hawaiian hoary bats (*Lasiurus cinereus semotus*) are often seen in the general area. Both are listed endangered species, but they are commonly observed in many parts of East Hawai'i. The native trees favored by Hawaiian Hawks for nesting are not present in the alien vegetation on the project site and immediately surrounding areas. The urban setting of the project area, which is already used for quarrying and landfill activities, lessens its value for bat habitat.

Table 1 – Yamada and Sons Proposed Quarry Area Plant Species List

Scientific Name	Family	Common Name	Life Form	Status
<i>Adiantum hispidulum</i>	Pteridaceae	Rough Maidenhair	Fern	A
<i>Ageratina riparia</i>	Asteraceae	Pamakani	Herb	A
<i>Ageratum conyzoides</i>	Asteraceae	Ageratum	Herb	A
<i>Alistonia macrophylla</i>	Apocynaceae	Alistonia	Tree	A
<i>Andropogon virginicus</i>	Poaceae	Broomsedge	Herb	A
<i>Ardisia elliptica</i>	Myrsinaceae	Shoebuttan Ardisia	Tree	A
<i>Arundina graminifolia</i>	Orchidaceae	Bamboo Orchid	Herb	A
<i>Begonia sp.</i>	Begoniaceae	Begonia	Herb	A
<i>Bidens pilosa</i>	Asteraceae	Beggar's Tick	Herb	A
<i>Blechnum appendiculatum</i>	Blechnaceae	Blechnum	Fern	A
<i>Brachiaria mutica</i>	Poaceae	California Grass	Herb	A
<i>Buddleia asiatica</i>	Buddleiaceae	Dog Tail	Shrub	A
<i>Castilleja arvensis</i>	Scrophulariaceae	Indian Paintbrush	Herb	A
<i>Cecropia obtusifolia</i>	Cecropiaceae	Cecropia	Tree	A
<i>Chamaecrista nictitans</i>	Fabaceae	Partridge Pea	Herb	A
<i>Chloris sp.</i>	Poaceae	Chloris	Herb	A
<i>Christella dentata</i>	Thelypteridaceae	Downy Wood Fern	Fern	A
<i>Cibotium menziesii</i>	Dicksoniaceae	Hapuu i'i	Fern	I
<i>Clidemia hirta</i>	Melastomataceae	Koster's Curse	Shrub	A
<i>Clusia rosea</i>	Clusiaceae	Autograph Tree	Tree	A
<i>Cocculus trilobus</i>	Menispermaceae	Huehue	Vine	I
<i>Commelina diffusa</i>	Commelinaceae	Honohono	Herb	A
<i>Conyza bonariensis</i>	Asteraceae	Hairy Horseweed	Herb	A
<i>Cordyline fruticosa</i>	Agavaceae	Ki	Shrub	A
<i>Crotalaria retusa</i>	Fabaceae	Crotalaria	Herb	A
<i>Cuscuta sandwichiana</i>	Cuscutaceae	Dodder	Vine	I
<i>Cyperus halpan</i>	Cyperaceae	Cyperus	Herb	A
<i>Desmodium cajanifolium</i>	Fabaceae	Desmodium	Shrub	A
<i>Desmodium sandwicense</i>	Fabaceae	Spanish clover	Herb	A
<i>Desmodium triflorum</i>	Fabaceae	Desmodium	Herb	A
<i>Dicranopteris linearis</i>	Gleicheniaceae	Uluhe	Fern	I
<i>Digitaria sp.</i>	Poaceae	Digitaria	Herb	A
<i>Dioscorea pentaphylla.</i>	Dioscoreaceae	Yam	Vine	A
<i>Dissotis rotundifolia</i>	Melastomataceae	Dissotis	Herb	A
<i>Drymaria cordata</i>	Caryophyllaceae	Pipili	Herb	A
<i>Emilia sonchifolia</i>	Asteraceae	Pualele	Herb	A
<i>Eragrostis pectinacea</i>	Poaceae	Eragrostis	Herb	A
<i>Eragrostis tenella.</i>	Poaceae	Lovegrass	Herb	A
<i>Ficus microcarpa</i>	Moraceae	Banyan	Tree	A
<i>Filicium decipiens</i>	Sapindaceae	Fern Tree	Tree	A
<i>Fimbristylis dichotoma</i>	Cyperaceae	Fimbristylis	Herb	I
<i>Hydrocotyle verticillata</i>	Apiaceae	Marsh Pennywort	Herb	A

Table 1, cont'd				
Scientific Name	Family	Common Name	Life Form	Status
<i>Hyptis pectinata</i>	Lamiaceae	Comb Hyptis	Shrub	A
<i>Ipomoea indica</i>	Convolvulaceae	Morning Glory	Vine	I
<i>Justicia betonica</i>	Acanthaceae	White Shrimp Plant	Herb	A
<i>Lantana camara</i>	Verbenaceae	Lantana	Shrub	A
<i>Lepisorus thunbergianus</i>	Polypodiaceae	Pleopeltis	Fern	I
<i>Leucaena leucocephala</i>	Fabaceae	Haole Koa	Shrub	A
<i>Lycopodium cernuum</i>	Lycopodiaceae	Wawaeiole	Fern	I
<i>Lygodium japonicum</i>	Schizaeaceae	Japanese Climbing Fern	Fern	A
<i>Macaranga mappia</i>	Euphorbiaceae	Bingabing	Tree	A
<i>Machaerina</i> sp.	Cyperaceae	Uki	Herb	I
<i>Mangifera indica</i>	Anacardiaceae	Mango	Tree	A
<i>Melastoma</i> sp.	Melastomataceae	Melastoma	Shrub	A
<i>Melinis minutiflora</i>	Poaceae	Molasses Grass	Herb	A
<i>Melochia umbellata</i>	Sterculiaceae	Melochia	Tree	A
<i>Merremia aegyptia</i>	Convolvulaceae	Wood Rose	Vine	I(?)
<i>Metrosideros polymorpha</i>	Myrtaceae	'Ohi'a	Tree	I
<i>Microlepia strigosa</i>	Dennstaedtiaceae	Palapalai	Fern	I
<i>Mimosa pudica</i>	Fabaceae	Sleeping Grass	Herb	A
<i>Nephrolepis multiflora</i>	Nephrolepidaceae	Sword Fern	Fern	A
<i>Nephrolepis exaltata</i>	Nephrolepidaceae	Sword Fern	Fern	I
<i>Oplismenus hirtellus</i>	Poaceae	Basketgrass	Herb	A
<i>Paederia foetida</i>	Rubiaceae	Maile Pilau	Vine	A
<i>Pandanus tectorius</i>	Pandanaceae	Hala	Tree	A
<i>Panicum maximum</i>	Poaceae	Guinea Grass	Herb	A
<i>Panicum repens</i>	Poaceae	Torpedo Grass	Herb	A
<i>Paraserianthes falcataria</i>	Fabaceae	Albizia	Tree	A
<i>Paraserianthes</i> sp.	Fabaceae	Chocolate Albizia	Tree	A
<i>Paspalum conjugatum</i>	Poaceae	Hilo Grass	Herb	A
<i>Paspalum urvillei</i>	Poaceae	Vasey Grass	Herb	A
<i>Passiflora foetida</i>	Passifloraceae	Love-in-a-mist	Vine	A
<i>Pennisetum purpureum</i>	Poaceae	Napier Grass	Herb	A
<i>Phaius tankarvilleae</i>	Orchidaceae	Chinese Ground Orchid	Herb	A
<i>Phlebodium aureum</i>	Polypodiaceae	Golden Polypody	Fern	A
<i>Phyllanthus debilis</i>	Euphorbiaceae	Niruri	Herb	A
<i>Phymatosorus grossus</i>	Polypodiaceae	Maile Scented Fern	Fern	A
<i>Pilea microphylla</i>	Urticaceae	Artillery Plant	Herb	A
<i>Pityrogramma calomelanos</i>	Pteridaceae	Silver Back Fern	Fern	A
<i>Pluchea symphitifolia</i>	Asteraceae	Sourbush	Shrub	A
<i>Polygala paniculata</i>	Polygalaceae	Polygala	Herb	A
<i>Psidium cattleianum</i>	Myrtaceae	Waiawi	Tree	A
<i>Psidium guajava</i>	Myrtaceae	Guava	Tree	A
<i>Psilotum nudum</i>	Psilotaceae	Moa	Herb	I

Table 1, cont'd

Scientific Name	Family	Common Name	Life Form	Status
<i>Pteris cretica</i>	Pteridaceae	Oali	Fern	I
<i>Pterolepis glomerata</i>	Melastomataceae	Pterolepis	Herb	A
<i>Pycreus polystachyos</i>	Cyperaceae	Sedge	Herb	I
<i>Rhus sandwicensis</i>	Anacardiaceae	Neneleau	Shrub	I
<i>Rhynchelytrum repens</i>	Poaceae	Natal Redtop	Herb	A
<i>Rhynchospora caduca</i>	Cyperaceae	Rhynchospora	Herb	A
<i>Rubus rosifolius</i>	Rosaceae	Thimbleberry	Herb	A
<i>Sacciolepis indica</i>	Poaceae	Glenwood Grass	Herb	A
<i>Salvia occidentalis</i>	Lamiaceae	Salvia	Herb	A
<i>Schinus terebinthifolius</i>	Anacardiaceae	Christmas Berry	Shrub	A
<i>Schizachyrium condensatum</i>	Poaceae	Beardgrass	Herb	A
<i>Schefflera actinophylla</i>	Araliaceae	Octopus Tree	Tree	A
<i>Silene gallica</i>	Caryophyllaceae	Catchfly	Herb	A
<i>Spathoglottis plicata</i>	Orchidaceae	Malayan Ground Orchid	Herb	A
<i>Spermacoce assurgens</i>	Rubiaceae	Buttonweed	Herb	A
<i>Sphenomeris chinensis</i>	Lindsaeaceae	Pala'a	Fern	I
<i>Sporobolus indicus</i>	Poaceae	Smutgrass	Herb	A
<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Jamaica Vervain	Herb	A
<i>Tetrazygia bicolor</i>	Melastomataceae	Tetrazygia	Shrub	A
<i>Trema orientalis</i>	Ulmaceae	Gunpowder Tree	Tree	A
<i>Wedelia trilobata</i>	Asteraceae	Wedelia	Herb	A
<i>Zingiber zerumbet</i>	Zingiberaceae	Awapuhi	Herb	A

A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species

Table 2 – DLNR Step Quarry Plant Species List

Scientific Name	Family	Common Name	Life Form	Status
<i>Adiantum hispidulum</i>	Pteridaceae	Rough Maidenhair	Fern	A
<i>Ageratina riparia</i>	Asteraceae	Pamakani	Herb	A
<i>Ageratum conyzoides</i>	Asteraceae	Ageratum	Herb	A
<i>Andropogon virginicus</i>	Poaceae	Broomsedge	Herb	A
<i>Arundina graminifolia</i>	Orchidaceae	Bamboo Orchid	Herb	A
<i>Begonia sp.</i>	Begoniaceae	Begonia	Herb	A
<i>Bidens pilosa</i>	Asteraceae	Beggar's Tick	Herb	A
<i>Blechnum appendiculatum</i>	Blechnaceae	Blechnum	Fern	A
<i>Brachiaria mutica</i>	Poaceae	California Grass	Herb	A
<i>Buddleia asiatica</i>	Buddleiaceae	Dog Tail	Shrub	A
<i>Castilleja arvensis</i>	Scrophulariaceae	Indian Paintbrush	Herb	A
<i>Cecropia obtusifolia</i>	Cecropiaceae	Cecropia	Tree	A
<i>Chamaecrista nictitans</i>	Fabaceae	Partridge Pea	Herb	A
<i>Chloris sp.</i>	Poaceae	Chloris	Herb	A
<i>Clidemia hirta</i>	Melastomataceae	Koster's Curse	Shrub	A
<i>Clusia rosea</i>	Clusiaceae	Autograph Tree	Tree	A
<i>Cocculus trilobus</i>	Menispermaceae	Huehue	Vine	I
<i>Commelina diffusa</i>	Commelinaceae	Honohono	Herb	A
<i>Conyza bonariensis</i>	Asteraceae	Hairy Horseweed	Herb	A
<i>Crotalaria retusa</i>	Fabaceae	Crotalaria	Herb	A
<i>Cuscuta sandwichiana</i>	Cuscutaceae	Dodder	Vine	I
<i>Cyperus halpan</i>	Cyperaceae	Cyperus	Herb	A
<i>Desmodium cajanifolium</i>	Fabaceae	Desmodium	Shrub	A
<i>Desmodium sandwicense</i>	Fabaceae	Spanish clover	Herb	A
<i>Desmodium triflorum</i>	Fabaceae	Desmodium	Herb	A
<i>Dicranopteris linearis</i>	Gleicheniaceae	Uluhe	Fern	I
<i>Digitaria sp.</i>	Poaceae	Digitaria	Herb	A
<i>Dissotis rotundifolia</i>	Melastomataceae	Dissotis	Herb	A
<i>Drymaria cordata</i>	Caryophyllaceae	Pipili	Herb	A
<i>Emilia sonchifolia</i>	Asteraceae	Pualele	Herb	A
<i>Eragrostis af pectinacea</i>	Poaceae	Eragrostis	Herb	A
<i>Eragrostis tenella.</i>	Poaceae	Lovegrass	Herb	A
<i>Ficus microcarpa</i>	Moraceae	Banyan	Tree	A
<i>Fimbristylis dichotoma</i>	Cyperaceae	Fimbristylis	Herb	I
<i>Hydrocotyle verticillata</i>	Apiaceae	Marsh Pennywort	Herb	A
<i>Hyptis pectinata</i>	Lamiaceae	Comb Hyptis	Shrub	A
<i>Ipomoea indica</i>	Convolvulaceae	Morning Glory	Vine	I
<i>Lantana camara</i>	Verbenaceae	Lantana	Shrub	A
<i>Lepisorus thunbergianus</i>	Polypodiaceae	Pleopeltis	Fern	I
<i>Leucaena leucocephala</i>	Fabaceae	Haole Koa	Shrub	A

Table 2, cont'd				
Scientific Name	Family	Common Name	Life Form	Status
<i>Lycopodium cernuum</i>	Lycopodiaceae	Downy Wood Fern	Fern	I
<i>Macaranga mappia</i>	Euphorbiaceae	Bingabing	Tree	A
<i>Machaerina</i> sp.	Cyperaceae	Uki	Herb	I
<i>Mangifera indica</i>	Anacardiaceae	Mango	Tree	A
<i>Melastoma</i> sp.	Melastomataceae	Melastoma	Shrub	A
<i>Melinis minutiflora</i>	Poaceae	Molasses Grass	Herb	A
<i>Melochia umbellata</i>	Sterculiaceae	Melochia	Tree	A
<i>Metrosideros polymorpha</i>	Myrtaceae	Ohia	Tree	I
<i>Mimosa pudica</i>	Fabaceae	Sleeping Grass	Herb	A
<i>Nephrolepis multiflora</i>	Nephrolepidaceae	Sword Fern	Fern	A
<i>Nephrolepis exaltata</i>	Nephrolepidaceae	Sword Fern	Fern	I
<i>Paederia foetida</i>	Rubiaceae	Maile Pilau	Vine	A
<i>Pandanus tectorius</i>	Pandanaceae	Hala	Tree	A
<i>Panicum maximum</i>	Poaceae	Guinea Grass	Herb	A
<i>Panicum repens</i>	Poaceae	Torpedo Grass	Herb	A
<i>Paraserianthes falcata</i>	Fabaceae	Albizia	Tree	A
<i>Paraserianthes</i> sp.	Fabaceae	Chocolate Albizia	Tree	A
<i>Paspalum conjugatum</i>	Poaceae	Hilo Grass	Herb	A
<i>Paspalum urvillei</i>	Poaceae	Vasey Grass	Herb	A
<i>Passiflora foetida</i>	Passifloraceae	Love-in-a-mist	Vine	A
<i>Pennisetum purpureum</i>	Poaceae	Napier Grass	Herb	A
<i>Phyllanthus debilis</i>	Euphorbiaceae	Niruri	Herb	A
<i>Phymatosorus grossus</i>	Polypodiaceae	Maile Scented Fern	Fern	A
<i>Pilea microphylla</i>	Urticaceae	Artillery Plant	Herb	A
<i>Pityrogramma calomelanos</i>	Pteridaceae	Silver Back Fern	Fern	A
<i>Pluchea symphitifolia</i>	Asteraceae	Sourbush	Shrub	A
<i>Polygala paniculata</i>	Polygalaceae	Polygala	Herb	A
<i>Psidium cattleianum</i>	Myrtaceae	Waiawi	Tree	A
<i>Psidium guajava</i>	Myrtaceae	Guava	Tree	A
<i>Pycreus polystachyos</i>	Cyperaceae	Sedge	Herb	I
<i>Rhynchelytrum repens</i>	Poaceae	Natal Redtop	Herb	A
<i>Rhynchospora caduca</i>	Cyperaceae	Rhynchospora	Herb	A
<i>Rubus rosifolius</i>	Rosaceae	Thimbleberry	Herb	A
<i>Sacciolepis indica</i>	Poaceae	Glenwood Grass	Herb	A
<i>Salvia occidentalis</i>	Lamiaceae	Salvia	Herb	A
<i>Schinus terebinthifolius</i>	Anacardiaceae	Christmas Berry	Shrub	A
<i>Schizachyrium condensatum</i>	Poaceae	Beardgrass	Herb	A
<i>Schefflera actinophylla</i>	Araliaceae	Octopus Tree	Tree	A

Table 2, cont'd				
Scientific Name	Family	Common Name	Life Form	Status
<i>Silene gallica</i>	Caryophyllaceae	Catchfly	Herb	A
<i>Spathoglottis plicata</i>	Orchidaceae	Malayan Ground Orchid	Herb	A
<i>Spermacoce assurgens</i>	Rubiaceae	Buttonweed	Herb	A
<i>Sphenomeris chinensis</i>	Lindsaeaceae	Pala'a	Fern	I
<i>Sporobolus indicus</i>	Poaceae	Smutgrass	Herb	A
<i>Stachytarpheta jamaicensis</i>	Verbenaceae	Jamaica Vervain	Herb	A
<i>Tetrazygia bicolor</i>	Melastomataceae	Tetrazygia	Shrub	A
<i>Trema orientalis</i>	Ulmaceae	Gunpowder Tree	Tree	A
<i>Vigna</i> sp.	Fabaceae	Vigna	Vine	I
<i>Wedelia trilobata</i>	Asteraceae	Wedelia	Herb	A

A = alien, E = endemic, I = indigenous, End = Federal and State listed Endangered Species

Impacts and Mitigation Measures

Because of the lack of native ecosystems, or threatened or endangered plant species, no adverse impacts to botanical resources would occur as a result of clearing and improvements. As the area does not represent valuable habitat, no adverse impact to Hawaiian Hawks or Hawaiian hoary bats, or any other native fauna, is expected.

3.1.4 Air Quality, Noise, and Scenic Resources

Environmental Setting

Air pollution in East Hawai'i is minimal, originating mainly from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that occasionally blankets the area. The persistent trade winds keep the project area relatively free of vog for most of the year. The entire State of Hawai'i is located within an attainment area (i.e., meeting federal ambient air quality standards), as defined in the Clean Air Act, in accordance with the State Implementation Plan.

Noise on the project site is moderate to periodically high due to nearby quarrying activities, and activities at the South Hilo Sanitary Landfill.

Impacts and Mitigation Measures

Quarrying activities involve excavation, blasting, milling of materials, and the activities of heavy equipment. These activities may frequently generate noise exceeding 95 decibels at times. However, the nearest homes are about a half mile away, there are no other sensitive receptors near the proposed project site, and the noise is generally confined to existing quarries. In fact, Yamada's quarrying of their existing lease (TMK 2-1-013:163) will soon cease because of the

depletion of appropriate rock and the proposed project will effectively relocate quarrying activities further away from sensitive receptors.

Quarrying activities also have to potential to produce fugitive dust emissions. Mitigation for dust would be part of the NPDES permit described above in Section 3.1.2, and would also be part of permit conditions for the covered or non-covered source permit presently held by the applicant for rock crushing and milling equipment.

Removal of non-scenic, alien trees and vegetation would be required in order to site the project on the property. As the general area is already the site of industrial activities including quarrying, these modifications would be in character with adjacent properties. No important viewplanes or scenic sites recognized in the Hawai'i County General Plan are present in the area or would be affected.

3.1.5 Hazardous Substances, Toxic Waste and Hazardous Conditions

Existing Conditions

Review of land use history and site reconnaissance revealed no evidence of hazardous materials. The South Hawai'i Sanitary Landfill, planned for a 64-foot vertical expansion, is located about a half mile northwest.

Impacts

The current and expanded landfill, which is in compliance with all health regulations, poses no health or safety risks to quarry operations, and the proposed quarry would not affect the landfill (three other quarries separate the two sites). Transportation, storage, or use of hazardous materials on the proposed project site, such as those used for blasting, may require a number of permits and licenses including, but not limited to, the following:

- Compliance with applicable federal regulations, including 55 CFR Title 27 (implementing Title XI of the Organized Crime Control Act of 1970) regulating interstate commerce in explosives;
- Licensing for personnel using explosives by the State Department of Labor & Industrial Relations, Occupational Safety & Health Division (DOSH);
- Compliance with applicable State Department of Transportation regulations concerning transportation of hazardous materials on public roadways;
- A generator permit from the State Department of Health, in the case of the non-exempt generation of hazardous waste;
- Compliance with the hazardous material transportation, storage and disposal (TSD) requirements of the Resource Conservation and Recovery Act (RCRA); and
- Compliance with applicable OSHA regulations.

Compliance with the requirements of the above permits, regulations, and licenses will minimize the risk of release of hazardous materials on the site, as well as risk to workers and the general public.

3.2 Socioeconomic and Cultural

3.2.1 Socioeconomic Characteristics

The project would affect and benefit Hilo and, more generally, East Hawai'i. Table 3 provides information on the socioeconomic characteristics of Hilo along with those of Hawai'i County as a whole for comparison, from the United States 2000 census.

Table 3 – Selected Socioeconomic Characteristics

CHARACTERISTIC	ISLAND OF HAWAI'I	HILO
Total Population	148,677	36,836
Percent Caucasian	31.5	15.8
Percent Asian	26.7	39.6
Percent Hawaiian	9.7	13.3
Percent Two or More Races	28.4	26.5
Median Age (Years)	38.6	38.0
Percent Under 18 Years	26.1	25.8
Percent Over 65 Years	13.5	15.8
Percent Households with Children	21.3	37.8
Average Household Size	2.75	2.85
Percent Housing Vacant	15.5	9.6

Source: U.S. Bureau of the Census, May 2001. *Profiles of General Demographic Characteristics, 2000 Census of Population and Housing, Hawai'i*. (U.S. Census Bureau Web Page).

Impacts

The proposed project would have a positive economic impact for Hawai'i County, particularly in that it would provide essential material for both public and private projects as well as continuing employment for Yamada and Sons employees and businesses dependent upon a steady supply of rock products. The project would also provide revenue for the State of Hawai'i, through leasing and royalties for material extracted.

3.2.2 Cultural Setting

Existing Environment

A letter report providing cultural and archaeological information for the project site, including its context in the ahupua'a of Waiakea, was written by Rechtman Consulting, Inc. It is attached as Appendix 1 and summarized in this and the next section, which also includes information from other sources.

The purpose of the study was to document the presence of any historic properties or traditional cultural properties that might exist within the project area, assess the significance of any such resources, and provide a statement of impact to any such resources as a result of the project. The study used historic maps and documents, archaeological summaries of the area, and field investigation. This information provided a context for the search for potential historic or traditional cultural properties.

The earliest historical knowledge of Hilo comes from legends written by Kamakau (1961) of a 16th century chief 'Umi-a-Liloa (son of Liloa), who at that time ruled the entire island of Hawai'i. Descendants of Umi and his sister-wife were referred to as "Kona" chiefs, controlling Ka'u, Kona, and Kohala, while descendants of Umi and his Maui wife were "Hilo" chiefs, controlling Hāmākua, Hilo, and Puna (Kelly 1981:1). According to Kamakau (1961), both sides fought over control of the island, desiring access to resources such as feathers, *māmaki* tapa, and canoes on the Hilo side, and *wauke* tapa and warm lands and waters on the Kona side (c.f. Kelly 1981:3).

Sometime near the end of the 16th century or early in the 17th century, the lands of Hilo were divided into *ahupua'a*, which till today retain their original names (Kelly 1981:3). These include the *ahupua'a* of Pu'u'eo, Pi'ihonua, Punahoa, Pōnohawai, Kūkūau and Waiākea. The design of these land divisions was such that residents could have access to all that they needed to live, with ocean resources at the coast, and agricultural and forest resources in the interior. However, only Pi'ihonua and Waiākea provided access to the full range of resources stretching from the sea up to 6,000 feet along the slopes of Mauna Kea (Kelly 1981:5).

Waiākea, the *ahupua'a* of the current study, literally translates as "broad waters" (Pukui et al. 1974:220). One legendary account that takes place within the *ahupua'a* of Waiākea, relates the story of Hi'iaka, a sister of Pele, who defeated an evil *mo'o* woman at Pana'ewa. In the story, the *mo'o* and her followers blocked Hi'iaka's path on a journey around the island first by taking the form of fog, then of sharp rain, and then of a *kukui* tree. Hi'iaka defeated the *mo'o* and her followers by entangling them in a growth of vines (Beckwith 1976:173-174).

Historical accounts (McEldowney 1979) place the current study area in a zone of agricultural productivity, where forests were burned down to create an open plain for planting crops such as taro, bananas, sugarcane, breadfruit, and *kukui*, and where scattered dwellings were also present. Handy and Handy (1972) also describe the general region as an agricultural area:

"On the lava strewn plain of Waiākea and on the slopes between Waiākea and Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Panaewa and in all the lower fern-forest zone above Hilo town along the course of the Wailuku River" (Handy and Handy 1972:539).

Interestingly, McEldowney (1979:20-21) notes that the Pana'ewa forest (in the vicinity of the current project area) was one of the few forests on the island to nearly reach the ocean in the early 1800s. This may mean that small-scale agriculture was practiced at clearings within the Pana'ewa forest, as opposed to the burning off of large areas, such as was practiced in other parts of Waiākea.

During the early Historic Period Waiākea Ahupua'a became part of Kamehameha I's personal land holdings (Moniz n.d.:11). As a result of the *Mahele* in 1848, nearly all of the *ahupua'a* became Crown Lands (for the occupant of the throne). According to Moniz (n.d.:12) twenty-six *kuleana* claims were registered for lands in Waiākea; most of these lands were centered along fishponds or major inland roads, and none were in the immediate vicinity of the current study area. Following the *Mahele*, Kamehameha IV leased large portions of Waiākea (not including the current study area) to outside interests for the production of sugar (Moniz n.d.).

As discussed in the next section, no significant archaeological remains reflecting cultural history or supporting cultural values appear to be present due to mechanized alteration of the terrain. Furthermore, no caves, springs, pu'u, native forest groves, gathering resources or other natural features are present on or near the project site. The vegetation is highly disturbed, dominated by invasive, weedy species, and secondary growth, and does not contain the quality and quantity of resources that would be important for native gathering.

As part of the current study, an effort was made to obtain information about any potential traditional cultural properties and associated practices that might be present, or have taken place in the Waiākea ahupua'a. The Office of Hawaiian Affairs (East Hawai'i) and the Panaewa Hawaiian Homes Community Association were contacted but had no information relative to the existence of traditional cultural properties in the immediate vicinity of the current project area, nor did they provide any information indicating current use of the area for traditional and customary practices.

Impacts and Mitigation Measures

As no resources or practices of a potential traditional cultural nature (i.e., landform, vegetation, etc.) appear to be present on or near the project site, and there is no evidence of any traditional gathering uses or other cultural practices, the proposed construction would not appear to impact any culturally valued resources or cultural practices.

3.2.3 Archaeology and Historic Sites

Existing Environment

A letter report providing cultural and archaeological information for the project site, including its context in the ahupua'a of Waiākea, was written by Rechtman Consulting, Inc. It is attached as Appendix 1 and summarized in this and the previous section.

One previous archaeological study was conducted in the immediate vicinity of the study area. This inventory survey, conducted by Carson (1999) for a 176-acre parcel to the south of the current project area (TMK 3-2-1-13:154), reported no sites. Carson concluded that, "if any sites existed [on the parcel] in the past, then they were probably modified or destroyed by past land alteration activities such as bulldozing and the creation of dirt roads" (1999:8). Rechtman stated that land in the vicinity of the current project area has apparently been used for quarries since the early the early 1900s.

In May of 2006 Rechtman Consulting conducted an intensive on-foot archaeological survey of the entire proposed Yamada area and the DLNR step quarry expansion area. A thorough examination of the surface of the project area revealed that a large portion of it had previously undergone mechanical clearing, and that no archaeological resources were present; given the history of land use in the vicinity of the property, the likelihood of encountering subsurface resources is extremely remote.

Impacts and Mitigation Measures

Rechtman Consulting has requested a determination of "no adverse effect", or other comment on its findings, from the State Historic Preservation Officer (SHPO), in accordance with HAR 13§13-284-5(b)1. The Final EA will report on whether the SHPO has concurred that the proposed action would have no effect on historic properties.

In the unlikely event that archaeological resources are encountered during future development activities within the current study area, work in the immediate area of the discovery should be halted and DLNR-SHPD contacted as outlined in Hawai'i Administrative Rules 13§13-275-12.

3.3 Infrastructure

3.3.1 Utilities

Existing Facilities and Services

There are currently no utility services to the site.

Impacts and Mitigation Measures

Yamada and Sons does not require utilities for the quarry, and the proposed action would not have any impact on existing utilities.

Water required for dust suppression will be either trucked to the site or provided by catchment. In addition, portable toilets would be provided and maintained for employee use. The applicant may use a generator on site.

3.3.2 Traffic and Parking

Existing Environment

Presently the project site is accessed via a two-lane County driveway commonly called Ammunition Dump Road, which is slated by the County for improvement as far south as the landfill. Yamada and Sons trucks utilize a private access road that leads from the rear of their baseyard along Railroad Avenue to a point along Ammunition Dump Road located just south of the Hilo Convenience Center (see Fig. 1), which avoids affecting traffic on Railroad Avenue, Leilani Street and the busiest portion of Ammunition Dump Road, namely the recycling and transfer station areas.

Impacts and Mitigation Measures

Yamada and Sons estimates that the project will require use of 4-5 gravel trucks making three trips per hour between the quarry and their baseyard, between the hours of 7:00 am and 5:00 pm on weekdays. Therefore, Yamada and Son's trucks would utilize a segment of Ammunition Dump Road that is shared only with other quarry operations, as well as mostly County and/or commercial trash haulers in transit to and from the South Hilo Sanitary Landfill. Therefore, truck traffic from the proposed project will likely not affect other users of the Ammunition Dump Road, including users of the Convenience Center. However, the Hawai'i County Department of Environmental Management (DEM) expressed concern about the licensing status of the rock-hauling trucks and their impact on pavement of the improved Ammunition Dump Road (see letter in App. 2) if it is improved. After review of the EA, DEM determined that the project would not have a negative impact. In a letter of December 5, 2006 (see Appendix 3), DEM stated that the County does not plan to pave Ammunition Dump Road and that there would be no conflict with rock haulers who utilize the existing roadway and assist in maintaining the road surface.

Similar traffic impacts will occur if and when quarrying occurs at the DLNR step quarry expansion area. In addition, DLNR would need to relocate Ammunition Dump Road slightly to the south, beyond the steps.

3.4 Secondary and Cumulative Impacts

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce more severe impacts or conflicts in mitigation measures. The adverse effects of the project – minor and temporary disturbance to air quality, noise, visual and traffic congestion quality during construction – are limited in severity, nature and geographic scale. At the current time there are a number of planned projects near the project site. The Phase One Expansion of the East Hawai'i Sanitary Landfill, the East Hawai'i Regional Sort Station, and the Waste Reduction Technology Facility are all planned or ongoing projects of the Hawai'i County Department of Environmental Management. In addition, the State of Hawai'i is planning the Mana Quarry Project, which would continue quarrying land east of Leilani Street and south of the Airport Access Road and then convert the land to industrial subdivision lots after termination of quarrying. Taken together, the projects will realign Leilani Street and Ammunition Dump Road south as far as the South Hilo Sanitary Landfill and create more intensive industrial use of the area up to and including the landfill. If Yamada and Sons continues to access the project site via its own gated access route, there would be only minor cumulative effects to industrial traffic that do not require mitigation, other than DEM concerns listed above, which are expected to be addressed. Impacts to water quality, dust and noise will be localized and largely mitigated, and they will not tend to accumulate. Landfill expansion will continue to demand rock for daily cover, and thus there is potential for synergy with the Yamada and Sons quarry.

3.5 Required Permits and Approvals

The following permits and approvals would be required:

- State DOH: National Pollutant Discharge Elimination System Permit (NPDES)
- County Planning Department or Commission: Special Permit and Subdivision
- County Department of Public Works: Grubbing and Grading Permits

3.6 Consistency With Government Plans and Policies

3.6.1 Hawai'i State Plan

Adopted in 1978 and last revised in 1991 (Hawai'i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State's long-run growth and development activities. The three themes that express the basic purpose of the *Hawai'i State Plan* are individual and family self-sufficiency, social and economic mobility and community or social well-being. The proposed project would provide products essential to infrastructural improvements and maintenance in Hawai'i County, and is therefore important to community well-being and economic mobility. No substantial environmental impact would occur.

3.6.2 Hawai'i County Zoning and General Plan

Hawai'i County Zoning. The project site is zoned Agricultural (A-20a), where quarrying is a permitted activity, but one requiring a Special Permit from the Hawai'i County Planning Commission. The property is not situated within the County's Special Management Area (SMA). The project will likely require property subdivision through the Planning Department.

The *Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG, Hawai'i County Planning Department 2006)*. The LUPAG map component of the *General Plan* is a graphic representation of the Plan's goals, policies, and standards as well as of the physical relationship between land uses. It also establishes the basic urban and non-urban form for areas within the planned public and cultural facilities, public utilities and safety features, and transportation corridors. The project site is classified as Important Agricultural Lands in the LUPAG. The General Plan defines these as those lands with "better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors" (p. 14-8). Generally, these lands have been identified through maps from the previous General Plan, the U.S. Natural Resource Conservation Service, the UH Land Study Bureau, or similar studies. However, as recognized in the General Plan, some areas so designated may be inappropriately classified because of the scale of previous mapping, and the location of these lands requires verification by more detailed mapping when considering specific land use decisions. It is expected that the Special Permit process will consider the rather poor agricultural potential of the proposed Yamada quarry area and DLNR stepped quarry expansion area when considering permit applications.

3.6.3 Hawai'i State Land Use Law

All land in the State of Hawai'i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. The property is in the State Land Use Agricultural District. Although the planned use is not a conformant use according of this State Land Use District designation, State Land Use law allows for further definition by County ordinance, which allows for quarrying on agricultural lands. However, as discussed above, a Special Permit from the Hawai'i County Planning Commission would be required for the proposed use.

PART 4: ANTICIPATED DETERMINATION

Based on evaluation of the environmental setting and impacts, and in consideration of the comments on the Draft EA, the applicant believes that the proposed action will not have a significant effect upon the environment and thus expects that the Hawai'i State Department of Land and Natural Resources will issue a Finding of No Significant Impact (FONSI).

PART 5: FINDINGS AND REASONS

Chapter 11-200-12, Hawai'i Administrative Rules, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. *The proposed project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources.* No valuable natural or cultural resources would be committed or lost, as the project site contains none.
2. *The proposed project will not curtail the range of beneficial uses of the environment.* No restriction of beneficial uses would occur, as the land has poor potential for other uses and is surrounded by industrial land use.
3. *The proposed project will not conflict with the State's long-term environmental policies.* The State's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The project is minor and fulfills aspects of these policies calling for an improved social environment. It is thus consistent with the State's long-term environmental policies.
4. *The proposed project will not substantially affect the economic or social welfare of the community or State.* The project would not have any adverse effect on the economic or social welfare of the County or State, and would benefit the economy of the Hilo area.
5. *The proposed project does not substantially affect public health in any detrimental way.* The proposed project would be subject to environmental, health and safety permits and restrictions and would not be detrimental to public health in any way.
6. *The proposed project will not involve substantial secondary impacts, such as population changes or effects on public facilities.* No secondary effects are expected to result from the proposed action.
7. *The proposed project will not involve a substantial degradation of environmental quality.* The project site would not cause a substantial degradation of environmental quality, and mitigation for storm water runoff, as well as dust emissions, would be required.
8. *The proposed project will not substantially affect any rare, threatened or endangered species of flora or fauna or habitat.* The project site supports overwhelmingly alien vegetation. Impacts to rare, threatened or endangered species of flora or fauna would not occur.
9. *The proposed project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions.* The project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
10. *The proposed project will not detrimentally affect air or water quality or ambient noise levels.* No adverse effects on these resources would occur. Implementation of a Storm Water Pollution Prevention Plan will mitigate impacts to water quality. There are no sensitive receptors in the project area, and hence noise produced would not be detrimental.
11. *The project does not affect nor would it likely to be damaged as a result of being located in environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area.* Although the

project is located in an area with volcanic and seismic risk, the entire Island of Hawai'i shares this risk, and the project is not imprudent to construct.

12. *The project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies.* No scenic vistas and viewplanes will be adversely affected by the project.
13. *The project will not require substantial energy consumption.* The construction and operation of the facilities would not require substantial energy consumption. No adverse effects would be expected.

For the reasons above, the proposed action would not have any significant effect in the context of Chapter 343, Hawai'i Revised Statutes and section 11-200-12 of the State Administrative Rules.

REFERENCES

- Beckwith, M. 1976. *Hawaiian Mythology*. Honolulu: University of Hawaii Press.
- Carson, M. 1999. Archaeological Inventory Survey of the 176-Acre Pana'ewa Campus Site, Waiakea Ahupua'a, Hilo District, Island of Hawai'i (TMK:2-1-13:154). Scientific Consulting Services, Inc. report 168-1. Prepared for PBR Hawaii, Inc.
- FEMA. 2005. *Flood Zone Mapping*. http://www.fema.gov/fhm/fq_term.shtm.
- Gagne, W., and L. Cuddihy. 1990. "Vegetation," pp. 45-114 in W.L. Wagner, D.R. Herbst, and S.H. Sohmer, eds., *Manual of the Flowering Plants of Hawai'i*. 2 vols. Honolulu: University of Hawai'i Press.
- Handy, E.S.C., and E. Handy. 1972. *Native Planters in Old Hawai'i*. B.P. Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu. (With M.K. Pukui).
- Hawai'i County Planning Department. 2005. *The General Plan, County of Hawai'i*. Hilo.
- Heliker, C. 1990. *Volcanic and Seismic Hazards on the Island of Hawai'i*. Washington: U.S. GPO.
- Kamakau, S. 1961. *Ruling Chiefs of Hawaii*. Honolulu: The Kamehameha Schools Press.
- Kelly, M. 1981. "Archaeological and Historical Studies for the Alenaio Stream Flood Damage Reduction Study, Hilo Hawai'i. Report 1. Background History." Department of Anthropology, B.P. Bishop Museum, Honolulu. Prepared for U.S. Army Engineer District, Pacific Ocean.
- McEldowney, H. 1979. "Archaeological and Historical Literature Search and Research Design: Lava Flow Control Study, Hilo Hawai'i." Manuscript on file, Department of Land and Natural Resources-State Historic Preservation Division.
- Moniz, J., n.d., Historical and Archaeological Synthesis of Land Use and Settlement Patterns, Waiakea Ahupua'a, Hilo, Hawaii. Manuscript on file at DLNR-SHPD Hilo Office (1994).
- Pukui, M., S. Elbert, and E. Mookini. 1974. *Place Names of Hawaii*. Revised and Expanded Edition. Honolulu: University of Hawaii Press, Honolulu
- University of Hawaii, Land Study Bureau. 1965. Detailed Land Classification — Island of Hawaii. In L. S. Bulletin No. 6, November.
- U.S. Dept. of Commerce, Economics and Statistics Administration, Bureau of the Census. 2001. <http://factfinder.census.gov/>.

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ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS QUARRY

APPENDIX 1

**ARCHAEOLOGICAL REPORT/CULTURAL IMPACT
ASSESSMENT**

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RECHTMAN CONSULTING, LLC

HC 1 Box 4149 Kaa'au, Hawai'i 96749-9710
phone: (808) 966-7636 fax: (808) 443-0065
e-mail: bob@rechtmanconsulting.com
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL STUDIES

June, 15, 2006

RC-0363

Julie Taomia, Ph.D.
Hawai'i Island Archaeologist
DLNR-SHPD
74-383 Kealakehe Parkway
Kailua-Kona, HI 96740

Dear Julie:

On behalf of Ron Terry, Ph.D., Rechtman Consulting, LLC has prepared this request for determination of "no historic properties affected" associated with the proposed development of a roadway and a quarry site within a roughly 15-acre project area (TMK:3-2-1-13:002 por. and 3-2-1-13:148 por.) in Waiākea Ahupua'a, South Hilo District, Island of Hawai'i (Figures 1, 2, and 3). The project area measures roughly 400 meters long by 200 meters wide, and is located at elevations ranging from 80 to 100 feet above sea level in a portion of Waiākea Ahupua'a commonly referred to as Pana'ewa. The proposed quarry site is bounded to the west by an existing quarry site (Figure 4), to the south by an existing paved roadway (Figure 5), and to the north and east by currently undeveloped forestland. The survey area also included a roughly 600-meter long by 20-meter wide corridor along either side of the existing paved roadway that passes along the southern edge of the project area.

Soils within the project area are described as Papai extremely stony muck on 3 to 25 percent slopes (Sato et al. 1973). These well-drained, thin, extremely stony organic soils formed over fragmented 'a'ā from a Mauna Loa lava flow that occurred 750-1,500 years ago (Wolfe and Morris 1996). A recent survey of the vegetation present within the study area identified numerous alien and a few indigenous species within a secondary forest setting (Geomatrix Associates unpublished data). The existing vegetation pattern indicates that the study property has undergone mechanical alteration in the past including, but not limited to, mechanized clearing and earth moving. The presence of a large earthen berm along the western edge of the project area where it abuts the existing quarry, and the presence of at least two overgrown bulldozed roadways crossing the area, attest to the former mechanical alteration of the proposed quarry site. Modern trash and several abandoned vehicles were observed at various locations throughout the interior portions of the project area.

The earliest historical knowledge of Hilo comes from legends written by Kamakau (1961) of a 16th century chief 'Umi-a-Liloa (son of Liloa) who at that time ruled the entire island of Hawai'i. Descendants of Umi and his sister-wife were referred to as "Kona" chiefs, controlling Ka'ū, Kona, and Kohala, while descendants of Umi and his Maui wife were "Hilo" chiefs, controlling Hāmākua, Hilo, and Puna (Kelly 1981:1). According to Kamakau (1961) both sides fought over control of the island, desiring access to resources such as feathers, *māmaki* tapa, and canoes on the Hilo side; and *wauke* tapa, and warm lands and waters on the Kona side (c.f. Kelly 1981:3).

Sometime near the end of the 16th century or early in the 17th century, the lands of Hilo were divided into *ahupua'a* that today retain their original names (Kelly 1981:3). The design of these land divisions ensured that residents could have access to all that they needed to live, with ocean resources at the coast, and agricultural and forest resources in the interior. Waiākea, the *ahupua'a* of the current study, literally translates as "broad waters" (Pukui et al. 1974:220). One legendary account that takes place within the

ahupua'a of Waiākea, relates the story of Hi'iaka, a sister of Pele, who defeated an evil *mo'o* woman at Pana'ewa. In the story, the *mo'o* and her followers blocked Hi'iaka's path on a journey around the island first by taking the form of fog, then of sharp rain, and then of a *kukui* tree. Hi'iaka defeated the *mo'o* and her followers by entangling them in a growth of vines (Beckwith 1976:173-174).

Historical accounts (McEldowney 1979) place the current study area in a zone of agricultural productivity, where forests were burned down to create an open plain for planting crops such as taro, bananas, sugarcane, breadfruit, and *kukui*, and where scattered dwellings were also present. Handy and Handy (1972) also describe the general region as an agricultural area:

On the lava strewn plain of Waiakea and on the slopes between Waiakea and Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Pana'ewa and in all the lower fern-forest zone above Hilo town along the course of the Wailuku River. (Handy and Handy 1972:539)

Interestingly, McEldowney (1979:20-21) notes that the Pana'ewa forest (in the vicinity of the current project area) was one of the few forests on the island to nearly reach the ocean in the early 1800s. This may mean that small-scale agriculture was practiced at clearings within the Pana'ewa forest, as opposed to the burning off of large areas, such as was practiced in other parts of Waiākea.


During the early Historic Period Waiākea Ahupua'a became part of Kamehameha I's personal land holdings (Moniz n.d.:11). As a result of the *Māhele* in 1848, nearly all of the *ahupua'a* became Crown Lands (for the occupant of the throne). According to Moniz (n.d.:12) twenty-six *kuleana* claims were registered for lands in Waiākea; most of these lands were centered along fishponds or major inland roads, and none were in the immediate vicinity of the current study area. Following the *Māhele*, Kamehameha IV leased large portions of Waiākea (not including the current study area) to outside interests for the production of sugar (Moniz n.d.). Land in the vicinity of the current project area has been used for quarries since the early the early 1900s.

One previous archaeological study was conducted in the immediate vicinity of the study area. This inventory survey, conducted by Carson (1999) at a 176-acre parcel to the south of the current project area (TMK:3-2-1-13:154), reported no findings. Carson concludes that, "if any sites existed [on the parcel] in the past, then they were probably modified or destroyed by past land alteration activities such as bulldozing and the creation of dirt roads" (1999:8).

On May 22, 2006 Matthew R. Clark, B.A., Olivier M. Bautista, B.A., Mark J. Winburn, B.A., and Lizabeth A. Hauani'o, under the direction of Robert B. Rechtman, Ph.D., conducted an intensive on-foot archaeological survey of the entire project area. A thorough examination of the surface of the project area revealed that a large portion of it had previously undergone mechanical clearing, and that no archaeological resources were present; and, given the history of land use in the vicinity of the property, the likelihood of encountering subsurface resources is extremely remote. Based on these negative findings, on behalf of our client, we are requesting that DLNR-SHPD issue a written determination of "no historic properties affected" in accordance with HAR 13§13-284-5(b)1.

Should you require further information, or wish to visit the parcel, please contact me directly.

Respectfully,



Bob Rechtman, Ph.D.
Principal Archaeologist

References Cited

- Beckwith, M.
1976 *Hawaiian Mythology*. Honolulu: University of Hawaii Press.
- Carson, M
1999 Archaeological Inventory Survey of the 176-Acre Pana'ewa Campus Site, Waiakea Ahupua'a, Hilo District, Island of Hawai'i (TMK:2-1-13:154). Scientific Consulting Services, Inc. report 168-1. Prepared for PBR Hawaii, Inc.
- Handy, E.S.C., E.G. Handy (with M. Pukui)
1972 *Native Planters in Old Hawaii: Their Life, Lore and Environment*. B.P. Bishop Museum Bulletin 223. Honolulu: Department of Anthropology, Bishop Museum Press.
- Kelly, M.
1981 Archaeological and Historical Studies for the Alenaio Stream Flood Damage Reduction Study, Hilo Hawai'i. Report 1. Background History. Department of Anthropology, B.P. Bishop Museum, Honolulu. Prepared for U.S. Army Engineer District, Pacific Ocean.
- McEldowney, H.
1979 Archaeological and Historical Literature Search and Research Design: Lava Flow Control Study, Hilo Hawai'i. Manuscript on file, Department of Land and Natural Resources-State Historic Preservation Division.
- Moniz, J.
n.d. Historical and Archaeological Synthesis of Land Use and Settlement Patterns, Waiākea Ahupua'a, Hilo, Hawaii. Manuscript on file at DLNR-SHPD Hilo Office (1994).
- Pukui, M., S. Elbert, and E. Mookini
1974 *Place Names of Hawaii*. Revised and Expanded Edition. Honolulu: University of Hawaii Press, Honolulu.
- Sato, H., W. Ikeda, R. Paeth, R. Smythe, and M. Takehiro, Jr.
1973 Soil Survey of the Island of Hawaii, State of Hawaii. U.S. Department of Agriculture, Soil Conservation Service and University of Hawaii Agricultural Experiment Station. Washington, D.C.: Government Printing Office.
- Wolfe, E., and J. Morris
1996 Geologic Map of the Island of Hawai'i. Geologic Investigations Series Map 1-2524-A. U.S. Department of the Interior, U.S. Geological Survey.

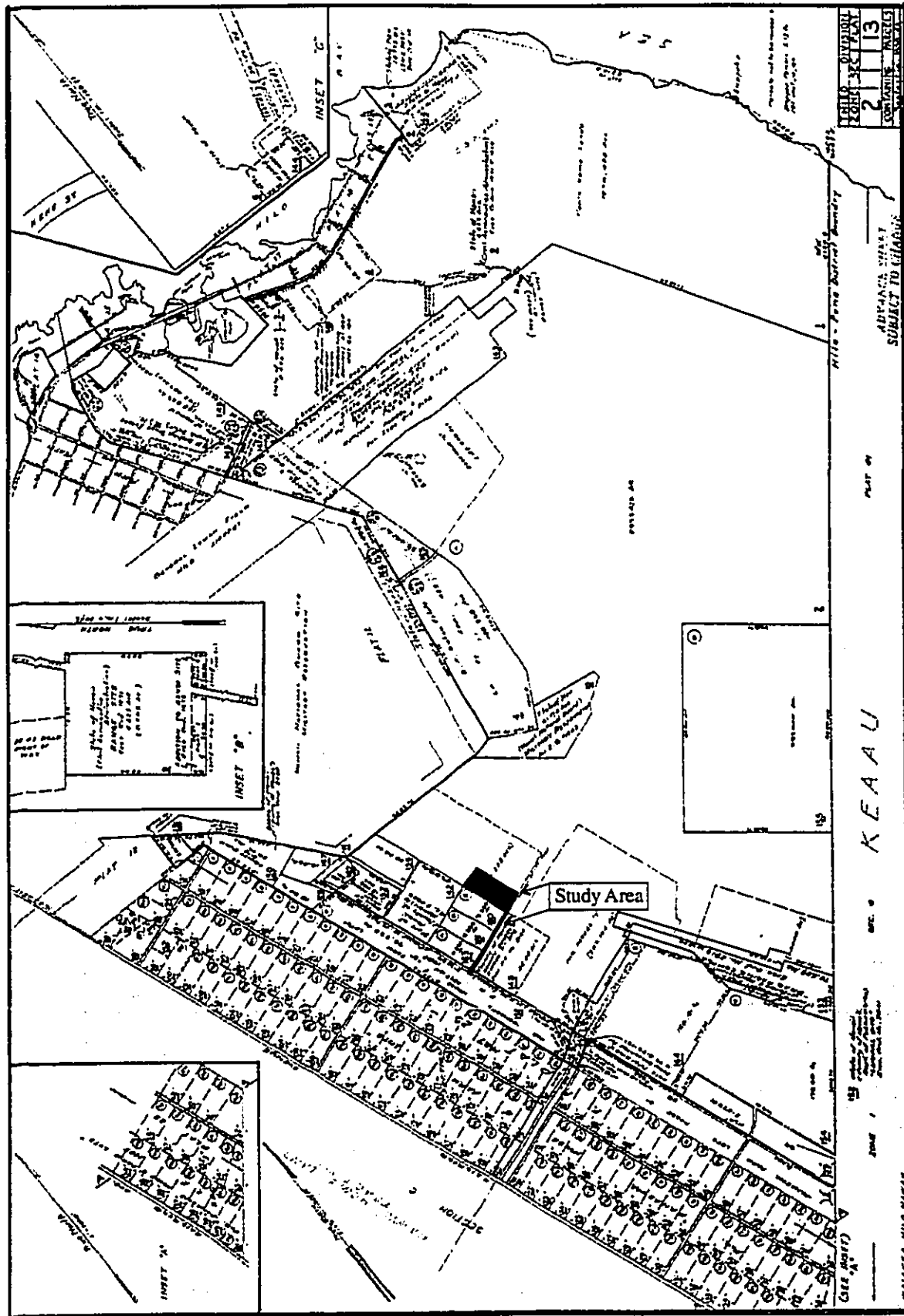


Figure 2. Tax Map Key 3-2-1-13 showing current study area (portions of Parcels 002 and 148).



Figure 3. Aerial view of current project area.

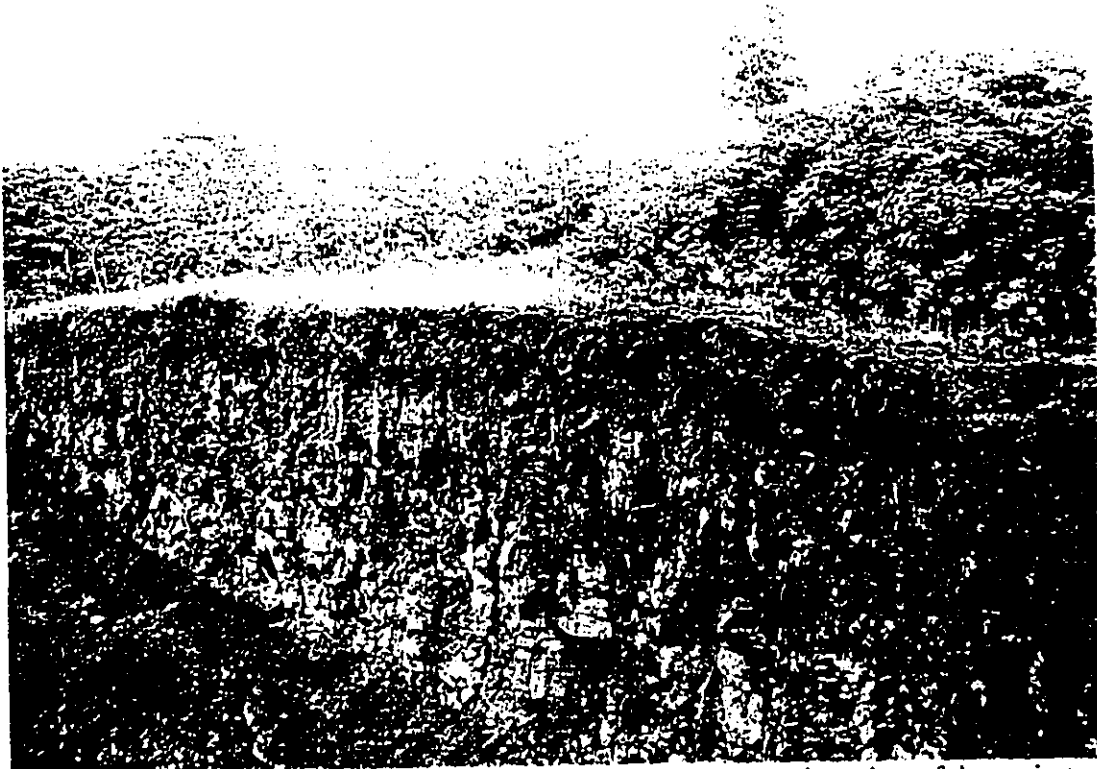


Figure 4. View to northeast of the existing quarry along the western boundary of the project area.



Figure 5. View to east of the existing paved road along the southern project area boundary.

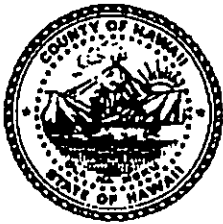
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ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS QUARRY

APPENDIX 2

COMMENTS IN RESPONSE TO PRE-CONSULTATION



**SOLID WASTE DIVISION
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

COUNTY OF HAWAII – 108 Railroad Ave. - Hilo, Hawai'i 96720
Hilo Office (808) 961-8515 • Fax (808) 961-8553

MEMORANDUM

DATE : Thursday, May 11, 2006
TO : Graham Knopp, Associate
Geometrician Associates
FROM : Michael Dworsky, Chief
SUBJECT: Yamada & Sons quarry expansion TMK (3rd) 2-1-13:02

Graham - - I am very much interested in the EA for the proposed quarry expansion. In particular as it will related to the adjacent South Hilo Sanitary Landfill, and also the new County Road Alignment. When the new alignment becomes a County Road, there will be some impact to the current rock haulers leaving the quarries, that are not sized or licensed to be on County roads.

Looking forward to the EA.

Regards,

Michael Dworsky, PE
Solid Waste Division Chief

Harry Kim
Mayor



Darryl J. Oliveira
Fire Chief

Desmond K. Wery
Deputy Fire Chief

County of Hawai'i

FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 961-8297 • Fax (808) 961-8296

May 17, 2006

Mr. Graham Knopp, Associate
Geometrician Associates, LLC
HC 2 Box 9575
Kea'au, Hawaii 96749

RE: ENVIRONMENTAL ASSESSMENT (EA) FOR YAMADA & SONS QUARRY
EXPANSION, ISLAND OF HAWAII, LOCATED ON AN APPROXIMATELY
15.0 ACRE PORTION OF TMK (3RD)2-1-13:02

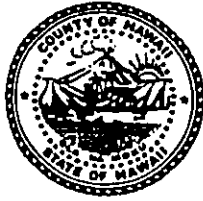
We have no comments to offer at this time in reference to the above-mentioned Environmental Assessment.


DARRYL OLIVEIRA
Fire Chief

JCP:lpc



Harry Kim
Mayor



Lawrence K. Mahuna
Police Chief

Harry S. Kubojiri
Deputy Police Chief

County of Hawaii

POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-8869

May 19, 2006

Mr. Graham Knopp
Associate
Geometrician Associates
HC 2 Box 9575
Keaau, HI 96749

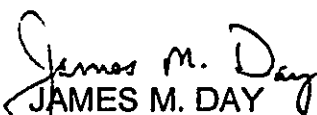
Dear Mr. Knopp:

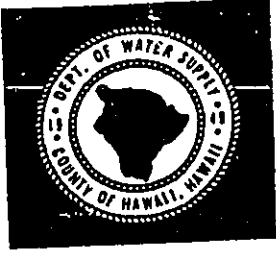
Subject: Environmental Assessment (EA) for Yamada & Sons quarry expansion, Island of Hawai'i, located on an approximately 15.0 acre portion of TMK (3rd) 2-1-13:02

Staff, upon reviewing the provided documents and visiting the proposed site, does not anticipate any significant impact on traffic and public safety in this area.

Thank you for allowing us the opportunity to comment.

Sincerely,


JAMES M. DAY
ASSISTANT POLICE CHIEF
AREA I OPERATIONS



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

May 23, 2006

Geometrician Associates, LLC
ATTENTION: MR. GRAHAM KNOPP
HC 2, Box 9575
Keaau, HI 96749

**YAMADA AND SONS QUARRY EXPANSION
DRAFT ENVIRONMENTAL ASSESSMENT
HAMAKUA, ISLAND OF HAWAI'I, HAWAI'I
TAX MAP KEY (3) 2-1-013:002**

Thank you for allowing us the opportunity to comment on your Pre-Draft Environmental Assessment letter of May 2, 2006.

Please be informed that the nearest Department of Water Supply facility is an existing 8-inch waterline within Auwae Road approximately 3,350 feet from the proposed quarry expansion site. Should the applicant require water service for the proposed quarry expansion, the extension of waterlines to the site may be required, including all necessary easements for the waterline if it is not installed within a County right-of-way. In addition, the applicant would be required to install a reduced pressure type backflow prevention assembly just after the water meter on private property. Water service cannot begin until the installation of the backflow prevention assembly has been inspected and approved by Department of Water Supply personnel.

If you have any questions, please contact Mr. Finn McCall of our Water Resources and Planning Branch at (808) 961-8070, extension 255.

Sincerely yours,

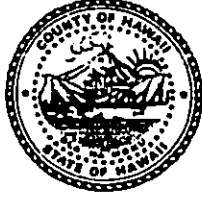
Milton D. Pavao, P.E.
Manager

FM:sco

... Water brings progress...

The Department of Water Supply is an Equal Opportunity provider and employer. To file a complaint of discrimination, write: USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington DC 20250-9410. Or call (202) 720-5964 (voice and TDD)

Harry Kim
Mayor



Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-3043
(808) 961-8288 • FAX (808) 961-8742

June 2, 2006

Mr. Graham Knopp
Geometrician Associates, LLC
HC 2, Box 9575
Keaau, Hawaii 96749

Dear Mr. Knopp:

**SUBJECT: Pre-Draft Environmental Assessment (DEA)
Yamada & Sons Quarry Expansion
Waiakea, South Hilo, Island of Hawaii
Tax Map Key: (3) 2-1-013:Portion 002**

This is in response to your letter dated May 2, 2006 requesting our comments on any special environmental conditions or impacts related to the proposed development.

We understand that Yamada & Sons, Inc. is proposing to expand their existing quarrying operations on nearby parcels to the subject State lands. The proposed project site is zoned Agricultural (A-20a) by the County of Hawaii and is in the State Land Use (SLU) Agricultural district. The site is not in the Special Management Area.

The Hawaii County Zoning Code describes quarrying activities as excavation or removal of natural building materials or minerals for commercial use. Pursuant to §25-5-72(c), HCC, a Special Permit is required for the described activities within the Agricultural zoning district and the SLU Agricultural district.

Due to the proximity of the proposed expansion of quarrying activities to the existing Hilo landfill, we suggest that particular attention should be given to any potential environmental or health risks that may develop in light of the anticipated vertical expansion of the landfill.

Thank you for the opportunity to provide comments on the DEA. Should you have questions, please feel welcome to contact Larry Brown or Esther Imamura of my staff at 961-8288.

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2397

May 30, 2006

Graham Knopp
Geometrician Associates, LLC
HC2 Box 9575
Kea'au, HI 96749

RE: Pre-Draft Environmental Assessment Consultation for the Proposed Expansion of the Yamada and Sons Quarry, Waiakea, Hawai'i Island, TMK (3) 2-1-13: 02.

Dear Mr. Knopp,

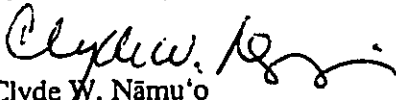
The Office of Hawaiian Affairs (OHA) is in receipt of your May 2, 2006 request for comment on the above-listed proposed project. OHA offers the following comments:

Our staff has no comment regarding the above-listed submission, but we do look forward to reviewing the Draft Environmental Assessment when completed.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,


Clyde W. Nāmu'o
Administrator

CC: Lukela Ruddle
OHA Community Affairs Coordinator (Hilo)
162 A Baker Avenue
Hilo, HI 96720-4869

ENVIRONMENTAL ASSESSMENT

YAMADA AND SONS QUARRY

APPENDIX 3

COMMENTS TO THE DRAFT E.A. AND RESPONSES

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

OCTOBER 8, 2006

Yamada and Sons Quarry (HRS 343 DEA)

District: South Hilo
TMK: (3)2-1-13:02 (por.)
Applicant: Yamada and Sons, Inc.
P.O. Box 4699, Hilo, HI 96720
Contact: Brian Ikawa (922-8402)

Approving Agency: Dept. of Land & Natural Resources, Land Div
P.O. Box 936, Hilo, HI 96721
Contact: Harry Yada (974-6203)

Consultant: Geometrician Associates
P.O. Box 396, Hilo, HI 96721
Contact: Ron Terry (969-7090)

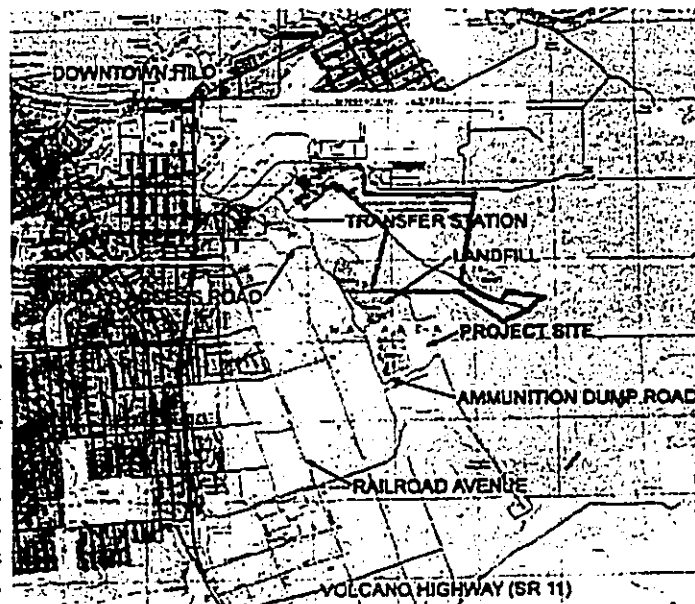
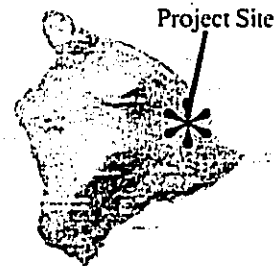
Public Comment
Deadline: November 8, 2006
Status: Draft environmental assessment (DEA) notice pending 30-day public comment. Address comments to the applicant with copies to the approving agency, consultant and OEQC.

Permits Required: Subdivision, Special Permit, Grubbing and Grading, NPDES

Yamada and Sons, Inc. ("Yamada and Sons") propose to acquire a license to develop a 14.99-acre portion of a State property for use as a rock quarry. The project site is adjacent to existing quarries and is presently vacant and undeveloped. Yamada and Sons requires a new quarry because their existing quarry has nearly exhausted its supply of adequate quality material. The quarry would allow the manufacture of engineered products, including base course and components of asphalt and concrete, that are necessary for the construction of a wide variety and large number of Hawai'i County projects, both public and private. Yamada and Sons would acquire a license to with the Department of Land and Natural Resources (DLNR) for use of the site, and will pay royalties to the State for extraction of material. The proposed quarrying activities would be identical in nature to the ongoing quarrying activities located on adjacent parcels: rock would be excavated with heavy equipment when possible, and when impenetrable rock is encountered, drilling and blasting would be performed. Excavated rock would either be processed on-site, or at Yamada and Sons' Baseyard located along Railroad Avenue near the project site. They anticipate that about 35,000 tons of material would be extracted per month, and with the excavation reaching a maximum depth of about 60 feet, the quarry is expected to have an active lifetime of roughly ten years or more. DLNR anticipates that in the future it may also decide to step quarry a 100-foot strip on the southern boundary of three existing quarries

in the area to produce a better profile for future land uses after substantial quarrying is finished: this strip, which would require realignment of part of the Ammunition Dump Road, has also been studied as part of the EA.

Because the project would require clearing of land area greater than one acre, the applicant would obtain an NPDES permit and develop and implement a Storm Water Pollution Prevention Plan (SWPPP) to contain sediment and storm water runoff from leaving the project site. Surveys have determined that no significant biological, historic or cultural resources are present. If archaeological resources or burials are encountered during land-altering activities associated with construction, work in the immediate area of the discovery will be halted and the State Historic Preservation Division would be contacted. Also, in order to protect public safety the quarry will be "stepped" or terraced, a vegetative buffer will be maintained around the periphery of the site, and access routes to the interior of the site will be kept gated.



Project Location

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeeq@health.state.hi.us

October 12, 2006

Peter Young
Department of Land & Natural Resources
PO Box 621
Honolulu, HI 96809

Attn: Harry Yada

Subject: Draft Environmental assessment (EA), Yamada & Sons Rock Quarry

Dear Mr. Young:

We have the following comments:

Air quality: Will you require a clean air permit for the dust generated from the quarrying activity?

Noise and vibration: The draft EA mentions that the Panaewa Homes are nearby. How close is nearest residence? How will you mitigate the effects of noise and vibration on these homes during blasting?

Licensing of trucks: DEM has questioned the current licensing status. What is the current status? If the trucks are unlicensed, how will they be permitted to haul quarry material to consumers?

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".

GENEVIEVE SALMONSON
Director

c: Ron Terry

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawai'i 96721 rterry@hawaii.rr.com

January 12, 2007

Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu HI 96813

Dear Ms. Salmonson:

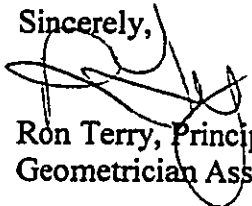
**Subject: Draft Environmental Assessment for Yamada and Sons
Quarry on TMK 2-1-13:02 (por.)**

Thank you for your comment letter on the Draft EA dated October 12, 2006. As the author of the EA, I offer the following responses to your specific comments:

- 1. Air quality permits.* Our discussions with State Department of Health officials indicate, as stated in Section 3.14 of the Draft EA and not contradicted by comments from DOH, which was provided a copy of the Draft EA, that the only new permits tied to air quality would be certain aspects of the NPDES permit. As the Draft EA discussed, the existing rock crushing and milling operation, which would utilize rock from the proposed quarry to supplement rock from other nearby quarries, would be required to continue operation under the existing permit conditions for its covered or non-covered source permit.
- 2. Noise and vibration.* The nearest homes are approximately a half mile away – one of the nearest is shown in the upper left of the airphoto that is Figure 3 of the EA. It is important to note that four existing quarries lie between the proposed quarry and the only nearby residential neighborhood. The applicant is unaware of any complaints regarding noise or vibration regarding these existing quarries, and the likelihood of problems resulting from activities at the farther proposed quarry is therefore low.
- 3. Unlicensed trucks.* After further review of the County of Hawai'i's plans for the area, the Department of Environmental Management (DEM) determined that the project would not have a negative impact. In a letter of December 5, 2006 that will be included in the Final EA, DEM stated that the County does not plan to pave Ammunition Dump Road and that there would be no conflict with rock haulers who utilize the existing roadway and assist in maintaining the road surface.

Again, thank you for your comment.

Sincerely,

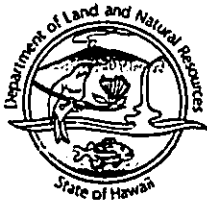


Ron Terry, Principal
Geometrician Associates

Cc: DLNR Land Division, Hilo Office



LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BEACHING AND OCEAN RECREATION
HURDLES/CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
EMERALD BENT
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVATION COMMISSION
LAND
STATE PARKS

November 20, 2006

Ron Terry
Geometrics Associates
P.O. Box 396
Hilo, Hawaii 96721

LOG NO: 2006.3793
DOC NO: 0611NM30
Archaeology

Dear Mr. Terry:

**SUBJECT: Chapter 6E-8 Historic Preservation Review -Draft EA Yamada and Sons Quarry
Waiakea, South Hilo, Hawaii
TMK: (3) 2-1-013: 002**

The aforementioned project consists of a new rock quarry.

The *Archaeological Letter Report, Waiakea Ahupuaa, South Hilo District, Hawaii Island, TMK:3-2-1-013: 002* (Rechtman, Rechtman Consulting LLC, 2006) is acceptable. No historic properties were found.

We concur with your determination that no historic properties will be affected by this undertaking. If you have any questions, please contact Nancy McMahon, the Kauai Archaeologist at 808.742.7033.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

NM:gvf

Cc: Harry Yada, DLNR- Land Division, Hawaii Island P.O. Box 936, Hilo, HI 96721
OEQC, 235 South Beretania Street, Suite 702, Honolulu, HI 96813

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawai'i 96721 rterry@hawaii.rr.com

January 12, 2007

Melanie Chinen, Administrator
State Historic Pres. Div.
601 Kamokila Blvd., Rm. 555
Kapolei HI 96707

Dear Ms. Chinen:

**Subject: Draft Environmental Assessment for Yamada and Sons
Quarry on TMK 2-1-13:02 (por.)**

Thank you for your comment letter on the Draft EA dated November 20, 2006, in which your office concurred with the finding of the consulting archaeologist that no historic properties would be affected. We appreciate your review of the EA and the inventory survey.

Sincerely,


Ron Terry, Principal
Geometrician/Associates

Cc: DLNR Land Division, Hilo Office

Harry Kim
Mayor



Darryl J. Oliveira
Fire Chief

Desmond K. Wery
Deputy Fire Chief

County of Hawai'i

FIRE DEPARTMENT

25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720
(808) 961-8297 • Fax (808) 961-8296

October 16, 2006

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, Hawaii 96721

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
Project Name: Yamada and Sons Quarry
TAX MAP KEY: (3rd) 2-1-13:02 (por.) South Hilo, Hawaii

We have no comments to offer at this time in reference to the above-mentioned Draft Environmental Assessment.


DARRYL OLIVEIRA
Fire Chief

PBE:lpc

CC: Director, Office of Environmental Quality Control
Harry Yada, State Department of Land and Natural Resources – Land Division



geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawai'i 96721 rterry@hawaii.rr.com

January 12, 2007

Darryl Oliveira, Chief
Hawai'i County Fire Department
25 Aupuni Street
Hilo HI 96720

Dear Chief Oliveira:

**Subject: Draft Environmental Assessment for Yamada and Sons
Quarry on TMK 2-1-13:02 (por.)**

Thank you for your comment letter on the Draft EA dated October 16, 2006, in which you stated that your agency had no additional comments to offer. We very much appreciate your review of the document.

Sincerely,


Ron Terry, Principal
Geometrician Associates

Cc: DLNR Land Division, Hilo Office

Dec-20-06 14:29

From-YAMADA DIVERSIFIED

9338415

T-059 P.01/01 F-685

Harry Kim
Mayor



Barbara Bell
Director

Nelson Ho
Deputy Director

County of Hawaii

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

25 Anapuni Street, Room 210 • Hilo, Hawaii 96720-4252
(808) 961-8083 • Fax (808) 961-8086
email: cohdem@co.hawaii.hi.us

December 5, 2006

Mr. Graham Knopp, Associate
Geometrician Associates,
HC 2 Box 9575
Keaau Hawaii 96749

Subject: Environmental Assessment for Yamada & Sons quarry expansion, located on an approximately 15.0 acre portion of TMK (3rd) 2-1-13:02

Dear Mr. Knopp:

After further review of the proposed quarry expansion, and the County of Hawaii's plans for that area, there is no longer any negative impact. In fact the proposed quarry expansion is compatible with the Solid Waste Division as we are dependent on quarry material for the existing landfill. Furthermore, the new quarry and adjacent quarries may be considered for future development by the Solid Waste Division for additional landfill space.

The County of Hawaii does not currently plan on paving Ammunition Dump Rd., or make it into a county road, therefore there is no conflict with rock haulers who utilize the existing roadway and assist in maintaining the road surface.

Thank you for the opportunity to clarify our position, and we have no further concerns that would impact the Quarry Expansion project from proceeding. In addition, there are no potential environmental or health risks as a result of the vertical expansion of the landfill.

Regards,

A handwritten signature in black ink, appearing to read "Michael Dworsky".

Michael Dworsky, P.E.
Chief, Solid Waste Division

Cc: Yamada and Sons, Inc
733 Kanoelehua Ave.
Hilo, Hawaii 96720

geometrician

ASSOCIATES, LLC
integrating geographic science and planning

phone: (808) 969-7090 PO Box 396 Hilo Hawai'i 96721 rterry@hawaii.rr.com

January 12, 2007

Michael Dworsy, P.E.
Chief, Solid Waste Division
Hawai'i County Department of Environmental Management

Dear Mr. Dworsky:

**Subject: Draft Environmental Assessment for Yamada and Sons
Quarry on TMK 2-1-13:02 (por.)**

Thank you for your comment letter on the Draft EA dated December 5, 2006. As the author of the EA, I want to acknowledge your comment that after further review of the County of Hawai'i's plans for the area, your Department has determined that the project would not have a negative impact or conflict. We also appreciate the information concerning the lack of risks associated with the vertical expansion of the landfill.

Sincerely,


Ron Terry, Principal
Geometrician Associates

Cc: DLNR Land Division, Hilo Office