

Application for Amendment to Permit Terms, Conditions, and Time Stipulations

**HAWAIIAN CEMENT
PU‘UNĒNĒ QUARRY
PU‘UNĒNĒ, MAUI, HAWAI‘I
TMK No. (2)3-8-004:001(por.)
(SP 92-380 and CUP 2006/0002)**

Prepared for:

Hawaiian Cement

February 2021

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by Munekiyo Hiraga



MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

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(TMK No. (2)3-8-004:001(por.)
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APPLICATION FOR
AMENDMENT TO PERMIT
TERMS, CONDITIONS, AND
TIME STIPULATIONS
CHECKLIST

1

REQUIRED SUBMITTALS CHECKLIST

Instructions:

- **The following checklist items shall be completed and submitted at the time of application submittal. Incomplete applications will delay their processing and may be returned.**
- **Please number all documents and arrange them in the order they are listed below.**

1. Completed ***Required Items Checklist*** (THIS CHECKLIST) (pg 2)

2. Completed ***Application Form*** (pg 3) **(See Section 2)**

3. A notarized letter of authorization from the legal owner, if the applicant is not the owner.
(See Section 3)

4. An electronic copy in PDF format of the completed application packet on a flash drive or compact disk.

5. Completed ***Zoning and Flood Confirmation Form***, when the proposed amendment would modify the site area subject to development (pg 4) **(See Section 4)**

6. A ***non-refundable filing fee***, payable to County of Maui, Director of Finance.

The current fee schedule is available at the Department of Planning or at the Department of Planning section of the County of Maui website under "Development Permits, Applications & Reviews".
www.mauicounty.gov.

7. Other information, as required by the Planning Director. **(See Section 5)**



APPLICATION FOR
AMENDMENT TO PERMIT
TERMS, CONDITIONS, AND
TIME STIPULATIONS FORM

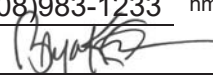
2

Application for Amendment to Permit Terms, Conditions & Time Stipulation

Please print legibly or type in the information below.

PROPERTY ADDRESS / PROJECT INFORMATION	
Name of Project: <i>(If project name is not provided, applicants name will be used)</i>	<u>Hawaiian Cement Pu'unēnē Quarry</u>
Tax Map Key No: <u>(2)3-8-004:001(por.)</u>	Total Lot Area: <u>2008.69 acres</u>
Physical Address / Location of Project: <u>Approximately one (1) mile east of Maui Veterans Highway</u>	
Additional Location Information: <u>Access provided via Kama'āina Road.</u>	

DESCRIPTION OF PROPOSED ACTIVITY OR DEVELOPMENT	
Written description of the proposed action shall include, but not be limited to: use, length, width, height, depth, building material(s), and statement of objectives of the proposed action. <u>Attach additional sheets, if needed:</u>	
Describe the Existing Use:	<u>Hawaiian Cement currently operates a quarry and rock crushing operation on a portion of the property.</u>
Describe the Proposed Use: <i>Include a description of all proposed ground altering activities (e.g., area of disturbance, quantity of fill, depth of excavation, etc.).</i>	<u>Hawaiian Cement seeks to amend the boundaries of its existing quarry operations on the subject parcel covered by State Land Use Commission Special Use Permit (SP 92-380) and County Special Use Permit (CUP 2006/0002) by approximately 45.4 acres for quarry use.</u>
Valuation*: <u>Not Applicable</u>	Building Permit Application No: <i>(if applicable)</i> <u>Not Applicable</u>
<small>*Total cost or fair market value as estimated by an architect, engineer, or contractor licensed by the Department of Commerce and Consumer Affairs, State of Hawaii; or, by the administrator of Department of Public Works, Development Services Administration.</small>	

CONTACT INFORMATION	
APPLICANT INFORMATION	
Applicant's Name(s):	<u>David Gomes Hawaiian Cement</u> Email: <u>dave.gomes@hawaiiancement.com</u>
Mailing Address:	<u>P.O. Box 488, Kahului, Hawai'i 96732</u>
Phone Number(s):	bus <u>877-7004</u> hm <u>----</u> cell <u>----</u> fax <u>877-7414</u>
Signature(s):	<u>See Letters of Authorization, Section 3</u> Date: _____
CONSULTANT INFORMATION	
Contact Name(s):	<u>Bryan Esmeralda, AICP Munekiyō Hiraga</u> Email: <u>planning@munekiyohiraga.com</u>
Mailing Address:	<u>305 High Street, Suite 104, Wailuku, Hawai'i 96793</u>
Phone Number(s):	bus <u>(808)983-1233</u> hm <u>---</u> cell <u>---</u> fax <u>244-8729</u>
Signature(s):	 Date: <u>February 5, 2021</u>
OWNER INFORMATION	
Owner's Name(s):	<u>Alexander & Baldwin, LLC</u> Email: <u>---</u>
Mailing Address:	<u>11 Pu'unēnē Avenue, Kahului, Hawai'i 96732</u>
Phone Number(s):	bus <u>877-5523</u> hm <u>---</u> cell <u>---</u> fax <u>---</u>
Signature(s):	<u>Refer to Letters of Authorization, Section 3</u> Date: _____



LETTERS OF
AUTHORIZATION

3





ALEXANDER & BALDWIN
PARTNERS FOR HAWAII

January 14, 2021

Michele Chouteau McLean, Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: Letter of Authorization for Hawaiian Cement Pu'unēnē Quarry;
TMK (2)3-8-004:001(por.); Pu'unēnē, Maui, Hawai'i

Dear Ms. McLean:

Alexander & Baldwin, LLC, owner of the above-mentioned property, hereby authorizes Hawaiian Cement and its consultant, Munekiyo Hiraga, to prepare, file, process, and obtain all necessary permits and approvals for the subject property, including, but not limited to an Application for Amendment to Permit Terms, Conditions, and Time Stipulations for the subject project.

Should you have any questions, please feel free to contact Jason Koga, Land & Environmental Manager, at 872-4310.

Sincerely,

ALEXANDER & BALDWIN, LLC

Carol K. Reimann
Its Vice President, Series R

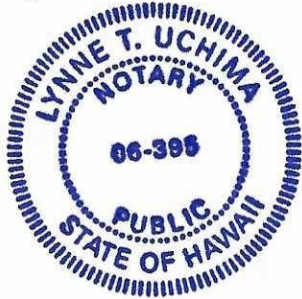
cc: Dave Gomes, Hawaiian Cement
Bryan K. Esmeralda, Munekiyo Hiraga

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STATE OF HAWAII)
) SS.
COUNTY OF MAUI)

On this 14th day of January, 2021, before me, the undersigned Notary Public in and for said State, personally appeared CAROL K. REIMANN, Vice President, Series R, of Alexander & Baldwin, LLC, a Delaware limited liability company, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument and person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



Lynne T. Uchima

Print Name: _____
Notary Public, State of Hawaii
My commission expires: 1/2/2022

Doc. Date: <u>1/14/2021</u>	# Pages: <u>2</u>	
Notary Name: <u>Lynne T. Uchima</u>		<u>Second</u> Circuit
Doc. Description:		
<u>Letter of Authorization to County of Maui</u>		
<u>Dept of Planning for Hawaiian Cement</u>	(Stamp or Seal)	
<u>and Murekiyo Hiraga</u>		
<u>Lynne T. Uchima</u>	<u>1/14/2021</u>	
Notary Signature	Date	

A circular notary seal for Lynne T. Uchima, Notary Public, State of Hawaii. The seal contains the text "LYNNE T. UCHIMA", "NOTARY", "06-395", "PUBLIC", and "STATE OF HAWAII".



**HAWAIIAN
CEMENT**

Maui Concrete and Aggregate Division

Michele Chouteau McLean, Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: Letter of Authorization for Hawaiian Cement Pu'unēnē Quarry; TMK
(2)3-8-004:001(por.); Pu'unēnē, Maui, Hawai'i

Dear Ms. McLean:

Hawaiian Cement, lessee of the above-mentioned property, hereby authorizes Munekiyo Hiraga, to prepare, file, process, and obtain all necessary permits and approvals for the subject property, including, but not limited to an Application for Amendment to Permit Terms, Conditions, and Time Stipulations for the subject project.

Should you have any questions, please feel free to contact me at 871-7004.

Sincerely,

David Gomes

cc: Bryan K. Esmeralda, Munekiyo Hiraga

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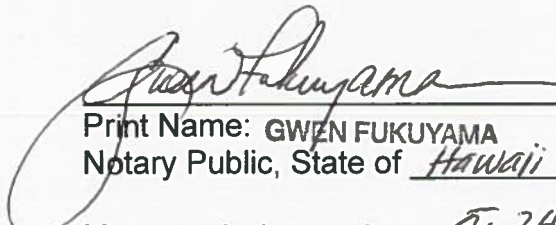
**HAWAIIAN
CEMENT**

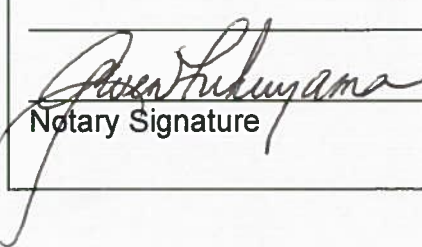
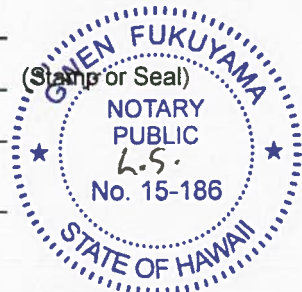
Maui Concrete and Aggregate Division

STATE OF HAWAII)
) SS.
COUNTY OF MAUI)

On this 22nd day of January, 2020, before me personally appeared David Gomes, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

WITNESS my hand and official seal.


Print Name: GWEN FUKUYAMA
Notary Public, State of Hawaii
My commission expires: 5-24-2023

Doc. Date: <u>JAN 22 2021</u>	# Pages: <u>2</u>	<u>Second</u> Circuit
Notary Name: <u>GWEN FUKUYAMA</u>		
Doc. Description: <u>Letter of Authorization for Hawaiian Cement Puunene Quarry</u>		
	<u>1/22/2021</u>	
Notary Signature	Date	



ZONING AND FLOOD
CONFIRMATION FORM

4



19-0319 RECEIVED
 JAN 18 2019
 COUNTY OF MAUI
 DEPT OF PLANNING

COUNTY OF MAUI
 DEPARTMENT OF PLANNING
 One Main Plaza Building
 2200 Main Street, Suite 315
 Wailuku, Hawaii 96793



Zoning Administration and
 Enforcement Division (ZAED)
 Telephone: (808) 270-7253
 Facsimile: (808) 270-7634
 E-mail: planning@mauicounty.gov

JAN 23 2019

ZONING AND FLOOD CONFIRMATION FORM

(This section to be completed by the Applicant)

APPLICANT NAME Munekiyo Hiraga TELEPHONE 244-2015
 PROJECT NAME Hawaiian Cement Puunene Quarry E-MAIL planning@munekyohiraga.com
 PROPERTY ADDRESS East of Maui Veterans Highway TAX MAP KEY (2)3-8-004:001

Yes No Will this Zoning & Flood Confirmation Form be used with a Subdivision Application?
 IF YES, answer questions A and B below and comply with instructions 2 & 3 below:
 A) Yes No Will it be processed under a consistency exemption from Section 18.04.030(B), MCC?
 IF YES, which exemption? (No. 1, 2, 3, 4 or 5) _____
 B) State the purpose of subdivision and the proposed land uses (ie 1-lot into 2-lots for all land uses allowed by law):

INSTRUCTIONS:

- 1) Please use a separate Zoning & Flood Confirmation Form for each Tax Map Key (TMK) number.
- 2) If this will be used with a subdivision application AND the subject property contains multiple districts/designations of (1) State Land Use Districts, (2) Maui Island Plan Growth Boundaries, (3) Community Plan Designations, or (4) County Zoning Districts; submit a signed and dated Land Use Designations Map, prepared by a licensed surveyor, showing the metes & bounds of the subject parcel and of each district/designation including any subdistricts.
- 3) If this will be used with a subdivision application AND the subject property contains multiple State Land Use Districts; submit an approved District Boundary Interpretation from the State Land Use Commission.

(This section to be completed by ZAED)

LAND USE DISTRICTS/DESIGNATIONS (LUD) AND OTHER INFORMATION: ¹

STATE DISTRICT: Urban Rural Agriculture Conservation (SMA) Special Management Area

MAUI ISLAND Growth Boundary: Urban Small Town Rural Planned Growth Area Outside Growth Boundaries

PLAN Protected Area: Preservation Park Greenbelt Greenway Sensitive Land Outside Protected Areas

COMMUNITY PLAN: ² Agriculture (PD) Planned Development

COUNTY ZONING: Agriculture District (PH) Project District

OTHER/COMMENTS:

FEMA FLOOD INFORMATION: A Flood Development Permit is required if any portion of a parcel is designated V, VE, A, AO, AE, AH, D, or Floodway, and the project is on that portion.

FLOOD HAZARD AREA ZONES ³ Zone X See Additional Comments (Pg.2)

FEMA DESIGNATED FLOODWAY For Flood Zone AO, FLOOD DEPTH: See Attached LUD Map

SUBDIVISION LAND USE CONSISTENCY: Not Consistent, (LUDs appear to have NO permitted uses in common)

Not Applicable, (Due to processing under consistency exemption No. 1, 2, 3, 4, 5).

Interim Zoning, (The parcel or portion of the parcel that is zoned interim shall not be subdivided).

⁴ Consistent, (LUDs appear to have ALL permitted uses in common).

⁴ Consistent, upon obtaining an SMA, PD, or PH subdivision approval from Planning.

⁴ Consistent, upon recording a permissible uses unilateral agreement processed by Public Works (See Pg.2).

NOTES:

- 1 The conditions and/or representations made in the approval of a State District Boundary Amendment, Community Plan Amendment, County Change in Zoning, SMA Permit, Planned Development, Project District and/or a previous subdivision, may affect building permits, subdivisions, and uses on the land.
- 2 Please review the Maui Island Plan and the Community Plan document for any goals, objectives, policies or actions that may affect this parcel.
- 3 Flood development permits might be required in zones X and XS for any work done in streams, gulches, low-lying areas, or any type of drainageway; Flood development permits are required for work in all other zones. Subdivisions that include/adjoin streams, gulches, low-lying areas, or any type of drainageway might require the following designations to be shown on the subdivision map: 100-year flood inundation limits; base flood elevations; drainage reserves.
- 4 Subdivisions will be further reviewed during the subdivision application process to verify consistency, unilateral agreement requirements, and the conditions associated with a unilateral agreement [Section 18.04.030.D, Maui County Code].

REVIEWED & CONFIRMED BY:

Sheila Nakagawa 1/22/19
 (Signature) (Date)

For: John S Rapacz, Planning Program Administrator, Zoning Administration and Enforcement Division



PROJECT
ASSESSMENT
REPORT

5



Project Assessment Report for an Application to Amend Permit Terms, Conditions, and Time Stipulations

**HAWAIIAN CEMENT
PU‘UNĒNĒ QUARRY
PU‘UNĒNĒ, MAUI, HAWAI‘I
TMK No. (2)3-8-004:001(por.)
(SP 92-380 and CUP 2006/0002**

Prepared for:

Hawaiian Cement

February 2021

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by Munekiyo Hiraga**



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PROJECT
OVERVIEW



I. PROJECT OVERVIEW

A. BACKGROUND

1. Property Location and Ownership

Hawaiian Cement (Applicant) is permitted to operate an approximately 214.01-acre quarry and rock crushing operation at its Pu'unēnē facility which encompasses four (4) Tax Map Key (TMK) parcels: TMK (2)3-8-004:001 (por.) and 002 (por.), (2)3-8-008:001 (por.) and 031 (por.) ("Permitted Area"). See **Figure 1**. The existing quarry and rock crushing operation is permitted under State Land Use Commission Special Use Permit (SUP) SP92-380. Additionally, it is noted that the County zoning for the permitted area is "Agricultural" and, as such, a County Special Use Permit (CUP) was obtained to permit the quarry operation in 2006 (CUP 2006/0002).

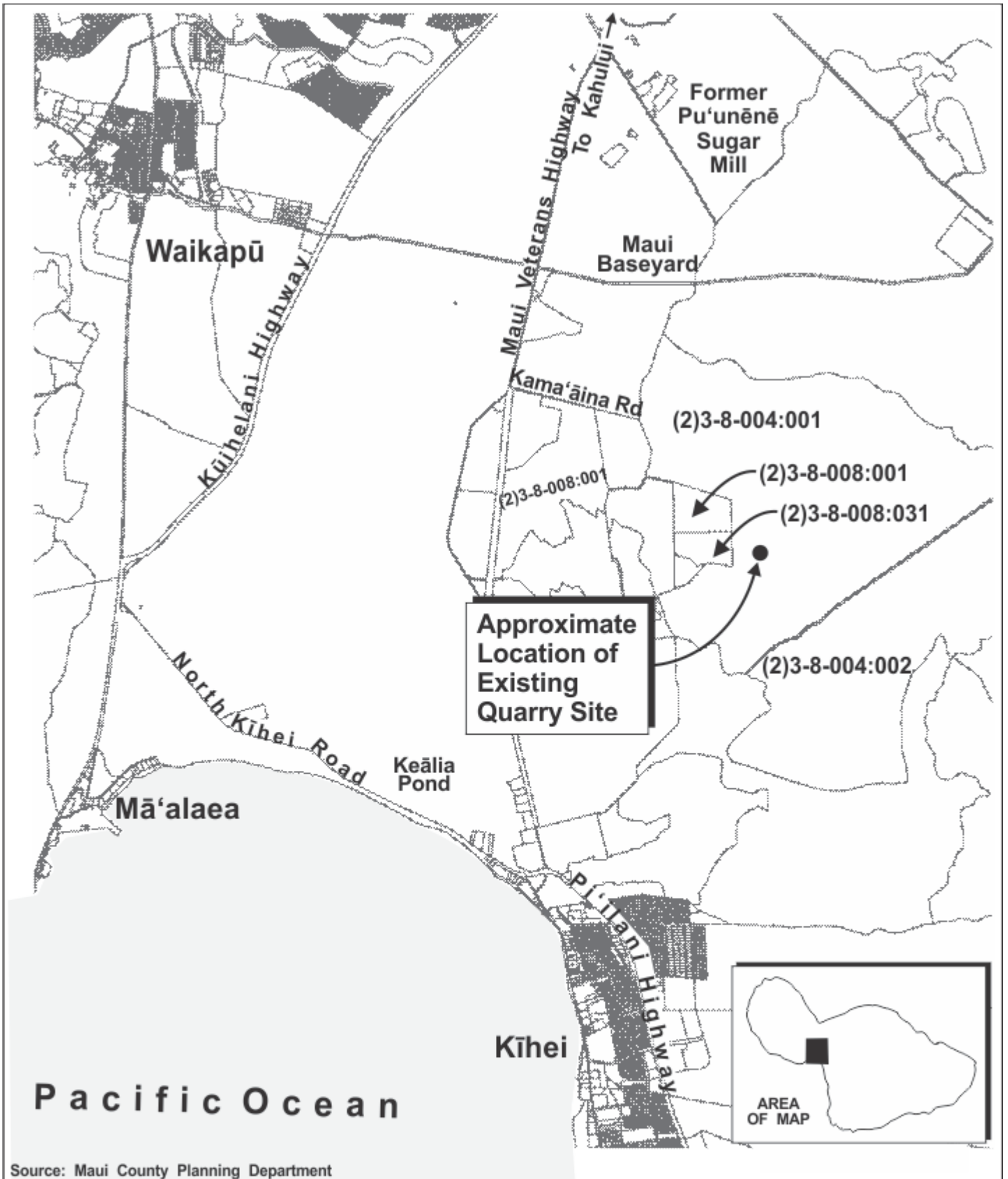
The existing quarry site located on TMK (2)3-8-004:001 (por.) is approximately one (1) mile east of the Maui Veterans Highway and Kama'āina Road intersection in the Pu'unēnē area. Refer to **Figure 1**. Surrounding land uses include lands formerly utilized for sugar cane cultivation to the east, north, and south, as well as the Maui Humane Society to the west. Other uses located further north of the existing quarry include the Maui Consolidated Baseyard light industrial subdivision. Access to the existing quarry and the proposed amendment area is provided through the signalized intersection of Kama'āina Road and Maui Veterans Highway.

The existing permitted area, as well as the proposed amendment area, are owned by Alexander & Baldwin LLC (A&B), from whom the Applicant holds a lease.

2. Description of Existing Conditions

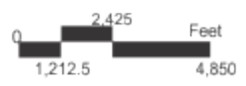
Hawaiian Cement produces crushed basalt rock products at the existing quarry site. The basalt rock quarry and crushed aggregate processing plant, maintenance facilities, administrative offices and storage are located within the existing quarry site as previously identified. Outside of the existing quarry site and within the permitted area, Hawaiian Cement has secured approvals for quarry operations to extract rock material as permitted by SP92-380.

Within this area, Hawaiian Cement is permitted to quarry for rock and crush the raw material and then transport the crushed material to its existing quarry site for further processing into the aggregate products which it sells. Normal quarry hours of operation are Monday through Saturday, from 6:00 a.m. to 5:00 p.m. Operation



Source: Maui County Planning Department

Figure 1 Hawaiian Cement
Pu'unenē Quarry Expansion
Regional Location Map



Prepared for: Hawaiian Cement

hours also include time for maintenance activities and reclamation work to restore quarried areas.

B. CHRONOLOGY OF LAND USE PERMITS AND APPROVALS

The Hawaiian Cement Pu'unēnē Quarry has been in operation since 1992 in conjunction with a concrete aggregate operation. It is noted that Hawaiian Cement has a long-term lease with A&B for the use of approximately 350 acres of their land in the Pu'unēnē area for quarry purposes.

1. State Land Use Commission Special Use Permit SP92-380

In July 1992, Hawaiian Cement received approval by the State Land Use Commission (LUC) for a SUP to establish a rock quarry and concrete aggregate operation on approximately 46 acres of land in the Pu'unēnē area. The original site is identified as TMK (2)3-8-008:031 (por.) ("Original Quarry Area"). See **Figure 2**.

a. First Amendment to SP92-380 (60 Additional Acres)

In November 1996, the LUC granted a first amendment to SP92-380 to permit an additional 60 acres to the 46 original acres, for a total permitted area of approximately 106 total acres, for the quarry and concrete aggregate operation. This additional 60 acres is located on (2)3-8-004:001(por.). Hawaiian Cement has since completed its quarrying work within this additional 60-acre area located adjacent to the original permit area. It is noted that the area where quarrying has been completed has been remediated for return to agricultural production per the Applicant's lease agreement with A&B. Refer to **Figure 2**.

b. Second Amendment to SP92-380 (66.4 Additional Acres)

In December 2006, the LUC granted a second amendment to SP92-380 to permit an additional 66.44 acres of land for rock quarry and concrete aggregate operations on a portion of TMK (2) 3-8-004:001(por). The 66.44 acres of additional permitted area was provided in two (2) permitted areas, a 24.476-acre portion and a 44.28-acre portion. Refer to **Figure 2**. It is noted that the Applicant has completed quarrying within the 24.476-acre portion and, as mentioned previously, this area has been remediated for return to agricultural production. Kolaloa Gulch separates the 44.28-acre portion, which is not being quarried at this time, from the other approved quarry sites. See **Appendix "A"**.

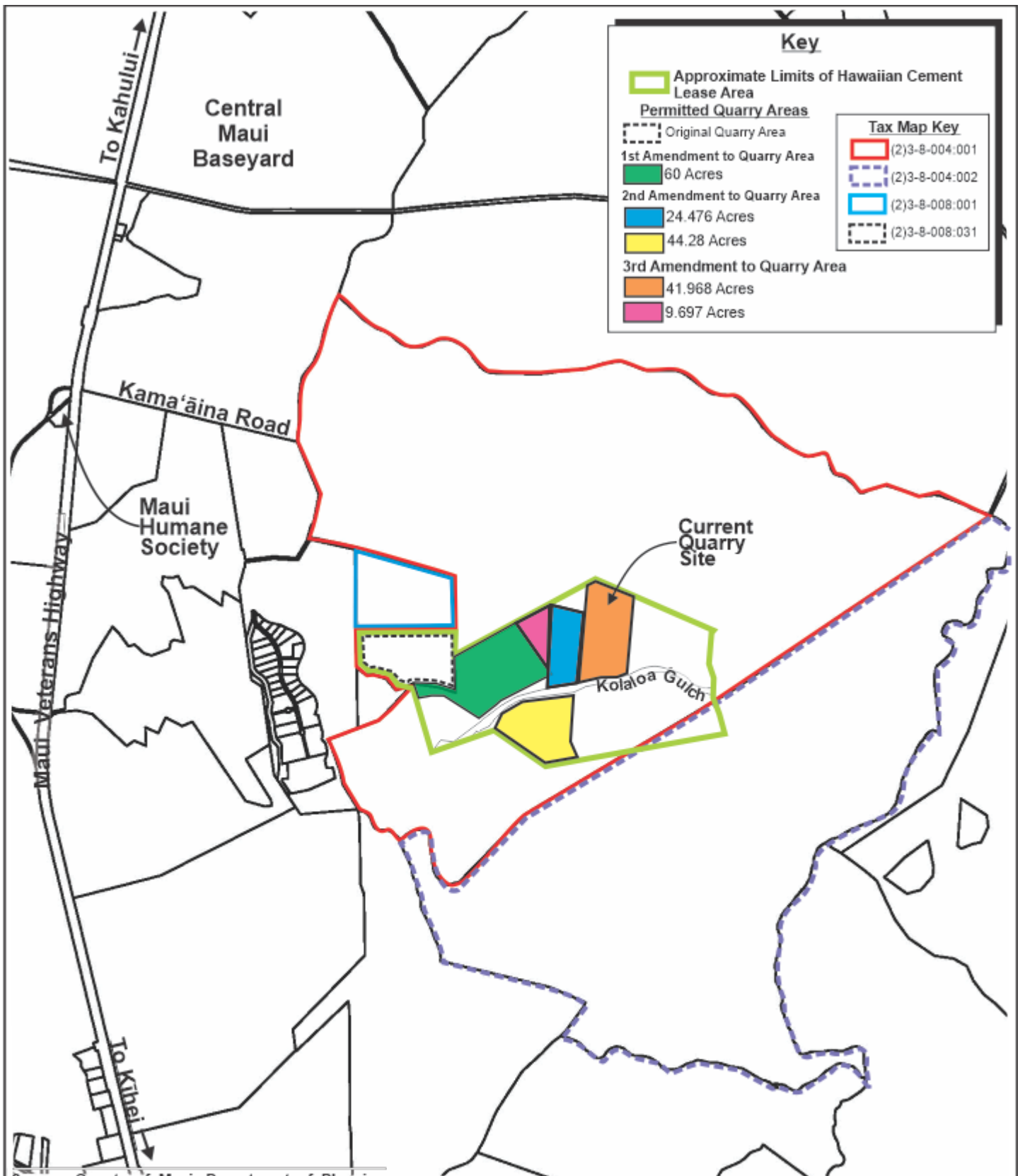


Figure 2

Hawaiian Cement
 Pu'unēnē Quarry Expansion
 Property Location Map



Prepared for: Hawaiian Cement

c. **Third Amendment to SP92-380 (41.968 Additional Acres)**

In 2014, the LUC granted a third amendment to SP92-380 to permit two (2) additional areas of 41.968 and 9.697 acres each on portions of TMK (2)3-8-004:001 for rock quarry operations. Refer to **Figure 2**. These additional areas are located on either side of the 24.476-acre additional site permitted by the Second Amendment. See **Appendix “B”**. The Applicant has completed quarrying in the 9.697-acre portion and is currently quarrying in the 41.968-acre portion approved under the Third Amendment. As mentioned previously, the 9.697-acre area where quarrying has been completed has been remediated for return to agricultural production.

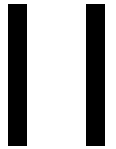
2. **County of Maui Special Use Permit CUP 2006/0002**

It is noted that prior to 1998, rock quarrying was a special use permitted on lands zoned “Agricultural” by the County of Maui. The special use was permitted if a State Special Use Permit was received for the property, regardless of the size of the permitted area. Thus, no County Special Use permit was required. However, in 1998, the County’s Agricultural District Zoning Ordinance was amended to include a size limitation for the State Special Use permit, such that any special uses proposed in an area for 15 acres or less would continue to be covered by the State permit. Any special uses proposed in an area over 15 acres would require a separate County Special Use Permit. Any existing operations which had a State Special Use permit in effect in 1998 were allowed to continue until their permit expiration deadline. At such time, applicants were required to seek a County Special Use permit in addition to the State Special Use permit for proposed areas over 15 acres.

In June 2006, as provided in the Agricultural District Zoning Ordinance enacted in 1998, the Maui Planning Commission (MPC) granted a County Special Use Permit (CUP) to the Applicant to permit the use of approximately 66.44 acres of land for rock quarry and concrete aggregate purposes (Second Amendment). As previously noted, the 66.44 acres are located on land identified as TMK (2)3-8-004:001(por). In 2014, the Applicant also sought to amend the boundary of the CUP approval to include the approximately 42-acre portion of the property for quarrying purposes as noted for the third amendment to the SUP. Refer to **Figure 2** and see **Appendix “C”**. Hawaiian Cement was granted amendments and the extensions for the CUP in congruence with those for the SUP.



PROPOSED LAND
USE REQUESTS



II. PROPOSED LAND USE REQUESTS

This report has been prepared in support of two (2) separate requests for the State Special Use Permit (SUP) and County Special Use Permit (CUP) by Hawaiian Cement to extend the boundaries of the permitted quarry area by approximately 45.4 acres within Tax Map Key (2)3-8-004:001, owned by Alexander & Baldwin LLC. The requests are described in further detail below.

1. State Land Use Commission Special Use Permit Boundary Amendment

The current boundaries of SP92-380 as reflected in the Third Amendment approved in November 2014, is shown in **Figure 2**. In reviewing current operations, the Applicant is proposing an amendment to the existing boundary of the permitted area to extend the permitted quarry area to the east by approximately 45.4 acres (Proposed Quarry Expansion Site). See **Figure 3**.

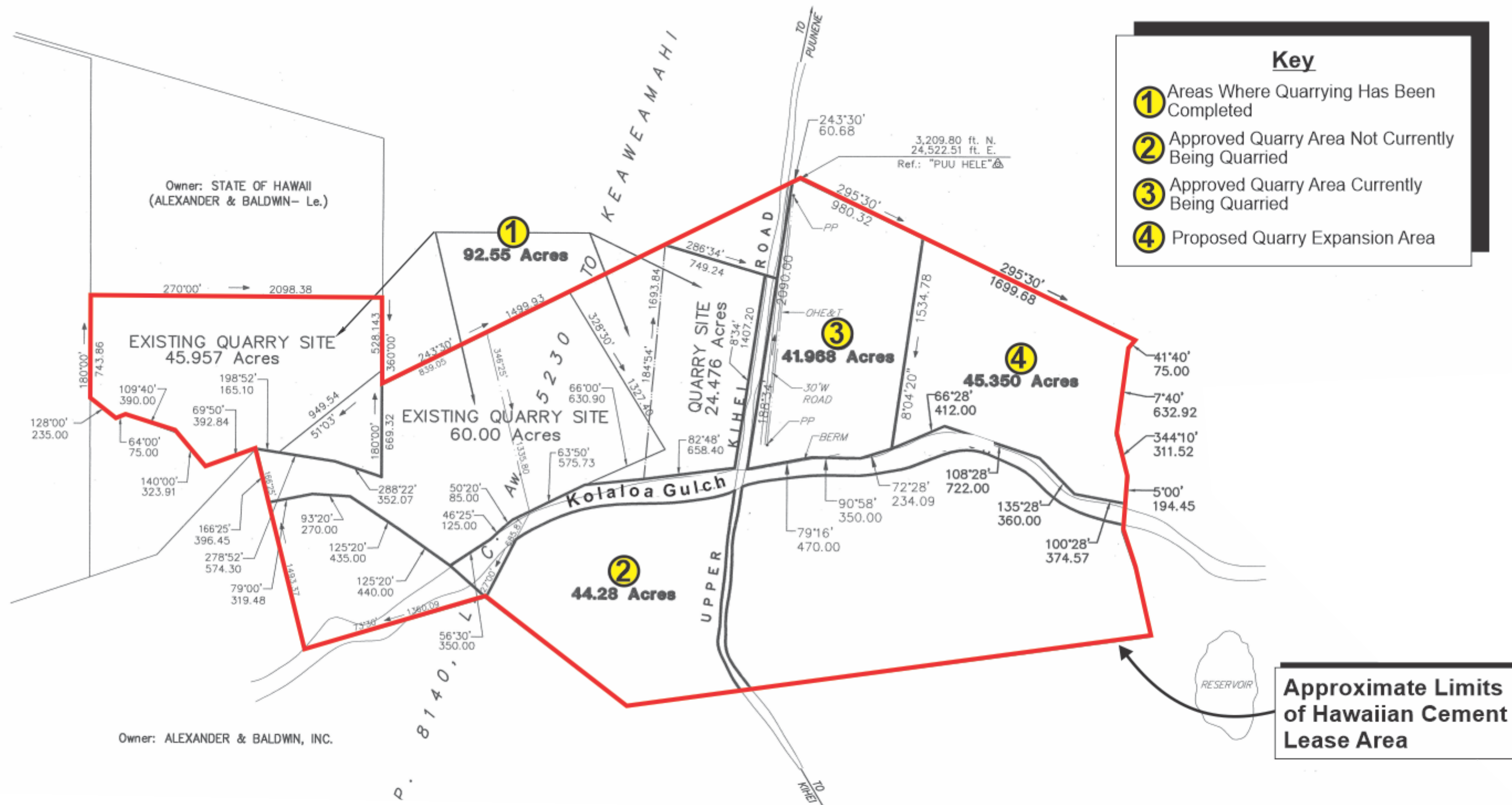
By amending the existing Permitted Area, the Applicant will continue to quarry an area adjacent to its existing operation.

2. County Special Use Permit Boundary Amendment

Subsequent to the First Amendment to the SP92-380 in 1996, the County of Maui adopted the Agricultural District Zoning Ordinance, Chapter 19.30A of the Maui County Code (MCC) in 1998. Prior to 1998, quarry activities and related operations for the Hawaiian Cement Pu'unēnē Quarry were permitted through the SP92-380. Refer to **Appendix "A"**, **Appendix "B"**, and **Appendix "C"** of this application document. Further, Special Use Permits issued prior to the adoption of the Agricultural District zoning ordinance were permitted to remain in effect in full force for their permitted period, pursuant to Section 19.30A.110 of the MCC. However, upon renewal of the Special Use Permit, the provision of Chapter 19.30A of the MCC were considered applicable. Since the mining and resource extraction were considered permitted special uses according to Chapter 19.30A of the MCC and uses proposed for an area larger than 15 acres, in 2006, the Applicant sought a CUP approval for the Pu'unēnē Quarry. As previously noted, subsequent amendments and time extension requests were granted for both the SUP and CUP.

The Applicant is proposing an amendment to the CUP area, to extend eastward by 45.4 acres and adjacent to its Existing Quarrying operation.

By expanding the quarry area by the proposed 45.4 acres, the expected operational lifespan of the facility would be extended by 14 years. With this, there is an anticipated 30 years left of quarrying remaining at Pu'unēnē.



Source: R. T. Tanaka Engineers, Inc.

Figure 3

Hawaiian Cement Pu'unēnē Quarry Expansion
Existing and Proposed Quarry Areas


NOT TO SCALE



Prepared for: Hawaiian Cement



Of the total 350 acres leased by Hawaiian Cement, the proposed additional 45.4 acres would increase the total amount of lands approved for quarrying purposes within the leased 350 acres to 259.8 acres.



DESCRIPTION OF THE
EXISTING ENVIRONMENT
AND POTENTIAL IMPACTS
AND MITIGATION
MEASURES



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

A. SURROUNDING LAND USES

1. Existing Conditions

The Proposed Quarry Expansion Site is located approximately 1.2 miles east of the Maui Veterans Highway and Kama'āina Road intersection. As previously noted, a majority of the surrounding lands were formerly utilized for sugar cane cultivation by HC&S and are currently fallow. The State of Hawai'i, Department of Land and Natural Resources (DLNR) also owns significant acres in the surrounding area. The DLNR, along with the Department of Hawaiian Home Lands (DHHL), Department of Accounting and General Services (DAGS), and the Department of Public Safety (PSD) have proposed a master planning effort for their lands in the surrounding area. Generally, industrial and commercial uses, agricultural uses, and the future location of the Maui Regional Public Safety Complex are being considered in the master plan. Currently, however, the State lands are vacant. The County of Maui also owns land in the area which are intermittently used for recreational car racing as well as for Fire and Police Department training exercises. Additionally, as previously noted, the Maui Humane Society has its offices located west of the proposed project area, immediately adjacent to the Maui Veterans Highway/Kama'āina Road intersection.

2. Potential Impacts and Mitigation Measures

The Applicant's Pu'unēnē Quarry has been in operation in the project area since 1992. As previously noted, the surrounding lands are vacant lands formerly used for sugar cane cultivation. Additionally, the Applicant has the existing infrastructure to support the quarry and concrete aggregate operation on its existing permitted area and proposed expansion area. For example, transport trucks carrying base course from the proposed expansion area would utilize existing roadway infrastructure that is provided by the existing operation. Further, quarry activity would occur on the proposed 45.4-acre area, and final crushing of the rock material would continue within the existing quarry operation area. Additionally, as a condition of Hawaiian Cement's lease agreement with A&B, upon completion of quarrying activities, the Applicant is required to restore the land for agricultural use. See **Appendix "D"**. As such, no potential impacts are anticipated to the surrounding lands with the proposed 45.4-acre expansion area.

B. SOIL CONDITIONS AND AGRICULTURAL PRODUCTIVITY

1. Existing Conditions

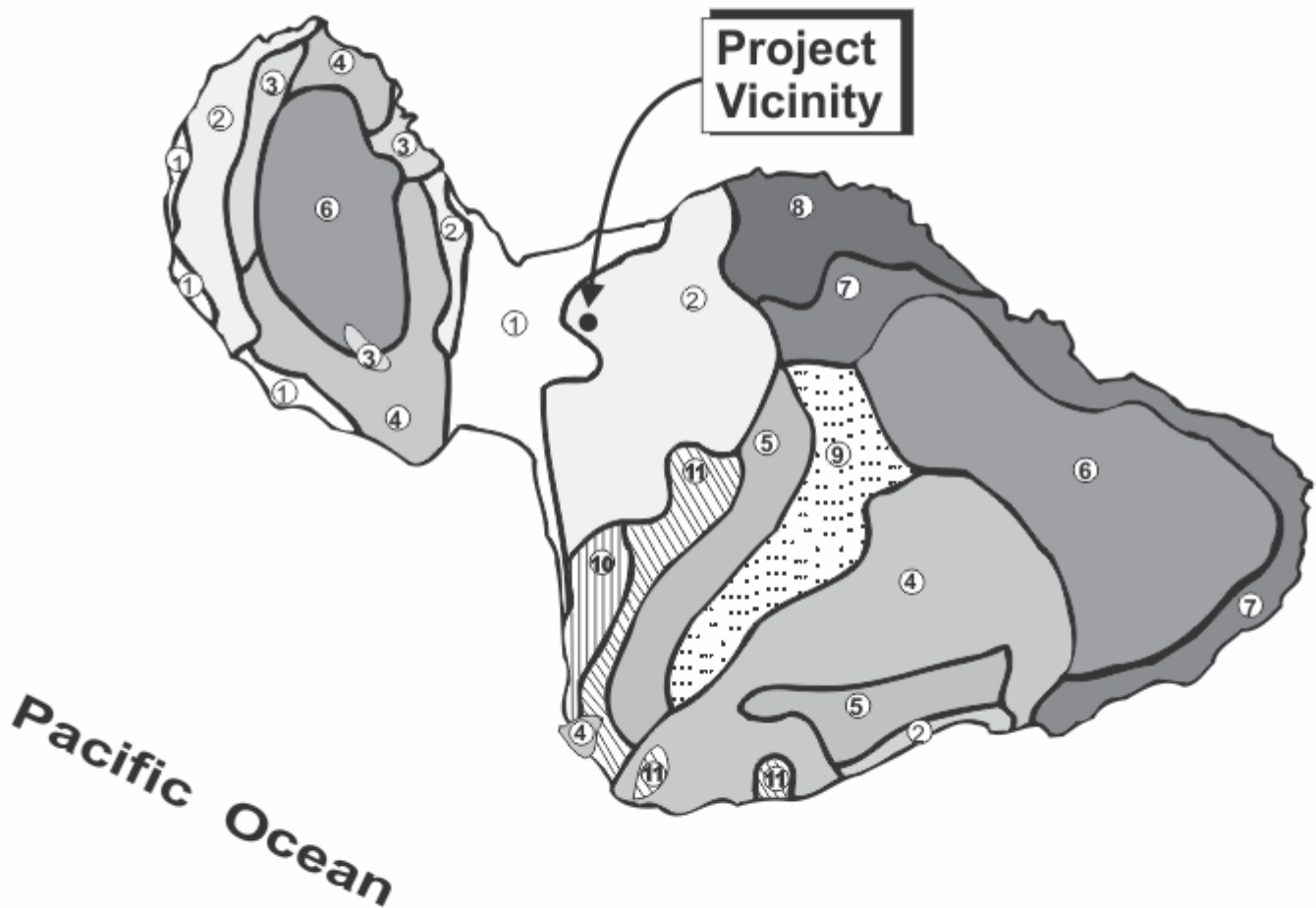
The U.S. Department of Agriculture Soil Conservation Service designates various associations on the island of Maui and classifies the soil in its Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i. Underlying the project site and surrounding lands are soils belonging to the Waiakoa-Keahua-Molokai association. See **Figure 4**. The Waiakoa-Keahua-Molokai association is categorized as well-drained, moderately fine textured soils on low uplands on Central Maui. According to the Soil Conservation Service, the soils are nearly level to moderately steep, and the association makes up approximately 15 percent of the island. The elevation at the site ranges from 300 to 400 feet above mean sea level. The soil types specific to the project site are Alae cobbly sandy loam (AcA), soils from the Pulehu series including Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA), Pulehu silt loam, 3 to 7 percent slopes (PpB), and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). See **Figure 5**.

The characteristics of Alae cobbly sandy loam, 0 to 3 percent slopes, include dark grayish-brown cobbly sandy loam, with the substratum including coarse to very coarse sand. Permeability is rapid, runoff is slow and erosion hazard is low. Waiakoa very stony silty clay loam, 3 to 7 percent slopes, has a surface layer that is dark reddish brown silty clay loam and a very dark grayish-brown subsoil section. Permeability is moderate and runoff is slow with a slight erosion hazard. For the soils of the Pulehu classification (Pulehu cobbly clay loam, 0 to 3 percent slopes and Pulehu silt loam, 3 to 7 percent slopes); soil characteristics are relatively the same. The soil is dark-brown to dark grayish-brown and can include coarse and/or cobbly soil under the surface layer. Permeability is generally moderate, while runoff is slow and erosion hazard low. For the Waiakoa soils, the soil is well drained and moderately deep. In most places, half the original surface layer has been eroded. Runoff is medium and the erosion hazard is severe.

The State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawai'i (ALISH). These are "Prime", "Unique", and "Other" important agricultural lands. "Prime" lands are those lands which possess the soil quality, growing season, and moisture supply needed to produce high yields of crops economically and when treated and managed according to modern farming techniques. "Unique" lands have similar crop specific characteristics, while lands rated "Other" are not classified as "Prime" or "Unique", but are of Statewide or local agriculture importance. Lands not rated "Prime", "Unique", or "Other", are "Unclassified". Although the ALISH map designates the lands underlying the proposed boundary expansion as "Prime" and

LEGEND

- | | |
|--|-------------------------------------|
| ① Pulehu-Ewa-Jaucas association | ⑦ Hana-Makaalae-Kailua association |
| ② Waiakoa-Keahua-Molokai association | ⑧ Pauwela-Haiku association |
| ③ Honolua-Olelo association | ⑨ Laumaia-Kaipoi-Olinda association |
| ④ Rock land-Rough mountainous land association | ⑩ Keawakapu-Makena association |
| ⑤ Puu Pa-Kula-Pane association | ⑪ Kamaole-Oanapuka association |
| ⑥ Hydrandepts-Tropaquods association | |



Source: USDA, Soil Conservation Service

Figure 4

Hawaiian Cement
Pu'unēnē Quarry Expansion
Soil Association Map

NOT TO SCALE



Prepared for: Hawaiian Cement

 MUNEKIYO HIRAGA

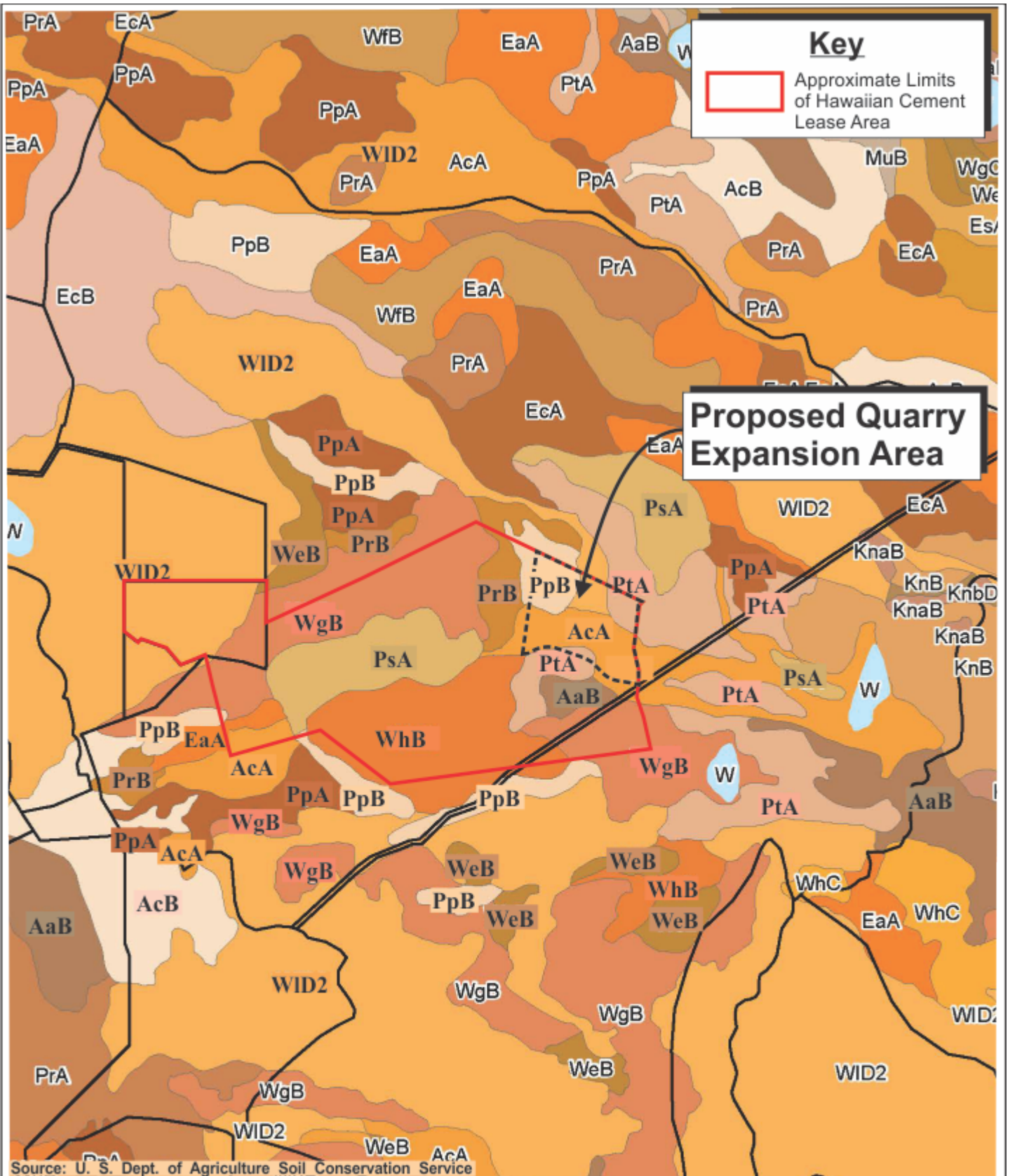
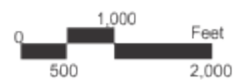


Figure 5

Hawaiian Cement
Pu'unēnē Quarry Expansion
Soil Classification Map



Prepared for: Hawaiian Cement



“Other”, much of the land in the surrounding area has been quarried. As previously noted, the Applicant is required as a condition of their lease agreement with A&B to restore completed quarry areas for agricultural uses. As such, agricultural operations are anticipated to be continued following completion of quarry activity. See **Figure 6**.

In June 2009, A&B received approval for the designation of approximately 27,000 acres of its lands in Central and Upcountry Maui as “Important Agricultural Lands” (IAL) by the LUC. The proposed quarry expansion area is located within one (1) of the designated IAL areas, however, it is not critical for agriculture based on the amount of similarly designated land within the area and the State as a whole. See **Figure 7**. As previously noted, the Applicant is required by its lease agreement with A&B to restore quarried areas for agricultural use. This will provide for continued use of the land area for agricultural cultivation. The temporary quarry activity is not in conflict with the policies and standards of the IAL as outlined in Hawai‘i Revised Statutes (HRS) Chapter 205-43.

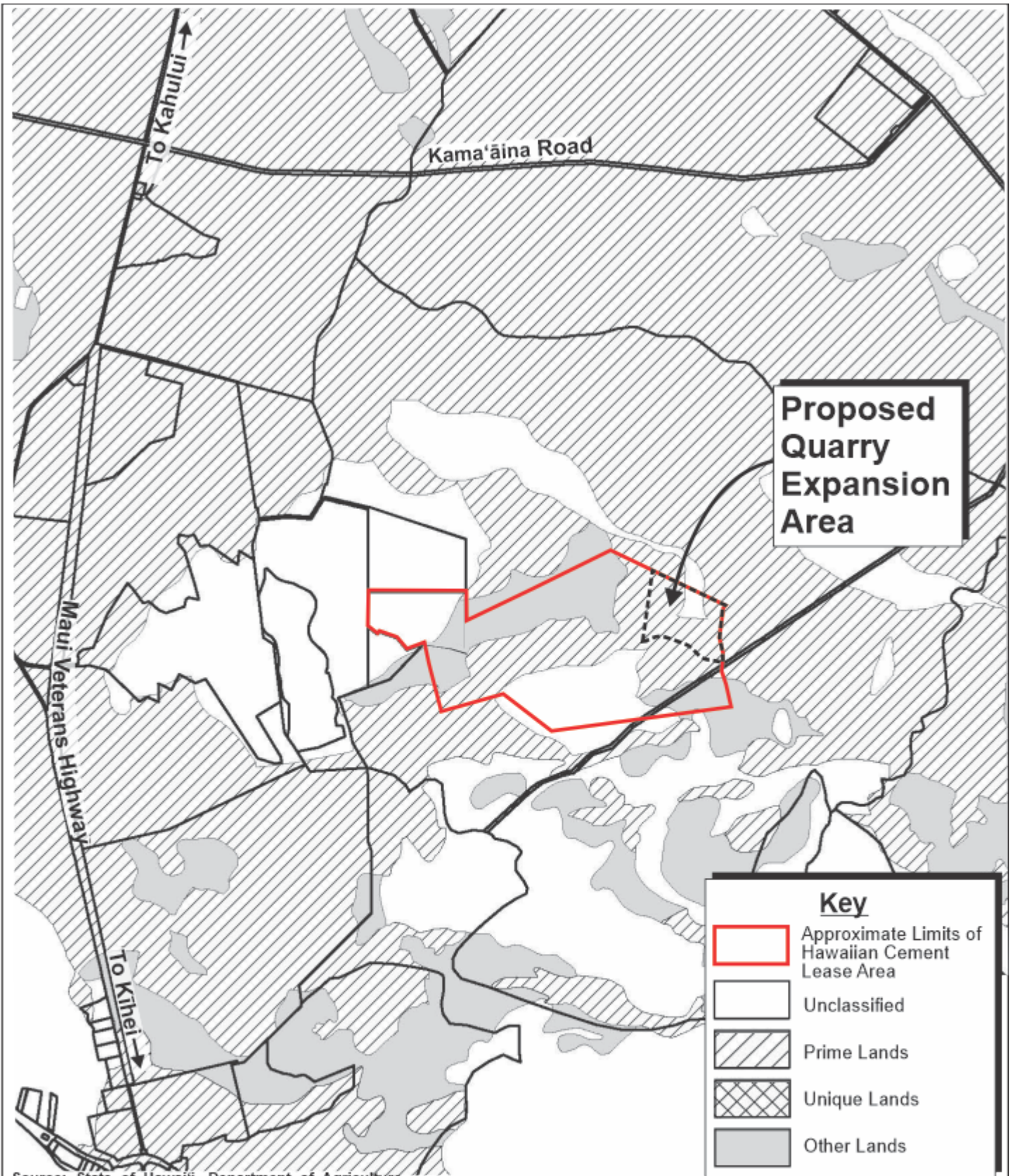
The Land Study Bureau classifies lands with a productivity rating of “A” through “E”, with “A” reflecting lands with the highest productivity and “E” the lowest. The lands underlying the project site have productivity ratings of “A”, “B”, and “E”. According to the Land Study Bureau’s Detailed Land Classification Map, the proposed expansion area has been rated A51i, A71i, and E73. The land type, A51i and A71i, represents deep, non-stony, well-drained, fine-textured soils with slopes ranging from 0 to 10 percent and between 2 to 5 percent, respectively, and elevations ranging from sea level to 400 feet. The land type, E73, represents rocky, well-drained, fine to moderately fine-textured soils with slopes ranging from 0 to 35 percent and elevations ranging from sea level to 750 feet. See **Figure 8**.

2. Potential Impacts and Mitigation Measures

Site activity conducted with quarry operations will alter the existing land patterns and soil constitution, as the rock quarry will extract both surface and subsurface rock materials.

The lands underlying the permitted area of SP92-380 have been extensively altered in the past for agricultural, as well as mining and quarrying-related activities since 1992.

The use of the land within the permitted area, as well as the requested approximately 45.4 acres outside of the current SUP and CUP boundaries is not anticipated to adversely affect potential future agricultural cultivation and production activities. Hawaiian Cement is required to comply with a condition of its land lease to restore completed quarry areas for agricultural uses. As stated



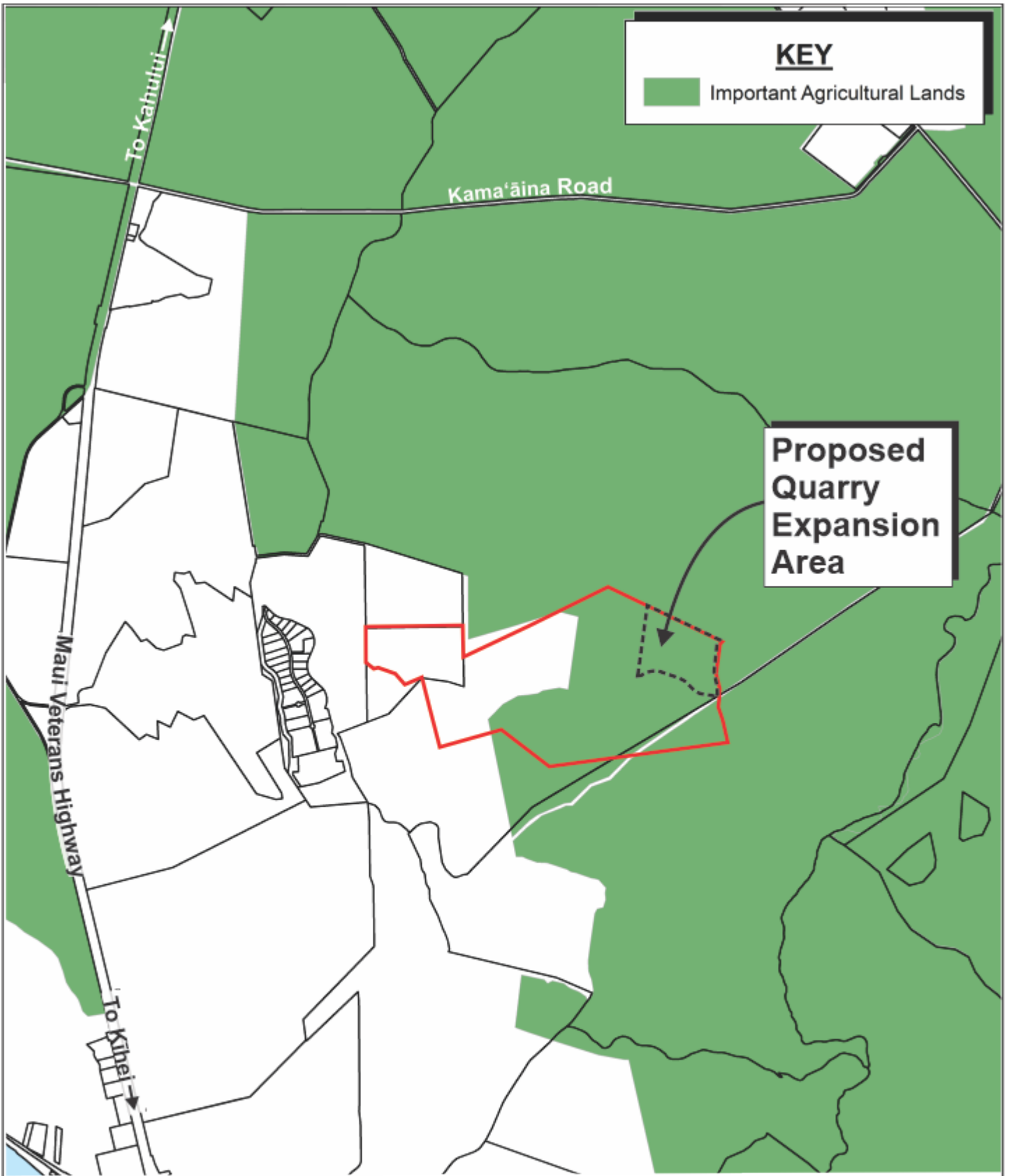
Source: State of Hawai'i, Department of Agriculture

Figure 6

Hawaiian Cement
 Pu'unēnē Quarry Expansion
 Agricultural Lands of Importance
 to the State of Hawai'i Map



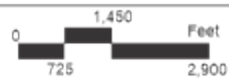
Prepared for: Hawaiian Cement



Source: State Land Use Commission

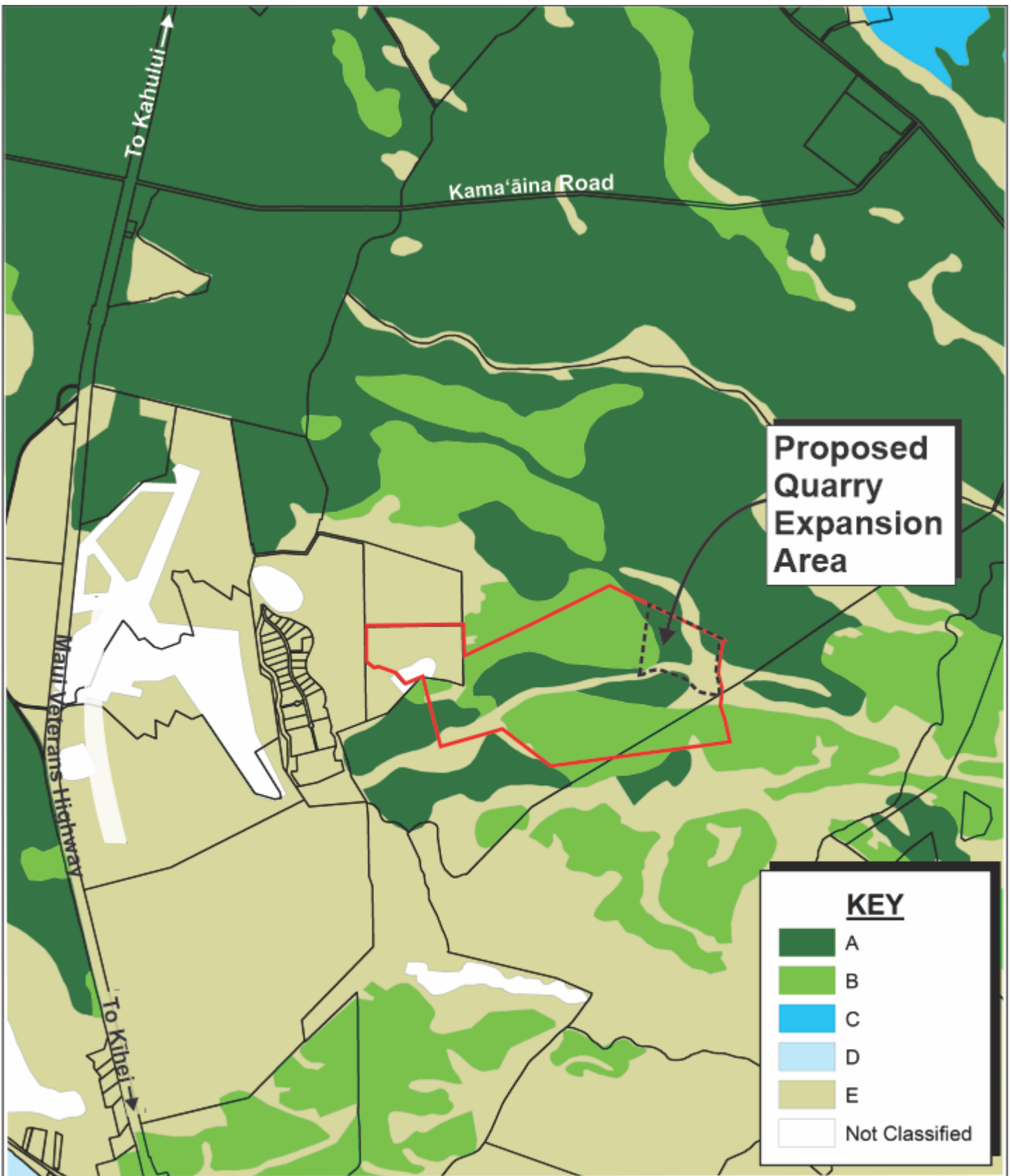
Figure 7

Hawaiian Cement
 Pu'unēnē Quarry Expansion
 Important Agricultural Lands



Prepared for: Hawaiian Cement





Source: University of Hawaii Land Study Bureau

Figure 8

Hawaiian Cement
Pu'unēnē Quarry Expansion
Land Study Bureau Map



Prepared for: Hawaiian Cement



previously, for those areas where quarrying has been completed, the land has been remediated for return to agricultural use.

C. ARCHAEOLOGY AND CULTURAL RESOURCES

1. Existing Conditions

Hawaiian Cement's Pu'unēnē Quarry operates its facilities on lands which have been heavily altered over the years. The lands underlying the property have been extensively disturbed in the past for purposes of commercial agriculture activities (sugar cane production). There have been no identified archaeological features located within the project area.

Consultation was initiated with the State Historic Preservation Division (SHPD) in March 2019, with the filing of the Hawai'i Revised Statutes (HRS) 6E submittal form by the project's archaeologist, Scientific Consulting Services. See **Appendix "E"**.

In addition to the HRS 6E submittal form, a revised Archaeological Assessment (AA) and Archaeological Monitoring Plan (AMP) were also provided to the SHPD for review. See **Appendix "E-1"** and **Appendix "E-2"**, respectively.

As stated in the AA, an archaeological inventory survey was conducted for the proposed 41.968-acre rock quarry expansion site yielding negative results. As such, the AA report was submitted and reviewed by SHPD in 2015 (Log. No. 2014.04654 and Doc. No. 1505MD19). Several revisions were recommended by SHPD and the revised AA report was resubmitted in 2015 and 2017, respectively, but not reviewed. Due to changes in SHPD review and submittal procedures in April 2018, and a license issue for the project's previous archaeologist, Archaeological Services Hawai'i, the AA report was updated and prepared under the supervision of Atlas Archaeology and submitted to SHPD in March 2020. Refer to **Appendix "E-1"**.

Although no historic properties are anticipated to be affected, an AMP was prepared for the proposed expansion area. Refer to **Appendix "E-2"**.

In addition, a Cultural Impact Assessment (CIA) report was prepared for the entire Pu'unēnē Quarry site, including the proposed expansion area, to determine if ongoing cultural activities or resources are present at the site and then to assess the potential for impacts on these cultural resources. See **Appendix "E-4"**. The CIA was prepared using archival and documentary research involving both published and unpublished sources, which include legendary accounts of native and foreign writers, early historical journals and narratives, historical maps and accounts, land records such as Land Commission Awards, Royal Patent Grants,

and Boundary Commission records, and previous archaeological reports, as well as communication with organizations and individuals with knowledge of the project area, its cultural resources, and practices and beliefs characteristic of it. Consultation was conducted via telephone, e-mail, the U.S. Postal Service, and via virtual meeting platforms. Information pertaining to traditional cultural practices conducted within the project area or in Pūlehu Nui Ahupua'a in general was sought from 41 individuals and organizations. A CIA Notice was also published in the November 2019 issue of the Office of Hawaiian Affairs newsletter, Ka Wai Ola. In addition, at the request of several of the cultural consultants, a site visit was held to obtain additional perspective and understanding of the land, its vegetation, and the location of roads. The CIA consultation process yielded responses from 17 individuals via e-mail, one (1) telephone interview, and one (1) virtual interview.

2. Potential Impacts and Mitigation Measures

Due to the negative findings at the project area, the overall project was determined to have “no effect” on historic properties. Thus, no further archaeological procedures or mitigation measures are warranted for the proposed expansion area. Via letter dated April 17, 2020, the SHPD determined that review pursuant to HRS 6E has been completed, and that the AA and Archaeological Monitoring Plan provided have been accepted. See **Appendix “E-3”**. Following completion of monitoring, an Archaeological Monitoring Report will be prepared and submitted to the SHPD for review.

The information obtained during the CIA consultation process indicates that the land leased by Hawaiian Cement for the Pu'unēnē Quarry is located in an area rich with legends and customary activities spanning the Pre-Contact Period, the Plantation Era of the Post-Contact Period, and the World War II (WWII) Era, and currently contains a native plant traditionally used for medicinal purposes. However, based on historical research, the negative results of archaeological studies previously conducted within and near the Pu'unēnē Quarry, and the responses to consultation requests, it is reasonable to conclude that there is no evidence of traditional cultural practices related to the gathering of, or seeking access to, resources (i.e., medicinal plants), or other customary activities (i.e., burials) in the currently proposed quarry expansion area or its adjacent lands leased by Hawaiian Cement for Pu'unēnē Quarry. Refer to **Appendix “E-4”**.

However, the consultation process did identify specific concerns pertaining to the potential for human burials and cultural materials associated with the continuous use of the area from the Pre-Contact Period through the Plantation Era and WWII Era that may still be present in subsurface contexts. The CIA recommended that the tenets specified in the AMP are followed. Other concerns identified during the consultation process pertain to potential impacts to Kolaloa Gulch, its drainage,

and traditional and historic cultural materials, including human burials which may be present in the gulch. Efforts to protect them are currently in place. The CIA acknowledged that there are access roads on either side of Kolaloa Gulch with berms located between the roads created to keep trucks and people from entering the gulch. Hawaiian Cement plans to keep the berms in place to act as buffers between quarry operations and the gulch. The final concern identified through the CIA consultation process pertained to the excavated quarry being perceived as an eye-sore, however, as previously discussed, Hawaiian Cement has a reclamation plan to return the property back for agricultural use once the quarry mining excavations have been completed. Refer to **Appendix “E-4”**.

With implementation of the above mitigation measures, impacts to historic or cultural resources are not anticipated with the proposed quarry expansion.

D. ROADWAYS AND ACCESS

1. Existing Conditions

The Pu'unēnē region is serviced by the State of Hawai'i's Maui Veterans Highway and Kama'āina Road, as well as the privately owned Mehameha Loop.

Maui Veterans Highway in the vicinity of the project area, is a four-lane divided highway with a north-south orientation. A traffic signal is provided at the intersection of Mehameha Loop and Kama'āina Road. The speed limit on the Highway in the vicinity of the Mehameha Loop/Kama'āina Road intersection is 45 miles per hour (mph).

Mehameha Loop is a privately owned road, owned by MP West, LLC. The two-lane roadway provides limited access to the Maui Humane Society to the west of the road's intersection with Maui Veterans Highway.

Access to the Hawaiian Cement Pu'unēnē quarry is provided by Kama'āina Road. The road terminates at the quarry to the east and is a privately owned road.

2. Potential Impacts and Mitigation Measures

The quarry site has been in operation since 1992 and is an established use within the area. Access to the project site will continue to be provided via its existing access off of Kama'āina Road via Maui Veterans Highway. As Hawaiian Cement will use its existing fleet of trucks without intensity of use, no adverse impacts to traffic conditions or roadways are anticipated as a result of the proposed expansion area.

E. WATER AND WASTEWATER SYSTEMS

1. Existing Conditions

Domestic water from the Wailuku-Kahului region is provided by the Department of Water Supply's (DWS) Central Maui Water System. The Central Maui System water sources are located on the windward slope of the West Maui Mountains. The major source of water for this system is the 'Īao Aquifer. Approximately 75 percent of the water to supply the Central Maui System is withdrawn from the 'Īao Aquifer which is located in the vicinity of the 'Īao Stream and Wai'eahu Stream. The remaining 25 percent is withdrawn from Waihe'e Aquifer to the northwest. The regulatory sustainable yield of the 'Īao Aquifer is 20 million gallons per day (MGD) while regulatory sustainable yield on the Waihe'e Aquifer is 8 MGD.

Drinking water as supplied by the DWS is not available on the site. Non-potable water for the quarry is provided through a non-potable private well that Hawaiian Cement constructed on Parcel 31. The non-potable water is utilized for concrete batching, dust control and wash down of the equipment. Potable water is provided on site through private bottle water vendors.

There is no existing County wastewater service to the existing quarry site or the proposed expansion area. Wastewater service for the existing operation is provided via port-a-potty units provided at the existing quarry site, a service contracted by the Applicant through a private vendor.

2. Potential Impacts and Mitigation Measures

Hawaiian Cement's Pu'unēnē quarry is an existing operation and the proposed expansion will not require additional water or wastewater resources. Existing water and wastewater services will continue to be maintained on the main operation site. The proposed quarry expansion area would be utilized only for mining of rock material. As such, no adverse impacts existing water or wastewater systems are anticipated.

F. DRAINAGE

1. Existing Conditions

In March 2019, R. T. Tanaka Engineers, Inc. prepared a Preliminary Drainage and Soil Erosion Study for the Proposed Quarry Expansion Site. See **Appendix "F"**. The site is presently fallow former sugar cane lands. The site has an average slope of approximately three (3) percent and is located at approximately 300 to 340 feet above mean sea level. The site is located to the north of Kolaloa Gulch and has an existing drainageway located to the north.

Runoff from the southern half of the site flows toward Kolaloa Gulch where it is blocked from directly entering the gulch by a dirt berm. The runoff then flows along a dirt road to the southwest corner of the proposed quarry expansion site where it then enters the gulch. Runoff from the northern half of the site is directed to the northwest where it flows and ponds in a low area adjacent to a paved cane haul road. Runoff from the fallow sugar cane fields above the site are also directed to Kolaloa Gulch by diversionary ditches. Refer to **Appendix “F”**.

The Kolaloa Gulch drainage basin is located in the northwesterly slope of Haleakalā and extends from an elevation of 300 feet to the upper slopes at approximately 9,600 feet. The basin is approximately 75,400 feet long with an average slope of 13 percent. The total drainage area, including Hapapa Gulch watershed, is approximately 6.03 square miles. Land uses vary throughout the drainage basin. The upper portion consists of poor range land and pasture land. The central portion consists of diversified agriculture and pasture lands. The lower portion consists of pasture lands and fallow sugar cane lands in the vicinity of the proposed quarry expansion site. Refer to **Appendix “F”**.

2. Potential Impacts and Mitigation Measures

The proposed expansion of the mining operations is anticipated to increase the storm runoff especially during active excavation when the ground is bare. The proposed quarry expansion site is anticipated to be mined in increments. Areas not in active mining will remain as fallow sugar cane fields. When quarrying is completed on each increment, the exposed areas will be backfilled with two (2) feet of topsoil and replanted. For hydrologic analysis, a typical area of 15 acres with an overland flow of 800 feet will be considered to calculate projected runoff generation from the mining action at the expansion site in keeping with Chapter 20.08, “Soil Erosion and Sedimentation Control”, of the Maui County Code. The rational method was used to determine runoff rate and volume for a 10-year and 50-year storm. It was estimated that a typical 15-acre area will increase the 10-year runoff rate by 15.2 cubic feet per second (cfs), from 13.3 cfs to 28.5 cfs, while the increase in the 50-year runoff rate is projected to be 27,225 cubic feet. Refer to **Appendix “F”**.

Increase in runoff volume for the 50-year, 1-hour storm will be retained onsite by means of retention ponds to be constructed at the downstream end of the grading areas. In keeping with the requirements of County drainage standards, the ponds will be sized to contain at least the 50-year, 1-hour runoff volume increase. Aside from keeping the runoff at pre-quarrying levels, the retention ponds will also reduce or preclude the potential for sediment contained in the runoff from entering downstream properties and Kolaloa Gulch. Refer to **Appendix “F”**.

Applicant will implement the County Best Management Practices during construction to control soil erosion and sedimentation, including measures during quarry operations such as:

- Constructing temporary drainage swales or berms to direct storm runoff away from mining areas and toward retention basins. Diverting runoff away from graded areas will minimize erosion of the bare soil, especially over the cut slopes.
- Constructing drainage basin(s) at downstream end of mining areas and grading to direct runoff from the mining area into the retention basin(s).
- Mining areas incrementally to the extent possible. The exposed area at any given time should not be larger than 15 acres, unless otherwise allowed.
- Stabilizing areas where mining is completed or use top soil and replant with sugar cane or other suitable ground cover.


The proposed project is not anticipated to have adverse drainage effects on Kolaloa Gulch and downstream properties.

It is anticipated that there will be no appreciable offsite runoff from areas mauka of the proposed expansion area that will flow into the proposed quarry area, as these flows will be intercepted by several diversionary ditches outside of the project area, which divert the mauka runoff to either Kolaloa Gulch or to the drainageways that are running outside the quarry area.



JUSTIFICATION FOR
REQUESTS

IV



IV. JUSTIFICATION FOR REQUESTS

A. STATE LAND USE COMMISSION SPECIAL USE PERMIT BOUNDARY AMENDMENT

The project site has been used for quarrying and mining related activities since 1992 and is an established use within the area. The current boundaries of SP92-380, is shown in **Figure 2**. Hawaiian Cement seeks an amendment to SP92-380 to incorporate the proposed additional 45.4 acres, bringing the total permitted area of Hawaiian Cement's Pu'unēnē Quarry to approximately 259.8 acres. Refer to **Figure 4**.

Pursuant to Section 15-15-95, Hawai'i Administrative Rules (HAR), certain "reasonable and unusual" uses may be permitted within the Agricultural District. The proposed amendment to SP92-380 by 45.4 acres has been assessed pursuant to Section 15-15-95 HAR as follows:

(1) The use shall not be contrary to the objectives sought to be accomplished by chapters 205 and 205A, HRS, and the rules of the commission;

The purpose of the Land Use Law, Chapter 205, is to preserve, protect, and encourage the development of lands in the State for those uses to which these lands are best suited in the interest of public health and welfare of the people of the State of Hawai'i. The request to amend and extend the boundaries of SP92-380 by approximately 45.4 acres has been undertaken in coordination with the landowner, Alexander & Baldwin LLC (A&B). The delineation of the overall quarry area has been undertaken in recognition of the need to provide a source of aggregate products, as well as a location for associated operations essential to sustaining the local construction industry. The use of the property for quarrying and related operations is considered important to the welfare interests of the island's residents. The use of the 45.4-acre area for quarrying and related uses is not expected to affect potential agricultural productivity. As previously noted, Hawaiian Cement is required to comply with a condition of its land lease to restore completed quarry areas to agricultural uses.

(2) The desired use would not adversely affect surrounding property;

The desired use is not anticipated to adversely affect surrounding property, which is currently used as part of the quarry operations, and fallow agricultural lands owned by A&B. As previously noted, as part of its lease agreement with A&B, Hawaiian Cement is required to restore lands to agricultural productivity following completion of quarrying areas. Hawaiian Cement is in compliance with this provision for areas where quarrying has been completed.

- (3) **The use would not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, and police and fire protection;**

Hawaiian Cement's quarrying and related operations are an existing use in the area. Further, the proposed boundary expansion is directly adjacent to lands currently being quarried. The proposed amended boundaries of the quarry by 45.4 acres is not anticipated to require improvements to infrastructure; thus it is not anticipated to adversely affect public agencies to provide roads, streets, sewers, water, or drainage facilities. Further, no adverse effects are anticipated to be placed upon police, fire protection, as well as the education system.

- (4) **Unusual conditions, trends, and needs have arisen since the district boundaries and rules were established; and**

Since the establishment of the district boundaries, the County of Maui has experienced continued economic and population growth, requiring the identification and development of material resources to support the local construction industry. This need has been recognized through previous approvals related to SP92-380. The current request to increase the SUP boundaries by approximately 45.4 acres is in keeping with the quarry's overall objective of providing a reliable source of concrete and aggregate products.

- (5) **The land upon which the proposed use is sought is unsuited for the uses permitted within the district.**

The removal of the former sugar cane lands for the quarry operations has continued to be coordinated with A&B (landowner) by Hawaiian Cement (lessee). As such, mining activities is considered a cooperative effort between A&B and the Applicant. Further, conditions are in place for the restoration of quarry lands for agricultural uses by the Applicant following the cessation of mining activities.

B. COUNTY SPECIAL USE PERMIT BOUNDARY AMENDMENT

The Applicant's proposed amendment to extend an existing permitted quarry area to include the additional 45.4 acres to the east does not adversely impact public services or infrastructure, and is consistent with surrounding land uses as has been previously assessed in regards to CUP 2006/002 for this quarry use.

A current compliance report for the CUP application is included as **Appendix "G"**.



REFERENCES

V



V. REFERENCES

County of Maui, Kihei-Makena Community Plan, March 1998.

County of Maui, The General Plan of the County of Maui, September 1990 Update.


Munekiyo & Hiraga, Inc., Project Assessment Report for an Amendment to State Land Use Commission Special Use Permit and an Amendment to County Special Use Permit (SP 92-380 and CUP 2006/0002), Hawaiian Cement Puunene Quarry at Puunene, Maui, February 2013.

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STATE SPECIAL USE
PERMIT (SP92-380)
DECISION AND ORDER
(SECOND AMENDMENT)
DATED DECEMBER 18, 2006

APPENDIX

A



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of) DOCKET NO. SP92-380
)
HAWAIIAN CEMENT) DECISION AND ORDER
) APPROVING AMENDMENT
) TO SPECIAL USE PERMIT
For A Special Permit To Allow A Rock)
Quarrying/Crushing Operation And Related)
Uses On Approximately 105.957 Acres Of)
Land Situated Within The State Land Use)
Agricultural District At Pulehunui, Wailuku,)
Maui, Hawai'i, Tax Map Keys: 3-8-04: Portion)
Of 1 And Portion Of 2 And 3-8-08: Portion Of)
1 And Portion Of 31)
_____)

DECISION AND ORDER APPROVING AMENDMENT TO SPECIAL USE PERMIT

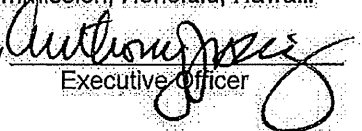
This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

DEC 18 2006

Date

by

Executive Officer



BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AMENDMENT
For A Special Permit To Allow A Rock	)	TO SPECIAL USE PERMIT
Quarrying/Crushing Operation And Related)	
Uses On Approximately 105.957 Acres Of)	
Land Situated Within The State Land Use)	
Agricultural District At Pulehunui, Wailuku,)	
Maui, Hawai'i, Tax Map Keys: 3-8-04: Portion)	
Of 1 And Portion Of 2 And 3-8-08: Portion Of)	
1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AMENDMENT TO SPECIAL USE PERMIT

On August 30, 2005, Hawaiian Cement ("Applicant") filed a written request to amend the special use permit issued in the above-entitled docket ("Proposed Amendment") with the County of Maui Department of Planning ("DP"), pursuant to section 205-6, Hawai'i Revised Statutes ("HRS"), and sections 15-15-95 and 15-15-96, Hawai'i Administrative Rules ("HAR"). The Applicant requested the expansion of its existing rock quarry and concrete aggregate operations on approximately 66.444 acres of land within the State Land Use Agricultural District,

identified as Tax Map Key: 3-8-04: por. 1, at Pulehunui, Wailuku, Maui, Hawai'i ("Expansion Areas").¹

The LUC has jurisdiction over the Applicant's Proposed Amendment. Section 205-6, HRS, and sections 15-15-95 and 15-15-96, HAR, authorize the LUC to approve special use permits and amendments thereto for areas greater than 15 acres.

On June 27, 2006, the County of Maui Planning Commission ("Planning Commission") conducted a hearing on the Applicant's Proposed Amendment. There was no public testimony provided on the Proposed Amendment. After due deliberation, the Planning Commission recommended approval of the Applicant's Proposed Amendment to the LUC, subject to the following five additional conditions, which augment the existing 11 conditions previously imposed by the LUC in its Decision And Order Approving A Time Extension To A Special Use Permit ("Decision And Order Approving A Time Extension") dated July 15, 2005:

12. That a grading permit from the Public Works Department shall be obtained prior to any land disturbance in the new quarry areas.

¹ By Findings Of Fact, Conclusions Of Law, And Decision And Order issued on July 13, 1992, the Land Use Commission ("LUC") approved the special use permit to establish the rock quarry and concrete aggregate operations on approximately 45.957 acres of land. By Findings Of Fact, Conclusions Of Law, And Decision And Order issued on November 25, 1996, the LUC approved an additional approximately 60 acres of land to the special use permit for a total area of 105.957 acres. Based on the configuration of the 105.957 acres in the record and the current tax maps, the existing rock quarry and concrete aggregate operations are located on Tax Map Keys: 3-8-04: por. 1 and 3-8-08: por. 20 and por. 31.

The existing configuration of the 105.957 acres in the record differs significantly from the boundaries of the actual area of use.

13. That prior to issuance of a grading permit, the applicant shall provide evidence of approval from the State Department of Transportation regarding a maintenance program for the driveway and surrounding roadway.
14. That prior to issuance of a grading permit, the applicant will provide evidence of approval from the State Department of Health regarding modifications to the Clean Air Branch permit.
15. That prior to issuance of a grading permit, the applicant shall submit an archeological [sic] inventory survey to the State Historic Preservation Division for their review; and shall comply with their subsequent comments.
16. That the new quarry operations shall be confined to the areas depicted on Exhibit 2 of the Planning Department staff report as "24.476 Acres" and "41.968 Acres" (attached as "Proposed Quarry Mining Site" map, dated July 7, 2005).

On August 25 and October 30, 2006, the LUC received a copy of the decision and a portion of the record of the Planning Commission's proceedings on the Applicant's Proposed Amendment. On November 14, 2006, the LUC received the remaining portion of the record.

On December 8, 2006, the LUC met at the Hapuna Beach Prince Hotel located on the Kohala Coast, South Kohala, Hawai'i, to consider the Applicant's Proposed Amendment. William Horneman appeared on behalf of the Applicant. Jeff Hunt appeared on behalf of the DP. Bryan C. Yee, Esq., and Abe Mitsuda also were present on behalf of the State Office of Planning ("OP").

At the meeting, the DP stated, among other things, that based on an e-mail received on July 18, 2006, the County Department of Public Works and Environmental Management clarified that the expansion of the quarry was in fact exempt from a grading permit, and therefore Condition Number 12 should be deleted and that references to the issuance of a grading permit in Condition Numbers 13, 14, and 15 should be rephrased to require that the respective actions occur prior to initiating the proposed quarry operations. The DP also clarified that Condition Number 13 addresses a maintenance program for the driveway and surrounding roadway including Mokulele Highway, whereas Condition Number 9 pertains primarily to a maintenance program for the access road. The Applicant then provided a background of the existing rock quarry and concrete aggregate operations. The Applicant pointed out, among other things, that he provided approximately 80,000 tons of aggregate per year and in excess of 160,000 cubic yards of concrete from the existing quarry to the economy of Maui. The Applicant noted that at the current rate of mining, he would run out of material at the current site by the middle of 2007, and therefore he intended to start quarrying operations into the Expansion Areas as soon as possible. In response to questioning from the LUC, the Applicant clarified that its existing restoration plan will apply to the Expansion Areas, and that it will amend or supplement its existing solid waste management plan to include the Expansion Areas. The Applicant further noted that it had no

objections to the revisions to Condition Numbers 13, 14, and 15 as recommended by the DP. The OP was then asked to provide comments on the Proposed Amendment. The OP stated that it had not yet received confirmation that the State Department of Transportation ("DOT") reviewed and approved the Applicant's maintenance program. The OP added, however, that with the assumption that (i) the term "surrounding roadway" in Condition Number 13 includes Mokulele Highway; (ii) the DOT's approval of a maintenance program is necessary prior to commencement of quarrying in the Expansion Areas; and (iii) the County of Maui will enforce violations of any maintenance program approved by the DOT, the OP had no objections to the Proposed Amendment.

Thereafter, a motion was made and seconded to approve the Applicant's Proposed Amendment, subject to the following additional conditions to the Decision And Order Approving A Time Extension dated July 15, 2005:

12. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Transportation regarding a maintenance program for the driveway and surrounding roadway.
13. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Health regarding modifications to the Clean Air Branch permit.
14. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall submit an archaeological inventory survey to the State Historic Preservation Division for their review; and shall comply with their subsequent comments.

15. That the new quarry operations shall be confined to the areas depicted on Exhibit 2 of the Planning Department staff report as "24.476 Acres" and "41.968 Acres" (attached as "Proposed Quarry Mining Site" map, dated July 7, 2005).
16. That the applicant shall file within one year of the issuance of this Decision and Order a request with the County of Maui Department of Planning to amend the special use permit to reflect the current boundaries of the existing 105.957-acre quarry site.

Following deliberation by the Commissioners, a vote was taken on the motion. There being a vote tally of 7 ayes, 0 nays, and 2 absent, the motion carried.

ORDER

The LUC, having duly considered the complete record of the Applicant's Proposed Amendment and the oral arguments presented by the parties present in the proceeding, and a motion having been made at a meeting on December 8, 2006, at the Hapuna Beach Prince Hotel located on the Kohala Coast, South Kohala, Hawai'i, and the motion having received the affirmative votes required by section 15-15-13, HAR, and there being good cause for the motion,

HEREBY ORDERS that the Applicant's Proposed Amendment to expand its existing rock quarry and concrete aggregate operations on approximately 66.444 acres of land within the State Land Use Agricultural District at Pulehunui, Wailuku, Maui, Hawai'i, identified as Tax Map Key: 3-8-04: por. 1, and approximately identified on Exhibit "A," attached hereto and incorporated by

reference herein, be APPROVED, subject to the following conditions to the Decision

And Order Approving A Time Extension dated July 15, 2005:

12. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Transportation regarding a maintenance program for the driveway and surrounding roadway.
13. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Health regarding modifications to the Clean Air Branch permit.
14. That prior to commencement of quarry operations into the Expansion Areas, the applicant shall submit an archaeological inventory survey to the State Historic Preservation Division for their review; and shall comply with their subsequent comments.
15. That the new quarry operations shall be confined to the areas depicted on Exhibit 2 of the Planning Department staff report as "24.476 Acres" and "41.968 Acres" (attached as "Proposed Quarry Mining Site" map, dated July 7, 2005).
16. That the applicant shall file within one year of the issuance of this Decision and Order a request with the County of Maui Department of Planning to amend the special use permit to reflect the current boundaries of the existing 105.957-acre quarry site.

All other conditions to the Decision And Order Approving A Time Extension dated July 15, 2005, are hereby reaffirmed and shall continue in effect.

Done at Honolulu, Hawai'i, this 18th day of

December, 2006.

APPROVED AS TO FORM:

Dean Inoué
Deputy Attorney General

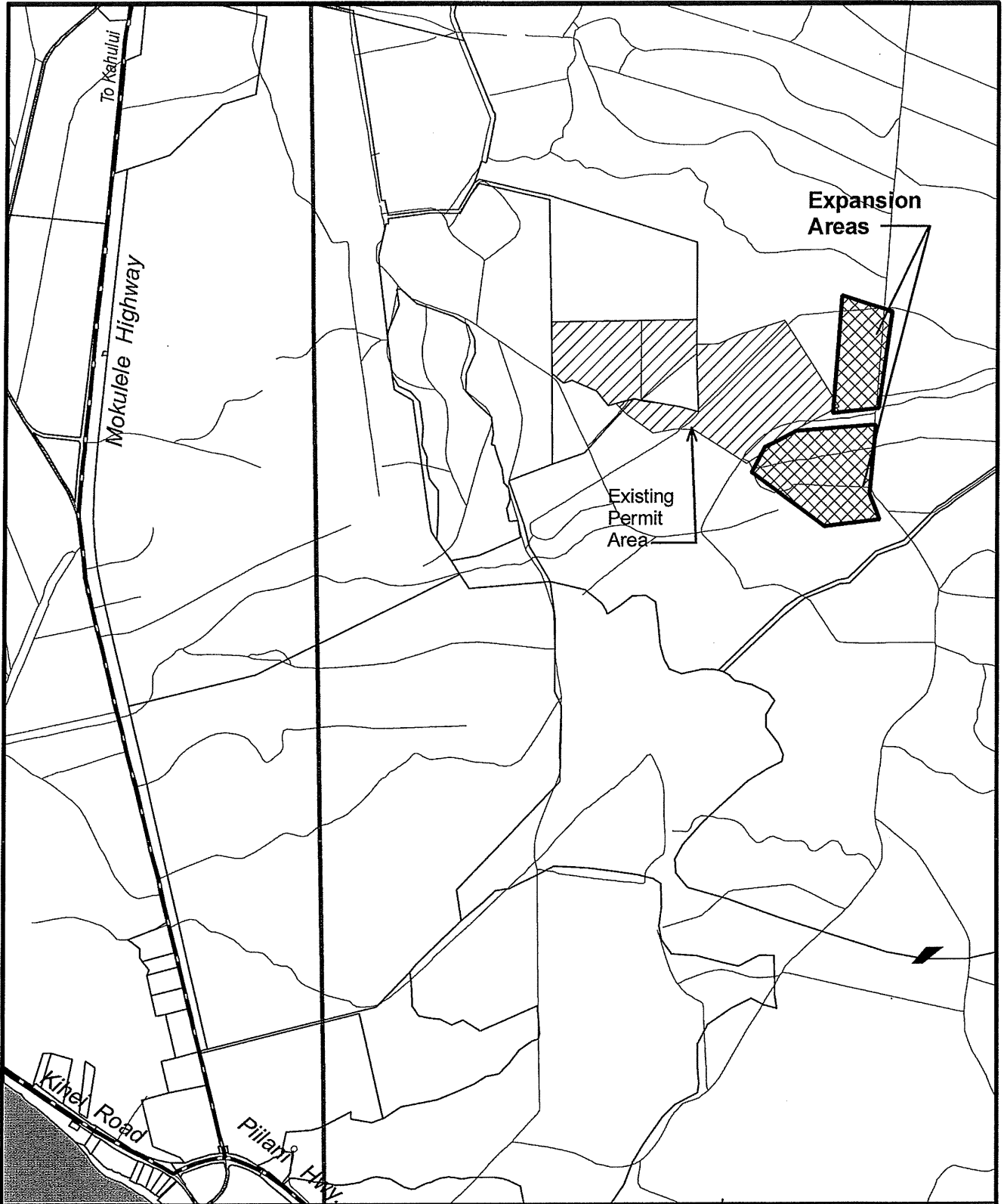
LAND USE COMMISSION
STATE OF HAWAII

By Lisa Judge
LISA JUDGE
Chairperson and Commissioner

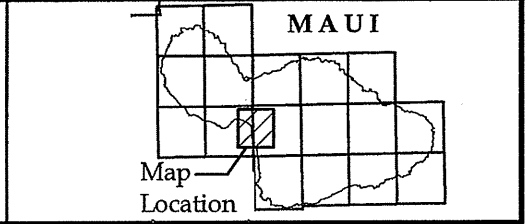
Filed and effective on
DEC 18 2006

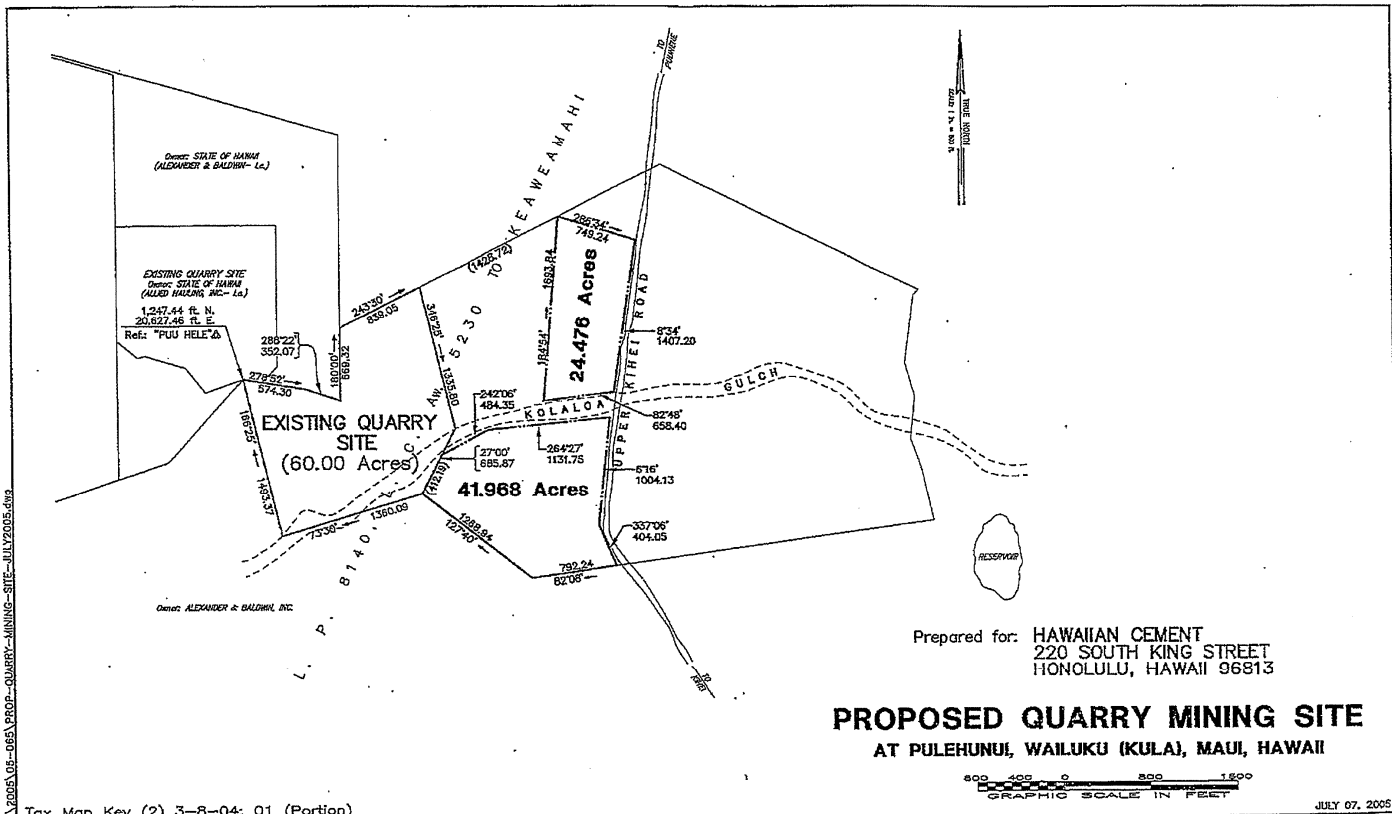
Certified by:

Anthony J. H. Ching
ANTHONY J. H. CHING, Executive Officer



SP92-380 HAWAIIAN CEMENT
LOCATION MAP
 Tax Map Key: 3-8-04: 1 (por.), 2 (por.), and
 3-8-08: 1 (por.) and 31 (por.)
 Pulehunui, Wailuku, Maui, Hawai'i
 Scale 1" = 2,000 feet
 Exhibit "A"





Prepared for: HAWAIIAN CEMENT
 220 SOUTH KING STREET
 HONOLULU, HAWAII 96813

**PROPOSED QUARRY MINING SITE
 AT PULEHUNU, WAILUKU (KULA), MAUI, HAWAII**



05-085 PROP-QUARRY-MINING-SITE-JULY2005.dwg

Tax Map Key (2) 3-8-04: 01 (Portion)
 871 KOLU STREET, SUITE 201
 WAILUKU MAUI HAWAII 96793

R. T. TANAKA ENGINEERS, INC.

JULY 07, 2005
 JOB NO. 05-085

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	CERTIFICATE OF SERVICE
)	
For A Special Permit To Allow A Rock)	
Quarrying/Crushing Operation And Related)	
Uses On Approximately 105.957 Acres Of)	
Land Situated Within The State Land Use)	
Agricultural District At Pulehunui, Wailuku,)	
Maui, Hawai'i, Tax Map Keys: 3-8-04: Portion)	
Of 1 And Portion Of 2 And 3-8-08: Portion Of)	
1 And Portion Of 31)	
_____)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Decision And Order Approving
Amendment To Special Use Permit was served upon the following by either hand
delivery or depositing the same in the U. S. Postal Service by regular or certified mail as
noted:

DEL. LAURA THIELEN, Director
 Office of Planning
 P. O. Box 2359
 Honolulu, Hawaii 96804-2359

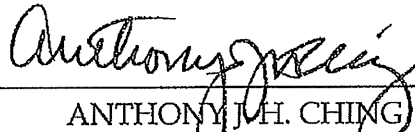
BRYAN YEE, Esq.
Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, Hawaii 96813

MICHAEL FOLEY, Director
County of Maui, Planning Department
250 South High Street
Wailuku, Hawaii 96793


BRIAN MOTO, Esq.
JANE LOVELL, Esq.
Corporation Counsel
County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT: WILLIAM HORNEMAN
99-130 Halawa Valley Street
Aiea, Hawaii 96701-3289

Honolulu, Hawai'i, DEC 18 2006.




ANTHONY J. H. CHING
Executive Officer



STATE SPECIAL USE PERMIT
(SP92-380) DECISION AND
ORDER (THIRD AMENDMENT)
DATED DECEMBER 3, 2014

APPENDIX

B





LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12:05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT; AND
Operation And Related Uses On	)	CERTIFICATE OF SERVICE
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE

THIS IS TO CERTIFY THAT THIS IS A TRUE AND CORRECT
COPY OF THE DOCUMENT ON FILE IN THE OFFICE OF THE
STATE LAND USE COMMISSION, HONOLULU, HAWAII.

Date December 3, 2014

BY 

Executive Officer



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT; AND
Operation And Related Uses On	)	CERTIFICATE OF SERVICE
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT
Operation And Related Uses On)	
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai`i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

On February 20, 2013, Hawaiian Cement ("Applicant") filed a request with the County of Maui Department of Planning ("DP") to amend the special use permit issued in the above-entitled docket pursuant to section 205-6, Hawai`i Revised Statutes ("HRS"), and sections 15-15-95 and 15-15-96, Hawai`i Administrative Rules ("HAR") by (1) expanding the existing Pu`unēnē Quarry by an additional 41.968 acres of land identified as Tax Map Key ("TMK"): 3-8-04: por. 1 ("Quarry Site 'C'"); (2) including 9.697 acres of land identified as TMK: 3-8-04; por. 1 within the existing quarry operation as part of the permitted area; (3) deleting Condition Number 16 of the

Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extending the life of the special use permit by 15 years (collectively "Request").

On May 27, 2014, the County of Maui Planning Commission ("Planning Commission") considered the Applicant's Request. There was no public testimony received by the Planning Commission. After due deliberation, at its meeting on May 27, 2014, the Planning Commission recommended approval of the Request to the State of Hawai'i Land Use Commission ("LUC").

On July 30, 2014, the LUC received a copy of the decision and a portion of the record of the Planning Commission's proceedings on the Applicant's Request. On October 15, 2014, the LUC received the remaining portion of the record.

The LUC has jurisdiction over the Applicant's Request. Section 205-6, HRS, and sections 15-15-95 and 15-15-96, HAR, authorize the LUC to approve special use permits and amendments thereto for areas greater than 15 acres.

On November 20, 2014, the LUC met in Kahului, Maui, Hawai'i, to consider the Applicant's Request. Karlynn Fukuda and Dave Gomes appeared on behalf of the Applicant. Kristin Tarnstrom, Esq., and Paul Fasi appeared on behalf of the DP. Bryan C. Yee, Esq., and Rodney Funakoshi also were present on behalf of the State of Hawai'i Office of Planning ("OP").

At the meeting, the Commission heard public testimony from Wil Cambra, Keoni Gomes, Clare Apana, and Johanna Kamaunu. Following the receipt of public testimony, the Applicant provided a presentation on its Request.

As part of its testimony, the DP noted that it had thoroughly reviewed the Applicant's Request and affirmed the Planning Commission's recommendation on the matter. Upon questioning, the DP acknowledged receipt of the December 10, 2007, revised map of the boundaries of the then 105.957-acre Pu'unēnē Quarry approved pursuant to the Findings of Fact, Conclusions of Law, and Decision and Order filed November 25, 1996.

The OP stated that it had no objections to the Applicant's Request.

Following discussion, a motion was made and seconded to approve the Applicant's Request, subject to the following amendment to Condition Number 1 and additional Condition Numbers 16 and 17 as follows:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

16. That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

Following deliberation by the Commissioners, a vote was taken on the motion. There being a vote tally of 7 ayes, 0 nays, and 1 excused, the motion carried.

ORDER

The LUC, having duly considered the complete record of the Applicant's Request and the oral arguments presented by the Applicant, OP, and the DP, and a motion having been made at a meeting on November 20, 2014, in Kahului, Maui, Hawai'i, and the motion having received the affirmative votes required by section 15-15-13, HAR, and there being good cause for the motion,

HEREBY ORDERS that the Applicant's Request to (1) expand the existing Pu'unēnē Quarry by an additional 41.968 acres of land identified as TMK: 3-8-04: por. 1 and further identified as Quarry Site "C"; (2) include 9.697 acres of land identified as TMK: 3-8-04: por. 1 within the existing quarry operation as part of the permitted area; (3) delete Condition Number 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extend the life of the special use permit by 15 years be APPROVED, subject to the following amendment to Condition Number 1:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use

Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

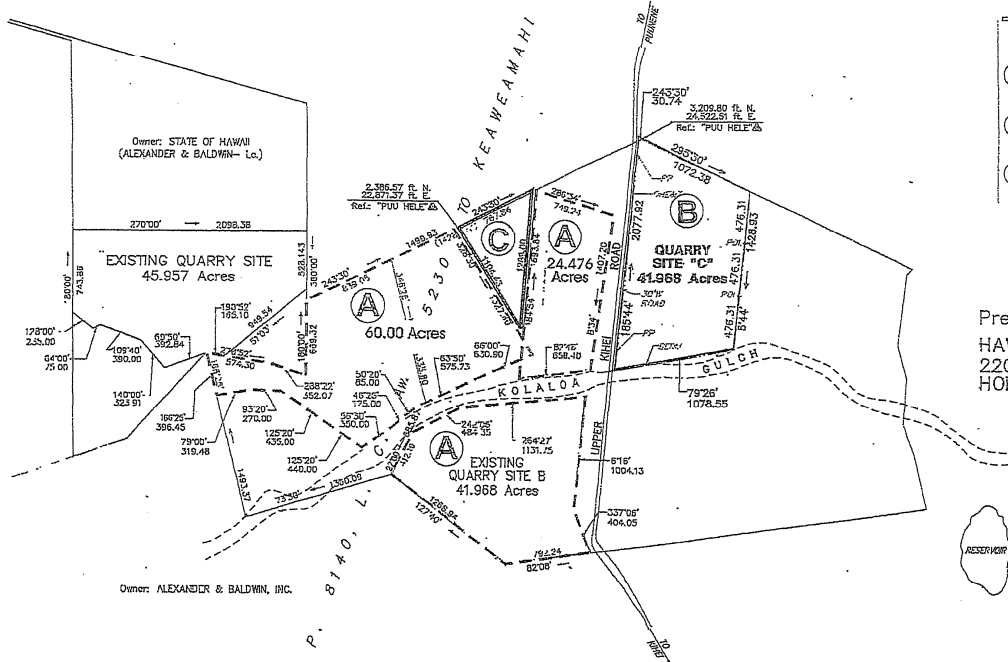
IT IS FURTHER ORDERED that the Applicant's Request be APPROVED, subject to the following additional Condition Numbers 16 and 17:

- 16.¹ That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.
17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

IT IS FURTHER ORDERED that all other conditions to the Decision and Order Approving a Time Extension filed July 15, 2005, and the Decision and Order Approving Amendment to Special Use Permit filed December 18, 2006, shall remain in full force and effect.

¹ This new condition replaces the previous Condition No. 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006, which is deleted with this Decision and Order.

TRUE NORTH
SCALE: 1 in. = 800 ft.



- KEY**
- (A) Area included in SUP and CUP approvals for Quarry
 - (B) Proposed 41.9-acre expansion location for quarry
 - (C) 9.7-acre site that was previously quarried

Prepared for:
HAWAIIAN CEMENT
220 SOUTH KING STREET
HONOLULU, HAWAII 96813

**PLAN SHOWING
HAWAIIAN CEMENT QUARRY MINING SITES
AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII**



Tax Map Key (2) 3-8-04: 01 (Portion)

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

REVISED: DECEMBER 13, 2013
REVISED: OCTOBER 15, 2012
REVISED: JUNE 14, 2012
DECEMBER 10, 2007

Hawaii County Planning Department Register JOB NO. 05-065

EXHIBIT "A"

ADOPTION OF ORDER

This ORDER shall take effect upon the date this ORDER is certified by this Commission.

Done at Honolulu, Hawai'i, this 3rd, day of December, 2014, per motion on November 20, 2014.

LAND USE COMMISSION

APPROVED AS TO FORM

STATE OF HAWAII

Diane Jackson
Deputy Attorney General

By Chad McDonald
Chad McDonald
Chairperson and Commissioner

Filed and effective on:

12/3/14

Certified by:

Daniel Orodunker

DANIEL ORODENKER
Executive Officer



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	CERTIFICATE OF SERVICE
)	
For An Amendment To Special Use Permit)	
That Established A Rock Quarrying/Crushing)	
Operation And Related Uses On)	
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

CERTIFICATE OF SERVICE

I hereby certify that a DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT was served upon the following by either hand delivery or depositing the same in the U.S. Postal Service by regular or certified mail as noted:

CERTIFIED KARLYNN FUKUDA
MAIL: Munekiyo & Hiraga Inc.
305 S. High Street
Wailuku, Hawai'i 96793
Petitioner Representative

DEL.: LEO ASUNCION, Acting Director
State Office of Planning
P. O. Box 2359
Honolulu, Hawai'i 96804-2359

REGULAR BRYAN C. YEE, Esq.
MAIL: Deputy Attorney General
425 Queen Street
Honolulu, Hawai'i 96813
Attorney for State Office of Planning

REGULAR KRISTIN TARNSTROM, Esq.
MAIL: Department of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawai'i 96793
Attorney for the County of Maui


REGULAR WILLIAM SPENCE, Director
MAIL: Department of Planning
County of Maui
200 South High Street
Wailuku, Hawai'i 96793

Dated: Honolulu, Hawai'i, December 3, 2014

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

DANIEL ORODENKER

Executive Officer



COUNTY SPECIAL USE
PERMIT (CUP 2006/0002)
AMENDMENT APPROVAL
LETTER DATED
JUNE 18, 2014

APPENDIX

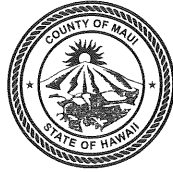
C



ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director



JUN 19 2014

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 18, 2014

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: AMENDMENT TO STATE LAND USE COMMISSION SPECIAL PERMIT (SP) AND AMENDMENT TO COUNTY SPECIAL USE PERMIT (CUP) FOR THE HAWAIIAN CEMENT PUUNENE ROCK QUARRY, PULEHUNUI, KAHULUI, ISLAND OF MAUI, HAWAII; TMK: (2) 3-8-004:001 (POR.) (SUP1 91-0013) (SP 92-380) (CUP 2006/0002)

At its regular meeting on May 27, 2014, the Maui Planning Commission (Commission) voted to recommend approval to the State Land Use Commission, the following proposed amendments to **State Land Use Commission Special Permit (SP 92-380)**:

1. To expand the quarry area by approximately 42 acres at TMK: (2) 3-8-004:001 (por.);
2. To include the 9.697-acre portion of the quarry within the permitted area (Area "C");
3. To delete Condition No. 16 of SP 92-380 as the Applicant has submitted said updated map to the Department of Planning; and
4. To approve a 15-year time extension for SP 92-380.

Further, the Commission also approved the proposed amendments to the **County Special Use Permit (CUP 2006/0002)** as follows:

Note: New material underlined; deleted material [bracketed]

1. That the County Special Use Permit shall be valid until July 21, 2032 [July 31, 2018], or the expiration date for the State Land Use Commission Special Permit, whichever is longer, subject to extension by the Planning Director [Maui Planning Commission] upon a timely request for extension filed at least ninety (90) days prior to its expiration. The Commission may require a public hearing on the time extension.

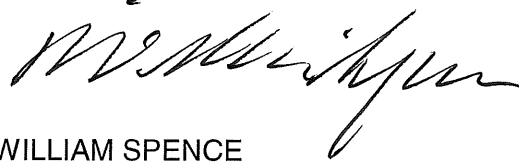
2. That the County Special Use Permit shall not be transferred without the prior written approval of the Planning Director [Maui Planning Commission].
3. That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject County Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this County Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS (1,000,000.00) naming the County of Maui as an additional named insured, insuring and defending the Applicant and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department of Planning (Department) within ninety (90) calendar days from the date of transmittal of the decision and order.
4. That full compliance with all applicable governmental requirements shall be rendered; and
5. That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.
6. That the quarry area is expanded by approximately 42 acres and includes the 9.697-acre portion of the quarry within the permitted area, known as Area "C".

The Commission adopted the Report and Recommendation prepared by the Department of Planning for the May 27, 2014, meeting as its Findings of Fact, Conclusions of Law, and Decision and Order. Parties to proceedings before the Commission may obtain Judicial Review of Decision and Orders issued by the Commission in the manner set forth in Chapter 91-14, Hawaii Revised Statutes (HRS).

Ms. Karlynn Fukuda, Executive Vice President
June 18, 2014
Page 3

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Paul Fasi at paul.fasi@mauicounty.gov or at (808) 270-7814.

Sincerely,



WILLIAM SPENCE
Planning Director

xc: Clayton I. Yoshida, AICP, Planning Program Administrator (PDF)
Paul F. Fasi, Staff Planner (PDF)
Development Services Administration
William Aila, Jr., Chairperson, Department of Land and Natural Resources
State of Hawaii Land Use Commission
CZM File (SUP)
Project File
General File

WRS:PFF:nst


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EXECUTED LEASE
AMENDMENT

APPENDIX

D



FIRST AMENDMENT TO AMENDED AND RESTATED LICENSE AGREEMENT

THIS FIRST AMENDMENT TO AMENDED AND RESTATED LICENSE AGREEMENT (this "***Amendment***") dated this ____ day of _____, 2017 (the "***Effective Date***") is made by and between the ALEXANDER & BALDWIN, LLC, SERIES T, a series of a Delaware limited liability company (which series was established after the conversion from Alexander & Baldwin, LLC, a Hawaii limited liability company), hereinafter referred to as "***Licensor***," whose principal place of business and post office address on Maui is 33 Lono Avenue, Kahului, Maui, Hawaii 96732 and in Honolulu is 822 Bishop Street, Honolulu, Hawaii 96813 and **HAWAIIAN CEMENT**, a Hawai'i general partnership, hereinafter referred to as "***Licensee***," whose post office address is 99-1300 Halawa Street, Aiea, Hawaii 96701.

A. Licensor and Licensee entered into that certain Amended and Restated License Agreement dated March 26, 2012, effective as of March 1, 2012 (the "***License Agreement***") whereby Licensor licensed exclusively to Licensee various portions from time to time within up to 350 acres of that certain rock extraction area (the "***Rock Extraction Area***") situate at Waikapu, Maui, Hawaii, being identified as a portion of TMK (2) 3-8-004-002 ("***Parcel 2***") and further described in the License Agreement, for rock extraction. Although the License Agreement provides that the Rock Extraction Area comprises a portion of Parcel 2, the Rock Extraction Area also comprises a portion of TMK (2) 3-8-004-001 ("***Parcel 1***").

B. Alexander & Baldwin, LLC, Series R, a series of a Delaware limited liability company (which series was established after the conversion from Alexander & Baldwin, LLC, a Hawaii limited liability company) ("***ABL Series R***") is the current fee owner of Parcels 1 and 2.

C. ABL Series R, as Grantor, and Licensor, as Grantee, entered into that certain unrecorded Grant of Easement effective as of January 1, 2017, as amended by that certain First Amendment to Grant of Easement effective as of May 5, 2017 (as amended, the "***Easement Agreement***") pursuant to which ABL Series R granted to Licensor and its successors and assigns, a perpetual and exclusive easement over, across, under, along and upon Parcels 1 and 2.

D. In connection with the Easement Agreement, ABL Series R, as Assignor, and Licensor, as Assignee, entered into that certain Assignment and Assumption of Amended and Restated License Agreement effective as of January 1, 2017 ("***Assignment and Assumption***") whereby ABL Series R transferred and assigned to Licensor all right, title and interest of ABL Series R in and to the License Agreement.

E. Licensor and Licensee desire to modify certain terms of the License Agreement as set forth in this Amendment.

NOW, THEREFORE, the parties hereto, in consideration of the premises and of the covenants herein contained, hereby mutually agree to the following terms and conditions:

1. **Amendments.**

1.1 Rock Extraction Area. The first sentence of Section 3 (License) of the License Agreement is hereby amended and restated as follows: "Licensor hereby licenses exclusively to Licensee (except for use by Licensor or its affiliated companies, including but not limited to Hawaiian Commercial and Sugar Company ("***HC&S***") as provided herein, various portions from time to time within up to 350 acres of that certain rock extraction area (the "***Rock Extraction Area***") situate at Waikapu, Maui, Hawaii, as more particularly shown on **Exhibit**

"A" attached hereto and made a part hereof, being identified as a portion of Tax Map Key Nos. (2) 3-8-004-001 and -002.”

1.2 Section 3(a) of Exhibit C to the License Agreement is amended and restated as follows:

(a) Overburden (soil), in place before the mining occurred, shall be replaced with the same material over the quarry floor at a depth not less than 24”.

Except as amended by this Amendment, in all other respects, the License Agreement shall remain the same and in full force and effect.

2. **Other Agreements.**

2.1 Each individual signing on behalf of a party hereto is authorized to do so and no approval or consent of any person is required or, if required, has been obtained, in connection with the execution and performance of this Amendment.

2.2 This Amendment shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

2.3 This Amendment may be executed in any number of counterparts and by either party hereto on a separate counterpart, each of which when so executed and delivered shall be deemed an original and all of which taken together shall constitute but one and the same instrument. Electronically transmitted executed copies of this Amendment shall be fully binding and effective for all purposes whether or not originally executed documents are transmitted to the other party. Facsimile signatures on documents are to be treated the same as original signatures.

[signatures appear on following page]

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.


ALEXANDER & BALDWIN, LLC, SERIES T
a Delaware limited liability company

By: _____
Name: _____
Its: _____, Series T

By: _____
Name: _____
Its: _____, Series T

Licensor

HAWAIIAN CEMENT, a Hawaii general partnership


By:  _____
Name: JASON MACY
Its: PRESIDENT

By: _____
Name: _____
Its: _____

Licensee

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first above written.

ALEXANDER & BALDWIN, LLC, SERIES T
a Delaware limited liability company

By: 
Name: **NELSON N.S. CHUN**
Its: **SENIOR VICE PRESIDENT**, Series T

By: 
Name: **ALYSON J. NAKAMURA**
Its: **SECRETARY**, Series T


Licensor

HAWAIIAN CEMENT, a Hawaii general partnership

By: _____
Name: _____
Its: _____

By: _____
Name: _____
Its: _____


Licensee



HRS 6E SUBMITTAL
FORM (Submitted in
March 2019)

APPENDIX

E



**State Historic Preservation Division
HRS 6E Submittal Form**

Per §6E, Hawai'i Revised Statutes, if the Project requires review by the State Historic Preservation Division (SHPD), please review and fill out this form and submit all requested information to SHPD. Please submit this form and project documentation **electronically** to:

dlnr.intake.shpd@hawaii.gov

If you are unable to submit electronically, please contact SHPD at (808) 692-8015. Mahalo.

The submission date of this form is:

1. APPLICANT (select one)

Property Owner Government Agency

2. AGENCY (select one)

Planning Department Department of Public Works Other (specify):

Type of Permit Applied For: State Special Use Permit and County Special Use Permit

3. APPLICANT CONTACT

3.1) Name: David Gomes

3.2) Title: General Manager

3.3) Street Address:

3.4) County: Maui

3.5) State: Hawaii

3.6) Zip Code: 96732

3.7) Phone: (808) 871-7004

3.8) Email: David.Gomes@HawaiianCement.com

4. PROJECT DATA

4.1) Permit Number (if applicable): SUP92-308, SUP1 91-0013, and CUP 2006/0002

4.2) TMK [e.g. (3) 1-2-003:004]: (2)3-8-004:001 (por) and 002 (por) and (2)3-8-008:001 (por) and 031 (por)

4.3) Street Address:

4.4) County: Maui

4.5) State: Hawaii

4.6) Zip Code: 96732

4.7) Total Property Acreage: 400 Acres



4.8) Project Area (acreage, square feet): 400 Acres

4.9) List any previous SHPD correspondence (LOG Number & DOC Number, if applicable):

LOG NO.

DOC NO.

5. PROJECT INFORMATION

5.1) Does the Project involve a Historic Property? A Historic Property is any building, structure, object,

district, area, or site, including heiau and underwater site, **which is over 50 years old** (HRS §6E-2).

Yes No

5.2) The date(s) of construction for the historic property (building, structure, object, district, area, or site, including heiau and underwater site) is

5.3) Is the Property listed on the Hawai'i and or National Register of Historic Places? To check:
<http://dlnr.hawaii.gov/shpd/>

Yes No

5.4) Detailed Project Description and Scope of Work:

Hawaiian Cement, leasing the land from A&B, is submitting paperwork for an extension of a State and County Special Use Permit. The work involves rock extraction or quarrying of materials that are used as base course by the State, County, and private developers in construction projects. Hawaiian Cement

5.5) Description of **previous** ground disturbance (e.g. previous grading and grubbing):

The entirety of the 400 acre project area was formerly under intensive sugar cane cultivation.

5.6) Description of **proposed** ground disturbance (e.g. # of trenches, Length x Width x Depth):

Ground disturbance is conducted in several steps and will occur throughout the project area. The first step is clearing/grubbing the surface, followed by excavation of soils. Drilling occurs when bedrock is encountered, bedrock being a major part of the base course materials. Excavation is required to be conducted by benching locations such that the landscape is stepped and large open-air pits do not occur.

5.7) The Agency shall ensure whether historic properties are present in the project area, and, if so, it shall ensure that these properties are properly identified and inventoried. Identify all known historic properties:

5.8) Once a historic property is identified, then an assessment of significance shall occur.

Integrity (check all that apply):

Location Design Setting Materials Workmanship Feeling Association

Criteria (check all that apply):


- a – associated with events that have made an important contribution to the broad patterns of our history
- b – associated with the lives of persons important in our past
- c – embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value
- d – have yielded, or is likely to yield, information important for research on prehistory or history
- e – have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out or still carried out, at the property or due to associations with traditional beliefs, events, or oral accounts - - these associations being important to the group's history and cultural identity

The following are the minimum number and type of color photographs required:

Quantity	Description
1-2	Street view(s) of the resource and surrounding area
1-2	Over view of exterior work area
1	exterior photo of the North elevation (if applicable)
1	exterior photo of the South elevation (if applicable)
1	exterior photo of the East elevation (if applicable)
1	exterior photo of the West elevation (if applicable)
1-2	interior photos(s) of areas affected (if applicable)

CHECKLIST

- SHPD FORM 6E** (this form)
- PROJECT SUBMITTALS** (any requested documentation for items 6.1 - 6.7 of this form)
- FILING FEE FORM** (if applicable)



ARCHAEOLOGICAL
ASSESSMENT
DATED MARCH 2020

APPENDIX

E-1



**FINAL ARCHAEOLOGICAL ASSESMENT REPORT
FOR HAWAIIAN CEMENT QUARRY EXPANSION
LOCATED AT TMK: (2) 3-8-004:001 portion
PŪLEHU NUI *AHUPUA'A*, KULA MOKU;
WAILUKU DISTRICT
ISLAND OF MAUI**

**FOR: planning@mauicounty.gov, dsa.subdivision@mauicounty.gov and Mr. Dave Gomes
Hawaiian Cement dave.gomes@hawaiiancement.com**

**BY: Mr. Reynaldo Nico Fuentes (M.A.), Ms. Lisa J. Rotunno-Hazuka (B.A.)
and Ms. Jenny O'Claray-Nu (B.A.)**

**UPDATED MARCH 2020
REVISED SEPT 2017
REVISED JULY 2015
OCTOBER 2014**

ATLAS ARCHAEOLOGY
Mr. Reynaldo Nico Fuentes
POB 1368
WAILUKU, Hi 96784

EXECUTIVE SUMMARY

Under contract to Mr. David Gomes of Hawaiian Cement, and pursuant to recommendations by the State Historic Preservation Division-SHPD (Doc. No. 0603JP55), Archaeological Services Hawaii, LLC (ASH) conducted an archaeological inventory survey (AIS) with negative results for the proposed rock quarry expansion site comprised of 41.968 acres. The subject parcel is located within a larger 2008-acre parcel, Parcel 1 (TMK: (2) 3-8-004:001), situated along the isthmus of Maui, Pūlehu Nui *ahupua'a*, Wailuku District, Kula *Moku*, TMK: (2) 3-8-004:001 pors. Due to an absence of findings, an archaeological assessment (AA) report was submitted and reviewed by SHPD in 2015 (Log. No. 2014.04654 and Doc. No. 1505MD19). Several revisions were recommended by SHPD and the revised AA report was submitted in 2015 and 2017 but not reviewed. Due to changes in SHPD review and submittal procedures in April 2018, and a permit issue for ASH, this revised AA report was updated and prepared under the supervision of Atlas Archaeology.

Pūlehu Nui was actively settled during both the pre-Contact and historic periods and most of the population appeared to be centered within the *mauka* and *makai* areas. However during the historic period, these marginal or intermediate zones were utilized for commercial sugar and or ranching and contained Plantation Camps dispersed across the landscape.

The subject parcel is presently under various stages of cultivation, 8.8 acres in the southwest corner was recently harvested of sugarcane and the remaining 33.168 acres is actively cultivated. The inventory level procedures consisted of background research, a pedestrian survey and subsurface testing. The fieldwork procedures performed by ASH personnel occurred on 14 and 28 June 2014 and 3 and 12 July 2014 by archaeologist, Mr. Reynaldo N. Fuentes (B.A.) and supervisory archaeologist, Ms. Jenny O'Claray-Nu. Overall coordination for the project was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.), was the principal investigator. Recent revisions and update to the report were prepared under the direction of principal investigator, Mr. Reynaldo N. Fuentes (M.A.) of Atlas Archaeology.

A total of 17 backhoe trenches and 2 dozer cuts were executed within the approximate 42 acre parcel and all were negative for cultural remains. Documentation of the soil profiles indicated agricultural disturbances and alluvial deposits in the upper layers. Five test trenches (TR's 1-5) and two bulldozer cuts (BD 1-2) were placed in this 8.8 acre section and all trenching was devoid of cultural remains. The remaining 33.168 acres was cultivated in sugarcane and TR's 6-17 were executed in the cane haul roads of this section. The seventeen trenches averaged 4.0 m long by 1.00 m wide with a depth varying between 1.0 m-3.0 m. The two bulldozer cuts ranged from 12.0 to 15.0 m long by 5.0 m wide with an overall depth of 1.6 m.

Due to the negative findings at the project area, along with an absence of any former Plantation Camps in the area and following HRS §13-284-7, the overall project will have “no effect” on historic properties. The negative results were anticipated in this marginal/transitional zone due to the prior disturbances and 2011 AIS investigations (Rotunno-Hazuka et al. 2011) in the adjoining project to the west. Thus, no further archaeological procedures or mitigation measures are warranted for the 42.0-acre project area.

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INTRODUCTION

Under contract to Mr. David Gomes of Hawaiian Cement located at Mokulele Hwy, Pu`unēnē, Hi 96753 and pursuant to recommendations by the State Historic Preservation Division-SHPD (Doc. No. 0603JP55), Archaeological Services Hawaii, LLC. (ASH) conducted archaeological inventory survey procedures (AIS) for the proposed 41.968 acre rock quarry expansion site situated in Pūlehu Nui *ahupua`a*, Kula Moku, Wailuku District, TMK: (2) 3-8-004:001 por (Figures 1-4). This revised AA report was prepared according to recommendations by SHPD (Log. No. 2014.04654 and Doc. No. 1505MD19) and the rules and regulations set forth in the Hawaii Administrative Rules (HAR) §13-284-5(5)(A) and 276-5(a)(c).

The proposed activity encompasses a long-term project comprised of rock mining within fallow and cultivated sugarcane fields. Due to a lack of surface structural remains during the pedestrian survey, inventory level testing through mechanical excavations was deemed appropriate. A total of 17 trench (TR1-17) and 2 bulldozer excavations (BD1-2) were conducted to determine presence/absence, extent and significance (if applicable) of subsurface historic properties including burial features. All mechanical test excavations were negative for buried cultural remains.

PROJECT AREA DESCRIPTION

The project area, comprised of 41.968 acres, is situated within a larger 2008.69 acre parcel on the isthmus of Maui approximately 5.6 km (3.5 mi) to 6.0 km (4.0 mi) inland from the Mā`alaea coastline and 0.75 km (.5 miles) east (*mauka*) of the intersection Mokulele Highway and Meha Meha Loop (road to Hawaiian Cement and the Animal Shelter). The subject parcel area is bounded to the west by a prior archaeological assessment (Rotunno-Hazuka et al. 2011) and a paved access road designated Upper Kihei Road, to the south by Kolaloa Gulch, to the north by an irrigation ditch and active sugar cane fields, and east by active sugar cane. As exhibited on Figures 2 and 3, two former historic plantation camps, Kihei Camp 3 and Camp 13. Kihei Camp 3 appeared to be located approximately 2500 ft. (762 m) SE and across Kolaloa Gulch. Camp 13 was approximately 7500 ft. (2286 m) north from the current project area.

The entire parcel (2008.69-acres) including the 41.968-acre project area has been altered through compounded disturbances from sugar cane cultivation and prior rock mining. The subject parcel is comprised of two sections. One section contains 8.8 acres and was grubbed of all vegetation

and located within the southwestern portion of the project area. The remaining section consists of over 33.0 acres that are currently cultivated in sugarcane (Figure 4).

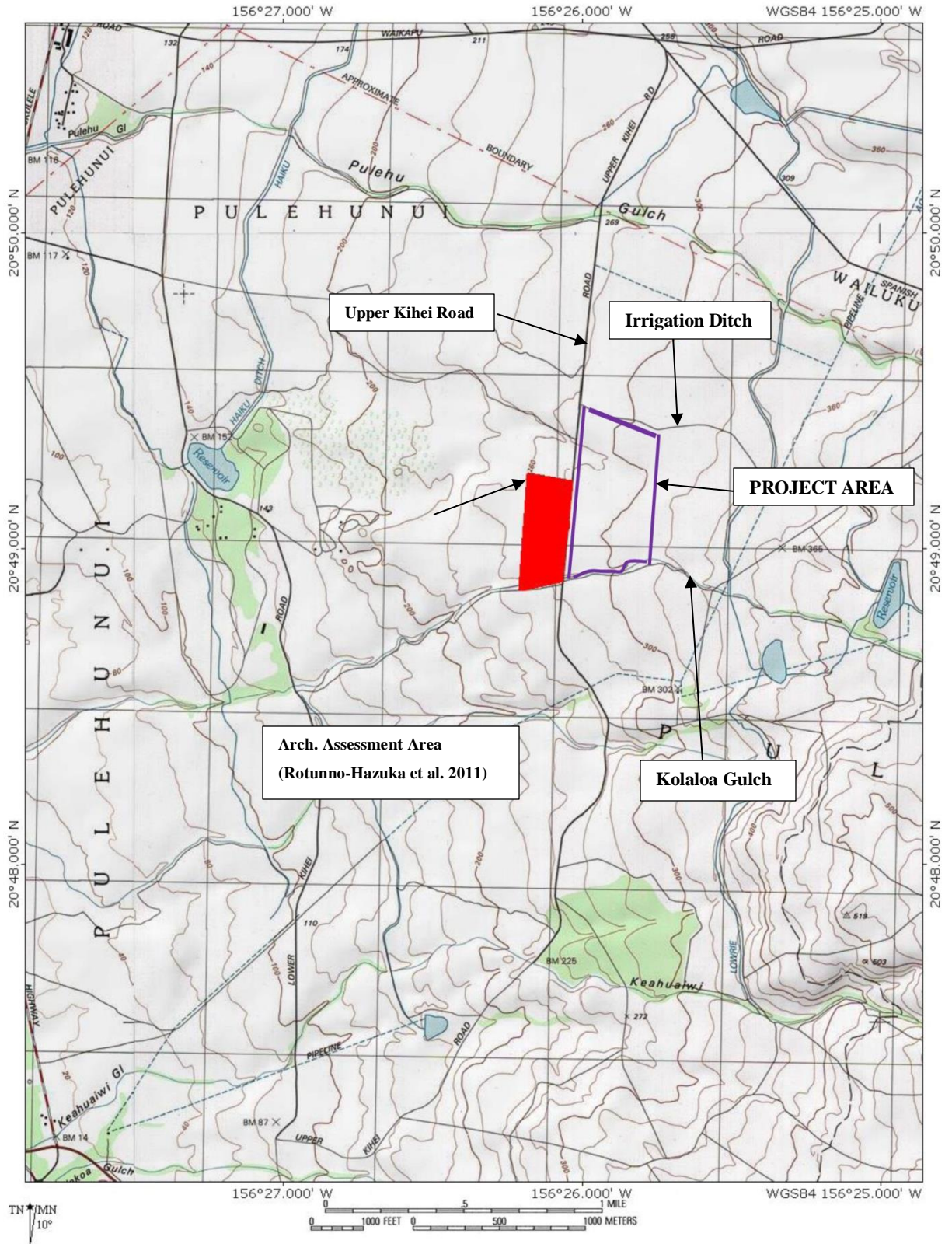


Figure 1. Location of Current Project Area (purple) and Previous Archaeological Assessment (red)

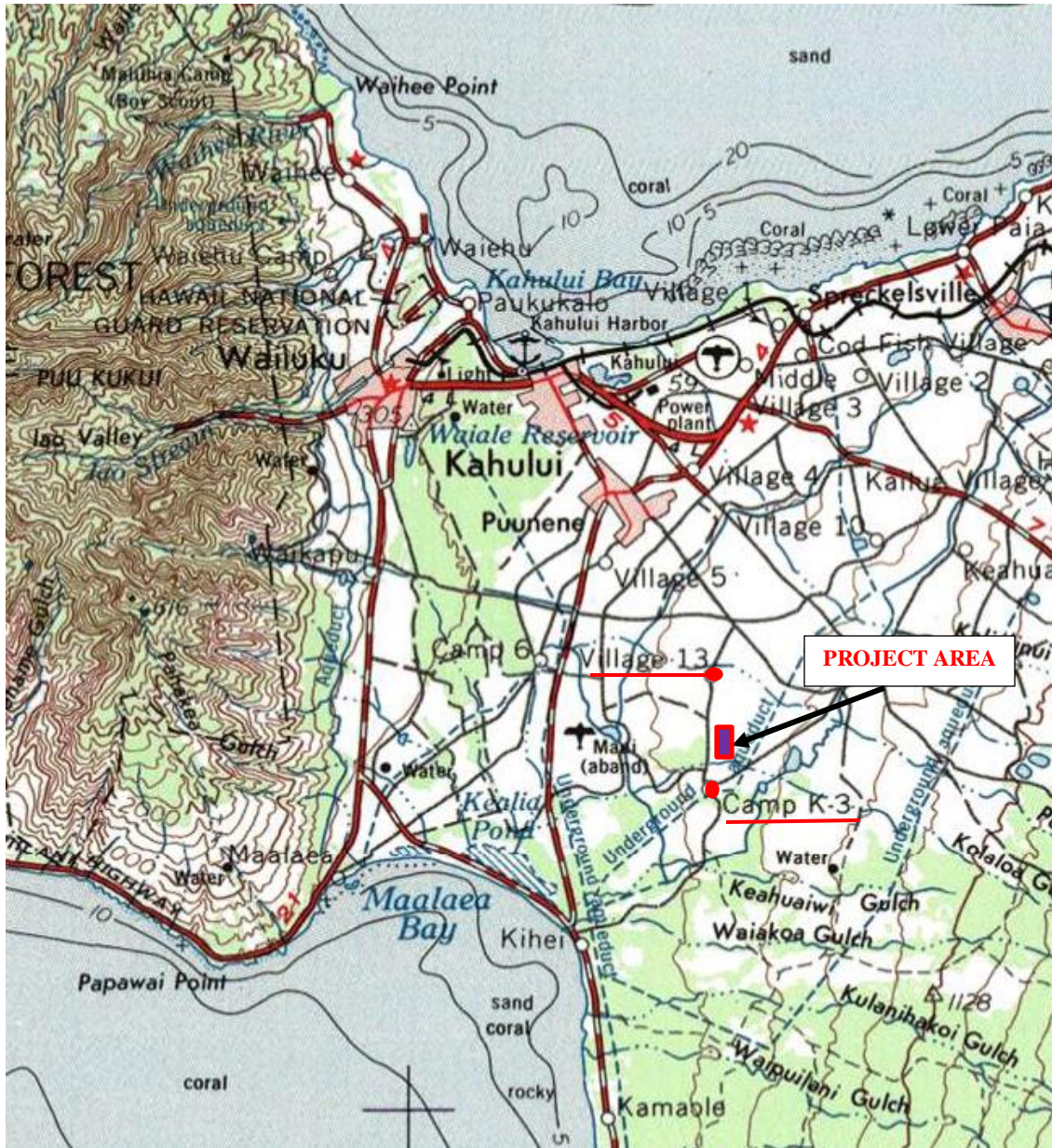


Figure 2. USGS Quadrangle Showing Location of Project Area (purple and red) and Various Plantation Camps Including Kihei Camp 3 and Camp 13

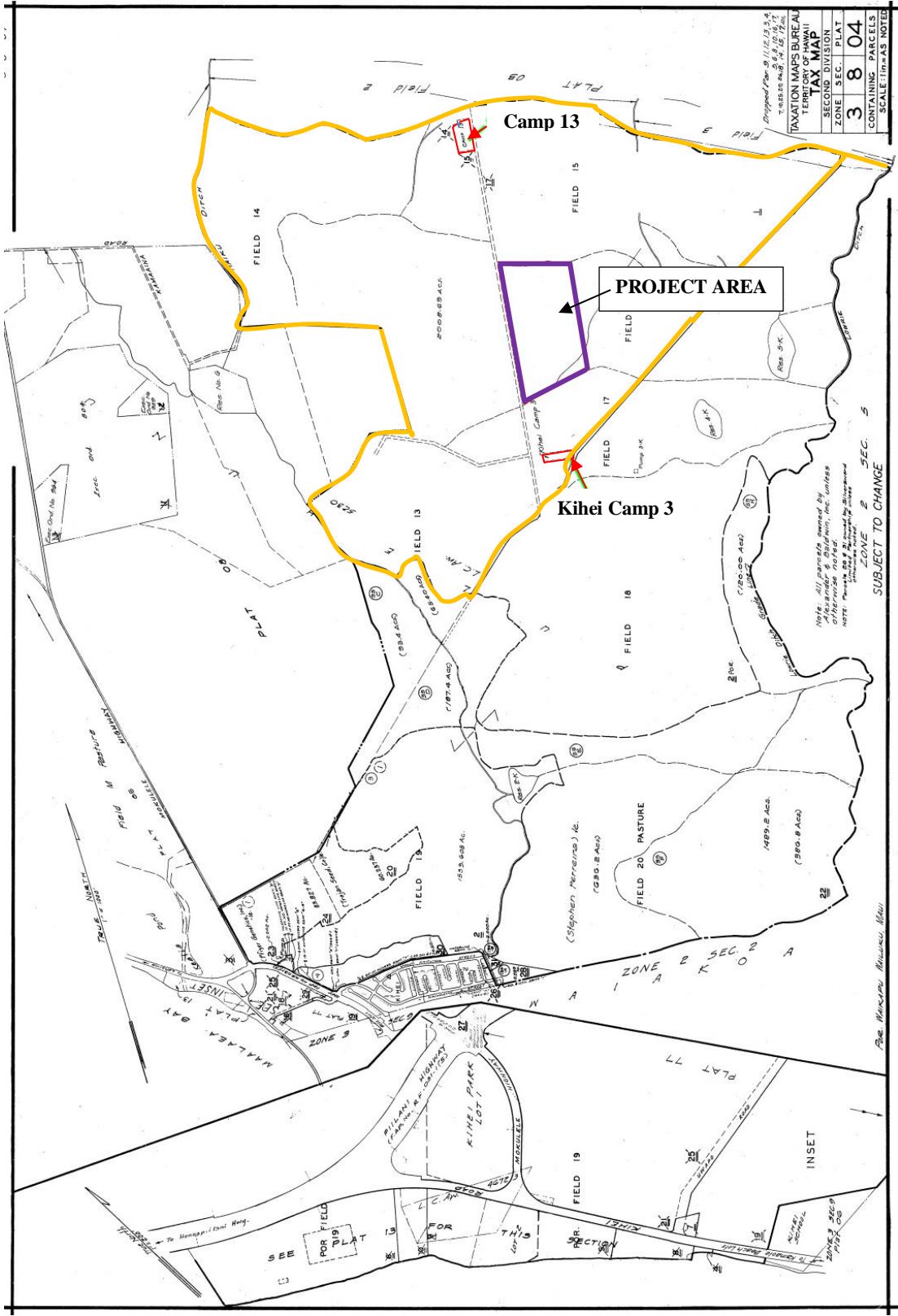


Figure 3. Tax Map Key 3-8-004 Showing Location of Project Area (purple), Plantation Camps 13 and 3 (red), LCA 5230 and extent of Parcel 1 (TMK: (2) 3-8-004:001) (gold)

EXISTING PROJECT CONDITIONS

The subject parcel is presently under various stages of cultivation. The first test area comprised an 8.8-acre **section of land** in the southwest corner. This portion was previously harvested and a drainage basin was constructed. The area adjacent to the drainage contains large linear stockpiles for safety purposes, to prevent vehicular and pedestrian traffic from entering the drainage area. The remaining 33.0-acres of the project area was cultivated in sugar cane.



Figure 4. Overview from the south of 8.8 acre portion of Project Area

ENVIRONMENTAL SETTING

The subject parcel is within the *ahupua`a* of Pūlehu Nui, a narrow triangular shaped section of land that stretches 15 miles at its base on the sand plains of central Maui, abutting and east of Waikapū *ahupua`a*, to a point at the peak of Kilohana on the rim of Haleakala (Tuggle 2001:12). Pūlehu Nui was part of the traditional *moku* Kula but is now part of the modern district Wailuku (Figure 5). As exhibited on Figure 5, Pūlehu Nui is bounded by a portion of Waikapū *ahupua`a* to the west, Wailuku *ahupua`a* to the north and by **Kula Moku** on the remaining sides. A very small portion of Pūlehu Nui is adjacent to the coast on the southwest.

Soils of the project area according to the USDA and Soil Survey Maps shows six soil zones within the project area; Alae cobbly sandy loam (AcA) 0 to 3% slope, Pulehu silt loam (PpB) 3 to 7%, Pulehu cobbly silt loam (PrB) 3 to 7%, Pulehu clay loam (PsA) 0 to 3% slope, and Waiakoa very stony silty clay loam (WgB) 3 to 7% slope, and Waiakoa extremely stony silty clay loam (WhB) 3 to 7% slope (Figure 6). The total area is occupied by 4.8% AcA, 10.8% PpB, 52.9% PrB, 6.5% PsA, 24.3% WgB, and 0.7% WhB. The Pulehu series consist of well-drained soils on alluvial fans and stream terraces around Maui. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The Waiakoa series consist of well-drained soils on uplands of Maui. These soils developed in material weathered from basic igneous rock. The upper part of profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet.

All soils can be utilized in multiple ways; truck crops, pasture lands, home sites and wildlife habitats, however in this instance the primary use was sugarcane cultivation and a rock quarry plant (Figure 7).

Test trenches were placed across the project area to obtain a representative sample of the subsurface conditions and indicate that soils generally consist of dark reddish brown to light brownish gray with moderate variability due to burning episodes associated with sugarcane (Figure 8). Soils contain high frequencies of cobbles, and the surface lacks humic layer components. Trenches near the southern boundary exhibit lenses of black cinders and is consistent with what mining operations have encountered while drilling and blasting (pers. Comm. with Mr. Gomes).

The climate for these two zones is typically dry, in particular the low elevation areas of which the current project are falls. Annual rainfall is less than 35 inches and occurs primarily in winter months; additionally mean annual air temperature falls between 73 and 75 degrees. Surface streams are absent however the large Kolaloa Gulch bounding the project area to the south may run under time of heavy rain.

Vegetation within the project area consists of the cultivated sugarcane (*Saccharum officinarum*) and various other unidentified weeds and grasses. It was observed that concentrations of these unidentified weeds and grass were present within Kolaloa Gulch (see Figure 7).



Figure 5. Map of Maui Showing Traditional Kula Moku and Pūlehu Nui Ahupua`a (adapted from Tomonari-Tuggle-2001)



Figure 6. Location of Project Area on Web Soil Survey Map (outlined in blue)



Figure 7. Aerial Photograph of Project Area (purple outline)

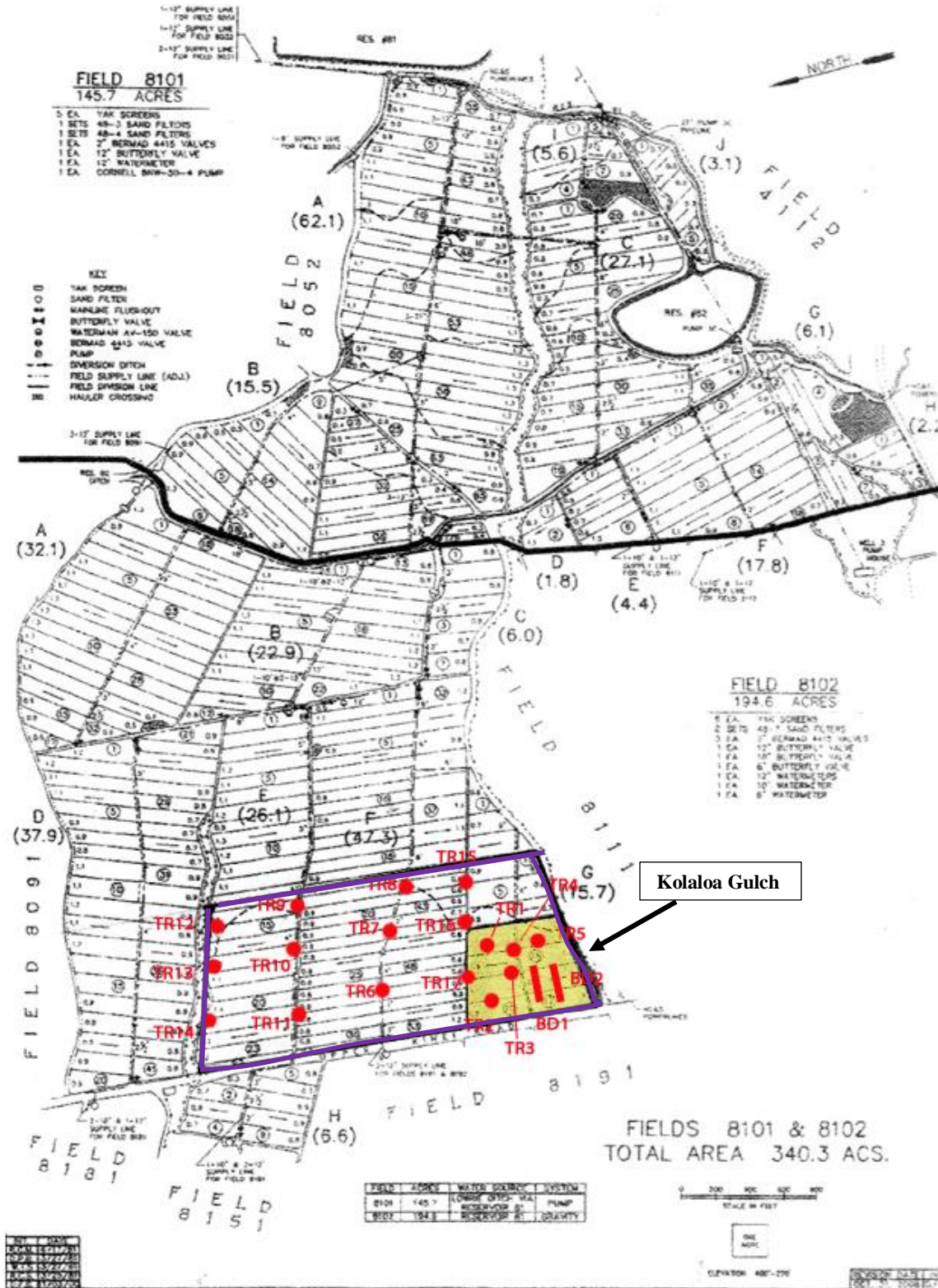


Figure 8. Sugar Cane Field Map Showing Project Area and Test Excavations (TR's 1-17 and BD's 1-2) (note yellow highlighted area is the 8.8 acre section of the project area)

BACKGROUND

As this report is an archaeological assessment, a brief background of the subject parcel and its surroundings is presented here. For a detailed background study of the Pūlehu Nui and Waikapū *ahupua`a*, the reader is referred to Tomonari-Tuggle et al. (2001) and Hill et al. (2007).

Based on the background research, it appears that Pūlehu Nui was actively settled during both the pre-Contact and historic period era's and that most of the population appeared to be centered within the *mauka* and *makai* areas. After the Plantation Camps were razed, cultivation of sugarcane continued and ranching also became a dominant activity within this intermittent zone.

LAND TENURE

The project area is situated within LCA 5230 which is comprised of approximately 1668 acres and was awarded to Keawemahi by the King in 1843 (see red arrows Figure 3). This grant was subsequently assigned Royal Patent 8140 but unfortunately no land use was ascribed to Keawemahi's land grant (Waihona `Aina 2000). As exhibited on Figure 3, no other LCA or Grants are within the immediate vicinity; however thirteen land commission awards were applied for within the *ahupua`a* of Pūlehu Nui, most of which were more inland and comprised of *kula* lands (Hill et. al. 2007:26). These *kula* lands were utilized for the cultivation of sweet potato and Irish potato. Hill also stated that one LCA was situated along the coast and referred to fishing rights.

PREVIOUS ARCHAEOLOGY

Few studies have been conducted within this central isthmus, intermittent area. The most notable investigations closest to the project area are presented below in Figures 9 and 10. A more comprehensive background section is presented in the Tomonari-Tuggle et al. 2001 and Hill et al. 2007.

The project area was subjected to a walk-through reconnaissance survey over two decades ago in 1990 by Archaeological Consultants of Hawaii (ACH). During this investigation, no historic properties were identified and ACH opined that no further archaeological work was necessary (Kennedy 1990: 2).

In 1991, Sinoto and Pantaleo conducted an archaeological inventory survey for the Proposed Kihei Gateway Complex in North Kihei and identified the footings of a bridge, Site 50-50-09-31, that was probably related to a cane railroad and Kihei Camp 1 (Sinoto and Pantaleo 1991) (see Figure 10).

In August of 1995 an inventory survey was conducted by Scientific Consultant Services for the Pu'unēnē Bypass/ Mokulele Highway. The pedestrian survey covered a portion of the Pūlehu nui and Wailuku *ahupua'a*. The area covered was approximately 10 miles and consisted primarily of active sugar cane fields. Survey expectations suggested that minimal to no archaeological evidence would be identified. Reasons for the lack of archaeological evidence were provided in the original report and are cited below: "Several factors may account for the lack of archaeological remains: extensive disturbance associated with prior sugarcane cultivation, highway and private construction activities... and/or little or no prehistoric occupation or use of the area." (Burgett and Spear 1997: 7).

In 1999 an AIS was conducted of The Naval Air Station Pu'unene (NASP) which was comprised of 1875 acres. The survey identified five sites composed of 180 features. The five sites are State Inventory of Historic Places 50-50-09-4164, Sugarcane plantation features Site 4800, Post-war ranching features, Site 4801, Old Kihei railroad bed Site 4802, and the Haiku Ditch and reservoir 4803 (Tuggle 2001:70). The NASP dates to just prior to WWII and was composed of multiple facilities, of which the "Hot Mix Plant" appears to be within the current project area (field 13). When the 1999 survey was conducted the proposed quarry location (current project area) was known and is shown in the eastern most portion of the NASP (Tuggle 2001:71). Features in the sugarcane plantation of Site 4800 consist of canals, roadbeds, and miscellaneous glass and porcelain fragments from Camp 6. Features interpreted as Post-war ranching elements from Site 4801 consist of corrals, watering troughs and fence post. The Old Kihei railroad bed, Site 4802 was identified as a concentration railway spikes and berm consistent with railroad berm forms.

The field inspection of 81.50 acres by Cultural Surveys Hawaii, Inc. (Hill et. al. in 2007) produced negative findings.

In 2010, ASH performed an Archaeological Assessment (AA) of 24.476 acres (Rotunno-Hazuka et. al 2011). During the procedures, a total of 20 backhoe trenches were executed across the project area that were negative for intact cultural remains. The excavations revealed that the project area had been disturbed by continuous agricultural activities and recent grading for rock mining. During the initial pedestrian surface survey, isolated marine shells, recent glass shards and concrete fragments along with agricultural materials consisting of plastic sheeting, irrigation tubing, PVC pipes and etc. were observed and scattered within the S-1 and S-2 areas.

Documentation of the soil profiles exhibited that all trenches contained upper layers of the

agricultural till zone within Layers I and II and these layers contained gravel, the above agricultural materials, fragments of glass and metal bolts for machinery. Most trenches contained about 3.0 ft. of soil overlying decomposing bedrock and or dense bedrock, Layers III and IV. The thickest soil deposits within the project area were noted along Kolaloa Gulch, and appeared to be from episodic flooding and or intentional buildup of the road for flood control purposes. The marine shells noted on the surface likely originated from imported sand (Grade B) material which is utilized as a soil conditioner providing nutrients (phosphorus) for the sugarcane (personal communication with Hawaiian Cement personnel).

The AA further recommended that,

“..As no intact deposits of cultural materials were noted during the survey, no further archaeological work including monitoring is warranted for the subject parcel. Similarly, it appears that future archaeological investigations in the adjoining areas may be unwarranted unless historic plantation camps are situated within the subject parcels, and or significant deposits are discovered in the future. In those parcels which contain plantation camps, subsurface testing should be concentrated around the camp unless scattered cultural deposits or surface structural remains are noted elsewhere during the pedestrian sweep (Rotunno-Hazuka et. al 2011:63).

However, SHPD recommended that inventory survey procedures should be conducted prior to rock mining activities.

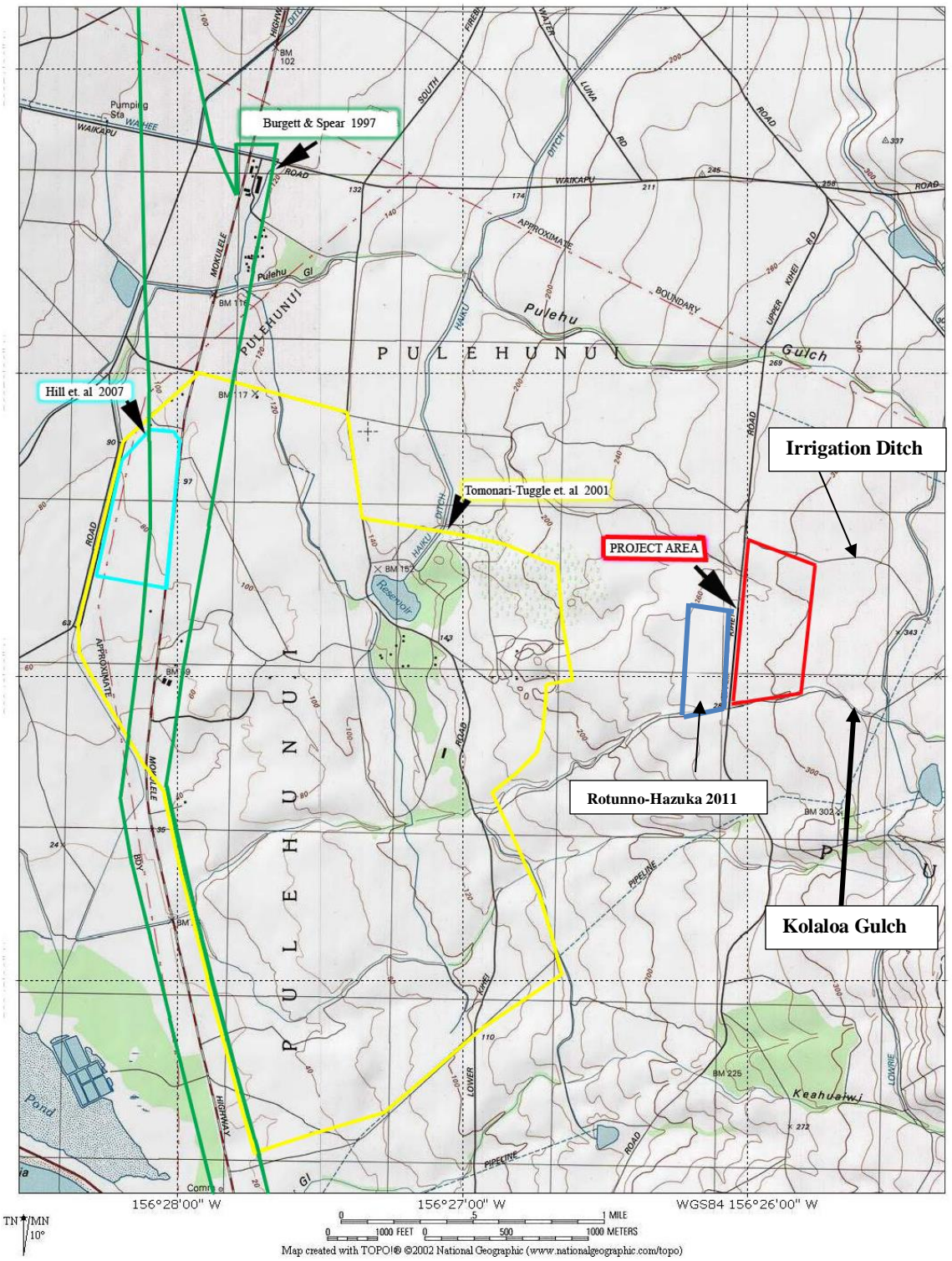


Figure 9. Plan View Map Showing Previous Archaeological Studies near the Project Area

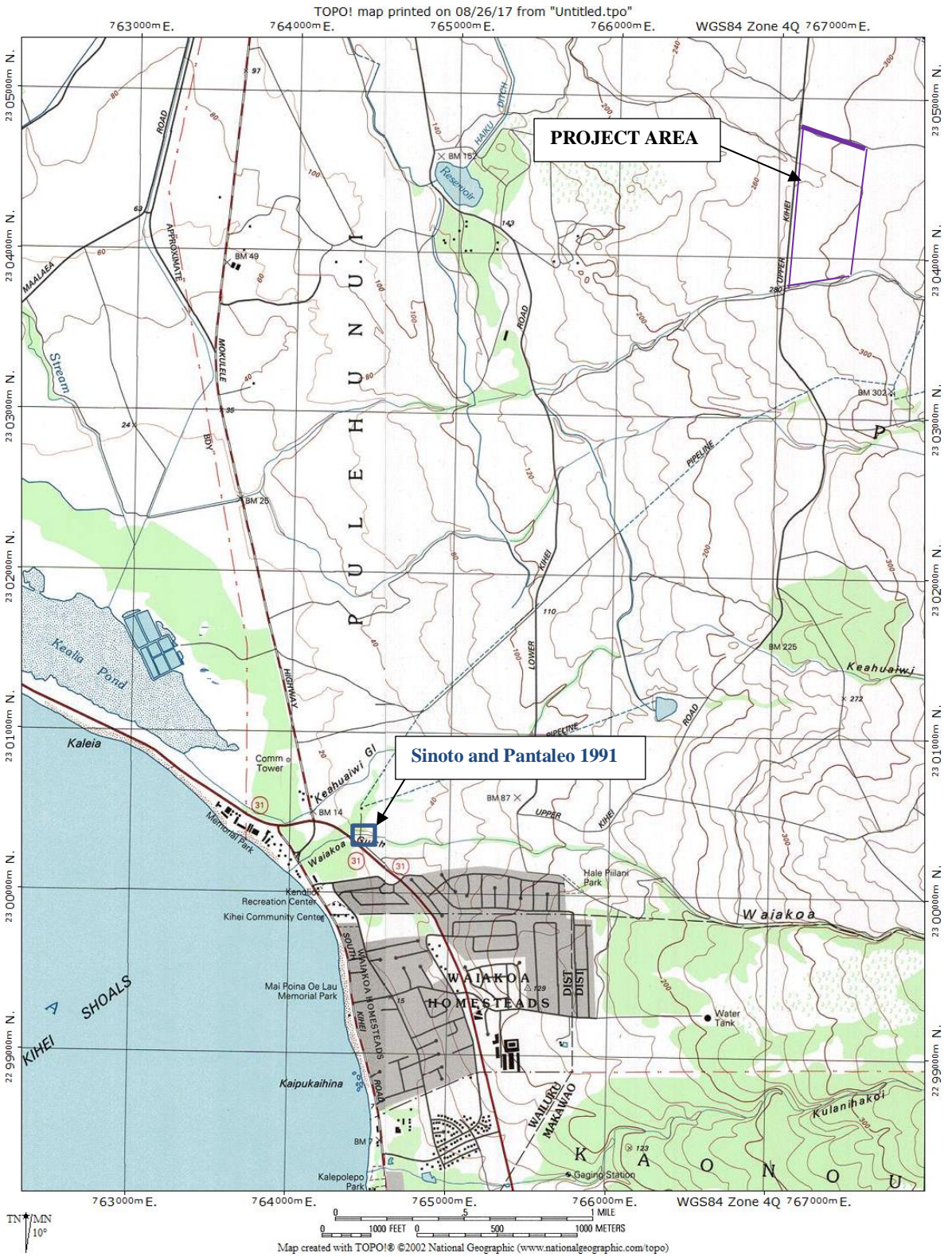


Figure 10. USGS Quadrangle Map Showing Previous Archaeological Studies near Project Area

SITE EXPECTABILITY

Based on the aforementioned information, the project area lies within the intermittent zone which was marginally occupied. It may have contained pre-Contact temporary habitation with small agricultural features, *mauka-makai* trails and possibly ceremonial structures such as *koa*.

Traditional settlement patterns would have centered around the shoreline and near the several fishponds within the area as well as along the lower and upper slopes of Haleakala. Historically, this same settlement pattern would have occurred but with the addition of Plantation Camps positioned along old access roads and railroads. Lastly, ranching era sites consisting of walled enclosures constructed from rock walls or barbed wire, cattle troughs, loading chutes and etc., may have been extant; however due to the extensive grading activities from sugar cane cultivation these historic properties may not have survived.

METHODS AND PROCEDURES

Prior to the commencement of field work, archaeological, historical and geographical archival researches were conducted at the SHPD and ASH libraries. Fieldwork and report synthesis and preparation was conducted by Archaeological Services Hawaii, LLC in 2014 and 2017. Recent revisions and updates to the report were prepared under the supervision of Mr. Reynaldo Nico Fuentes (M.A.) of Atlas Archaeology.

FIELD WORK

Fieldwork was conducted on the 14 and 28 June 2014 and the 3 and 12 July 2014 by archaeologist Mr. Reynaldo N. Fuentes (B.A.), archaeological supervisor Ms. Jenny O'Claray-Nu and project manager Ms. Lisa Rotunno-Hazuka for a total of 55 person hours. Overall coordination and supervision of the project was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.) was the Principal Investigator. Drafting was performed by Ms. Mia Watson.

The parameters of the project area were verified by comparing current landmarks (Upper Kihei Rd, Kolaloa Gulch, sugarcane fields) and natural features along with information provided on TMK maps and aerial photographs provided by the client. Field methods consisted of a pedestrian **survey with 5.0 m transect intervals** across the entire project area, with the exception of the sugarcane fields where only the cane roads were traversed. The purpose of this walk-through survey was two-fold; to ascertain if any cultural materials were present on the surface and to determine the placement of the backhoe trenches.

Due to an absence of surface structural remains, subsurface testing through backhoe test trenches was conducted. The project area was comprised of two sections, cultivated (78%) and non-cultivated (22%), and portions of the cultivated section were inaccessible for subsurface testing; thus, both non-probabilistic and variations of probabilistic statistical sampling methods were employed. Non-probabilistic strategies may be utilized in areas with accessibility issues, areas with more prominent sites or when the experienced archaeologist decides the testing method based on intuition; however, some form of probabilistic sampling is warranted (Renfrew and Bahn 1996:72). Two probabilistic methods for subsurface testing were utilized. The first method was a form of stratified random sampling where the project area is divided into its natural zones, cultivated (33-acres) and non-cultivated (9%) and the percentage of testing should be equal to the ratio represented by the zones; thus, the cultivated area would comprise 78% of the testing, and the non-cultivated area 22%. (Renfrew and Bahn 1996:72). Since only the roadways of the cultivated section were accessible for subsurface testing (pedestrian survey was conducted), the acreage would actually consist of approximately 9.0 acres for the roadways, and the percentages of testing for both sections would be approximately 50%. The second probabilistic method was systematic random sampling where the areas to be analyzed are chosen at random with a subsequent pre-determined strategy (Hester et al. 2009). "Use of this sample technique guarantees more uniform coverage of an area than would likely occur with simple random sampling" (Hester et al. 2009:29). For the cultivated area, the systematic random method was used and comprised trenching along the roadways were spaced approximately 50.0 m apart. The cultivated area consisted of 33.0-acres and only the roadways (approximately 9.0-acres) were accessible for subsurface testing and consisted of twelve (12) trenches. For the non-cultivated area in the SW quadrant, seven (7) test excavations that consisted of five (5) trenches and two (2) bulldozer cuts were implemented at this 8.8-acre area or approximate 9.0-acre section. There was no pre-determined measurement between the trenches but the trenches and bulldozer cuts were placed to provide uniform coverage across the entire area (see Figure 11). Therefore, a slight modification of the simple random sampling technique was used at the non-cultivated section, and a variation of the stratified random sampling technique was used at both sections, as exemplified by the percentage of testing. The cultivated roadway area contained 63% of the subsurface testing, and the non-cultivated area encompassed 37%, although the goal for each section was 50%. Regardless of the modifications to these statistical sampling methods, the data obtained from the sample set provided reliable probability information.

Backhoe trenches were excavated utilizing a 3.0 ft. wide bucket and were supervised and monitored by the archaeological personnel. Trenches were plotted utilizing tape and compass to a known surveyed point on the map. All trenches were documented through scaled stratigraphic profiles (Appendix A), photographs and overall dimensions.

LAB WORK

All soil samples collected during the undertaking will be accessioned and analyzed for color and texture utilizing the Munsell color system and the USDA textural classification system. No charcoal samples, midden and or artifacts were collected during the current course of work. All recovered samples, field notes, maps, and photographs generated in connection with the current project are the property of ASH, LLC and will be curated at Archaeological Services Hawaii, LLC, in Wailuku, Maui.

RESULTS

A total of 17 backhoe trenches (TR 1-17) and 2 bulldozer cuts (BD 1-2) were performed in the project area and averaged 4.0 m long by 1.00 m wide and ranged in depth from 0.80 m to 3.0 m (see Figure 11, Table I and Appendix A). As previously discussed, the project area contained two sections, the 8.8-acre non-cultivated section in the SE quadrant and the remaining cultivated section comprised of approximately 33.0-acres. TRs 1-5 and BD 1-2 were placed in the 8.8-acre section and TR's 6-17 were positioned in the 33.0 acres. During the pedestrian survey, scattered agricultural materials comprised of black plastic, PVC fragments, and black irrigation tubing.

All trenches were negative for buried cultural remains and contained a general tripartite or four layer stratigraphic sequence. The four layer soil profile consisted of two soil layers (Layers I and II), overlying a silty loam decomposing "saprolitic" basalt (Layer III) and bedrock (Layer IV). The three strata sequence consisted of Layers I-III where bedrock was absent. The overall, project wide stratigraphic sequence was as follows:

Layer I is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.

Trenches that exhibited the four strata overall project stratigraphy were TRs 1, 2, 4, 5, BD1 and BD2, and the tripartite soil profile was encountered at TRs 6, 10, 11, 13, 15 and 17. The remaining trenches, TRs 3, 7, 8, 12 and 16 with the exception of TR9, contained the above strata; however, the overall general sequence was interrupted by environmental or geological events, exhibited as alluvial layers comprised of water worn pebbles and silt lenses, and subangular, pyroclastic cobbles (similar to the material of small cinders) and/or coarse gravel lenses. TR9 contained a single disturbed layer overlying basalt bedrock (LIV). The stratum, identified at TR9 was Layer III of the overall stratigraphic record and therefore indicated the past disturbances of the area where Layers I and II were removed. Decomposing basalt and or bedrock was observed from 0.46 m (TR2) to 2.90 mbs (TR13) but averaged 0.80 m deep. TRs 1-17 and BD1-2 are discussed below and associated stratigraphic profiles presented in Appendix A.

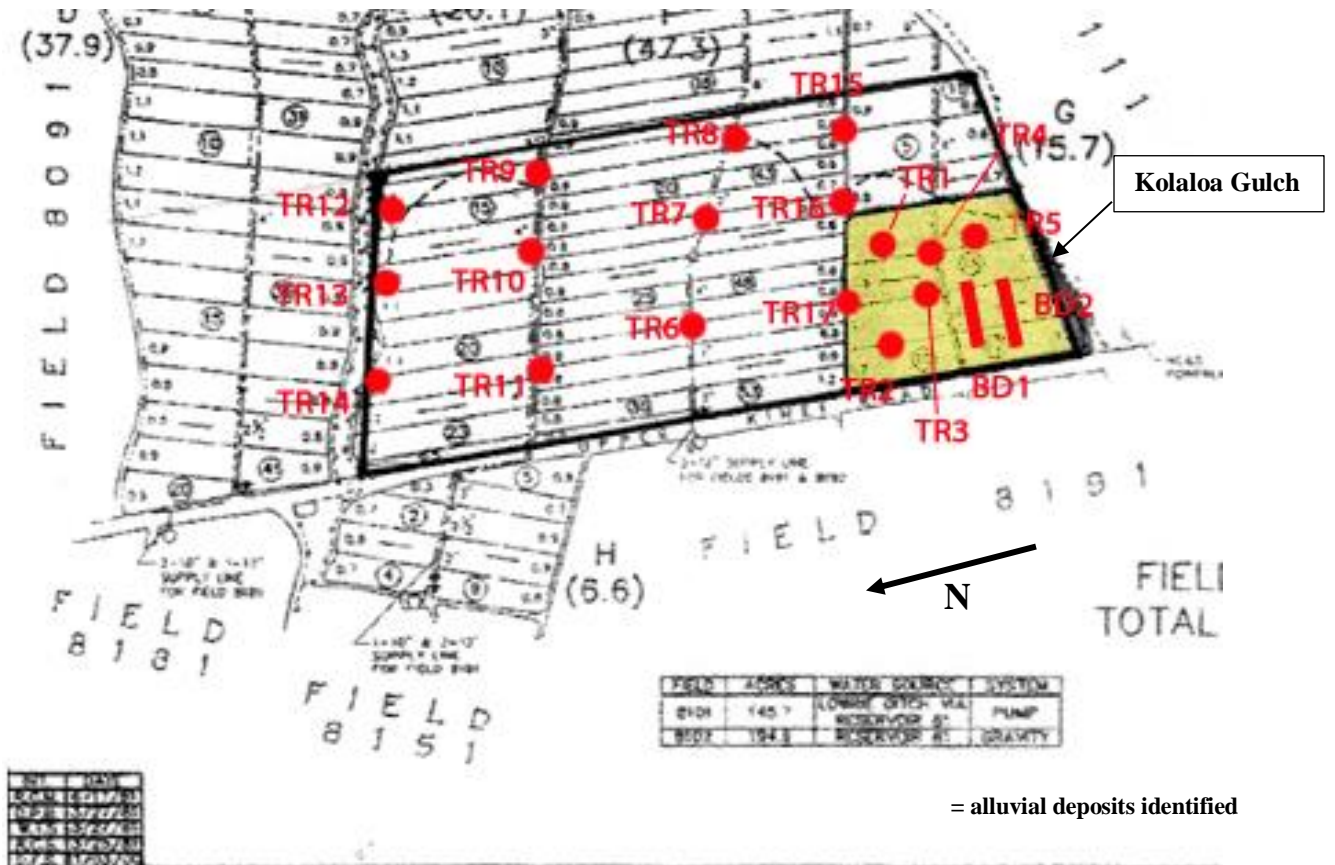


Figure 11. Enlarged Map Showing Location of TRs 1-17 and BD 1-2

Table I. Summary of Backhoe Trenches 1-17 and BD's 1 and 2

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENT TR / Profile	LAYER I	LAYER II	LAYER III	LAYER IV	LAYER V	LENS	COMMENTS
1	8	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
2	7	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
3	9	1.5	2	360° 270°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/4	10yr5/1	gravel	sterile
4	5	1.5	2	340° 70°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
5	9	1.5	2	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
BD 1	12	5	1.4	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
BD2	15	5	1.6	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
6	4.1	1.5	1.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
7	3.9	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	Sterile
8	4	1.5	1.8	270° 360°	7.5YR 3/3	7.5yr 3/1	5YR 3/4	7.5yr 3/1	10yr5/4	alluvial	Sterile
9	3.9	1.5	0.8	270° 360°	10YR 5/4	n/a	n/a	n/a	n/a	NO	Sterile
10	4	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
11	4	1.5	2.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
12	4	1.5	2.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	7.5yr 2.5/1	10yr5/1	gravel/alluvial cinder	sterile
13	4	1.5	3	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/1	n/a	n/a	NO	Sterile
14	4	1.5	2.05	270° 360°	7.5YR 3/3	5YR 3/4	5YR 4/6	5YR 3/4	10YR 5/4	alluvial /gravel	Sterile
15	4	1.5	1.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
16	4	1.5	1.45	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	sterile
17	4	1.5	1	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile

TRENCH 1

TR-1 was placed within the 8.8 acre area in the NE corner of the project area (see Figure 11, Table I and Appendix A). It measured 8.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 12 and 13). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (39-90cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (88-140cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".

Layer IV (136-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.



Figure 12. Overview Photograph of Trench 1 (View to North)



Figure 13. Photograph of Trench 1 West Wall

TRENCH 2

TR-2 was placed within the 8.8acre area in the NW corner of the project area (see Figure 11, Table I and Appendix A). It measured 7.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 14). No cultural materials were observed.

Layer I (0-38cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (38-50cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (46-120cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (120-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.



Figure 14. Photograph of Trench 2 East Wall

TRENCH 3

TR-3 was placed within the 8.8-acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 9.0 m long by 1.5 m wide by 2.0 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a five layer stratigraphic sequence (Figures 15 and 16). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (38-89cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (82-160cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".

Lens/Layer IV (159-200cmbs+) is a yellowish brown (10yr 5/4), gravelly sub-angular layer, non-plastic, non-sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the region.

Layer V (160-200cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 15. Overview Photograph of Trench 3 (View to East)

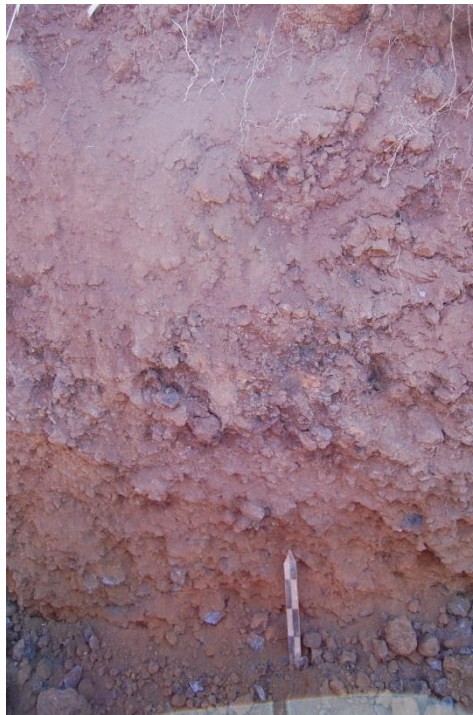


Figure 16. Photograph of TR-3 North Wall

TRENCH 4

TR-4 was placed within the 8.8acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 5.0 m long by 1.5 m wide by 2.0 m deep and was oriented 340° degrees (Figure 17). This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 18). No cultural materials were observed.

Layer I (0-58cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (40-100cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (98-142cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".

Layer IV (138-180cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This is the bedrock layer.



Figure 17. Overview Photograph of Trench 4 (View to North)



Figure 18. Photograph of Trench 4 West Wall

TRENCH 5

TR-5 was placed within the 8.8 acre area in the SE portion of the project area (see Figure 11, Table I and Appendix A). It measured 9.0 m long by 1.5 m wide by 2.0 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 19 and 20). No cultural materials were observed.

Layer I (0-42cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (38-92cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (98-174cmbs) is a greyish brown (10YR5/1) and yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (170-180cmbs+) is a gray (10yr 5/1), basalt bedrock, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 19. Overview Photograph of Trench 5 (View to North)



Figure 20. Photograph of Trench 5 West Wall

BULLDOZER CUT 1

BD-1 was placed within the 8.8 acre area in the SW portion of the project area (see Figure 11, Table I and Appendix A). It measured 12.0 m long by 1.5 m wide by 1.4 m deep and was oriented 270° degrees (Figure 21). This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 22). No cultural materials were observed.

Layer I (0-32cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (30-50cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (50-136cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".

Layer IV (136-140cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 21. Overview Photograph of Bulldozer Cut 1 (View to West)



Figure 22. Photograph of Bulldozer Cut 1 North Wall

BULLDOZER CUT 2

BD-2 was placed within the 8.8 acre area in the SW portion of the project area (see Figure 11, Table I and Appendix A). It measured 15.0 m long by 1.5 m wide by 1.6 m deep and was oriented 270° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 23 and 24). No cultural materials were observed.

Layer I (0-58cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (56-100cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (98-139cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (136-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 23. Overview Photograph of Bulldozer Cut 2 (View to West)



Figure 24. Photograph of Bulldozer Cut 2 North Wall

TRENCH 6

TR-6 was placed within the 33.0 acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.1 m long by 1.5 m wide by 1.6 m deep and was oriented 270° degrees (Figure 25 and Table I). This section was an active cane fields and therefore the location of this trench was along a known haul rd. Testing revealed a three layer stratigraphic sequence (Figure 26). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-90cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (86-160+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".



Figure 25. Overview Photograph of Trench 6 (View to West)



Figure 26. Photograph of Trench 6 South Wall

TRENCH 7

TR-7 was placed within the 33acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 3.9 m long by 1.5 m wide by 2.0 m deep and was oriented 270° degrees along the existing cane haul road (Figure 27 and Table I). Testing revealed a three layer sequence, where subangular, pyroclastic cobbles, similar to small cinder materials were observed in Layer III (Figure 28). No cultural materials were observed.

Layer I (0-20cmbs) is the till zone and comprised of a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation materials.

Layer II (18-170cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (168-200cmbs+) is a black (7.5yr 2.5/1) coarse gravels and pyroclastic small cobbles with greyish black silty clay, moist, non-plastic, non-sticky, medium grain, firm. This layer was also observed in TR16.



Figure 27. Overview Photograph of Trench 7 (View to North)



Figure 28. Photograph of Trench 7 North Wall

TRENCH 8

TR-8 was placed within the haul road in the central portion of the 33.0 acre area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.8 m deep and oriented 270° degrees. TR-8 contained a five layer stratigraphic sequence indicative of alluvial and or flood plain deposits (Figures 29 and 30). No cultural materials were observed.

Layer I (0-24cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Lens/Layer II (21-80cmbs) is a very dark gray (7.5yr 3/1), gravelly silt, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn basalt pebbles most likely associated with a former stream, or alluvial event.

Lens/Layer III (79-110cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer/Lens IV (110-146cmbs) is a very dark gray (7.5yr 3/1), gravelly silt, non-plastic, non-sticky, crumb, firm. This layer is the same as Lens/Layer II and contained low frequencies of water worn basalt pebbles. Since Layer III interrupts the alluvial deposits of Layers II and IV, this profile likely exhibits periodic flood events and subsidence.

Layer V (142-180cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprophytic layer".



Figure 29. Overview Photograph of Trench 8 (View to East)



Figure 30. Photograph of Trench 8 North Wall

TRENCH 9

TR-9 was placed within the 33.0 acre area in the eastern portion of the project area (see Figure 11, Table I and Appendix A). It measured 3.9 m long by 1.5 m wide by 0.8 m deep and was oriented 270° degrees (Figures 31 and 32). Testing revealed a single stratum that was negative for cultural materials and similar to Layer III of the overall general stratigraphic sequence. This single stratum terminated upon bedrock with decomposing basalt.

Layer I (0-80cmts) is a yellowish brown (10yr 5/4), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation indicating this layer was part of the "till zone".



Figure 31. Overview Photograph of Trench 9 (View to East)



Figure 32. Photograph of Trench 9 North Wall

TRENCH 10

TR-10 was placed within the 33.0 acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.5 m deep, oriented 270° degrees and placed in the cane haul road. Testing revealed a three layer stratigraphic sequence (Figures 33 and 34). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-74cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (60-150+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".



Figure 33. Overview Photograph of Trench 10 (View to East)



Figure 34. Photograph of Trench 10 North Wall

TRENCH 11

TR-11 was placed within the western portion of the 33.0 acre area within a cane haul road (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.2 m deep and was oriented 270° degrees. Testing revealed the same three layer stratigraphic sequence as observed within TR-10 (see Figure 34). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (16-80cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (72-120+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

TRENCH 12

TR-12 was placed in the NE portion of the 33.0 acre section (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 2.6 m deep, oriented 270° degrees and situated within a haul road (Figures 35 and 36). TR-12 contained a five layer stratigraphic sequence that was devoid of cultural materials.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-160cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Lens/Layer III (158-186+cmbs) is a yellowish brown (10yr 5/4), gravelly silt loam, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn basalt pebbles possibly associated with alluvial deposition.

Lens/Layer IV (182-190cmbs) is a black cinder (7.5yr 2.5/1), gravelly silt layer, non-plastic, non-sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the region.

Layer V (189-210 cmbs) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer bedrock.



Figure 35. Overview Photograph of Trench 12 (View to West)



Figure 36. Photograph of Trench 12 North Wall

TRENCH 13

TR-13 was placed within the 33acre area in the north central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 3.0 m deep and was oriented 270° degrees. This section was an active cane fields and therefore the location of this trench was along a known haul rd. Testing revealed a three layer stratigraphic sequence (Figures 37 and 38). No cultural materials were observed.

Layer I (0-18cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (16-295cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (295-305cmbs+) is a gray (10yr 5/1), basalt bedrock layer, non-plastic, non-sticky, massive, indurated.



Figure 37. Overview Photograph of Trench 13 (View to East)



Figure 38. Photograph of Trench 13 North Wall

TRENCH 14

TR-14 was placed along haul road within the 33.0 acre area in the north central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 2.05 m deep and was oriented 270° degrees. TR-14 contained a five layer stratigraphic sequence and no cultural materials were observed (Figure 39).

Layer I (0-9cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (8-160cmbs+) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Lens/Layer III (160-1.85cmbs+) is a reddish brown (5yr4/6), pebbly silt loam, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn basalt pebbles most likely associated with alluvial deposition.

Layer IV (185-195cmbs+) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer V (195-205cmbs+) is a dark yellowish brown (10yr5/4), gravelly silt loam, slightly plastic, slightly sticky, crumb, friable.



Figure 39. (Left) Overview Photograph of Trench 14 (View to West); (Right) Photograph of North Wall Trench 14 (View to Northwest)

TRENCH 15

TR-15 was placed within the 33.0 acre area within the cane haul road located in the eastern portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.2 m deep, oriented 270° degrees and contained a three layer stratigraphic sequence that was negative for cultural materials (Figure 40).

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-81cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (81-120cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".

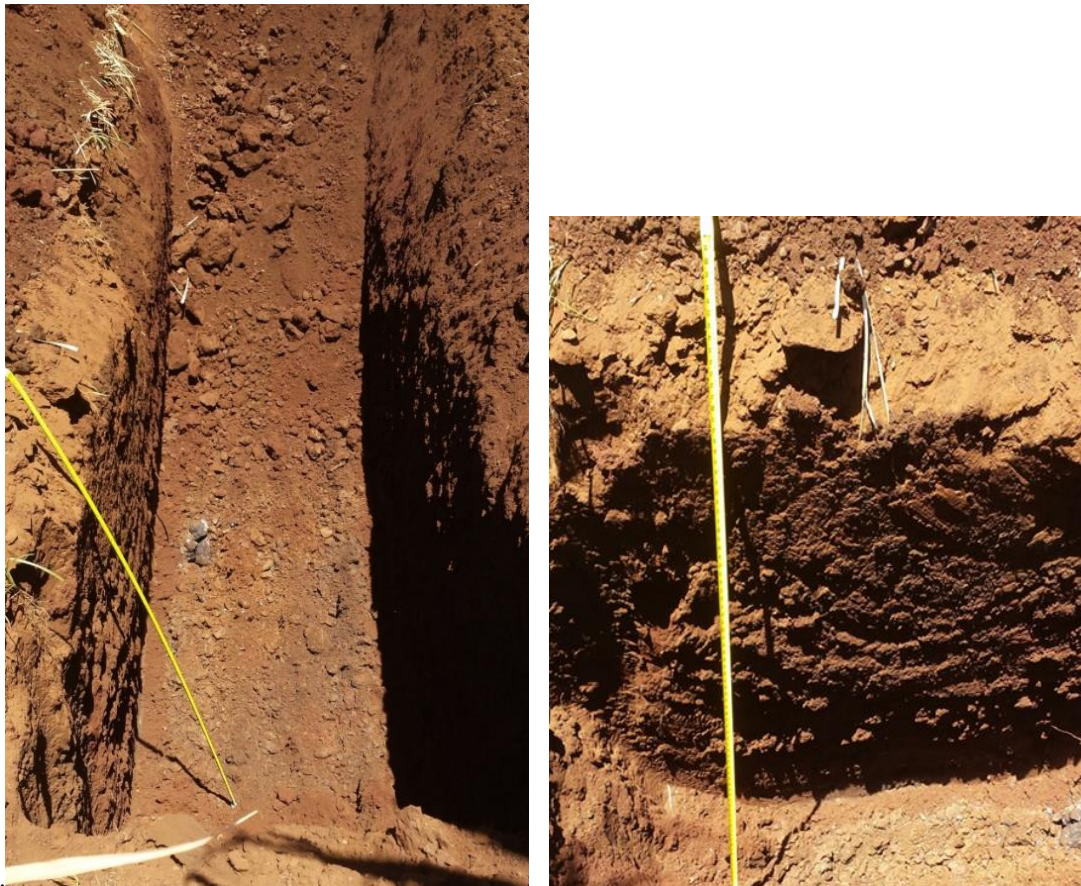


Figure 40. Photographs of TR-15 Overview (View to West) (left); and South Wall (right)

TRENCH 16

TR-16 was placed within the 33.0 acre area in the south central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.45 m deep, oriented 270° degrees and situated within a haul road. TR-16 contained a three layer stratigraphic sequence with the pyroclastic cobbles observed in TR-7 (Figures 41 and 42). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (20-78cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (68-150cmbs+) is a (7.5yr 2.5/1), greyish black silty clay with coarse gravels or small pyroclastic cobbles, non-plastic, non-sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the layer (similar to LIII in TR7).

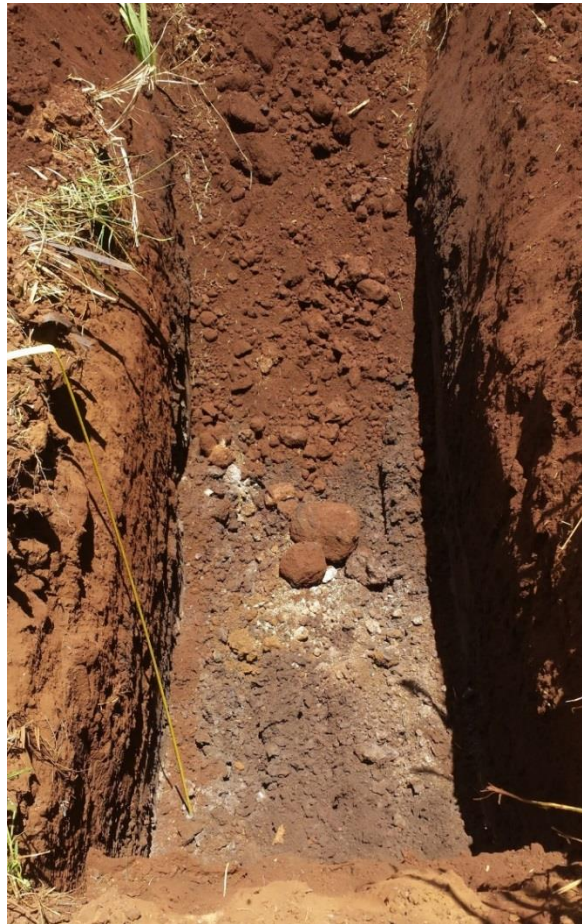


Figure 41. Overview Photograph of Trench 16 (View to West)



Figure 42. Photograph of Trench 16 North Wall

TRENCH 17

TR-17 was placed along the haul road within the 33.0 acre area in the south central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.0 m deep and was oriented 270° degrees. Testing revealed a three layer stratigraphic sequence (Figures 43 and 44). No cultural materials were observed.

Layer I (0-13cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (10-90cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed

Layer III (85-105cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolytic layer".



Figure 43. Overview Photograph of Trench 17 (View to West)



Figure 44. Photograph of Trench 17 South Wall

DISCUSSIONS AND RECOMMENDATIONS

To ascertain the presence/absence of historic properties that could be adversely affected by proposed rock mining activities, inventory level procedures comprised of a pedestrian survey and subsurface testing were performed at the subject parcel. During the survey, no surface structural remains were recorded; however, irrigation and agricultural materials consisting of plastic sheeting, black irrigation tubing, and PVC pipes were scattered across the surface indicative of the compounded tilling disturbances from sugar cane cultivation. Subsurface testing consisted of 17 backhoe trenches (TRs 1-17) and 2 bulldozer cuts (BDs 1 and 2) executed at both sections of the subject parcel and resulted in negative findings. The sampling strategy for the subsurface testing comprised both probabilistic and non-probabilistic sampling methods. The purpose of the probabilistic sampling method was to obtain quantifiable data from the sample set (test areas) in order to make reliable conclusions about the entire area.

Trenches 1-5 and BD 1 and 2 were placed within the 8.8-acre non-cultivated section, and TRs 6-17 were positioned in the cultivated 33.0-acres. The 19 excavations at the project indicated a similar, overall stratigraphic sequence across the 42.0-acre project parcel. The soil profiles exhibited a 3 to 4 layer stratigraphic sequence comprised of two soil layers (Layers I and II) overlying saprolytic (decomposing) basalt and/or bedrock (Layers III and IV). Layer I was disturbed from continuous agricultural activities and identified as the agricultural till zone that extended from 0.10 m to 0.80 mbs, and averaged 0.40 m deep. The saprolytic basalt was recorded from 0.46 m to 2.90 mbs and averaged 0.80 m deep. Variations in this overall sequence were due to prior disturbances and periodic environmental events where lenses/layers of alluvium (silt and water worn pebbles), possible colluvium (gravel) and weathered cobbles similar to pyroclastic material were interspersed between the main project strata. TRs 8, 12 and 14 contained alluvial, episodic flood lenses/layers, where TRs 12 and 14 were positioned on the northern perimeter along an existing ditch. Interestingly, TR8, which contained the thickest alluvial deposit was not located along a visible ditch or gulch, but the episodic flood deposits may be from Kolaloa Gulch to the south. TRs 3, 7, 12 and 16 were placed throughout both sections and exhibited the subangular gravel and pyroclastic cobbles. Since there were no knolls or Pu`u in the area where cinder like material accumulates, the type of environmental factor that created the pyroclastic cobbles in TRs 7 and 16 is indeterminate. TR9 was located in the NE quadrant and contained only 1 stratum as the overall project Layers I and II appeared to be previously removed.

The subject parcel and other localities where rock quarry activities have occurred, such as the Central Maui Landfill and H C&D quarry have exhibited similar environments with relatively

shallow soils overlying dense bedrock. The geology of these areas, i.e. shallow bedrock is one of the main reasons for establishing rock quarries and subsequent landfills (if applicable) in these zones.

The background research, exemplified that Pūlehu Nui was populated during the traditional and historic periods within the *ma uka* and *ma kai* sections of the *ahupua`a*, and no evidence of intermittent habitation was observed in this transitional zone (between the *ma uka* and *ma kai* areas) during the subsurface investigations. The compounded disturbances from a century of grubbing and removing sugar cane, and re-grading the area to prepare for new plantings have likely removed all evidence of traditional occupation. Similarly, remnants of historic habitation have likely been removed; however, localities where Plantation Camps were formally established may contain disturbed or truncated historic deposits. Two Plantation Camps (Kihei Camp 3 and Camp 13) were previously located to the south and north of the subject parcel, yet positioned from 2500 to 7500 ft. away.

Due to the negative findings at the project area, along with an absence of any former Plantation Camps in the area and following HRS §13-284-7, the overall project will have “no effect” on historic properties. The negative results were anticipated in this marginal/transitional zone due to the prior disturbances and 2011 AIS investigations (Rotunno-Hazuka et al. 2011) in the adjoining project to the west. Thus, no further archaeological procedures or mitigation measures are warranted for the 42.0-acre project area.

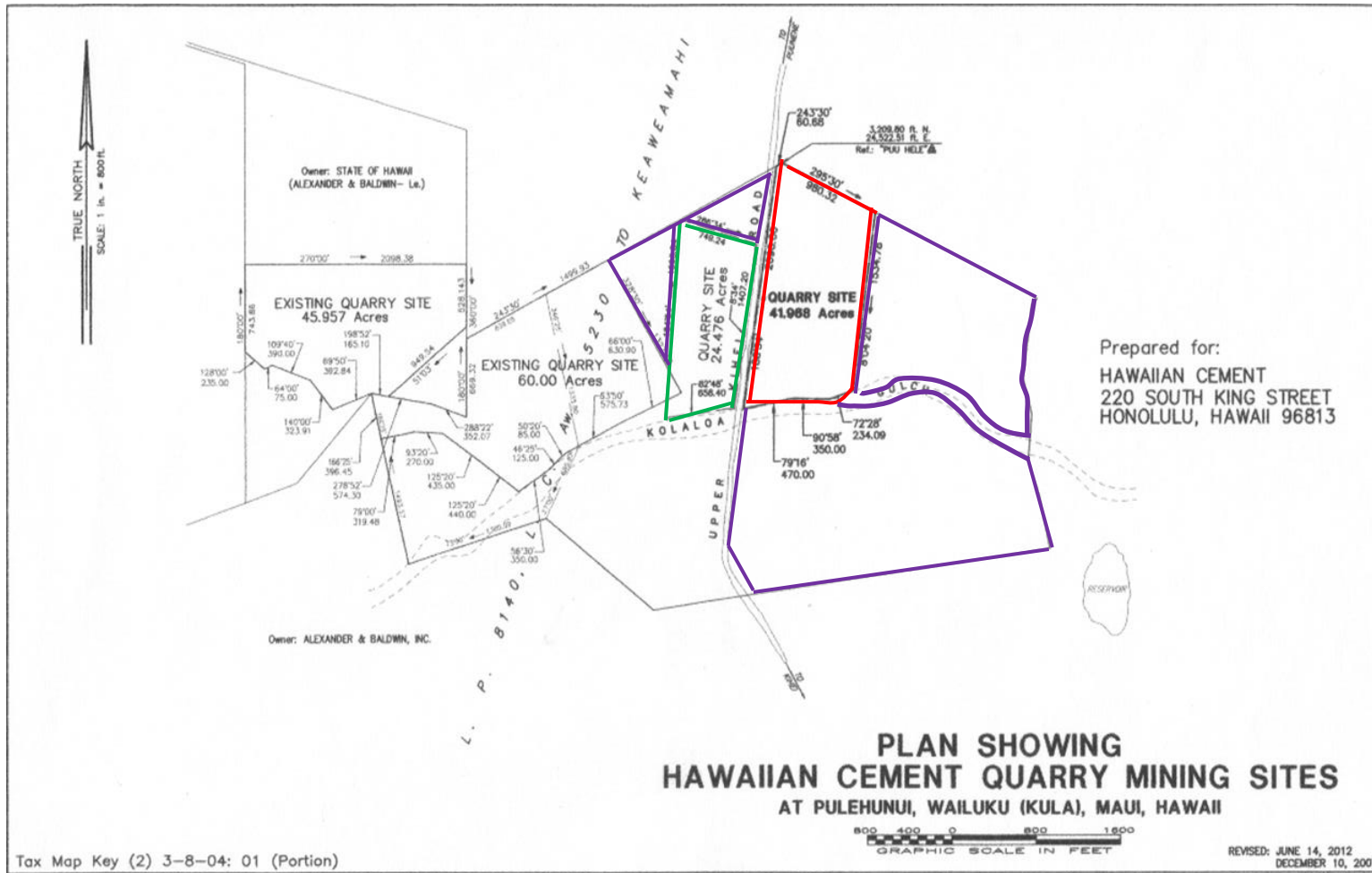


Figure 45. Development Map Showing Project Area (Red), Former A.A. Parcel (Green) and Possible Future Expansion Areas (Purple)

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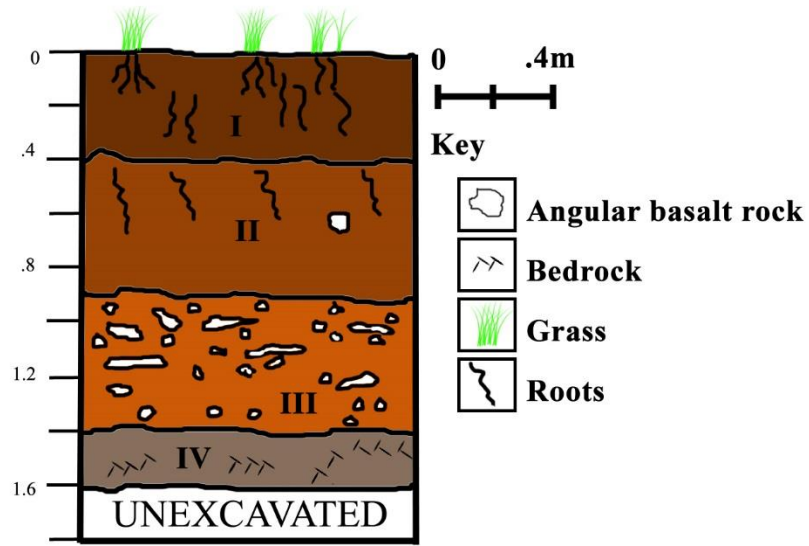
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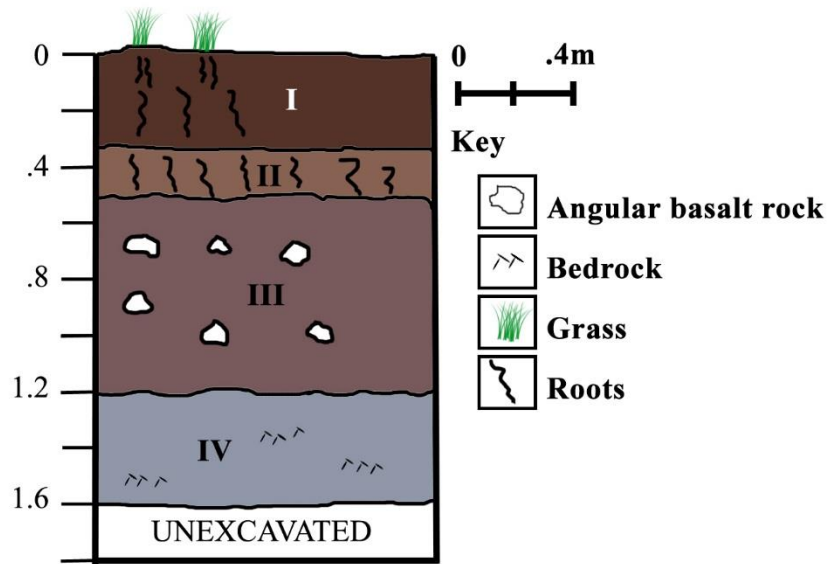
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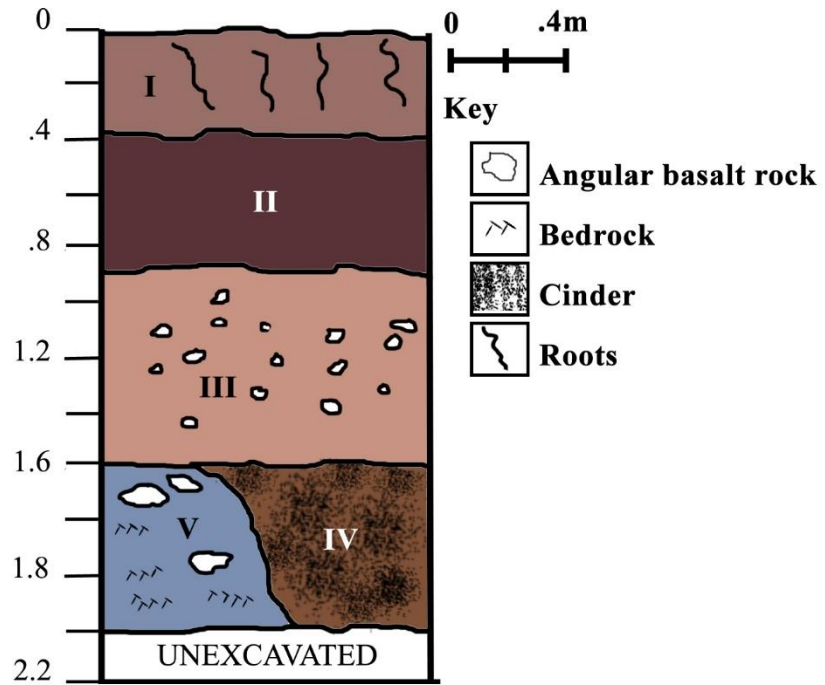
APPENDIX A



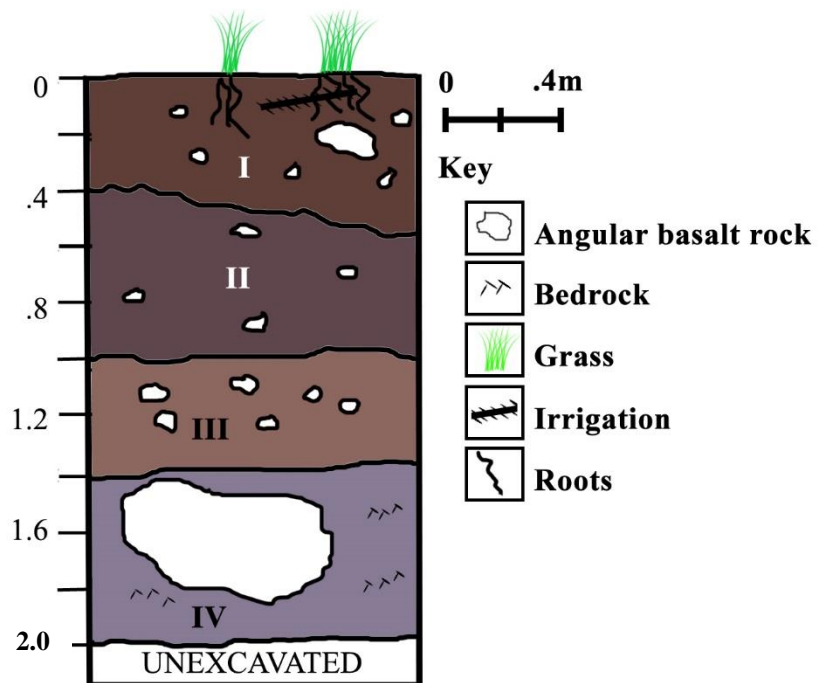
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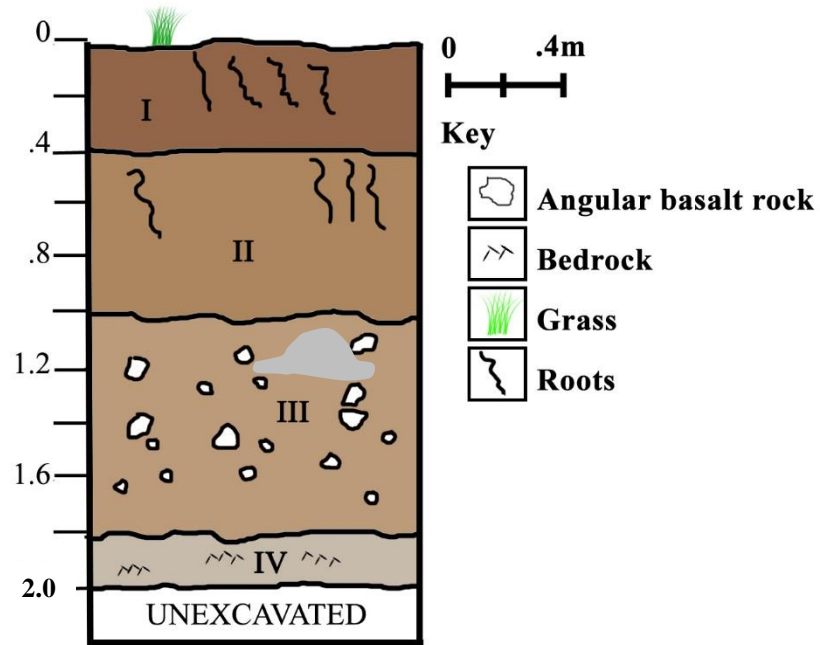
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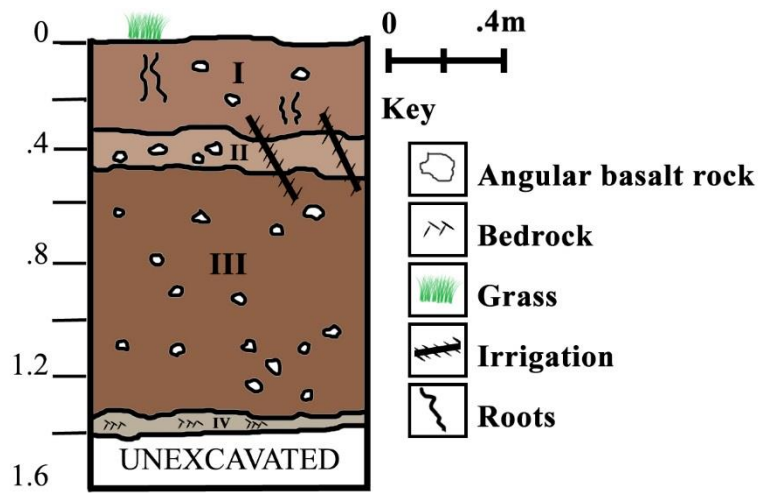
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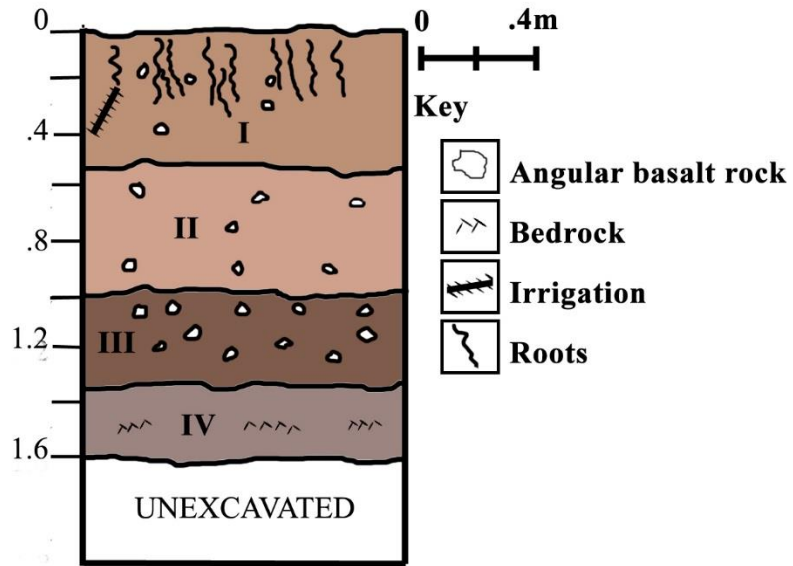
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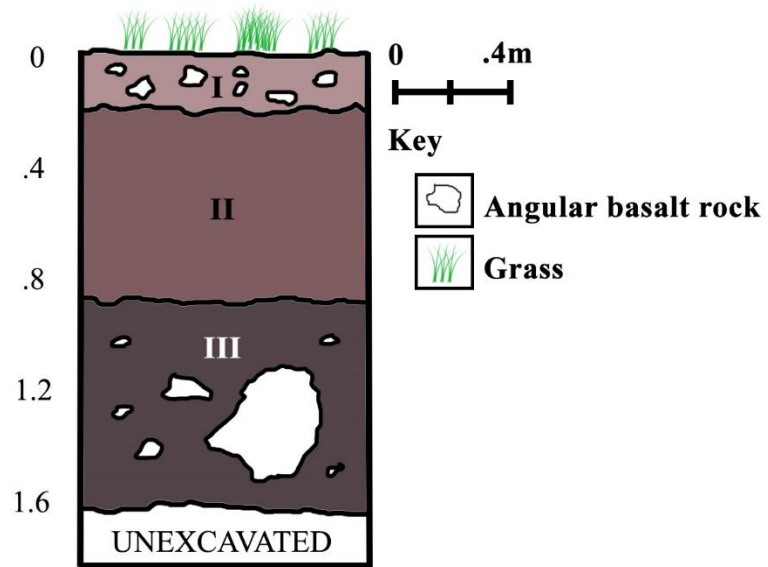
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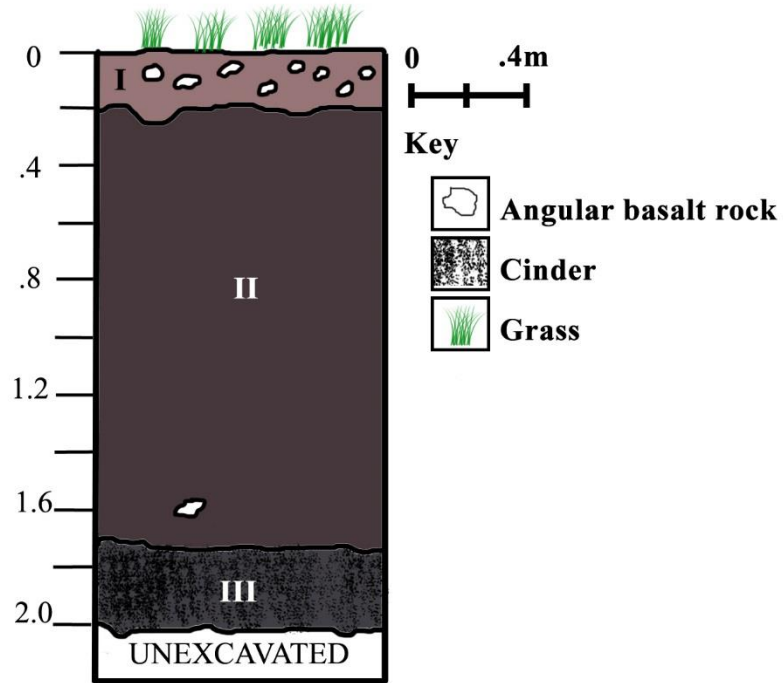
Stratigraphic Profile of North Wall at BD1



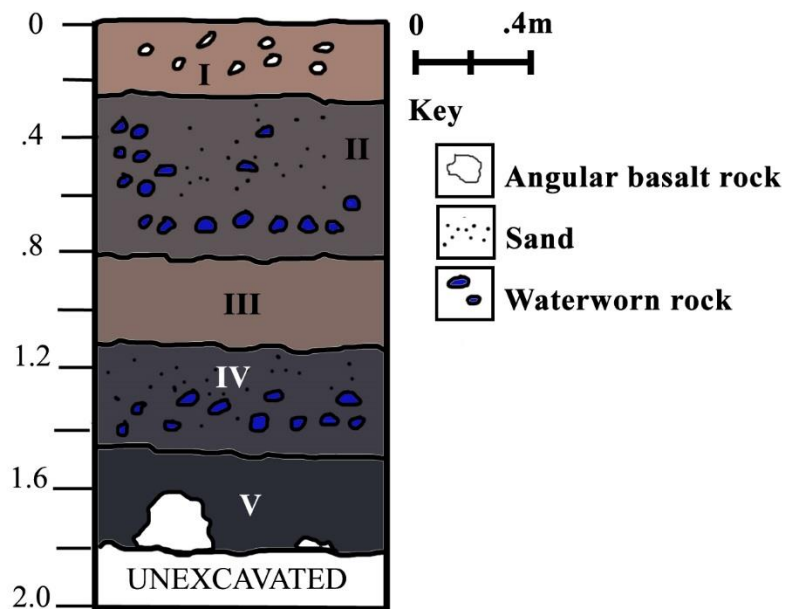
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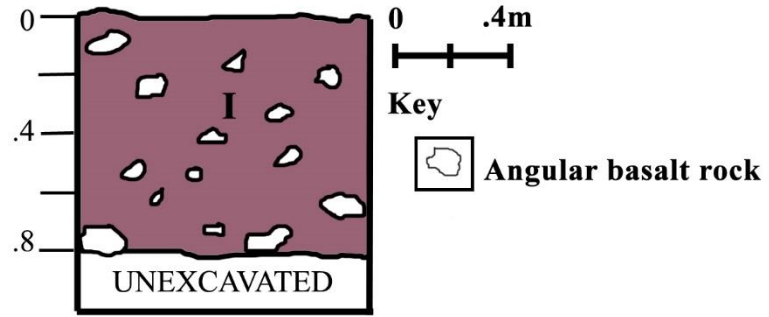
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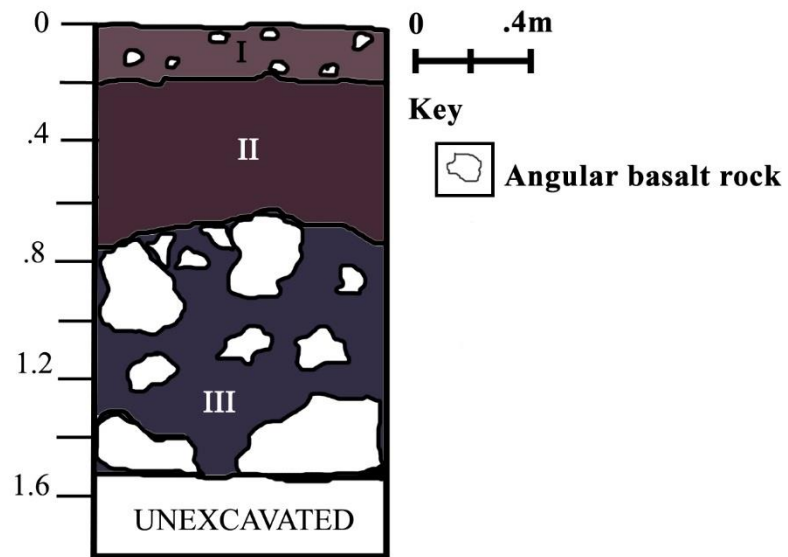
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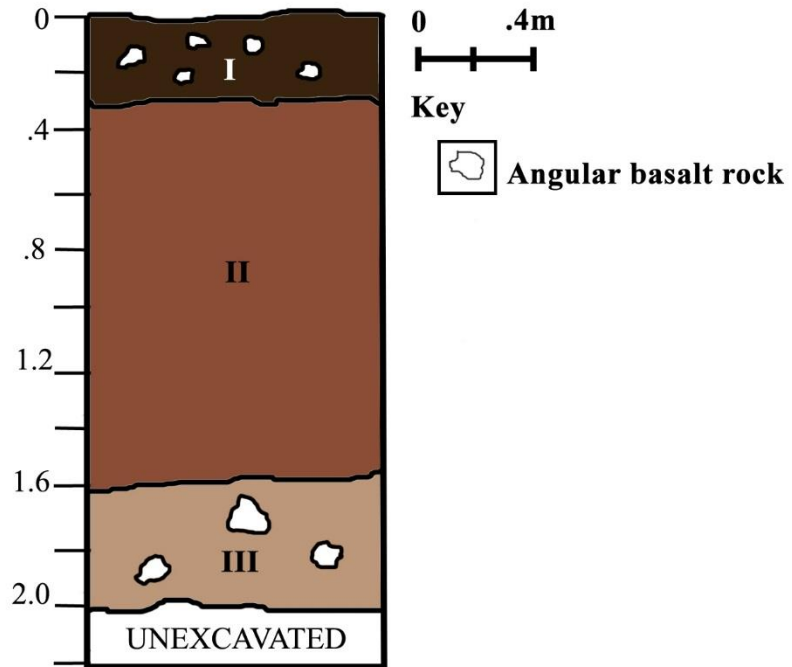


Stratigraphic Profile of North Wall at TR8

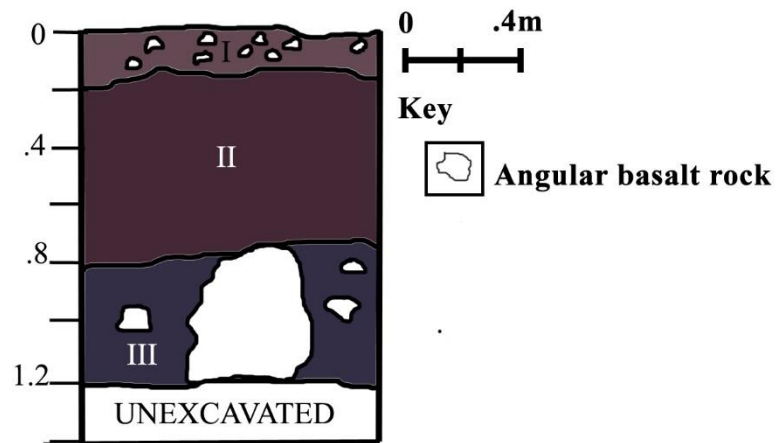


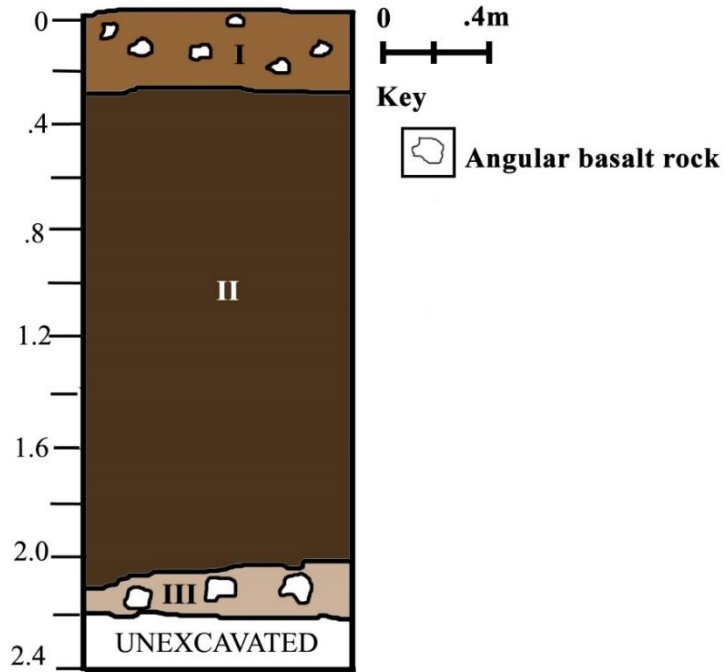
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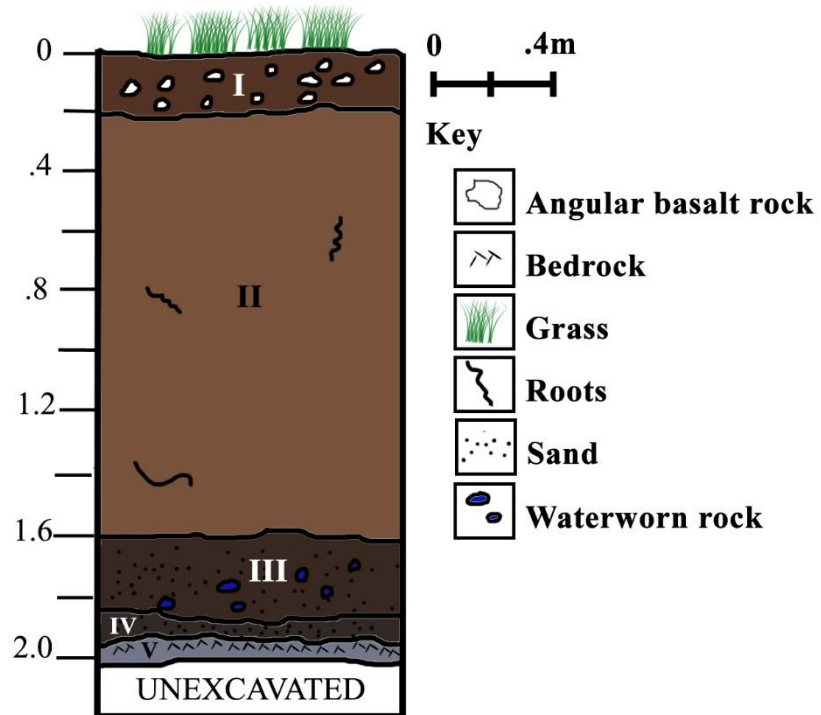


Stratigraphic Profile of North Wall at TR10

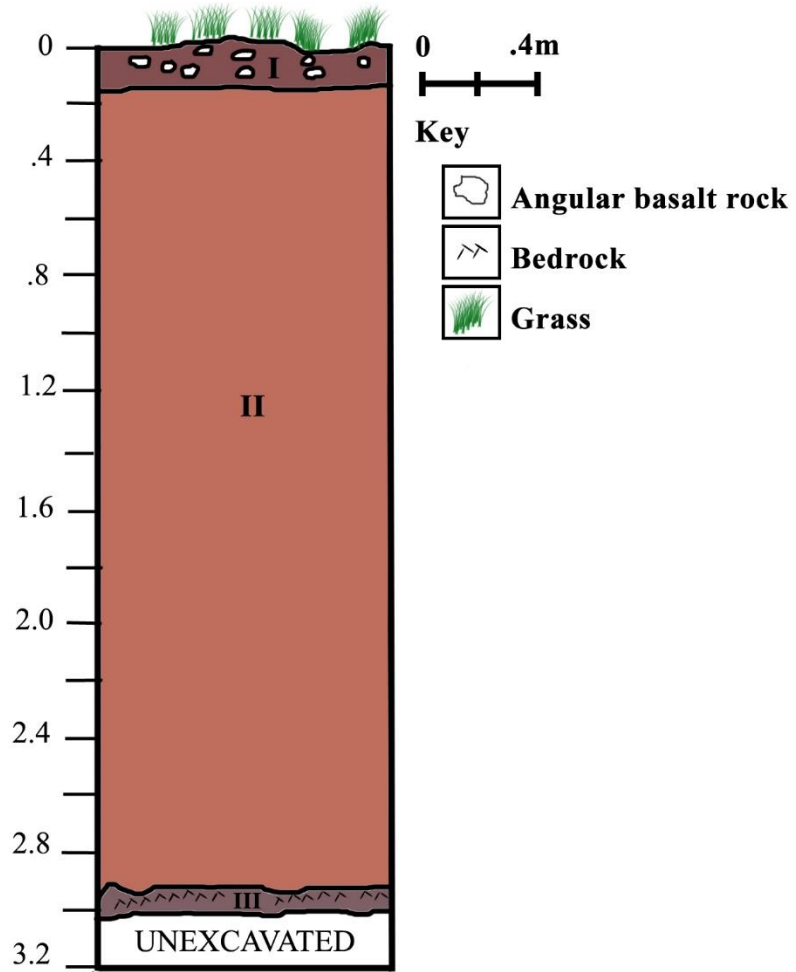




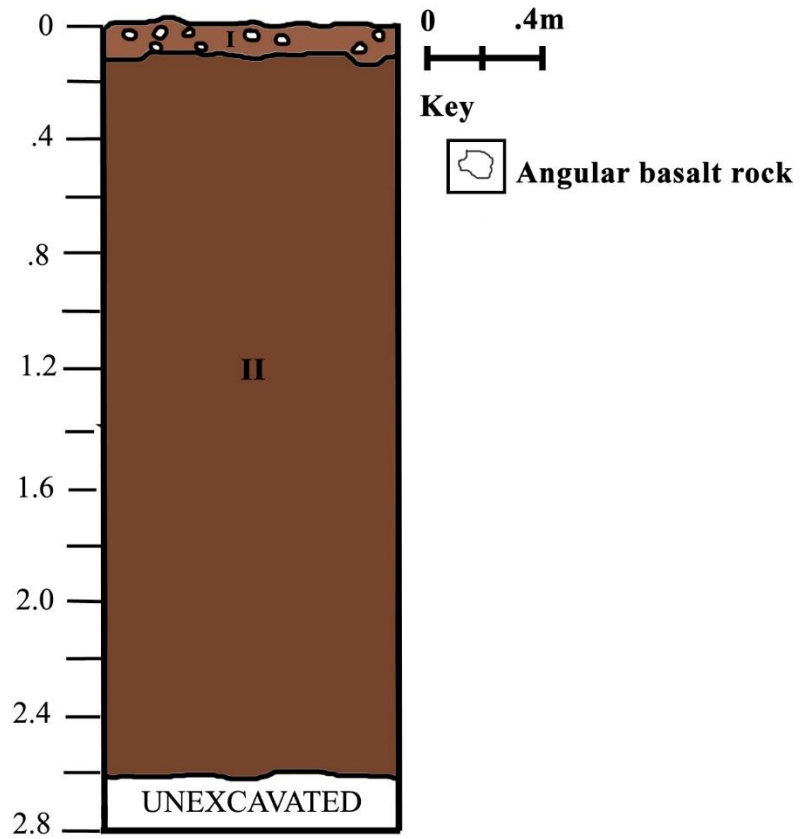
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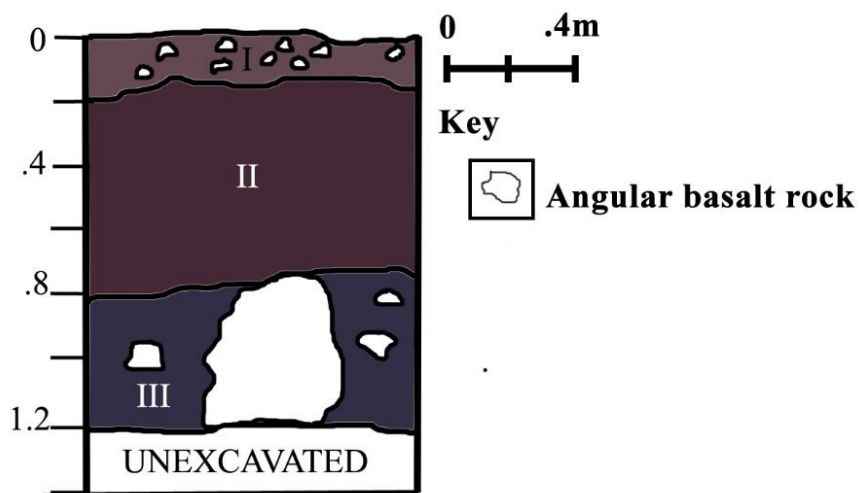
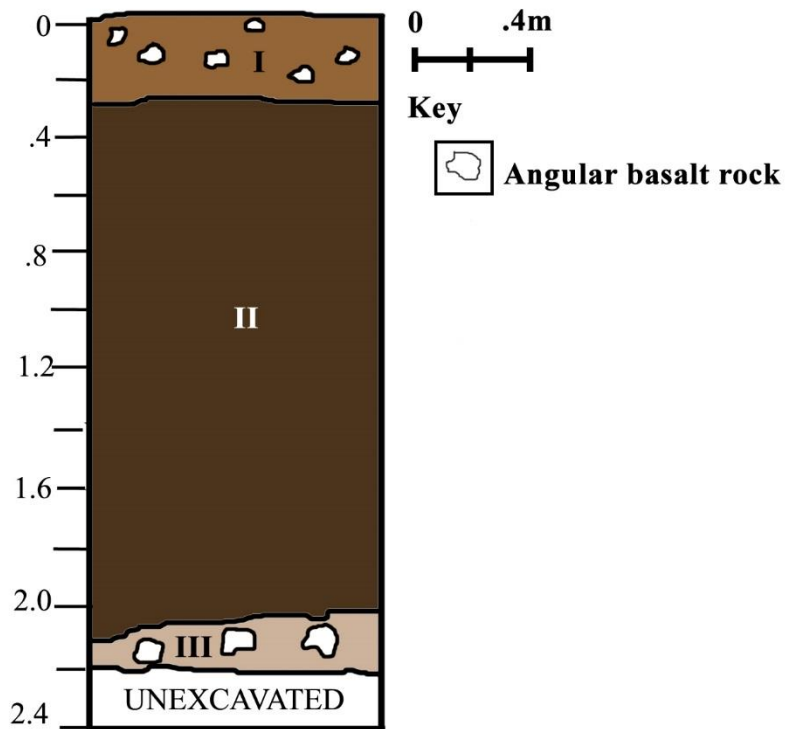
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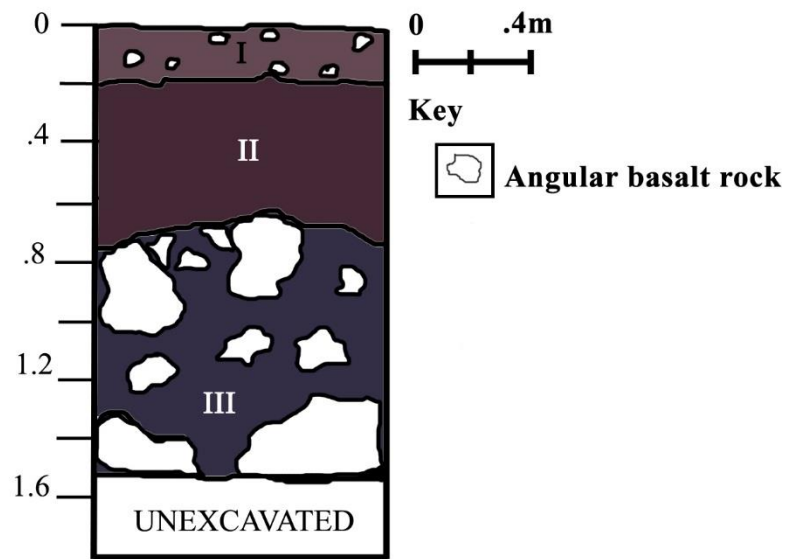
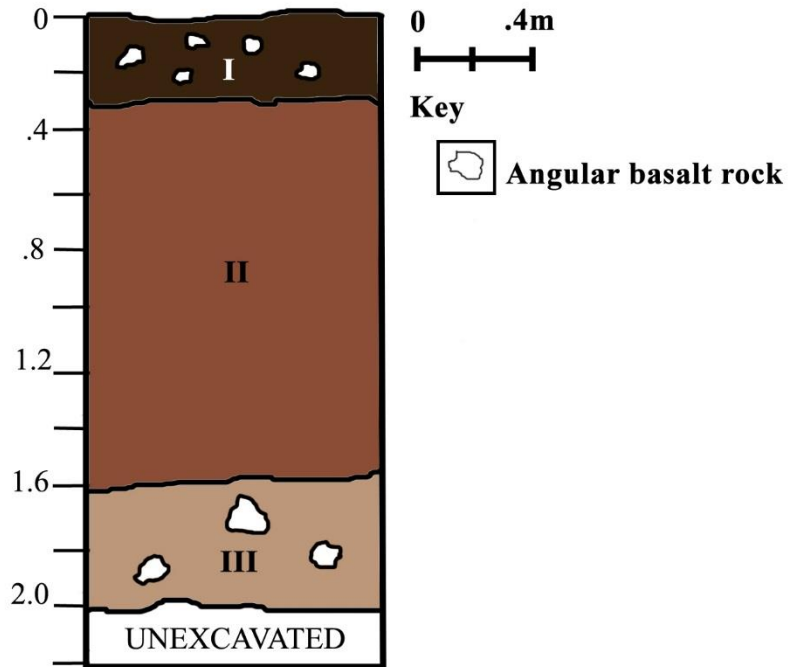
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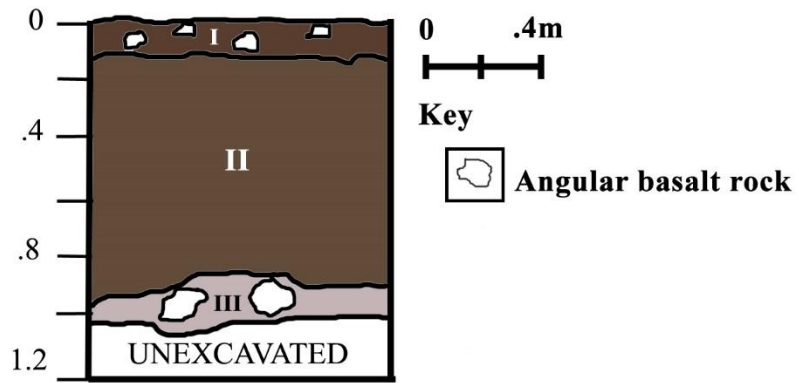
Stratigraphic Profile of North Wall at TR14



Stratigraphic Profile of North Wall at TR15

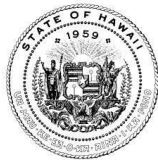


Stratigraphic Profile of North Wall at TR16



Stratigraphic Profile of South Wall at TR17

DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 17, 2020

Mr. Glen Ueno, Administrator
County of Maui
Department of Public Works
Development Services Administration Division
250 South High Street
Wailuku, Hawaii 96793

IN REPLY REFER TO:
Log No.: 2017.02140
2020.00762
Doc. No.: 2004AM09
Archaeology

Dear Mr. Glen Ueno:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –
Archaeological Assessment Report for the Hawaiian Cement Expansion Project and
Archaeological Monitoring Plan for the Increments 2 and 4 of the Expansion Project
Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui
TMK: (2) 3-8-004:001 por.**

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject draft report titled, *Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-004:001 por., Pūlehu Nui Ahupua‘a, Kula Moku, Wailuku District, Island of Maui* (Fuentes et al., March 2020). SHPD previously reviewed the subject archaeological assessment (AA) report and request revisions to the report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc. No. 1505MD19). SHPD received the subject revised report on September 17, 2017 (Log No. 2017.02140).

This letter also provides SHPD's review of the subject draft plan titled, *Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.* (Yucha and Hammatt, March 2020). SHPD received the subject archaeological monitoring plan on March 31, 2020 (Log No. 2020.00762) following consultation between Hawaiian Cement, Cultural Surveys Hawaii Inc. (CSH, archaeological consultant), and SHPD on March 4, 2020.

The parcel has been subject to previous archaeological investigations including an archaeological reconnaissance survey (Kennedy 1990), and two archaeological inventory surveys (Rotunno-Hazuka et al. 2011 and Fuentes et al., March 2020). The two archaeological inventory survey (AIS) investigations identified no historic properties. Per HAR §13-284-5(b)(5)(A), negative AIS results shall be presented in an archaeological assessment (AA) report. SHPD reviewed and accepted the Rotunno-Hazuka et al. (2011) AA report in a letter dated August 8, 2012 (Log Nos. 2011.0298 and 2001.0340, Doc. No. 1208JP01). SHPD reviewed and requested revisions to a draft of the Fuentes et al. (October 2014) AA report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc No. 1505MD19) and received the subject revised report on September 17, 2017 (Log No. 2017.02140).

The Fuentes et al. (2020) AIS was conducted in support of the Hawaiian Cement Quarry Expansion project. The project area consists of a 41,968-acre portion of the overall 2,008-acre subject parcel. Archaeological testing of the project area included a pedestrian survey of a portion of the project area spaced in 5-meter intervals. Additionally, 17 backhoe test trenches and two bulldozer cuts were excavated. No historic properties were. The AA report includes the locations of the test trenches, photographs, soil profiles drawn to scale, and soil descriptions using USDA soil terminology and attributes with Munsell colors.

The revised Fuentes et al. (2020) AA report adequately addressed the requested revisions from our previous review (Log No. 2014.04654, Doc No. 1505MD19). The report meets the minimum requirements specified in HAR §13-276-5. **The AA report is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library and to lehua.k.soares@hawaii.gov.

Hawaiian Cement and their archaeological consultant (CSH) consulted with SHPD during a meeting on March 4, 2020. During the meeting, Hawaiian Cement requested SHPD review the revised AA report submitted to SHPD on September 17, 2017 (Log No. 2017.02140). Additionally, Hawaiian Cement proposed work for increments 2 and 4 of the expansion project, including a field inspection with program of archaeological monitoring for identification purposes to be conducted during the excavation of soils overlying bedrock within the project area. The proposed project will include cement quarry mining within the entire footprint of increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock to be quarried and processed. No quarrying will occur within Kolaloa Gulch.

The AMP (Yucha and Hammatt, March 2020) proposes archaeological monitoring for identification purposes and provides a summary of previous archaeological investigations and identified historic properties present within the parcel and is formatted to address the rules outlined in HAR §13-279-4 (1) through (8) and stipulates the following:

- Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no surface historic properties within the project area. This inspection will be completed prior to the start of project-related ground disturbance;
- A coordination meeting will be conducted between the construction team and monitoring archaeologist prior to construction activities so the construction team is aware of the need for archaeological monitoring and the provisions detailed in the plan;
- Archaeological monitoring will include a combination of on-site and on-call monitoring. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this period, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days to record progress and inspect the exposed stratigraphy for historic properties. No archaeological monitoring will occur during quarrying of the basalt bed;
- Quarterly archaeological monitoring letter reports will be submitted to SHPD consisting of a cover letter with photographs, a summary of archaeological work and the status of project related construction work;
- The Quarterly reports will start with the results of the initial pedestrian survey and are intended to keep SHPD informed. A monitoring report meeting the requirements of HAR §13-279-5 and covering all the reported work will be submitted for review and acceptance following the completion of project related archaeological monitoring;
- The archaeological monitor has the authority to temporarily halt all activity in the area in the event of a potential historic property being identified, or to record archaeological information for cultural deposits or features;
- If non-burial historic properties are identified, documentation shall include, as appropriate, recording stratigraphy using USDA soil descriptions, GPS point collection, recordation of feature contents through excavation or sampling of features, screening of features, representative scaled profile drawings, photo documentation using a scale and north arrow, and appropriate laboratory analysis of collected samples and artifacts. Additionally, photographs and profiles of excavations will be collected from across the project area even if no significant historic properties are encountered. Representative profiles will be a minimum of 2-meter sections;
- If human remains are identified, work will cease in the vicinity and the find shall be secured, and provisions outlined within the Hawaii Revised Statutes (HRS) §6E-43 and HAR §13-300-40, and any SHPD directives, shall be followed;
- Collected materials not associated with burials will be temporarily stored at the archaeological firm's office/laboratory until an appropriate curation facility is selected, in consultation with the landowner and the SHPD and;
- Any changes in these provisions shall occur only with written approval from the SHPD.

Glen Ueno
4/17/20
Page 3

The plan meets the minimum requirement of HAR §13-279-4. **It is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a digital copy of the final AMP (Yucha and Hammatt, March 2020) to lehua.k.soares@hawaii.gov.

SHPD hereby notifies the County that the AA report (Fuentes et al., March 2020) and the AMP (Yucha and Hammatt, March 2020) have been accepted. The permit issuance process may continue.

SHPD requests written notification at the start of archaeological monitoring. SHPD looks forward to receiving brief archaeological monitoring letter reports of findings **quarterly** as specified in HAR §13-282-3(f)(1). Subsequently, SHPD looks forward to receipt of an archaeological monitoring report meeting the requirements of HAR §13-279-5 for review and acceptance following the conclusion of archaeological monitoring work.


Please contact Andrew McCallister, Historic Preservation Archaeologist IV, at Andrew.McCallister@hawaii.gov or at (808) 692-8015 for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

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

cc: The County of Maui, dsa.subdivision@mauicounty.gov
The County of Maui, building.permits@mauicounty.gov
Atlas Archaeology, atlasarch808@gmail.com
Trevor Yucha, CSH, tyucha@culturalsurveys.com
Gomes, David, Hawaiian Cement, david.gomes@hawaiiancement.com



ARCHAEOLOGICAL
MONITORING PLAN
DATED MARCH 2020

APPENDIX

E-2



FINAL

**Archaeological Monitoring Plan
for the Hawaiian Cement Quarry Mining Site
Increments 2 and 4 Expansion Project,
Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island,
TMK: (2) 3-8-004:001 por.**

**Prepared for
Hawaiian Cement**

**Prepared by
Trevor M. Yucha, B.S.
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: PULEHUNUI 17)**

March 2020

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Management Summary

Reference	Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site, Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua'a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por. (Yucha and Hammatt 2020)
Date	March 2020
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: PULEHUNUI 17
Investigation Permit Number	CSH will likely complete the archaeological monitoring fieldwork under archaeological fieldwork permit number 20-07, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.
Agencies	County of Maui; SHPD
Land Jurisdiction	Private (Hawaiian Cement)
Project Funding	Private
Project Location	The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui. The project area borders Upper Kīhei Road and is east (<i>mauka</i>) of the Puunene Armory and Maui Raceway Park. Increment 2 is located on the south side of Kolaloa Gulch and west side of Upper Kīhei Road. Increment 4 is located on the north side of Kolaloa Gulch and east side of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey 7.5-minute topographic quadrangle.
Project Description	The proposed project will include cement quarry mining within the entire footprint of Increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch.
Project Acreage	Increment 2 is 56.7 acres (22.9 hectares). Increment 4 is 57.9 acres (23.4 hectares). In total, the project area is 114.6 acres (46.4 hectares).
Project-Related Disturbance	The proposed project will include quarrying and removal of bedrock throughout the entire footprint of the project area. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch
Historic Preservation Regulatory Context	In 1990, Archaeological Consultants Hawai'i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry expansion areas including Increments 2 and 4 (Kennedy 1990). At the time of the survey, the entire property was covered in active

	<p>commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended.</p> <p>In 2010, Archaeological Services Hawai'i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01).</p> <p>In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an "archaeological assessment" in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey.</p> <p>In order to address proposed quarry expansion in Increments 2 and 4, the landowner and project agency are proposing to conduct archaeological monitoring for identification purposes.</p> <p>This archaeological monitoring plan (AMP) is intended to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-13-284. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the SHPD, this document fulfills the requirements of HAR §13-13-279-4.</p>
<p>Historic Properties Potentially Affected</p>	<p>No historic properties have been identified within the project area or vicinity.</p>
<p>Monitoring Recommendations</p>	<p>Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no historic properties on the surface of the project area. This inspection will be</p>

	<p>completed prior to the start of project-related ground disturbance and the results will be provided to the SHPD.</p> <p>Archaeological monitoring will be conducted intermittently during the excavation of soils overlying bedrock within the project area and will include a combination of on-site and on-call strategies. CSH recommends that overlying sediment removal from the project area be scheduled to be completed in one effort as opposed to as needed during the quarrying effort if possible. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm that there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this effort, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days (approximately twice per month) to record progress and confirm that subsurface conditions have not changed. No archaeological monitoring will occur during quarrying of basalt bedrock.</p> <p>In the event of significant finds, the SHPD will be notified. If human remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. All human skeletal remains that are encountered during excavation will be handled in compliance with HAR §13-13-300 and HRS §6E-43.</p>
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Section 1 Introduction

1.1 Project Background

At the request of Hawaiian Cement, Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological monitoring plan (AMP) for the Hawaiian Cement Quarry Mining Site, Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 (por.). The project area is located on the western flank of Haleakalā along the edge of the central isthmus of Maui. The project area borders Upper Kīhei Road and is east (*mauka*) of the Puunene Armory and Maui Raceway Park. Increment 2 is located on the south side of Kolaloa Gulch and west side of Upper Kīhei Road. Increment 4 is located on the north side of Kolaloa Gulch and east side of Upper Kīhei Road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2016 aerial photograph (Figure 3).

The proposed project will include cement quarry mining within the entire footprint of Increments 2 and 4 (Figure 4). Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock. The bedrock will be quarried and processed. No quarrying will occur within Kolaloa Gulch.

1.2 Historic Preservation Regulatory Context

In 1990, Archaeological Consultants Hawai‘i (ACH) completed a walk-through reconnaissance survey of the Hawaiian Cement Quarry expansion areas including Increments 2 and 4 (Kennedy 1990). At the time of the survey, the entire property was covered in active commercial sugarcane fields. No historic properties were identified during the survey and no further work was recommended.

In 2010, Archaeological Services Hawai‘i (ASH) conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study recommended no further work. The study was reviewed and accepted by the SHPD on 8 August 2012 (SHPD Log No.: 2011.0298 and 2011.0340; Doc. No.: 1208JP01; Appendix A).

In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No.: 1505MD19; Appendix A). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey.

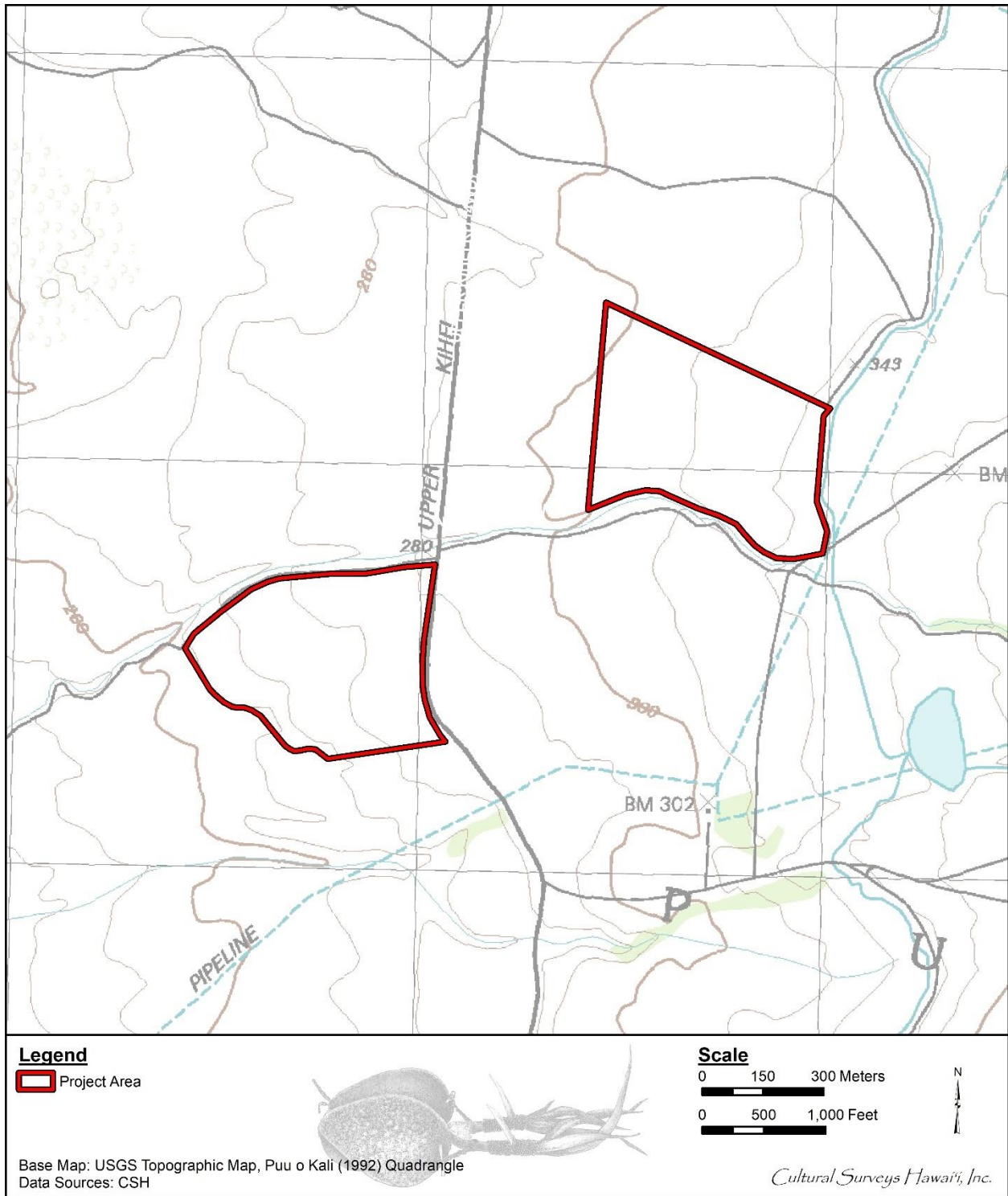


Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992)

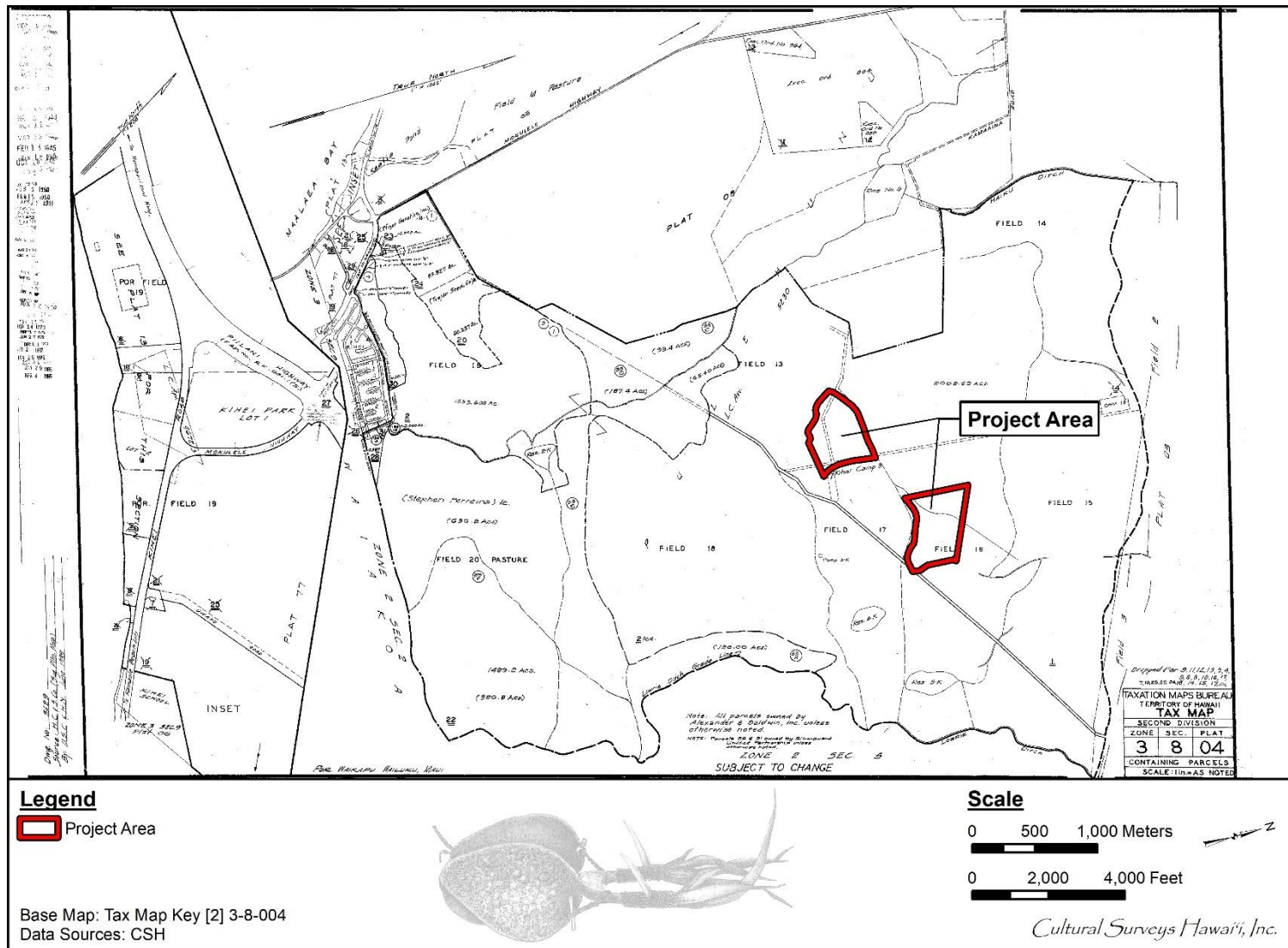


Figure 2. Tax Map Key (TMK) [2] 3-8-004 showing the project area (Hawaii TMK Service 2014)



Figure 3. Aerial photograph of the project area (Esri 2016)

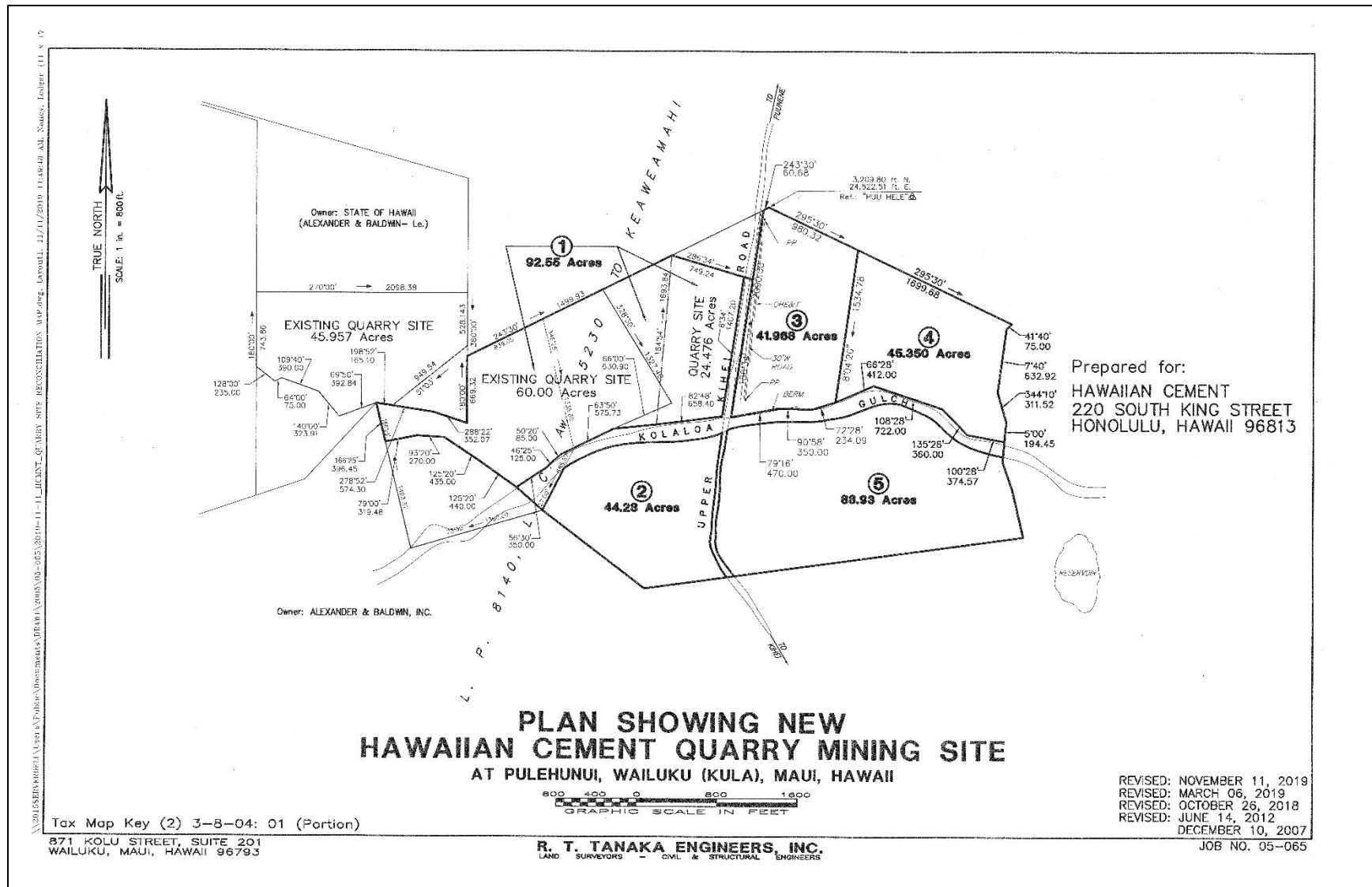


Figure 4. Hawaiian Cement Quarry Mining Site plan showing the location of Increments 2 and 4 (R.T. Tanaka Engineers Inc. 2019)

AMP for the Hawaiian Cement Quarry, Increments 2 and 4, Pūlehu Nui, Wailuku, Maui

TMK: [2] 3-8-004:001 por.

In order to address proposed quarry expansion in Increments 2 and 4, the landowner and project agency are proposing to conduct archaeological monitoring for identification purposes.

This archaeological monitoring plan (AMP) is intended to support the proposed project's historic preservation review under Hawai'i Revised Statutes (HRS) §6E-42 and HAR §13-13-284. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the SHPD, this document fulfills the requirements of HAR §13-13-279-4.

1.3 Environmental Setting

1.3.1 Natural Environment

The current project area is located on the western flank of Haleakalā along the edge of the level central isthmus of Maui. The project area is located approximately 4.75 km (2.95 mi) from the nearest shoreline fronting Kīhei and is 64 to 106 m (210 to 348 ft) above mean sea level. The topography of the project area is a gentle westward slope. The project area, and overall quarry site, is bisected by Kolaloa Gulch, a perennial tributary to Keālia Pond. Other nearby gulches include Pūlehu Gulch to the north of the project area and Keāhuaiwi Gulch to the south of the project area.

In 2014, the average monthly air temperature for the project area was between 21.43°C (70.58°F) in January and 25.50°C (77.90°F) in August, with an average annual air temperature of 23.51°C (74.31°F) (Giambelluca et al. 2014). The vicinity of the project area received a mean annual rainfall of 327.0 mm (12.87 inches) between 1978 and 2007, according to the University of Hawai'i 2011 *Online Rainfall Atlas of Hawaii* (Giambelluca et al. 2013). The mean monthly rainfall varied between 1.4 mm (0.06 inch) in June and 82.4 mm (3.24 inches) in January. This pattern of rainfall and low annual precipitation rate once sustained a lowland, dry shrubland, and grassland native ecosystem (Pratt and Gon 1998).

Vegetation with the project area includes fallow sugarcane (*Saccharum officinarum*) fields that have become overgrown with *koa haole* (*Leucaena leucocephala*), wild bitter melon (*Momordica charantia*), and other invasive trees, vines, and grasses.

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist of Alae cobbly sandy loam, 0 to 3 percent slopes (AcA), Pulehu silt loam, 0 to 3 percent slopes (PpA), Pulehu silt loam, 3 to 7 percent slopes (PpB), Pulehu clay loam, 0 to 3 percent slopes (PsA), Pulehu cobbly clay loam, 0 to 3 percent slopes (PtA), Waiakoa extremely stony silty clay loam, 3 to 7 percent slopes (WhB) (Figure 5).

Alae Series soils are described as:

This series consists of excessively drained soils on alluvial fans on the island of Maui. These soils developed in volcanic ash and recent alluvium derived from basic igneous rock. They are nearly level to gently sloping. Most areas have cobblestones on the surface. Elevations range from 50 to 600 feet. The annual rainfall amounts to 12 to 20 inches. The mean annual soil temperature is 74° F. Alae soils are geographically associated with Ewa, Pulehu, and Waiakoa soils.

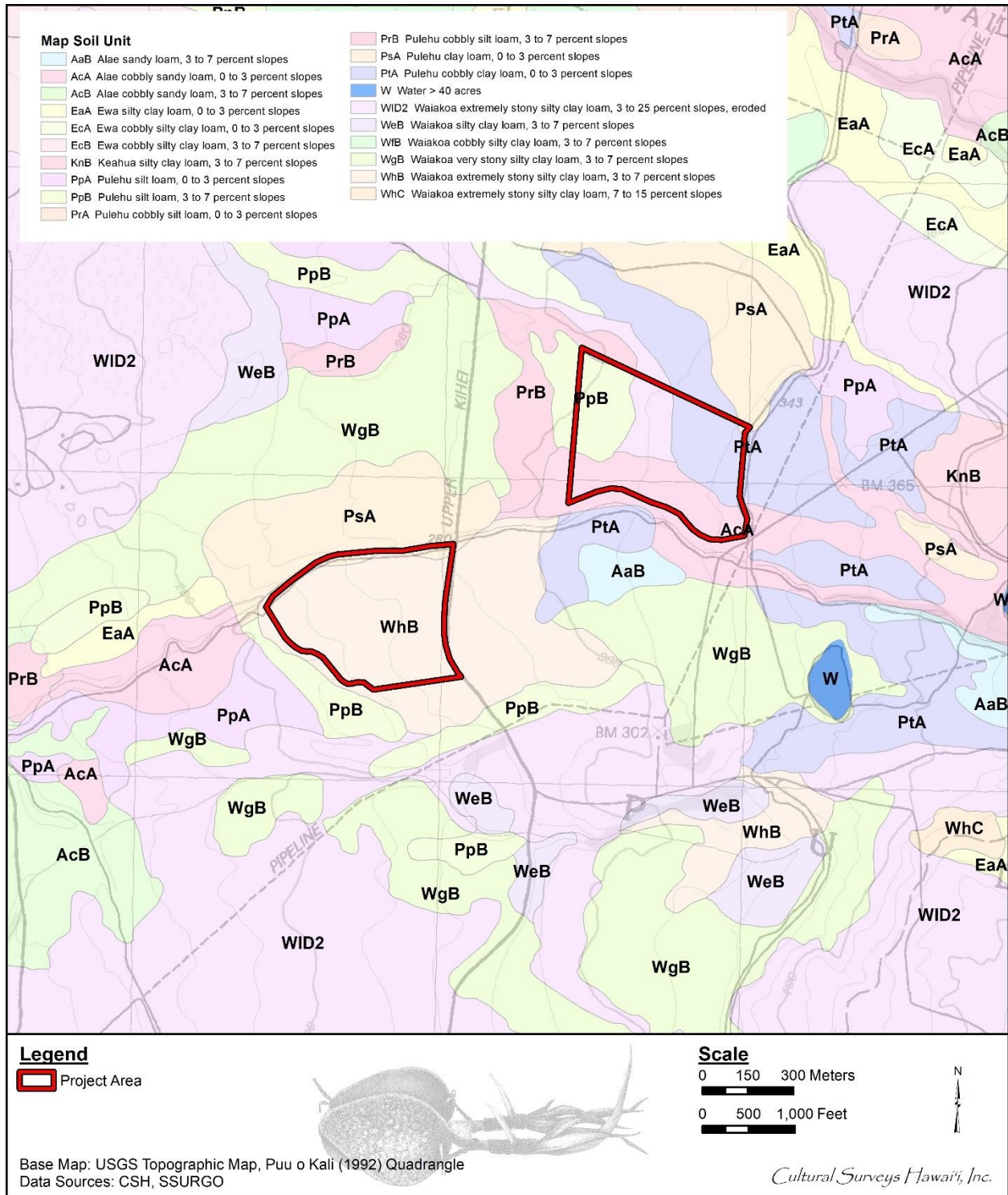


Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

These soils are used for sugarcane and pasture. Small areas are used for truck crops. The natural vegetation is feather fingergrass, kiawe, and uhaloa.(Foote et al. 1972:14)

Pulehu Series soils are described as:

This series consists of well-drained soils on alluvial fans and stream terraces and in basins. These soils occur on the islands of Lanai, Maui, Molokai, and Oahu. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 10 to 35 inches. The mean annual soil temperature is 74° F. Pulehu soils are geographically associated with Ewa, Jaucas, Kealia, Lualualei, Waialua, and Mala soils.

These soils are used for sugarcane, truck crops, pasture, homesites, and wildlife habitat. The natural vegetation consists of bermudagrass, bristly foxtail, fingergrass, kiawe, klu, lantana, koa haole, and sandbur. (Foote et al. 1972:115)

Waiakoa Series soils are described as:

This series consists of well-drained soils on uplands on the island of Maui. These soils developed in material weathered from basic igneous rock. The upper part of the profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet. The annual rainfall amounts to 12 to 20 inches; most of it occurs in winter. The mean annual soil temperature is 74° F. Waiakoa soils are geographically associated with Keahua and Keawakapu soils.

These soils are used for sugarcane, pasture, homesites, and wildlife habitat. The natural vegetation consists of buffelgrass, feather fingergrass, ilima, kiawe, uhaloa, and zinnia. (Foote et al. 1972:126)

1.3.2 Built Environment

The quarry site includes infrastructure and equipment that is used to quarry, transport, refine, and store quarry products. Infrastructure includes crushing equipment, conveyors, office and maintenance buildings, and storage buildings. The surrounding area includes fallow sugarcane fields that have remained uncultivated since the closing of commercial sugar cultivation in Central Maui in 2016. The Puunene Armory and Maui Raceway Park are located west of the project area.

Section 2 Background Research

2.1 Traditional and Historical Background

The division of Maui's lands into political districts occurred during the rule of Kaka'alaneo, under the direction of his *kahuna* (chief), Kalaiha'ōhi'a (Beckwith 1970:383). This division resulted in twelve districts, or *moku*, during traditional times: Kula, Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko'olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā'anapali, and Lāhainā. The current project area is located on the western flank of Haleakalā in the *moku* of Kula and *ahupua'a* of Pūlehu Nui. Overall, Pūlehu Nui Ahupua'a begins at Kilohana Peak, on the summit ridge of Haleakalā, and ends at a mid-point on the west shore of the central plains at a shared boundary with Waikapū Ahupua'a, encompassing a total area of 16,687.78 acres (McCully 1879).

2.1.1 Mo'olelo and Traditional Accounts

While the mythological and traditional accounts of the area are relatively scarce, an analysis of the *wahi pana* (place names/sacred sites) meanings for the region may yield some insight into the patterns of life in the area prior to Western contact (Table 1). In *Native Planters in Old Hawaii*, E. S. C. Handy et al. (1991:23-24,42) summarizes the relationship that traditional Hawaiians have had with the natural environment best in the following passage:

The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements (Handy et al. 1991:23-24)

(T)he relationship which existed from very early times between the Hawaiian people ... is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. (Handy et al. 1991:42)

The provided place names, together with the environmental data, suggest that the lands of coastal Pūlehu Nui were rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection.

Lands surrounding the current project area were also a site of conflict between the Hawai'i Island chief Kalani'ōpu'u and Maui Island chief Kahekili and is perhaps an explanation for the origins for such place names as "Waiakoa" and "Keāhuaiwi".

Table 1. Place names documented in the vicinity of the project area (from Pukui et al. (1974) unless otherwise noted)

Place Name	Meaning/Translation
Alakoa	<i>Lit.</i> , “soldier’s street” (p. 9)
Kalaepohaku	<i>Lit.</i> , “the stony promontory” (p. 72-73)
Kale‘ia	<i>Lit.</i> , “the abundance”, possibly in reference to the resources available from the fishponds and offshore fishing grounds (p. 76)
Kalepolepo	<i>Lit.</i> , “the dirt” (p. 77)
Ka‘ōpala	<i>Lit.</i> , “the rubbish”; dividing line between Pūlehu Nui and Waikapū Ahupua‘a (p. 86)
Keāhuaiwi	<i>Lit.</i> , “the bone pile”; the name of a gulch immediately adjacent to and north of Waiakoa Gulch (p. 101)
Keālia	<i>Lit.</i> , “salt encrustation”; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kīhei	<i>Lit.</i> , “cape or cloak”; sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	<i>kīhei</i> literally translates as “cape or cloak” and <i>pūko‘a</i> literally translates as “coral head”; Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kohemāmalama	<i>Lit.</i> , “bright vagina”; also the ancient name for Kaho‘olawe
Kō‘ie‘ie	<i>Lit.</i> , “a plaything for floating in the rapids”, ancient name of Kalepolepo (Sterling 1998:252)
Kolaloa	<i>Lit.</i> , “much sexual excitement”, the name of the gulch that bisects the project area
Kula (<i>moku</i>)	<i>Lit.</i> , “plain”; always an arid region (Handy in Sterling 1998:242)
Pūlehu (gulch)	<i>Lit.</i> , “broiled”, possibly in reference to abundant sweet potato cultivation in the uplands (p. 193)
Pūlehu Nui (<i>ahupua‘a</i>)	“large <i>pūlehu</i> ”
Waiakoa	<i>Lit.</i> , “water (used) by warrior”; the name of the gulch of the project area (p. 220)

The earliest account concerning Kīhei and Hawaiian politics is given by Samuel Kamakau (1961:70) during the time of Alapa'i and Kekaulike:

Alapa'i sailed from Kohala on Hawai'i...But when he landed at Mokulau in Kaupō (Maui) and heard that Ke-kau-like was dying, he gave up all thought of war and wished only to meet Ke-kau-like and his (half) sister Ke-ku'i-apo-iwa-nui...He landed at Kīheipukoa with all his chiefs and fighting men...While he was at Kīhei, Alapa'i heard that the ruling chief of Oahu was making war upon Molokai. Most of the chiefs of Molokai...were of Hawai'i...Alapa'i's sympathy was aroused, for these were his own brothers and children (relatives), and he made ready to go to their help on Molokai. (Kamakau 1961:70)

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani'ōpu'u of Hawai'i Island during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani'ōpu'u dedicated several war heiau on Hawai'i Island to aid in the defeat of Kahekili. Upon hearing this news Kahekili sent for the kahuna (priest) Kaleopu'upu'u who directed construction of the *heiau* of Kaluli and Pu'uohala on the north side of Wailuku.

In 1776, the army of Kalani'ōpu'u landed at Keoneo'o'io, with their war canoes extending to Makena at Honua'ula and proceeded to ravage the countryside. Kalani'ōpu'u landed with additional forces at Kīhepuko'a at Kealia to Kapa'ahu, 800 strong and eager to drink the waters of Wailuku:

Across the plains of Pu'u'ainako (Can-trash-hill) and Kama'oma'o shone the feather cloaks of the soldiers ... Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka'ilipoe at Pohakuaokahi ... Kaleopu'upu'u [said] to Kahekili, "The fish have entered the sluice; draw in the net." (Kamakau 1961:85)

The forces of Kahekili descended upon and destroyed the soldiers of Kalani'ōpu'u, slaying the Alapa (elite soldiers of Kalani'ōpu'u) on the sandhills at the southeast of Kalua. Only two men escaped to Kīheipuko'a to tell Kalani'ōpu'u the news of their defeat. After a second day of warfare Kalani'ōpu'u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko'a (Kamakau 1961:88-89).

Coastal Pūlehu Nui also shows a few vestiges of the lifestyles and subsistence activities of the *maka'āinana* (commoner) that lived there as well as the works of powerful *ali'i*. Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity. In *Ancient Sites of Maui, Moloka'i, and Lana'i*, author Van James (2002:71) states, in reference to Keālia Pond:

It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *'ama'ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko'a* (fishing shrine) or possible *heiau* platform stands near the site. (James 2002:71)

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Gulch to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by

the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Further testament of resource gathering in the area comes from neighboring Kō'ie'ie Fishpond (Figure 6) which can still be seen along the Kīhei coastline. This fishpond was once part of a broader distribution of these types of structures along the coast. To this effect James (2002:73,74) states:

In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei (“cloak”) coastline. With the exception of Kō'ie'ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *Menehune* constructed them.

It [Kō'ie'ie] is a small pond of three arcs. At low tide, another fishpond ruin can be seen just south of Kō'ie'ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. (James 2002:73,74)

The associations of these fishponds to the *menehune*, placing their times of construction in deep antiquity, suggest that this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to, and during the first days of, Western contact. To this effect (James 2002:73-74) documents that:

It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu*. Later, Kamehameha, who noticed Kō'ie'ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief 'Umilīloa, in the mid-1500s, also had the pond walls rebuilt. (James 2002:73-74)

Given its history of rehabilitation from conquering Hawai'i Island chiefs, it is believed that the fishpond at Kō'ie'ie was “a royal pond always stocked with the best fish” (James 2002:74). Further associations between Hawaiian royalty and Kō'ie'ie Fishpond are also exemplified by a story from the early historic period when Kihawahine, the family *'aumakua* of the Kamehameha line of chiefs, appeared at Kō'ie'ie Fishpond in saffron-yellow robes following the death of one of Kamehameha's sons at Kalepolepo in 1815 (James 2002:74).

2.1.2 Early Historic Period

Kīhei was one of the locations visited by Captain George Vancouver. A monument at Mai Poina 'Oe Ia'u Beach Park in Kīhei commemorates Vancouver's onshore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships.

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease; and nucleation around the developing port towns. The traditionally Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawai'i's shorelines during the 1800s.



Figure 6. Ko'ie'ie Fishpond as viewed from the shore, near former site of Kalepolepo (James 2002:73)

In this regard, Kuykendall (1938) notes that in the period from 1830 to 1854:

The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing. (Kuykendall 1938:313)

Kuykendall's observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku, located approximately one mile to the south of the current project area (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s most likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. (Kolb et al. 1997:68)

In 1820 the whaling industry was introduced in Hawai'i. Although the whaling trade centered on Lāhainā, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "From the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs and in particular the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai'i potato trade began to flourish. Kula became the area of highest potato production and was known as "the potato district" (the area between 2000 and 5000 ft. elevation). During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha'ula'ula Trails to the landing at Kalepolepo, just south of the project area. (Donham 1992:5) notes that the inundation of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."

Around 1849 John Halstead built the Koa House at Kalepolepo in Kīhei. The building, part store and part residence, thrived on both the trade of the whaling industry and the then thriving potato industry. During the Gold Rush years, the store became "an emporium for Irish potatoes" and served as a gathering place for the whaling sailors (Burgett and Spear 1995:6). David Malo created a balance for the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852. Potato production thrived in Kula from 1830-1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai'i

trade (Burgett and Spear 1995:6-7). Halstead ran his store until 1876, closing shop when the potato industry diminished (Janion 1977:25-31).

2.1.3 The Māhele and the Kuleana Act

The most significant change in land-use patterns and allocation came with the Māhele of 1848 and the privatization of land in Hawai'i. This action hastened the shift of the Hawaiian economy from that of a subsistence-based economy to that of a market-based economy. During the Māhele, all of the lands in the Kingdom of Hawai'i were divided between *mō'ī* (king), *ali'i* (chief), *konohiki* (overseer of an *ahupua'a*), and *maka'āinana* (tenants of the land) and passed into the Western land tenure model of private ownership. On 8 March 1848, Kamehameha III further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners, and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant. But by 1850, the government of Hawaii was offering land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants.

A total of 13 land commission claims were made in Pūlehu Nui, and nine were awarded (LCAs 0327B, 9671, 9019, 4672, 9672, 9673, 8866, 4567, and 5230). Only one of these awards, LCA 5230, is immediately surrounding and inclusive of the current project area (Figure 7 and Figure 8). Supporting testimony given to the land commissioners indicate that the 1668.78 acres of LCA 5230 were awarded to Keaweamahi by the King in 1843 and never disputed. The testimony given by Kaauwai and Kaiakekua additionally maintained that there were a great many natives that lived within the *ahupua'a* of Pūlehu Nui. The majority of the lands awarded were *kula* used for potato (both sweet potato and Irish potato) cultivation and were primarily located along the upper elevations of Kula Moku (Waihona 'Aina 2000).

In 1879, following the initial division of lands during the Māhele, the western boundary of Pūlehu Nui was disputed by the owners of adjacent lands in Waikapū. The western boundary of Pūlehu Nui that was specified by the Commissioner of Boundaries and surveyed included approximately 2,000 feet along the coastline from a sand spit known as Kīhei to a point of rocks called Kalaepōhaku. The eastern boundary line that was being claimed for Waikapū, however, would cut Pūlehu Nui off from the ocean, this being the more specific issue in the boundary dispute. Testimony was given by *kama'aina* (Native Hawaiian residents) of Pūlehu Nui and/or lands next to it regarding their familiarity with the boundaries of Pūlehu Nui Ahupua'a. All witnesses, with the exception of one, consistently stated the line between Pūlehu Nui and Omaopio was along a ravine or *kahawai*. The line carried along this *kahawai* and continued to follow the same natural boundary to Ka'opala at the bottom of the East Maui slope. Ka'opala meets the bottom of the West Maui slope and creates a depression and this is where the boundary turns course, following the natural depression or shallow *kahawai* to the sea. The court agreed that the boundary likely followed this natural line and concurred with the findings of the Commissioner of

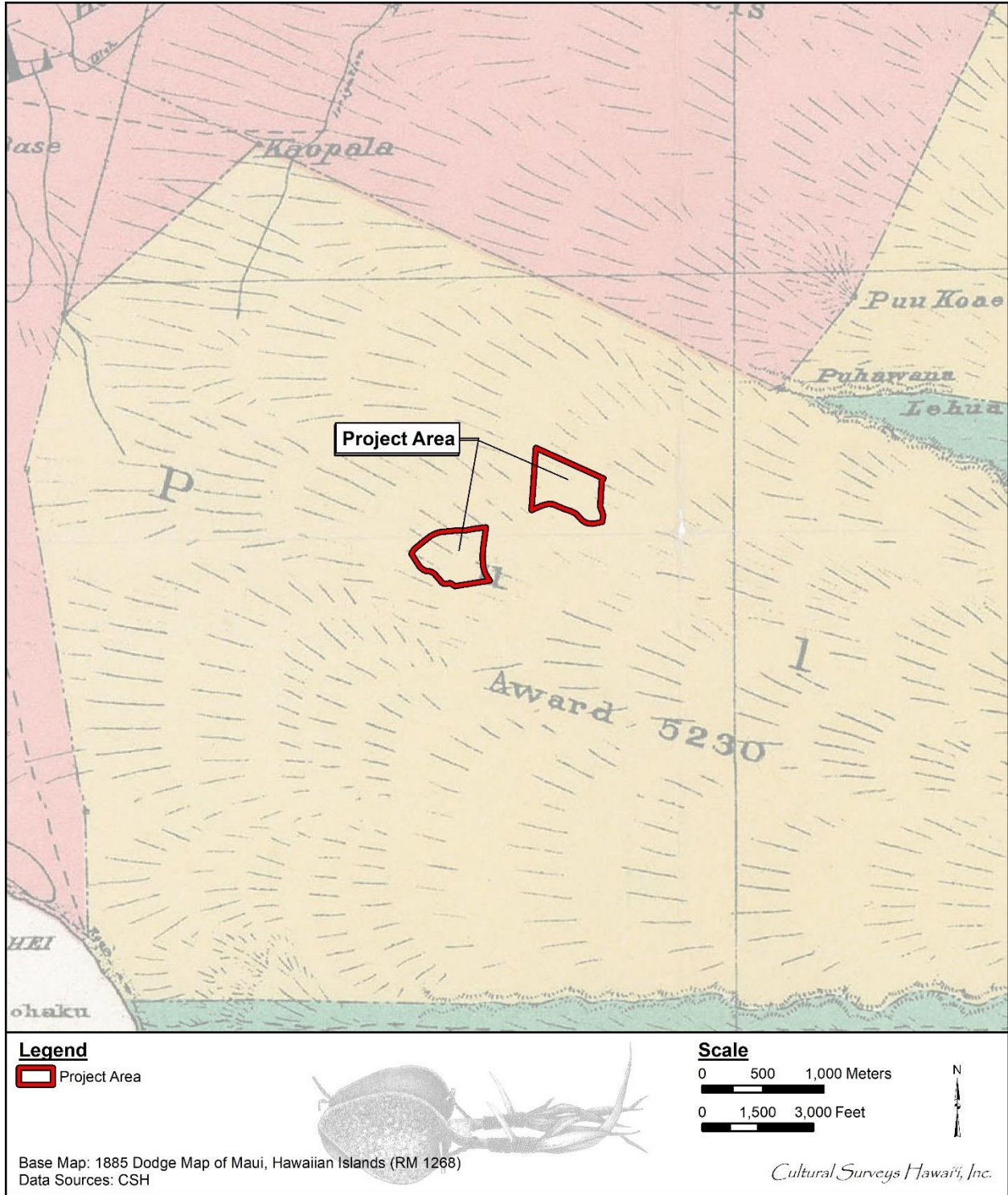


Figure 7. Portion of the 1885 Dodge map of Maui (RM 1268) showing the location of the project area within Award 5230 (Dodge 1885)

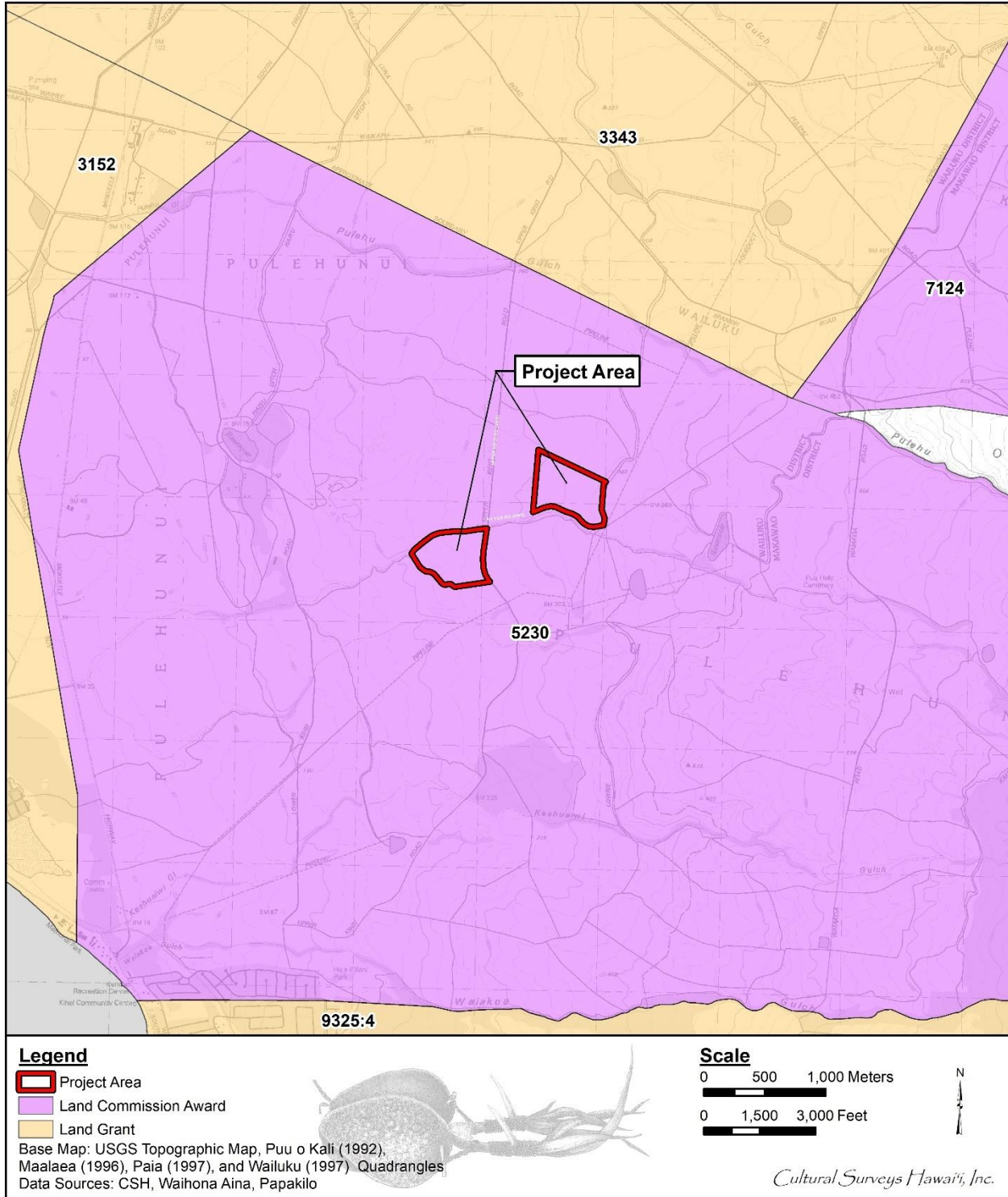


Figure 8. USGS topographic quadrangle map with an overlay of Land Commission Awards and Land Grants recorded in the vicinity of the project area (U.S. Geological Survey 1992, 1996, 1997a, 1997b)

Boundaries. As a result, the original 2,000 feet of coastline from Kīhei to Kalaepohaku that was attributed to Pūlehu Nui Ahupua‘a was upheld. (McCully J Court Opinion, in Sterling 1998:254-257)

2.1.4 Late 1800s through Early 1900s

By the time John Halstead closed shop in 1876, the boom years of Kalepolepo had passed. By 1880 the government survey of the Kula area showed the demarcation of only a few LCAs and those who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). Kennedy (1992:9) notes that at this time *kiawe* (*Prosopis pallida*) was imported to feed cattle and provide wood.

Regarding the settlement at Kalepolepo and the impact of the changes associated with the change to ranching on the general area known as Kīhei, Clark (1980:48) comments:

Halstead finally closed his store in 1876, as demands for his goods had steadily decreased, and moved to Ulupalakua . . . By this time the once thriving Hawaiian village at Kalepolepo had been almost totally abandoned as well. The slopes of Haleakala had gradually become denuded of their forests and torrential rains had caused heavy soil runoffs into the Kalepolepo shoreline. Cattle had trampled down the brush and grassy fields, causing sand dunes to drift and fill up the pond. Clouds of dust filled the air instead of cooling winds. Except for a handful of fishing families, Kalepolepo [and likely the Kīhei area in general] was deserted (Clark 1980:48).

The shift in the economics of coastal Pūlehu Nui to ranching was also noted by E.S. Craighill Handy. He noted that large sections of “Crown Lands” which had not been claimed as *kuleana* [family homestead property] during the Māhele (1848 and later) were given by the Kingdom to various Pūlehu Nui ranchers. The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains of Pulehu Nui were soon covered in *kiawe* forests (Handy and Handy 1972:510-511). In this manner, upland agricultural pursuits gradually gave way to ranching activities as the demand for locally produced agriculture dropped with the closure of the nearby entrepot at Kalepolepo.

Sugar would soon fill the void, and in late 1898 the Kīhei Plantation Company, Ltd (KPC) was organized with a capitalization of 60,000 shares at \$50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui’s arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of the Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. Sugar prices were rising due to the outbreak of war between the United States and Spain over the colonies in Cuba, Puerto Rico and the Philippines. Henry P. Baldwin, of the Maui plantation of HC&S, entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston’s landholdings in Kīhei into a sugar enterprise (Dean 1950:62).

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā'alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā'ia, to irrigate fields in Pu'unēnē (Wilcox 1996).

The McCandless Brothers drilled a successful Maui-Type well (U.S. Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 feet through the Honomanū basalts, and tunneled laterally over 1,500 feet in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei, and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu'unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the 'Ōla'a Sugar Company in Hawai'i, in exchange for a supply of steel rails for new railway requirements at Pu'unēnē. A large-scale Kona storm hit the plantation on November 15th, 1900, and caused immense damage to both Kīhei and the HC&S fields in Pu'unēnē. Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu'unēnē commencing operations January 29, 1902 (Dean 1950).

The Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was fully developed. It would have been named the HC&S K2 well, and would have included a large pumping station (Stearns and Macdonald 1942).

2.1.4.1 Railway Operations

The Kihei Plantation Company planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive "Haleakala" was built and sent on to Maui (Condé and Best 1973).

By March of 1900, the first annual report of the Kihei Sugar Company stated, "It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February" (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made it possible to harvest and transport over two thousand tons of sugar in a single year (Figure 9) (Dean 1950).

The laying of the railroad and the cultivation of the sugar cane was performed primarily by Japanese field labor. Kīhei's plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided

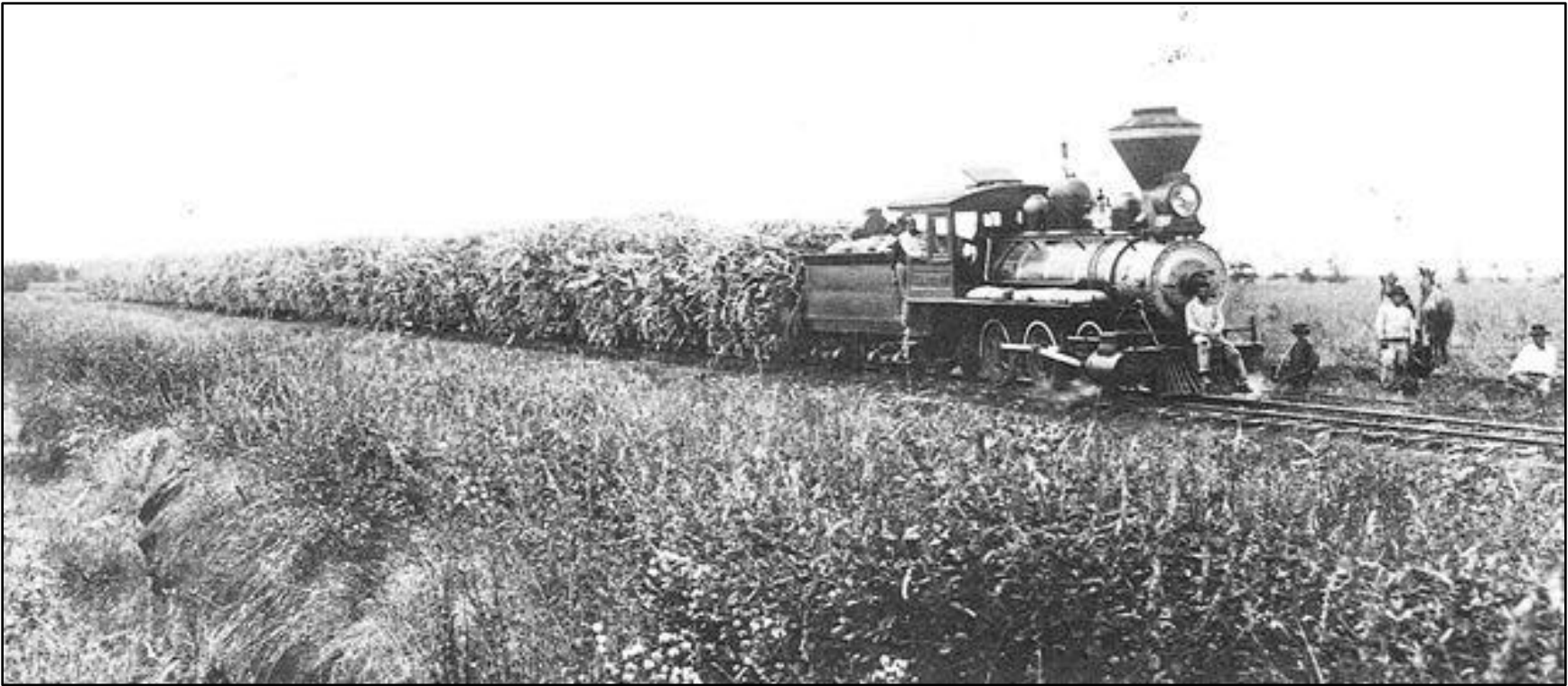


Figure 9. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973)

by HC&S in Pu'unēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907). A 1910 map of the HC&S plantation in Pu'unēnē depicts a portion of the field and rail network surrounding the project area (Figure 10). The "Upper Main R.R. Kihei" extended across Kolaloa Gulch between Increments 2 and 4 of the project area. A spur from this line extended through Increment 4 of the project area to the "K. No 4 Reservoir Ditch. Camp K-3, labeled as "Pump 3-K" is located adjacent to the project area along Makawao Road.

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company's rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kihei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from "Haleakala" to "Hawaiian Commercial & Sugar #4," becoming renamed again in 1910 as "Kihei" (Figure 11) (Condé and Best 1973:230-231).

2.1.4.2 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa'a'ea Reservoir, at the 1,000 ft. elevation, and maintain a four-foot drop per mile following the ditch's initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. The Halehaku Gulch, at 250 feet deep, and the Māliko Gulch, at over 350 feet deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā'ia, the allocation of water began. The first tenth of the water flow in the Lowrie Ditch was divided out to the Pā'ia Plantation (an 11/20ths share) and the Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation's Kīhei boundary, was 21.9 miles (Thrum 1900).

More water was required from wells and the East Maui watershed. The manager for the Kihei Plantation Company, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. It was determined that the Kihei Plantation Company would receive 2/9ths of the capacity from the enterprise (Figure 12) (Dean 1950).

The Kihei Plantation Company failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko'olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to \$7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined that the best course of action was to buy out the company for \$375,000 (Condé and Best 1973).

In 1908, the lands of the Kihei Plantation Company were divided up between five new major business entities of HC&S; the Kailua Plantation Company (994 acres), the Kalialinui Plantation Company (923 acres), the Kula Plantation Company (996 acres), the Makawao Plantation Company (982 acres), and the Pulehu Plantation Company (978 acres) acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were reapportioned between the new plantations (Dean 1950). Sugar operations continued in North Kīhei until circa 1968, when HC&S leased lands to a corn research farm.

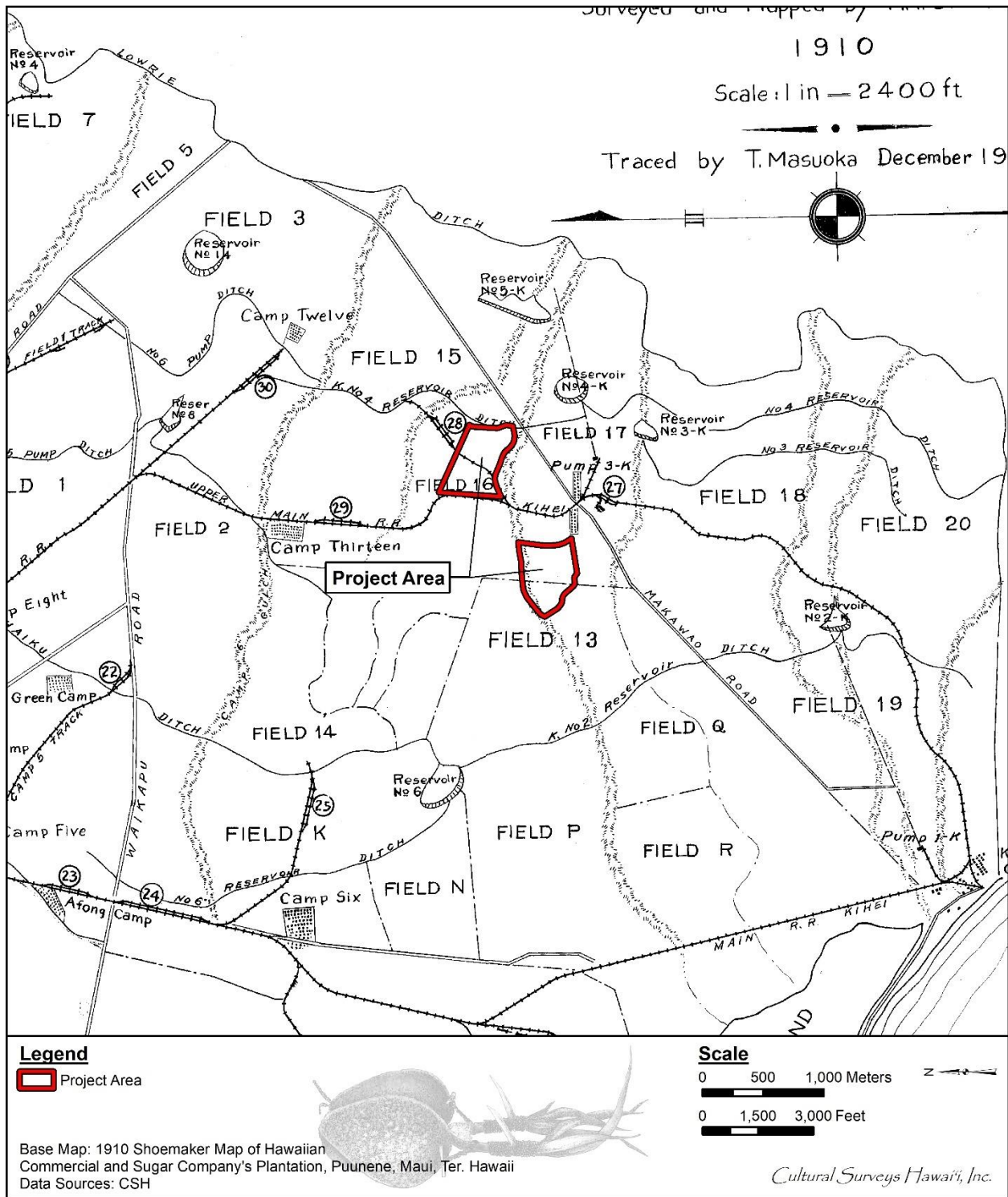


Figure 10. Portion of the 1910 Shoemaker map of the HC&S Plantation in Pu'unenē showing the current project area (Shoemaker 1910)



Figure 11. KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4”
(Condé and Best 1973:231)

H. C. & S. CO.						
Water Deliveries to Kihei Plant. Co., Ltd. During Month of October, 1907.						
DATE	DUMP WATER		MOUNTAIN WATER			
	Inches	Mill. Gall.	Inches	Mill. Gall.		
1	122	041				
2	130	045				
3	152	056				
4	160	060				
5	112	034				
6	070	015				
7			074	017		
8			068	014		
9			126	043		
10			050	005		
11			112	031		
12			218	095		

Pumps were run from the 1st to the 6th inclusive. —
 Water delivered to K.P.Co. — 0 —

Pump water - mill. Gall.	Price	
6 Days 2.53	@ \$12.25	\$30.86
Mountain water		
25 Days 14.27	@ \$5.90	84.21
31 Days 16.80		<u>\$114.57</u>

Figure 12. Portion of an accounting statement for water delivered to the Kihei Plantation Company in 1907 (CSH archives)

2.1.5 Early 1900s to Mid-1900s

The post-WWI years saw HC&S add electricity to some villages. HC&S completed the Waikapū well [Well 7] in 1926 - one of the largest deep wells in the world. The additional capacity of 40 million gallons per day (mgd) was instrumental in planning for more sugar and industry within Maui's central plains. On November 11, 1929, Inter-Island Airways, Ltd. began flying regularly scheduled flights between the Hawaiian Islands. Amphibious eight-passenger Sikorsky S-38 aircraft landed at Mā'alaea Bay, taxied up a concrete ramp, and delivered passengers to waiting automobiles for the trip to Wailuku and points beyond (Saito 2008). By 1936, the airline had purchased three new sixteen-passenger Sikorsky S-43 aircraft to supplement their four S-38's (Kennedy 1937).

Harold T. Stearns traversed the island of Maui between 1932 and 1942, conducting studies of the geology and ground-water resources. Between 1939 and 1940, Gordon A. Macdonald completed geologic maps for the study. Their combined work highlighted the then-recent explorations for water in Pūlehu Nui as a source of drinking water and for dust control during construction of the airport (Stearns and MacDonald 1942). They reported that the isthmus of Maui "was without trees and covered with drifting sand prior to the planting of cane. Old residents report that red dust storms were nearly a daily occurrence. It seems possible that very little water existed under the Maui isthmus, prior to irrigation. If so, the annual pumpage of 45.500 million gallons (average over the past 10 years) represents mostly return flow from the 78.271 million gallons of surface water imported for irrigation. [This measurement establishes that] recovery from wells is about 58% of surface water deliveries."

2.1.5.1 Pre-WWII Aviation History

By 1937, the Civil Aviation Authority (C.A.A.) for the Territory of Hawai'i recommended an airport for Pu'unēnē to accommodate the continued growth of commercial service. The site was approved by the U. S. Army, Inter-Island Airways (later Hawaiian Airlines), HC&S, the Kahului Railroad Company, and the C.A.A. (Balch 1938). Three intersecting runways were designed alongside the existing government roadway and railway lines connecting Kīhei Village to the HC&S mill and village at Pu'unēnē.

By 1938, it was clear that Japanese aggression against mainland China was jeopardizing the political stability of the Pacific region (Morison 1951). Pacific Naval Air Bases (P.N.A.B.) construction engineers were assigned to reinforce United States military outposts across the Pacific. In Hawai'i, the construction of new civilian airports at Kane'ohe (O'ahu), and Pu'unēnē (Maui) was undertaken by U.S. Engineer Department (U.S.E.D.) contractors. Prior to 1940, thirteen separate defense-related construction projects were begun in the Hawaiian Islands, primarily at Pearl Harbor (Woodbury 1946).

The Hepburn Board, a commission of six officers and engineers reporting to the United States Navy, authorized the immediate military-backed expansion of an existing design for a civilian airfield at Pu'unēnē. Quarters for a permanent utility squadron, as well as for rotating Carrier Air Service Units (CASU) crews, were hastily approved (Woodbury 1946). U.S. Engineer Department and Pacific Naval Air Base construction crews began work on June 17, 1940, building quarters and messing facilities for 500 men. The Navy used barracks at the National Guard Camp in Paukūkalo while completing buildings at NAS Puunene (Shettle Jr. 1997).

Two 50,000-gallon above-ground gasoline tanks were erected, and railroad spurs were laid to facilitate a direct supply line with the Kahului Harbor. As work progressed, a slew of change orders added bombproof revetments for aircraft storage, as well as bomb and ammunition magazines. By the time Pearl Harbor on O'ahu was attacked, Naval Air Station Puunene was an active training base (Navy 1947).

The location of Utility Squadron Three (VJ-3) at the Pu'unēnē airfield was found to be ideal for operations involving the use of radio-controlled aircraft for anti-aircraft training. The development of radio-controlled full-scale aircraft was code-named "Project Dog," and began as a military program located on the east coast of the United States in the mid 1930's (Fahrney 1982). "Project Dog" was moved to San Diego in 1938, and finally to the Navy's Maui Airport at Pu'unēnē early in 1940, in order to prove the practicality of radio-controlled assault drones. These were the earliest experiments leading towards the development of the guided missile.

Full-scale fortification of the Hawaiian Islands began in January 1940, immediately after President Franklin D. Roosevelt cancelled all trade agreements with Japan. On May 7, 1940, the U.S. Pacific Fleet was ordered out of the Port of Los Angeles, to be based at Pearl Harbor in the Territory of Hawai'i. This action was designed as a deterrent against further aggression by Japan in the Pacific region (Morison 1951).

Lieutenant Robert F. Jones commanded VJ-3 at NAS Puunene and advanced the syllabus of testing radio-controlled aircraft to the point where a radio-controlled aerial torpedo was thought to be possible. By April 1941, the Navy's efforts to develop a practical way to control drone aircraft from greater distances was in full swing (Rogers II 2002). In the middle of this research program, Navy Fighting Squadron VF-2 arrived at the Pu'unēnē aerodrome for training purposes in April 1941.

Flying F2A Brewster "Buffalo" fighter aircraft, the "Flying Chiefs" of VF-2 trained on Maui for approximately two months, returning to sea with the U.S.S. Lexington to take part in operations to ferry aircraft and supplies to Midway Island. The training regime of VF-2 included the use of "unrestricted air space for gunnery and tactics and many nearby bombing and strafing targets" (Lacouture 1989). The target range was located at lower 'Ulupalakua and the aircraft used practice bombs filled with lime powder and beach sand to mark their accuracy.

In May 1941, the 1st Battalion of the Army's 299th Infantry Regiment was assigned to establish defensive positions along the exposed coastal areas of Maui. Tents housing the administrative section for the Army's 24th Infantry Division, and the Fourth Platoon Signal Company, Aircraft Warning Air Corps Detachment, were located within a 14-acre section at the Maui Airport at Pu'unēnē (Allen 1950).

Plans were drawn up to expand the airfield to a size large enough to support both a Navy carrier air group and an Army Air Corps bombardment group. On average, pre-war U.S. Navy air groups consisted of 90 aircraft, made up of scout, dive-bomber, fighter, and torpedo divisions. A pre-WWII Army Air Corps bombardment group, consisting of three squadrons of medium or heavy bombers, would have numbered about 30 aircraft (Morison 1953).

2.1.5.2 World War II (1941-1945)

With the outbreak of war between Japan and the United States, NAS Puunene became the command headquarters for both Navy and Army units on the island of Maui. Plantation heavy

equipment and plantation operators worked side by side with U.S. Engineering Department personnel to accelerate construction of defensive positions and immediately lengthen runways at the base. The call for an immediate extension of the runways to military specifications involved extensive engineering to reroute miles of irrigation culverts for HC&S. The dispersion of facilities planned for NAS Puunene would come to utilize over 2,500 acres of land, and involve housing for over 5,000 men (Cotten 1945).

The attack on Pearl Harbor, December 7th, 1941, forced the “Project Dog” program at NAS Puunene to assign its research to safer bases on the mainland United States. Wartime operations for VJ-3 would concentrate exclusively on providing radio-controlled aircraft as realistic targets for fleet anti-aircraft gunnery training exercises (Rogers II 2002). Under wartime conditions, responsibilities for VJ-3 included maintaining an intense schedule of weather flights, rescue flights, and anti-submarine reconnaissance flights in the waters surrounding Maui.

Early in 1942, the first Carrier Air Service Unit, CASU-4, was commissioned at NAS Puunene, and the utility squadron personnel of VJ-3 were reinforced by Naval Air Station Officers. In June 1942, VF-72 (U.S. Navy Fighting Squadron 72), the first of over 150 squadrons of U.S. Navy fighter, bomber, and scout aircraft, arrived for advanced training prior to moving into forward combat areas (Wilcox 2004). For four days in early June 1942, as the Battle of Midway raged 600 miles to the northwest, NAS Puunene personnel were ordered into shelters and revetments, expecting bombing raids by Japanese aircraft sweeping across the Hawaiian archipelago (Vint 2000). With the success of American naval forces at Midway, the threat of a Japanese invasion of the Hawaiian Islands was postponed, and U.S. efforts to outfit military bases in the Hawaiian Islands for wartime training were redoubled.

Anti-aircraft gun emplacements and protective aircraft revetments were given top construction priority by the U.S. Pacific Naval Air Bases supervisors. Heavy equipment and civilian operators from Wailuku Sugar Company and Hawaiian Commercial & Sugar Company were employed at NAS Puunene, with their pay charged back to the U.S. government. Sugar milling at plantations across the Hawaiian Islands was confined to daylight hours until “blackout” procedures for night operations were approved (Allen 1950:289).

U.S. Engineering Department (U.S.E.D.) construction contractors were reinforced at NAS Puunene by additional Pacific Naval Air Bases (P.N.A.B.) personnel in July 1942. Domestic water pipelines were laid by HC&S to supply military camps being constructed at ten separate locations across the central Maui plains, including the Camp 6 location proximate to NAS Puunene. The main government road and the railroad lines that served the wharf at North Kihei were rerouted, as NAS Puunene expanded. The U.S. Army National Guard 108th Regiment, 27th Infantry Division, took up defensive duties along Maui’s coastlines beginning March, 1942, and occupied formal headquarters at NAS Puunene (Army 1948). On November 16, 1942, 400 men forming an advance echelon of the Navy’s 39th Construction Battalion arrived at NAS Puunene, to begin construction of underground fuel bunkers, bombproof buildings, ammunition magazines and an aviation ground school (Cressy 1944).

The establishment in 1943 of NAS Puunene as a “Top Gun” school for fighter-aircraft tactics was based on the Navy’s use of highly-decorated veteran fighter pilots, such as Commanders Edward “Butch” O’Hare, James “Jimmy” Flatley, and James “Jim” Thach to relay the latest intelligence from the front lines to new pilots rotating into combat (Feightner 1997). “Maui Group

Local Naval Defense Forces”, based at NAS Puunene, controlled the training airspace over the Kaho‘olawe aerial bombing ranges, and administered the training schedule (Lundstrom and Ewing 1990). Army National Guard Divisions were assigned to occupation, guard, and training stations in the Hawaiian Islands during World War II. Shoreline defenses held by the 27th Infantry Division on Maui were replaced by men of the 40th Infantry Division (U.S. Army 1947). As elements of both the 27th and 40th Divisions were combined and sent to the South Pacific for combat duty, they were replaced on Maui by regiments from the 33rd Infantry Division (Journal 1948). A resident of Maui during WWII said, “It was common to see groups of soldiers wearing their unit insignias all over Maui: the “Sunshine” [40th Division], and “Golden Cross” [33rd Division], and the last ones stationed here were the “Mohawks” [98th Division]”(Sanford 2004).

As of March 6 1943, the 48th Construction Battalion (“SeaBees”) replaced the 39th C.B., and immediately began construction of a new sewer and water system for NAS Puunene (Turner 1945). Newsletters published by the 39th Seabees (*Shore Lines*) and the 48th Seabees (*Trade Wind*) were joined by an official NAS Puunene newspaper, “To All Hands” (later renamed *The Island Breeze*). The publisher of the “Maui News,” Maui’s leading civilian newspaper, printed a companion weekly named “The Valley Islander,” which incorporated military news from all of the services based on Maui, including the 4th Marine Division in Kokomo (Sanford 2008). All military news in these papers was censored, but personnel changes, “scuttlebutt” gossip columns, and sports highlights featuring teams organized within military leagues on Maui attracted an avid readership.

The 127th SeaBees relieved the 48th SeaBees in May of 1944, and finished an extensive network of ammunition magazines located toward Kīhei of the main air base. The completion of expanded housing areas, a second CASU area, and additional “SeaBees” housing was accomplished before the end of 1944. Two Mobile Construction Battalion Units, CBMU 563 and CBMU 575, arrived to maintain the refrigeration and water purification systems.

On July 1, 1945, NAS Puunene personnel numbered 565 officers and 2,798 enlisted men, including seven Navy nurses, eight WAVES (Women Accepted for Volunteer Emergency Service) officers, and 92 WAVES enlisted personnel (Monthly Station Report of On-Board Personnel, NAS Puunene, “Confidential,” 1 July 1945). Total aircraft on board numbered 271 (Monthly Station Report of On-Board Aircraft, “Confidential,” 1 June 1945). The total number of structures built numbered over 300 (Cotten 1945).

Immediately following the August 1945 surrender of Japan to the military forces of the United States, facilities essential to the operation of Naval Air Station Kahului began to be removed from Pu‘unēnē. The bowling alley, bakery, and other specialized structures at NAS Puunene were relocated to NAS Kahului, only to be partially or entirely destroyed by a series of tidal waves that struck NAS Kahului facilities April 1, 1946 (Priestman 1946).

During 1946, Mauians were allowed to rent residential structures in Housing Area “A”, the area closest to the *pūnāwai* (Reservoir 6) known as “Airport Village”. The cost was reportedly \$36.00 per month (Cabos 2000). By 1947, the HC&S Company began to reclaim over 100 acres of former cane land for sugar cultivation in Parcels 2-B, 2-C, 2-F and Parcel 7 (Figure 13). During 1947, the use of the airstrip at Pu‘unēnē by civilians led some Mauians to believe that the site might be further expanded as a general aviation facility (Belknap 1947). But by the end of 1948, the site of the former Naval Air Station at Kahului had been chosen to replace the Pu‘unēnē site for all future civilian flight operations (Yoklavich et al. 1997).

By quitclaim deed dated December 31, 1948, the lands of the former air base were transferred from the United States back to the Territory of Hawai'i. In 1950, the *Maui News* reported that plans to allow for subsistence farming and the raising of pigs on five to ten-acre plots on former NAS Puunene lands were proceeding (*Maui News*, 8-23-50 1:1) (Figure 14).

The remaining base facilities, most of which were wooden structures, had, by that time, been abandoned or demolished. In May, 1951, the operations of Hawaiian Airlines and Trans-Pacific Airlines (later Aloha Airlines) were moved to the new civilian airport at Kahului, which utilized the runways of the former Naval Air Station Kahului. Thereafter, the airfield at Pu'unēnē was placed on "caretaker status", and sugar cultivation reclaimed much of the land area formerly dedicated to the aerodrome (Figure 15).

2.1.6 Modern Land Use

Many changes occurred in Kīhei following the end of World War II in 1945. With the airfield abandoned, a *Maui News* article reported that Maui farmers had begun to raise alfalfa on some of the land at NAS Puunene (Young 1950). Shortly following statehood in 1959, the County of Maui established a network of Civil Defense fallout shelters across the county, as well as in the Pu'unēnē airport area. Revetment and splinter shelters of the former air base were reorganized for civilian use and stocked with supplies of water, crackers and Geiger counters in the event of an atomic attack. In all, six separate shelters were established within the former boundaries of NAS Puunene, with a combined capacity estimated to accommodate 1,213 people (Figure 16).

Postwar aircraft enthusiasts used the abandoned runways 1-19 and 14-32 for general aviation operations until the early 1960's, when all general (civilian) flight operations were transferred to the Kahului Airport. A short portion of runway 1-19 remained open to support the aerial chemical spraying operations of the HC&S Company. Sanctioned drag races began in 1963, when the Valley Isle Timing Association was organized to regulate drag racing on runway 14-32, at the former airfield. The Hawai'i Army National Guard developed a 30-acre parcel of property within the former air base for use as an armory, which included facilities for helicopter and military vehicle maintenance (Helber et al. 1995).

By the mid-1970's, sugar cultivation operations had demolished all but one of the main runways, and had retaken most of the land area (over 1,400 acres) previously given up for the original pre-war Maui Airport. A 1976 aerial photograph depicts the expanse of sugar cane growth within and surrounding the vicinity of the project area (Figure 17). Since the 1970s, these fields within the project area were further expanded into offshoot portions of Kolaloa Gulch (see Figure 3). The project area continued to be used for commercial sugarcane growth until the closing of HC&S production in 2016.

The Hawaiian Cement Puunene Quarry started in the late-1970s with 28 acres. The quarry was further expended in 1980 to 194 acres. The primary resource of the quarry is basalt that is crushed and used for road base course, concrete and pavement aggregate, railroad ballast, and many other purposes (Yanik 2018).



Figure 13. Postwar NAS Puunene showing a return of some land to sugar cane cultivation in foreground, at center, right; photo dated Feb. 12, 1947, and back stamped "U.S. Army Air Forces Photo Lab," (Command 1947)

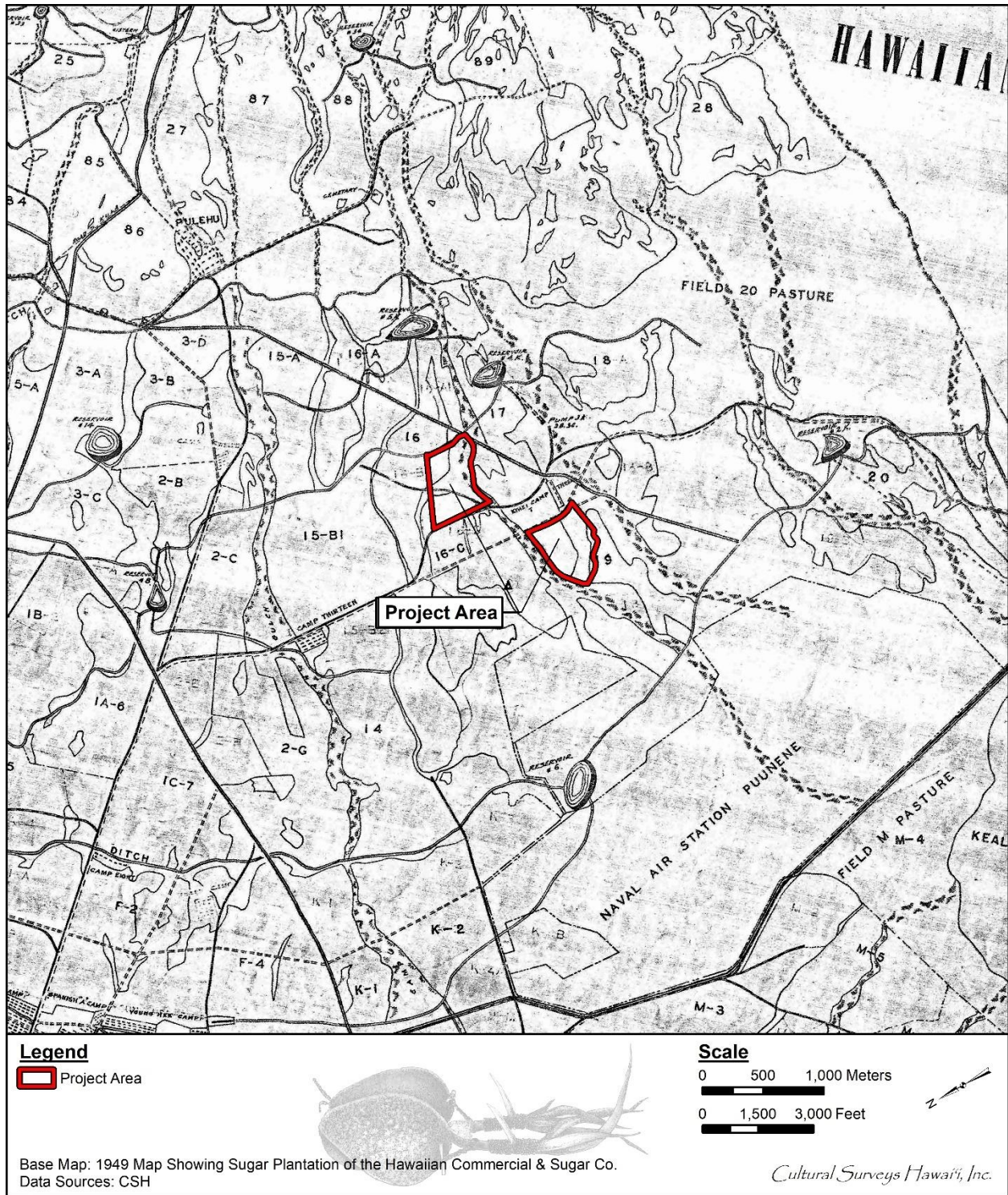


Figure 14. Portion of the 1949 HC&S sugar plantation map showing the boundary of NAS Puunene located west of the current project area (Hawaiian Commercial & Sugar Co. 1949)

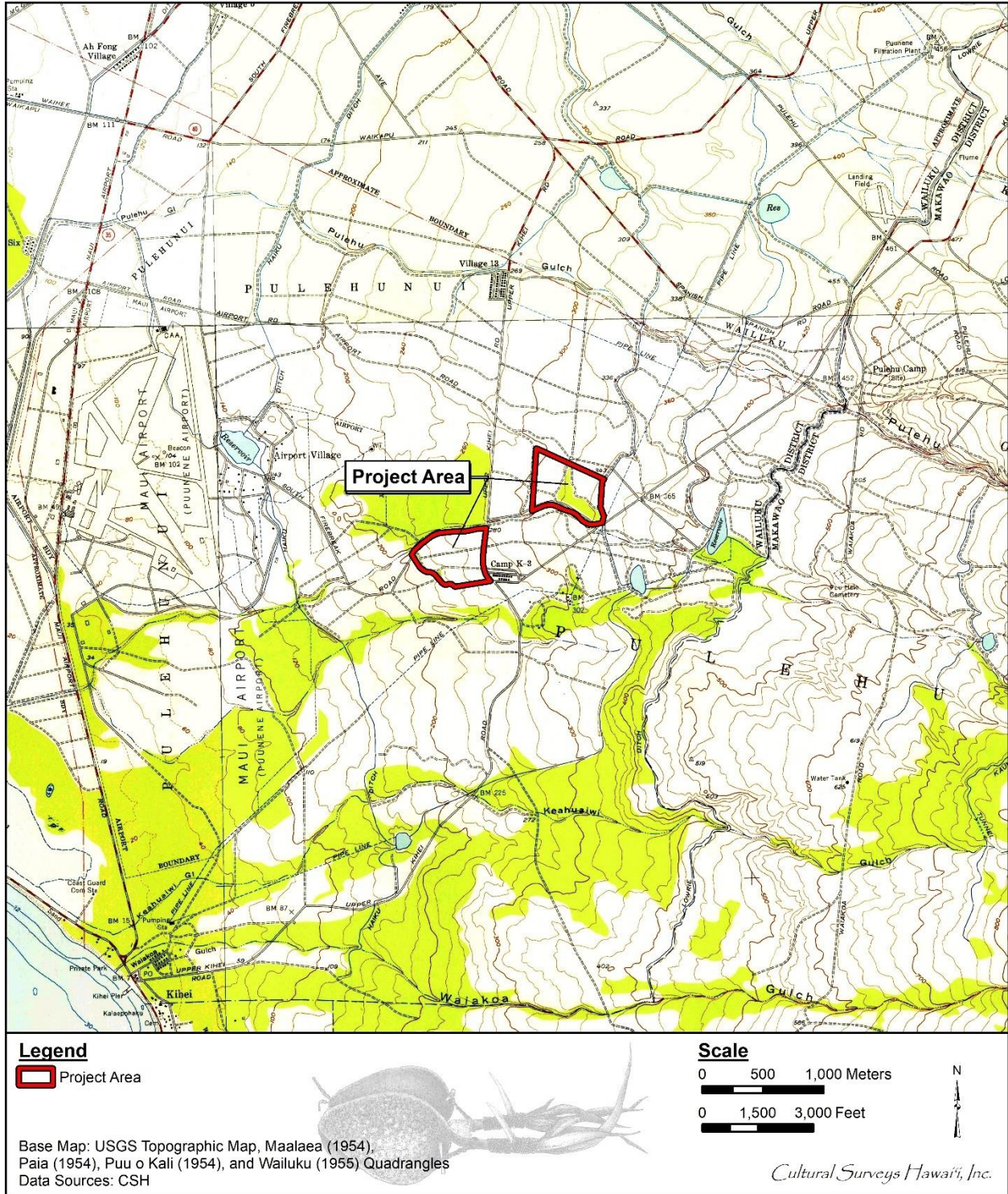


Figure 15. Portion of the 1954 USGS topographic quadrangle depicting the layout of the NAS Puunene (labeled Maui Airport) in the vicinity of the project area

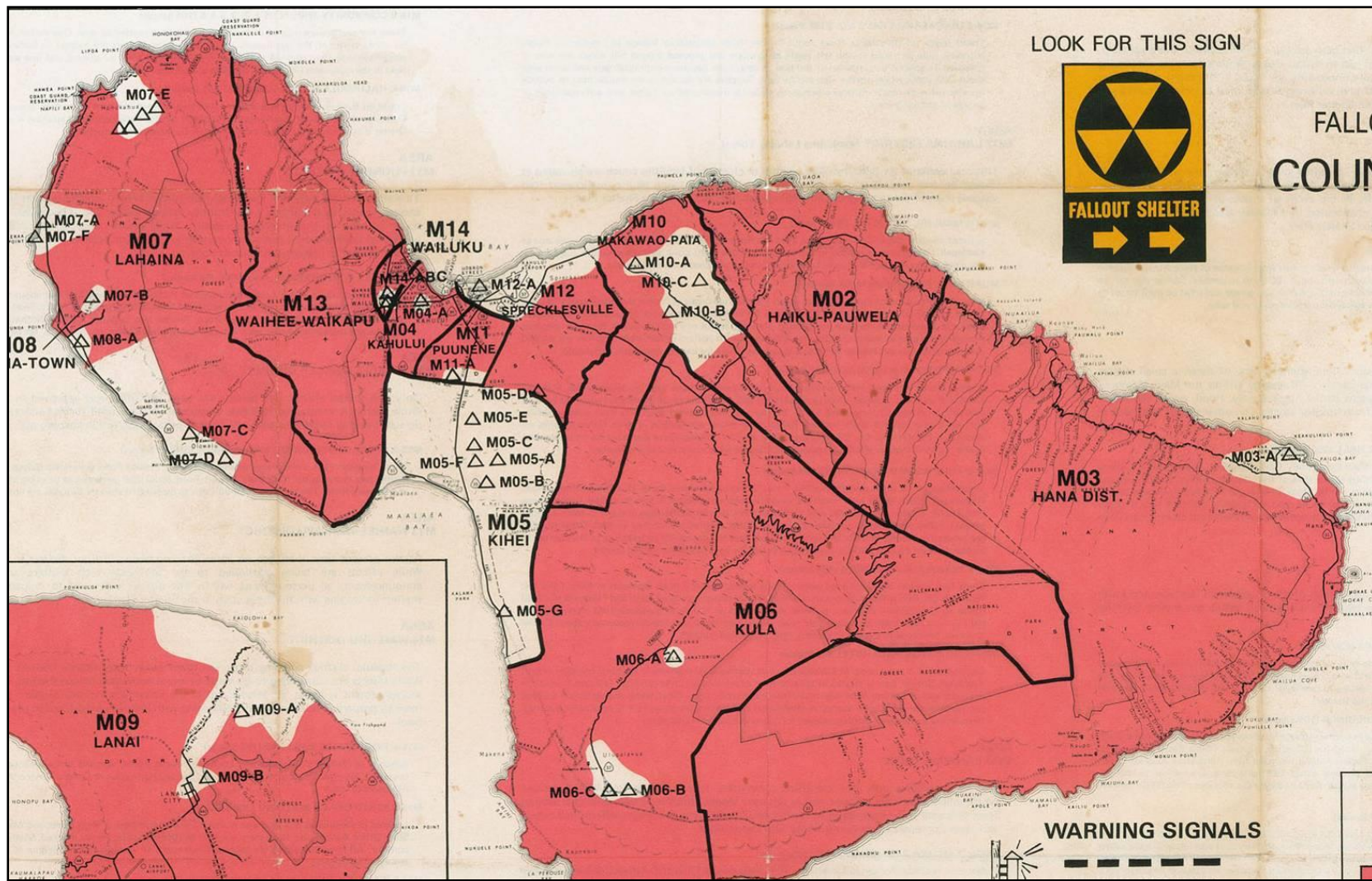


Figure 16. Maui Island map showing MO5 A through F, splinter shelters of the former NAS Puunene that were outfitted as fallout shelters in the 1960's (County of Maui n.d.)

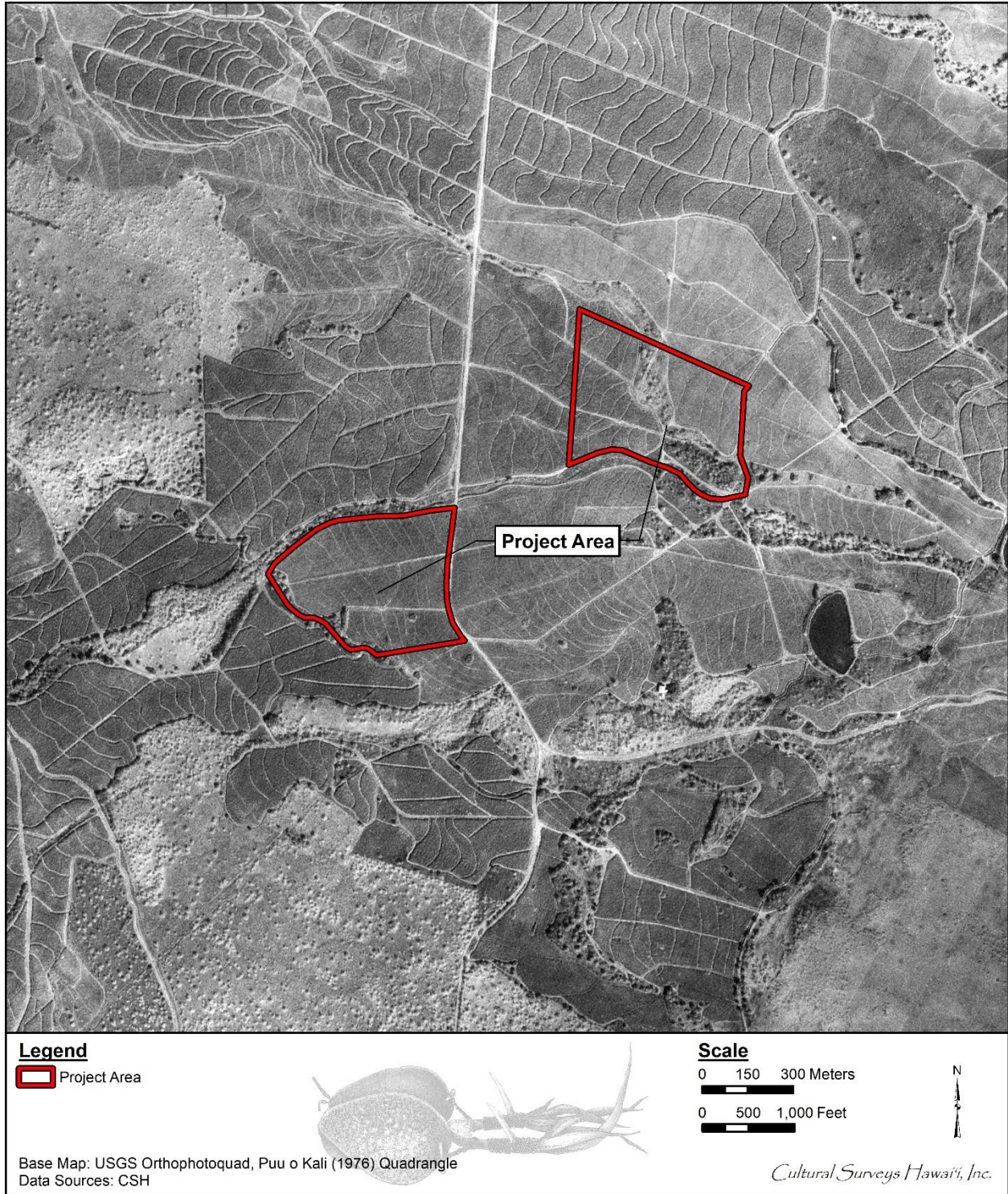


Figure 17. Portion of the 1976 Puu o Kali USGS orthophotoquad showing the expanse of commercial sugar cane fields within and surrounding the current project area (U.S. Geological Survey 1976)

2.2 Previous Archaeological Research

The earliest archaeological studies on the island of Maui were a part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area. Between 1931 and 1976, only sporadic archaeological studies were undertaken in the region and none in the vicinity of the project area.

Following the passage of the National Historic Preservation Act in 1966 and HRS Chapter 6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis. The lands surrounding the current project area have been subject to a variety of studies as described in Table 2 and depicted in Figure 18. These studies have identified NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-4164), sugarcane plantation features (SIHP # -4800), post-war ranching features (SIHP # -4801), the Kīhei Railroad bed (SIHP # -4802), the Haiku Ditch and reservoir (SIHP # -4803), and 90 other historic properties (SIHP #s 50-50-10-6693 through -6774), consisting of features associated with the sugar plantation, ranching and/or WWII period. No historic properties have been documented within the current project area. Historic properties that have been documented in the vicinity of the project area are depicted in Figure 19 and further described in Table 3.

2.2.1 Kennedy (1990)

In 1990, ACH completed an archaeological walk-through reconnaissance survey of the proposed Hawaiian Cement Puunene Quarry site including the current project area. The study documented that the entire property was covered in sugarcane with the exception of Kolaloa Gulch. The survey included an inspection of Kolaloa Gulch and the surrounding agricultural fields. No historic properties were identified, and no further work was recommended.

2.2.2 Tomonari-Tuggle et al. (2000)

In November 1999, International Archaeological Research Institute, Inc. (IARII) conducted an AIS of the former location of naval air station (NAS) Puunene (Tomonari-Tuggle et al. 2000), located north of the present project area. The entire NAS Puunene, consisting of 165 features, 59 of which are standing structures, has been deemed historically significant and designated SIHP # 50-50-09-4164. In addition to this historic military site, four other historic properties were identified: sugarcane plantation features (SIHP # -4800), post-war ranching features (SIHP # -4801), Kīhei Railroad bed (SIHP # -4802), and Haiku Ditch and reservoir (SIHP # -4803).

2.2.3 Lee-Greig et al. (2011)

From 18 October through 12 December 2009 and from 1 through 17 February 2010, CSH conducted an AIS of approximately 3165 acres in Pūlehu Nui for a proposed agricultural subdivision (Lee-Greig et al. 2011). Ninety historic properties (SIHP #s 50-50-10-6693 through -6774) were documented, consisting of features associated with the sugar plantation, ranching and/or WWII period.

Table 2. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Type of Study	Location	Results
Kennedy (1990)	Archaeological reconnaissance survey	Hawaiian Cement Puunene Quarry	No historic properties identified
Tomonari-Tuggle et al. (2000)	Archaeological inventory survey as part of an archaeology, architecture, and oral history report	Former NAS Puunene	Documented NAS Puunene, consisting of 59 standing structures and 165 total features (SIHP # 50-50-09-4164) and identified four other historic sites: sugarcane plantation features (SIHP # -4800); post-war ranching features (SIHP # -4801); Kīhei Railroad bed (SIHP # -4802); and Haiku Ditch and reservoir (SIHP # -4803)
Lee-Greig et al. (2011)	Archaeological inventory survey	Approximately 3165 acres located northeast and extending <i>mauka</i> from the present project area	Identified 90 historic properties (SIHP #s 50-50-10-6693 through -6774), consisting of features associated with the sugar plantation, ranching and/or WWII period
Rotunno-Hazuka et al. (2011)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 1	No historic properties identified
Fuentes et al. (2015 Draft)	Archaeological inventory survey	Hawaiian Cement Puunene Quarry Expansion Increment 3	No historic properties identified

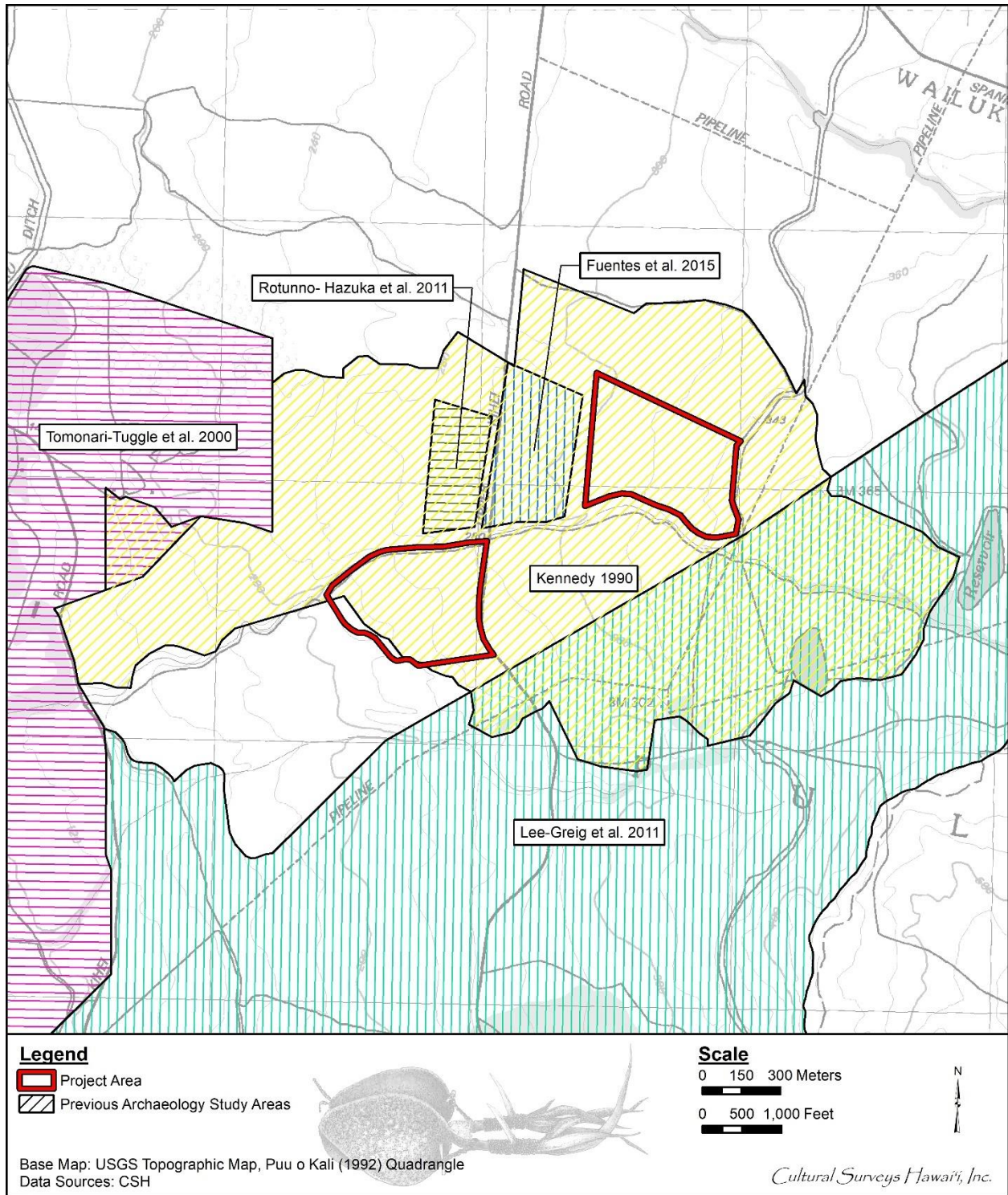


Figure 18. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previous archaeological studies in the vicinity of the current project area

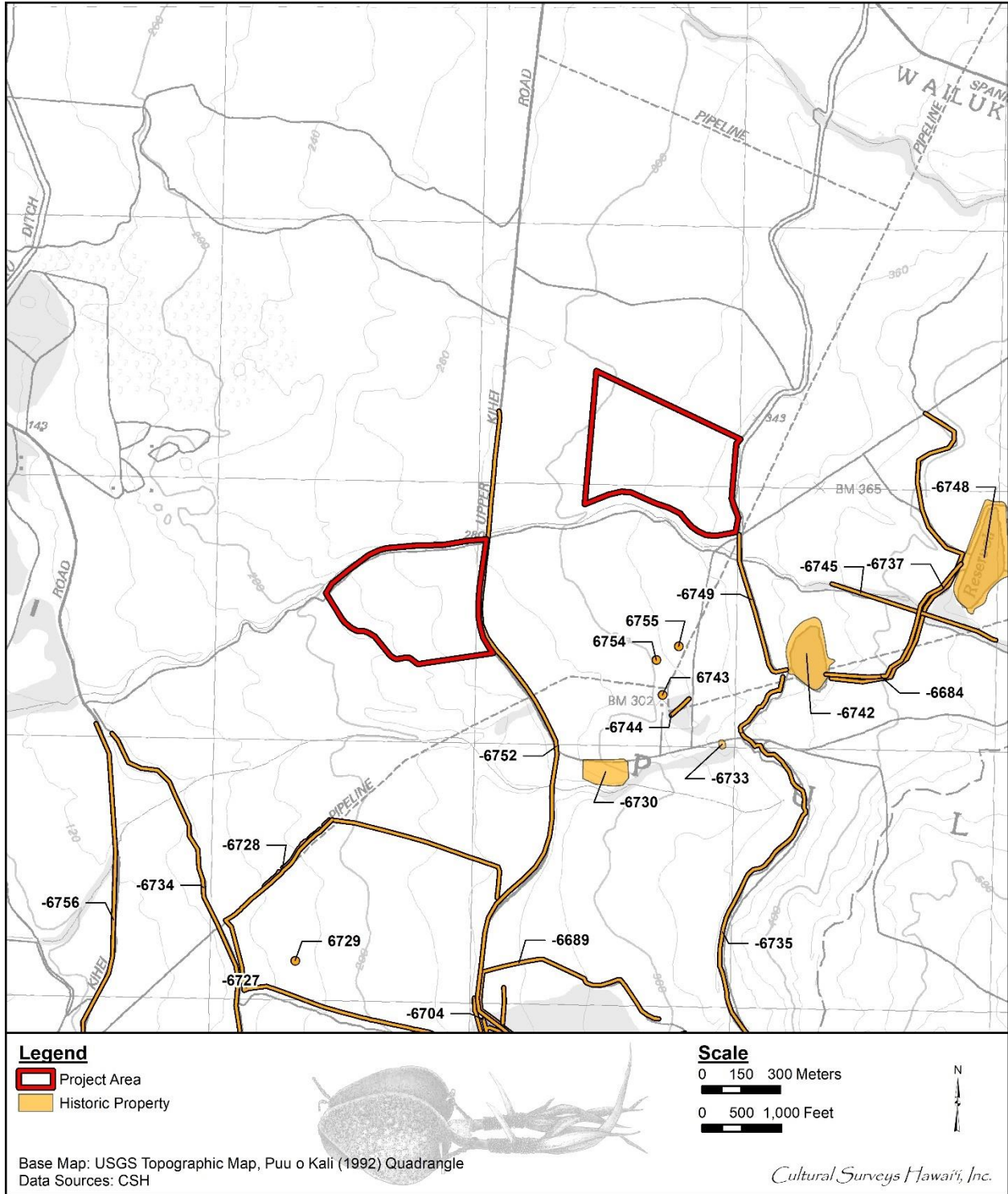


Figure 19. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previously documented historic properties in the vicinity of the project area

Table 3. Historic properties documented in the vicinity of the project area

SIHP 50-50-10-	Feature	Feature Type	Function	Probable Age	Condition
6684	None	Irrigation Pipe	Water Control	Historic Plantation	Fair to Poor
6689	None	Fence Line	Animal Husbandry	Historic Ranch	Good
6704	None	Fence Line	Animal Husbandry	Historic Ranch	Fair
6727	None	Fence Line	Indeterminate	Historic Ranch	Poor
6728	None	Irrigation Ditch	Water Control	Historic Plantation	Remnant
6729	None	C-Shape	Indeterminate	Possible Historic	Good
6730	Overall	Plantation Camp 3	Habitation	Historic Plantation	Good to Remnant
	A	Platform	Habitation	Historic Plantation	Good to Fair
	B	Wall	Indeterminate	Historic Plantation	Fair
	C	Wall	Indeterminate	Historic Plantation	Fair
	D	Depression	Indeterminate	Historic Plantation	Fair to Poor
	E	Mound	Indeterminate	Historic Plantation	Good
	F	Wall/Depression	Indeterminate	Historic Plantation	Poor
	G	U-Shape	Indeterminate	Historic Plantation	Poor
	H	Depression/Hole	Habitation	Historic Plantation	Poor
I	Terrace	Habitation	Historic Plantation	Remnant	
6733	None	Reservoir	Agriculture	Historic Plantation	Good
6734	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6735	Overall	Irrigation Ditch and Component Gates	Water Control	Historic Plantation	Good to Fair
	A	Irrigation Ditch	Water Control	Historic Plantation	Good
	B	Irrigation Gates	Water Control	Historic Plantation	Fair
6737	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6742	None	Reservoir	Agriculture	Historic Plantation	Good
6743	None	Pump House	Agriculture	Historic Plantation	Remnant
6744	None	Fence Line	Animal Husbandry	Historic Ranch	Remnant

SIHP 50-50- 10-	Featur e	Feature Type	Function	Probable Age	Condition
6745	None	Fence Line	Possible Boundary Marker	Historic Plantation	Poor
6748	None	Reservoir	Agriculture	Historic Plantation	Good
6749	None	Irrigation Ditch	Water Control	Historic Plantation	Good
6752	None	Historic Road	Transportation	Historic Plantation	Good to Poor
6754	None	WWII-Era Bomb Shelter	WWII Military	WWII Military	Excellent
6755	None	Concrete Cistern	Water Control	Historic Plantation	Good
6756	None	Historic Road	Transportation	Historic Plantation	Good to Poor

2.2.4 Rotunno-Hazuka et al. (2011)

In 2010, ASH conducted an archaeological inventory survey for the 24.476 acres for expansion within Increment 1 of the Hawaiian Cement Quarry (Rotunno-Hazuka et al. 2011). The study included the excavation of 20 backhoe-assisted test excavations that documented the agricultural plow zone developed over eroding and solid basalt bedrock. No historic properties were identified and as such, the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study recommended no further work.

2.2.5 Fuentes et al. (2015 Draft)

In 2014, ASH returned to the area to conduct an archaeological inventory survey of Increment 3 of the Hawaiian Cement Quarry (Fuentes et al. 2015 Draft). The study included the excavation of 17 backhoe-assisted test excavations with no historic properties identified. As such the study was termed an “archaeological assessment” in accordance with §13-284-5(5)(A). The study was submitted to the SHPD on 13 October 2014. The SHPD requested revisions to the study in a 12 May 2015 historic preservation review letter (SHPD Log No.: 2014.04654; Doc. No: 1505MD19). The study was revised and resubmitted to the SHPD in July 2015 and again in September 2017 with no response. Quarrying work in Increment 3 began and has continued without SHPD acceptance of the archaeological inventory survey.

2.3 Predictive Model

While previous archaeological studies conducted in the vicinity of the project area have identified numerous surface historic properties related to commercial sugarcane cultivation, ranching, and military use, no historic properties have been identified within the current project area. The project area was subject to a reconnaissance level pedestrian inspection with no finds. Two adjacent archaeological inventory surveys included a total to 37 backhoe-assisted test excavations with no finds. The adjacent studies documented that the stratigraphy of this area includes an agricultural plow zone developed over eroding and solid basalt bedrock. Based on the results of previous archaeological studies, there is a low expectation of the inadvertent discovery of historic properties within the project area. However, architectural remnants or artifacts related to plantation agriculture, the plantation railroad, or nearby military use are possible. Furthermore, while unlikely at this location given the traditional and historic background of the area, human burials have been identified beneath agricultural plow zones on Maui (Yucha and Yucha 2018 Draft; Yucha et al. 2017).

Section 3 Archaeological Monitoring Provisions

Under Hawai'i State historic preservation legislation, "Archaeological monitoring may be an identification, mitigation, or post-mitigation contingency measure. Monitoring shall entail the archaeological observation of, and possible intervention with, on-going activities, which may adversely affect historic properties" (HAR §13-13-279-3).

Hawai'i State historic preservation legislation governing archaeological monitoring programs requires that each monitoring plan discuss eight specific items (HAR §13-13-279-4). The monitoring provisions below address these eight requirements in terms of archaeological monitoring for the excavations within the current project area.

1) Anticipated Historic Properties:

No historic properties have been previously documented within the project area. A review of traditional and historical research and previous archaeological studies conducted in the area suggests that architectural remnants or artifacts related to plantation agriculture, the plantation railroad, or nearby military use are possible.

2) Locations of Historic Properties:

The entire project area was previously used for commercial sugarcane agriculture and was subject to continuous plowing. Artifacts and structural remnants may be located anywhere within the project area.

3) Fieldwork:

Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no historic properties on the surface of the project area. This inspection will be completed prior to the start of project-related ground disturbance and the results will be provided to the SHPD.

Archaeological monitoring will be conducted intermittently during the excavation of soils overlying bedrock within the project area and will include a combination of on-site and on-call strategies. CSH recommends that overlying sediment removal from the project area be scheduled to be completed in one effort as opposed to as needed during the quarrying effort if possible. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm that there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this effort, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days (approximately twice per month) to record progress and confirm that subsurface conditions have not changed. No archaeological monitoring will occur during quarrying of basalt bedrock.

The monitoring fieldwork will likely encompass the documentation of subsurface archaeological deposits (e.g., trash pits, structural remnants) and will employ current standard archaeological recording techniques. This will include drawing and recording the stratigraphy of excavation profiles where cultural features or artifacts are exposed as well as representative profiles. These exposures will be photographed, located on project area maps, and sampled. Photographs and representative profiles of excavations will be taken

even if no historically significant sites are documented. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents.

In the event of significant finds, the SHPD will be notified. If human remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. All human skeletal remains that are encountered during excavation will be handled in compliance with HAR §13-13-300 and HRS §6E-43.

4) Archaeologist's Role:

The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed, and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to ensure that the necessary archaeological sampling and recording can take place.

5) Coordination Meeting:

Before work commences on the project, an archaeologist shall hold a coordination meeting to orient the construction crew to the requirements of the archaeological monitoring program. At this meeting the monitor will discuss the procedures for both on-site and on-call monitoring. The archaeologist will also emphasize his or her authority to temporarily halt construction and that all finds (including objects such as bottles) are the property of the landowner and may not be removed from the construction site. At this time, it will be made clear that the archaeologist must be on-site to conduct a pedestrian inspection before work commences, remain on-site for five (5) full days of sediment excavation, and continue with spot checks once every 10 business-days for the duration of sediment excavation. It will also be clarified that no archaeological monitoring is required during quarrying of basalt bedrock.

6) Laboratory Work:

Laboratory work will be conducted in accordance with HAR §13-13-279-5(6). Laboratory analysis of non-burial related finds will be tabulated, and standard artifact and midden recording will be conducted as follows. Artifacts will be documented as to provenience, measurements, weight, type of material, and presumed function. Photographs of representative artifacts will be taken for inclusion in the archaeological monitoring report. Bone and shell midden materials will be sorted down to species, when possible, and then tabulated by provenience.

As appropriate, collected charcoal material obtained within intact cultural deposits will be analyzed for species identification. Charcoal samples ideal for dating analyses will be sent to Beta Analytic, Inc. for radiocarbon dating. If appropriate, artifacts may be sent to the University of Hawai'i-Hilo Geoarchaeology Lab for Energy-Dispersive X-ray Fluorescence (EDXRF) analysis in order to identify and possibly geographically locate the source material. All analyzed samples, provenience information, and results will be presented in table form within the archaeological monitoring report.

7) Report Preparation:

The report will contain sections on monitoring methods, archaeological results, stratigraphy, and results of laboratory analyses, and it will present a synthesis of these results. The report will address the requirements of a monitoring report (pursuant to HAR §13-13-279-5). Photographs of excavations will be included in the monitoring report even if no historically significant sites are documented. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human remains be identified, CSH will provide all appropriate additional written documentation (e.g., letters, memos, reports) that may be requested by the SHPD.

8) Archiving Materials:

All burial materials will be addressed in accordance with SHPD directives. Materials not associated with burials will be temporarily stored at CSH's Wailuku office until an appropriate curation facility is selected, in consultation with the landowner and the SHPD. All data generated will be stored at the CSH offices.

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Appendix A SHPD Correspondence

NEIL ABERCROMBIE
GOVERNOR OF HAWAII





STATE OF HAWAII
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai'i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:


**SUBJECT: Chapter 6E-42 Historic Preservation Review-
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)**

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 por., Pulehunui Ahupua'a, Kula Moku, Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and 13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,



Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

Ms. Lisa Rotunno-Hazuka
August 8, 2012
Page 2

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 por.s., Pulehunui Ahupua'a, Kula Moku; Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

- 1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

- 2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

- 3) Please correct the associated trench Figures to correspond with the accurate text references.

Additional Comment

- 4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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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

May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

**SUBJECT: Chapter 6E-42 Historic Preservation Review–
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)**

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 por., Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

Morgan E. Davis
Lead Archaeologist, Maui Section

Archaeological Services Hawaii, LLC
 May 12, 2015
 Page 2


Attachment

*Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at
 TMK: [2] 3-8-0047:001 por., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
 by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)*

1. Executive Summary, page 2, first paragraph: please replace "As detailed in" for "The" before 'background research.'
 - a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning "Similarly" – these statements regarding areas outside of the survey area are out of scope for this report.
2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.
3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.
4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace "piece of land district" with "section of land."
 - a. Second to last sentence, same page: please replace "Kula District" with either "Makawao District" or "Kula Moku."
 - b. Last sentence: please clarify which "this" *ahupua'a* is referring to, as two were mentioned above.
5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.
 - a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.
 - b. Page 19, final sentence: please replace lead-in "Unfortunately" with "However."
6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.
 - a. Third paragraph, second sentence: please revise – testing was not "systematic random" because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.
7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.
 - a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.
8. Table 1, pages 24-25: please continue the header on both pages.
 - a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.
9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

Archaeological Services Hawaii, LLC
May 12, 2015
Page 3

- a. Fourth paragraph, sentence beginning “Similarly” and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.
10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled “TR 3” to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.



HRS 6E,
ARCHAEOLOGICAL
ASSESSMENT AND
ARCHAEOLOGICAL
MONITORING PLAN
ACCEPTANCE LETTER
FROM STATE HISTORIC
PRESERVATION DIVISION
DATED APRIL 17, 2020

APPENDIX

E-3



DAVID Y. IGE
GOVERNOR OF
HAWAII



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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
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

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

April 17, 2020

Mr. Glen Ueno, Administrator
County of Maui
Department of Public Works
Development Services Administration Division
250 South High Street
Wailuku, Hawaii 96793

IN REPLY REFER TO:
Log No.: 2017.02140
2020.00762
Doc. No.: 2004AM09
Archaeology

Dear Mr. Glen Ueno:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –
Archaeological Assessment Report for the Hawaiian Cement Expansion Project and
Archaeological Monitoring Plan for the Increments 2 and 4 of the Expansion Project
Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui
TMK: (2) 3-8-004:001 por.**

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject draft report titled, *Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-004:001 por., Pūlehu Nui Ahupua‘a, Kula Moku, Wailuku District, Island of Maui* (Fuentes et al., March 2020). SHPD previously reviewed the subject archaeological assessment (AA) report and request revisions to the report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc. No. 1505MD19). SHPD received the subject revised report on September 17, 2017 (Log No. 2017.02140).

This letter also provides SHPD's review of the subject draft plan titled, *Archaeological Monitoring Plan for the Hawaiian Cement Quarry Mining Site Increments 2 and 4 Expansion Project, Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island, TMK: (2) 3-8-004:001 por.* (Yucha and Hammatt, March 2020). SHPD received the subject archaeological monitoring plan on March 31, 2020 (Log No. 2020.00762) following consultation between Hawaiian Cement, Cultural Surveys Hawaii Inc. (CSH, archaeological consultant), and SHPD on March 4, 2020.

The parcel has been subject to previous archaeological investigations including an archaeological reconnaissance survey (Kennedy 1990), and two archaeological inventory surveys (Rotunno-Hazuka et al. 2011 and Fuentes et al., March 2020). The two archaeological inventory survey (AIS) investigations identified no historic properties. Per HAR §13-284-5(b)(5)(A), negative AIS results shall be presented in an archaeological assessment (AA) report. SHPD reviewed and accepted the Rotunno-Hazuka et al. (2011) AA report in a letter dated August 8, 2012 (Log Nos. 2011.0298 and 2001.0340, Doc. No. 1208JP01). SHPD reviewed and requested revisions to a draft of the Fuentes et al. (October 2014) AA report in a letter dated May 12, 2015 (Log No. 2014.04654, Doc No. 1505MD19) and received the subject revised report on September 17, 2017 (Log No. 2017.02140).

The Fuentes et al. (2020) AIS was conducted in support of the Hawaiian Cement Quarry Expansion project. The project area consists of a 41.968-acre portion of the overall 2,008-acre subject parcel. Archaeological testing of the project area included a pedestrian survey of a portion of the project area spaced in 5-meter intervals. Additionally, 17 backhoe test trenches and two bulldozer cuts were excavated. No historic properties were. The AA report includes the locations of the test trenches, photographs, soil profiles drawn to scale, and soil descriptions using USDA soil terminology and attributes with Munsell colors.

The revised Fuentes et al. (2020) AA report adequately addressed the requested revisions from our previous review (Log No. 2014.04654, Doc No. 1505MD19). The report meets the minimum requirements specified in HAR §13-276-5. **The AA report is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a copy of this review letter and a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library and to lehua.k.soares@hawaii.gov.

Hawaiian Cement and their archaeological consultant (CSH) consulted with SHPD during a meeting on March 4, 2020. During the meeting, Hawaiian Cement requested SHPD review the revised AA report submitted to SHPD on September 17, 2017 (Log No. 2017.02140). Additionally, Hawaiian Cement proposed work for increments 2 and 4 of the expansion project, including a field inspection with program of archaeological monitoring for identification purposes to be conducted during the excavation of soils overlying bedrock within the project area. The proposed project will include cement quarry mining within the entire footprint of increments 2 and 4. Overlying agricultural soils will be stripped away from the surface to expose the shallow underlying bedrock to be quarried and processed. No quarrying will occur within Kolaloa Gulch.

The AMP (Yucha and Hammatt, March 2020) proposes archaeological monitoring for identification purposes and provides a summary of previous archaeological investigations and identified historic properties present within the parcel and is formatted to address the rules outlined in HAR §13-279-4 (1) through (8) and stipulates the following:

- Archaeological monitoring will begin with the completion of a 100% coverage pedestrian inspection to confirm that there are no surface historic properties within the project area. This inspection will be completed prior to the start of project-related ground disturbance;
- A coordination meeting will be conducted between the construction team and monitoring archaeologist prior to construction activities so the construction team is aware of the need for archaeological monitoring and the provisions detailed in the plan;
- Archaeological monitoring will include a combination of on-site and on-call monitoring. An on-site archaeological monitor will observe sediment excavation for up to five (5) full days to confirm there are no subsurface historic properties within the sediment deposits of the project area. If there are no significant finds during this period, the remainder of sediment excavation will proceed under on-call archaeological monitoring with an archaeologist conducting spot checks once every 10 business-days to record progress and inspect the exposed stratigraphy for historic properties. No archaeological monitoring will occur during quarrying of the basalt bed;
- Quarterly archaeological monitoring letter reports will be submitted to SHPD consisting of a cover letter with photographs, a summary of archaeological work and the status of project related construction work;
- The Quarterly reports will start with the results of the initial pedestrian survey and are intended to keep SHPD informed. A monitoring report meeting the requirements of HAR §13-279-5 and covering all the reported work will be submitted for review and acceptance following the completion of project related archaeological monitoring;
- The archaeological monitor has the authority to temporarily halt all activity in the area in the event of a potential historic property being identified, or to record archaeological information for cultural deposits or features;
- If non-burial historic properties are identified, documentation shall include, as appropriate, recording stratigraphy using USDA soil descriptions, GPS point collection, recordation of feature contents through excavation or sampling of features, screening of features, representative scaled profile drawings, photo documentation using a scale and north arrow, and appropriate laboratory analysis of collected samples and artifacts. Additionally, photographs and profiles of excavations will be collected from across the project area even if no significant historic properties are encountered. Representative profiles will be a minimum of 2-meter sections;
- If human remains are identified, work will cease in the vicinity and the find shall be secured, and provisions outlined within the Hawaii Revised Statutes (HRS) §6E-43 and HAR §13-300-40, and any SHPD directives, shall be followed;
- Collected materials not associated with burials will be temporarily stored at the archaeological firm's office/laboratory until an appropriate curation facility is selected, in consultation with the landowner and the SHPD and;
- Any changes in these provisions shall occur only with written approval from the SHPD.

Glen Ueno

4/17/20

Page 3

The plan meets the minimum requirement of HAR §13-279-4. **It is accepted.** Please send two hard copies of the document, clearly marked FINAL, along with a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library. Additionally, please send a digital copy of the final AMP (Yucha and Hammatt, March 2020) to lehua.k.soares@hawaii.gov.

SHPD hereby notifies the County that the AA report (Fuentes et al., March 2020) and the AMP (Yucha and Hammatt, March 2020) have been accepted. The permit issuance process may continue.

SHPD requests written notification at the start of archaeological monitoring. SHPD looks forward to receiving brief archaeological monitoring letter reports of findings **quarterly** as specified in HAR §13-282-3(f)(1). Subsequently, SHPD looks forward to receipt of an archaeological monitoring report meeting the requirements of HAR §13-279-5 for review and acceptance following the conclusion of archaeological monitoring work.

Please contact Andrew McCallister, Historic Preservation Archaeologist IV, at Andrew.McCallister@hawaii.gov or at (808) 692-8015 for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD

Administrator, State Historic Preservation Division

Deputy State Historic Preservation Officer


cc: The County of Maui, dsa.subdivision@mauicounty.gov
The County of Maui, building.permits@mauicounty.gov
Atlas Archaeology, atlasarch808@gmail.com
Trevor Yucha, CSH, tyucha@culturalsurveys.com
Gomes, David, Hawaiian Cement, david.gomes@hawaiiancement.com



CULTURAL IMPACT
ASSESSMENT
REPORT

APPENDIX

E-4



**A CULTURAL IMPACT ASSESSMENT REPORT IN ADVANCE OF THE
PROPOSED PUUNENE QUARRY EXPANSION PROJECT**

**PŪLEHU NUI AHUPUA‘A, WAILUKU (KULA) DISTRICT
ISLAND OF MAUI, HAWAI‘I**

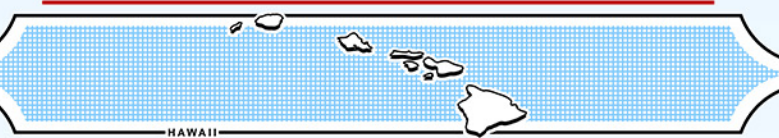
[TMK: (2) 3-8-004:001 por. AND 002 por.]

Prepared by:
Cathleen A. Dagher, B.A.
December 2020

Final

Prepared for:
Hawaiian Cement

SCIENTIFIC CONSULTANT SERVICES Inc.



1357 Kapiolani Blvd., Suite 850 Honolulu, Hawaii'i 96814

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INTRODUCTION

At the request of Hawaiian Cement, Scientific Consultant Services, Inc. (SCS) has prepared a Cultural Impact Assessment (CIA) in advance of the proposed Puunene Quarry Expansion Project. The proposed project area will be located in Pūlehu Nui Ahupua‘a, Wailuku (Kula) District, Island of Maui, Hawai‘i [TMK: (2) 3-8-004:001 por. and 002 por.]. (Figures 1 through 3). The 336-acre property is owned by Alexander and Baldwin LLC. and leased by Hawaiian Cement for quarrying purposes. Figure 4, which was provided by Hawaiian Cement, identifies Quarry Mining Site Increments 1 through 5: Increment 1 is comprised of 92.55 acres mined out approximately 50 years ago and is no longer active. Increment 2 is comprised of 44.28 acres and is currently untouched. Increment 3, is comprised of 41.968 acres, is actively being quarried and will soon be mined out. Increment 4 is comprised of 45.350 acres, and Increment 5 is comprised of 88.93 acres and is currently untouched.

The Hawaii State Office of Environmental Quality Control (OEQC 1997:11) states that “an environmental assessment of cultural impacts” gathers information about cultural practices and cultural features that may be affected by significant environmental effects:

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

The purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

CULTURAL IMPACT ASSESSMENT METHODOLOGY

The Constitution of the State of Hawai‘i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of Native Hawaiians. Article XII, Section 7 (2000) requires the State to “protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua‘a* tenants who are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778.” Additionally, Articles IX and XII, of the State constitution, other State laws, and the courts of the State, impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of Native Hawaiians as well as those of other ethnic groups.

Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result, in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua‘a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai‘i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, “native Hawaiian rights...may extend beyond the *ahupua‘a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner” [Pele Defense Fund v. Paty, 73 Haw.578, 620, 837 P.2d 1247, 1272 (1992)].

Act 50, enacted by the Legislature of the State of Hawai‘i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii’s culture, and traditional and customary rights... [H.B. NO. 2895].

Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the “cultural practices of the community and State” as part of the HRS Chapter 343 (2001) environmental review process. It also re-defined the definition of “significant effect” to include “the sum of effects on the quality of the environment including actions that impact a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State’s environmental policies, or adversely affect the economic welfare, social welfare or cultural practices of the community and State.” Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

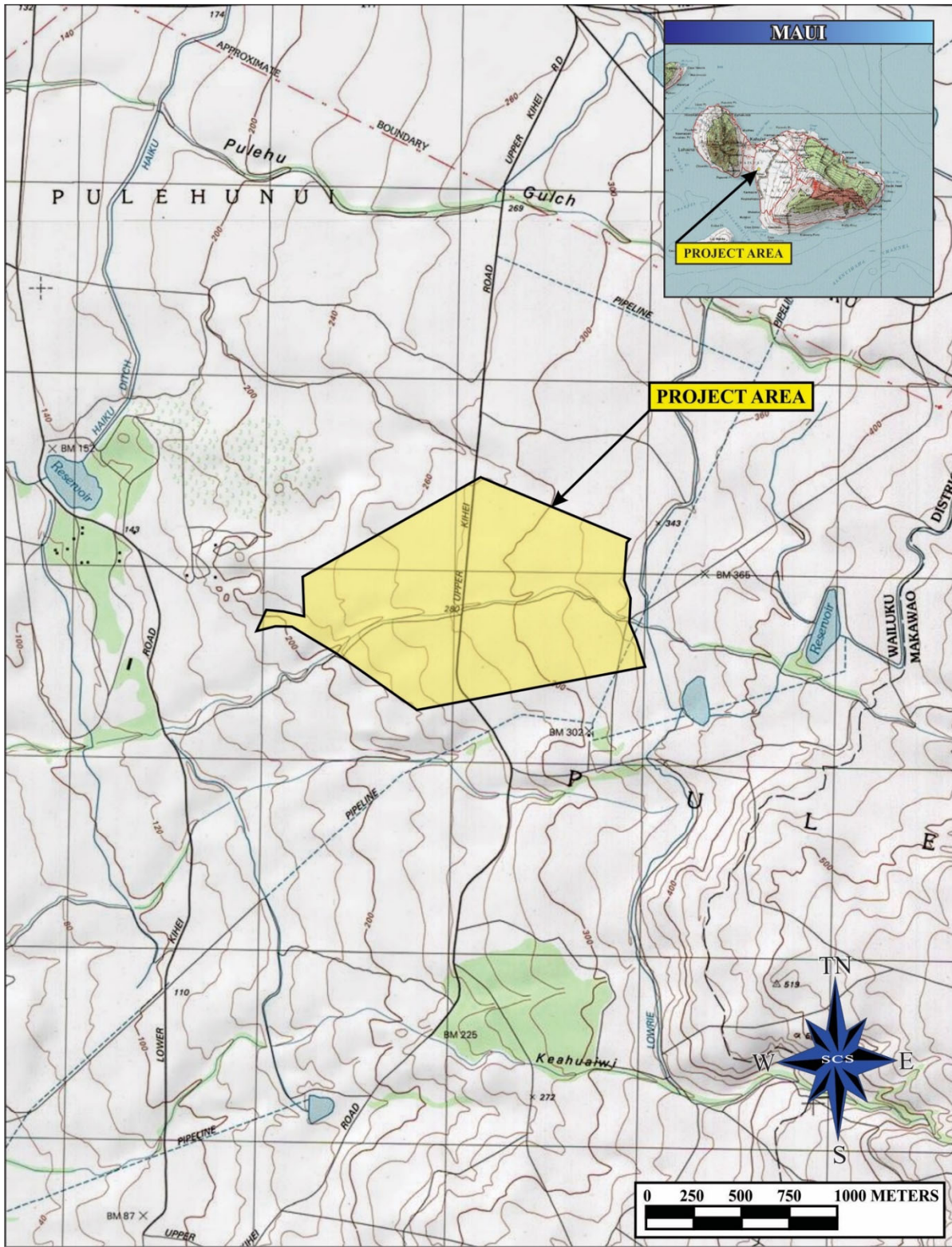


Figure 1: Portion of USGS quadrangle (Maalaea, HI 2017; 1:24,000) map showing project area location.

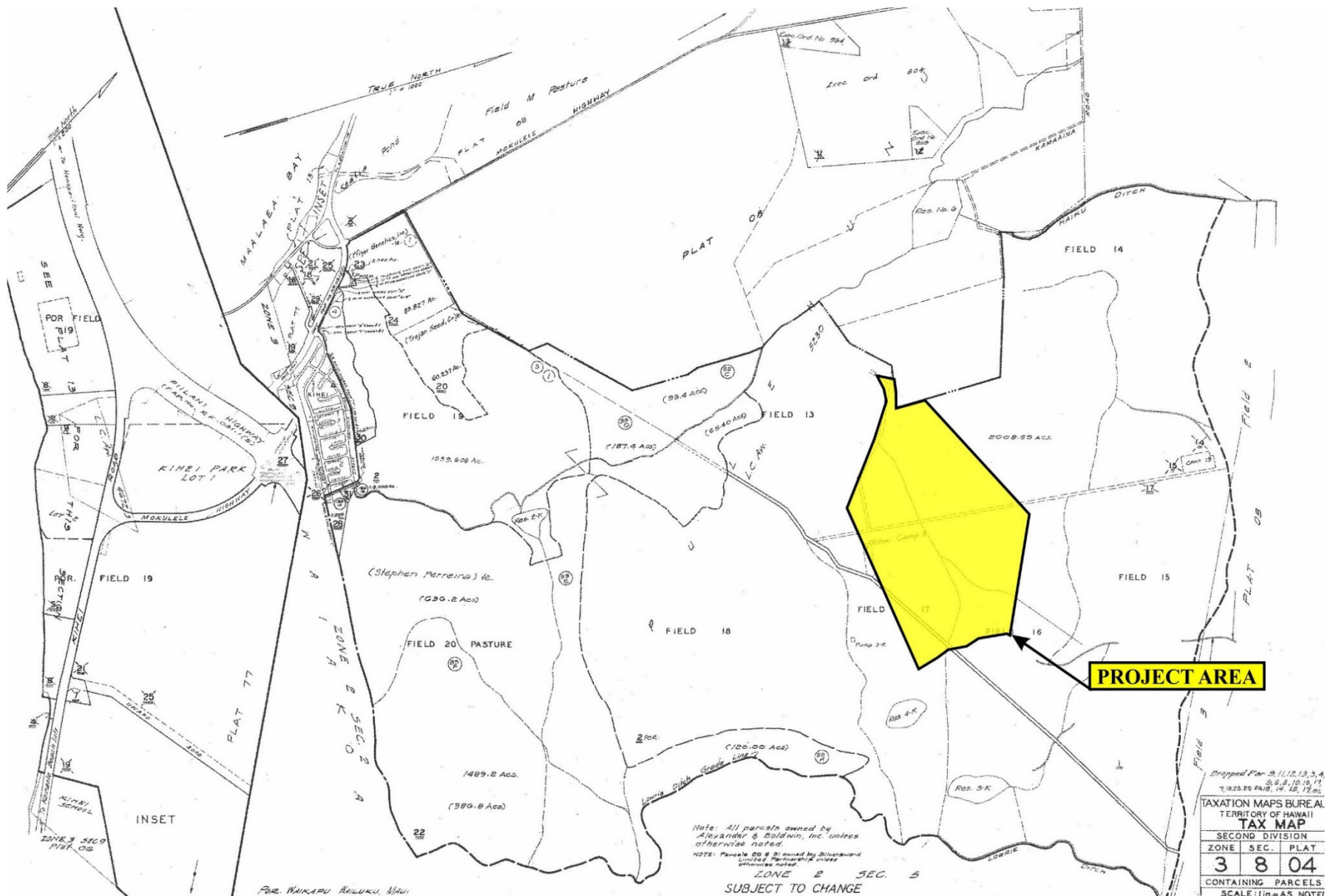


Figure 2: Tax Map Key [TMK: (2) 3-8-004] showing project area location.

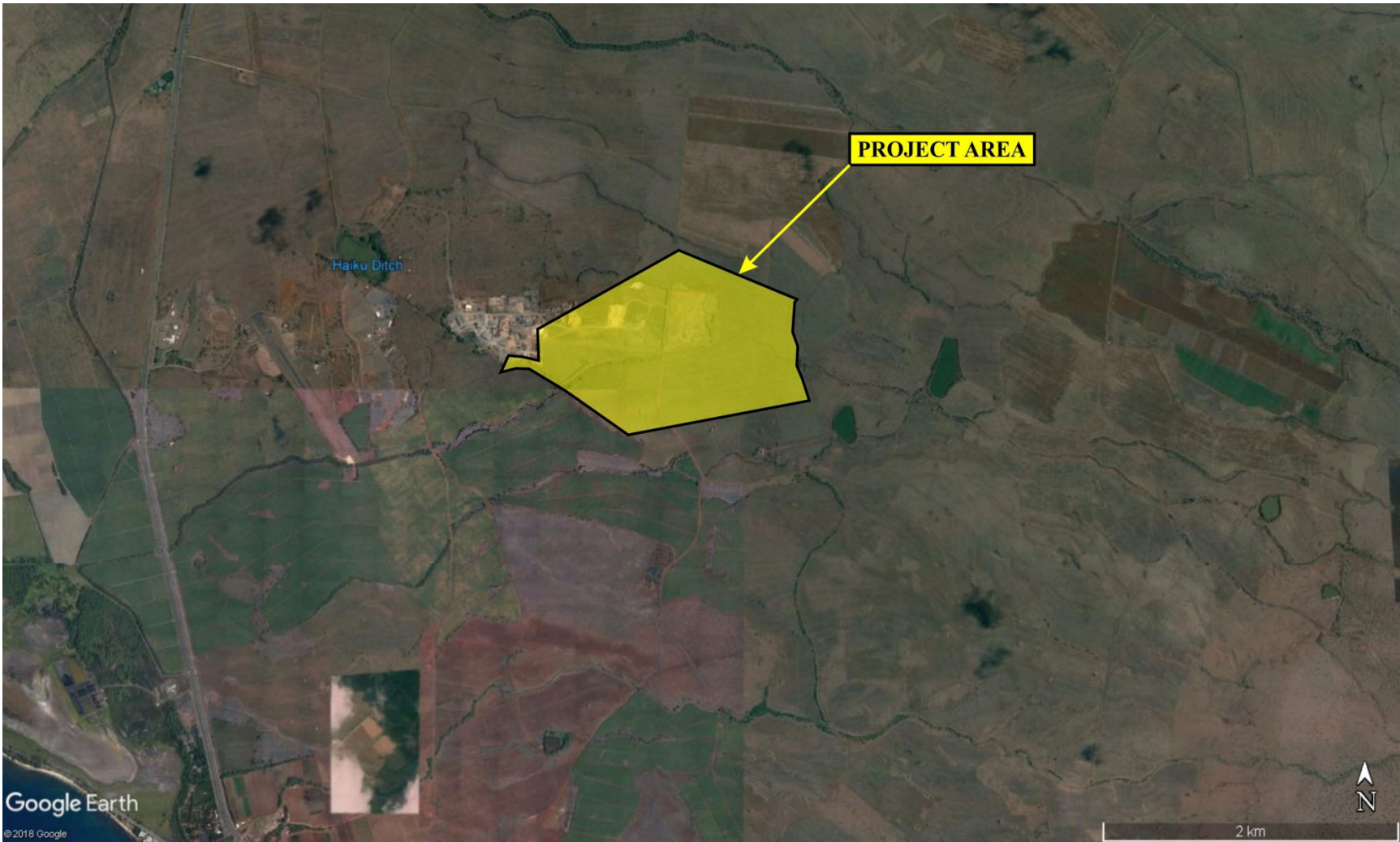
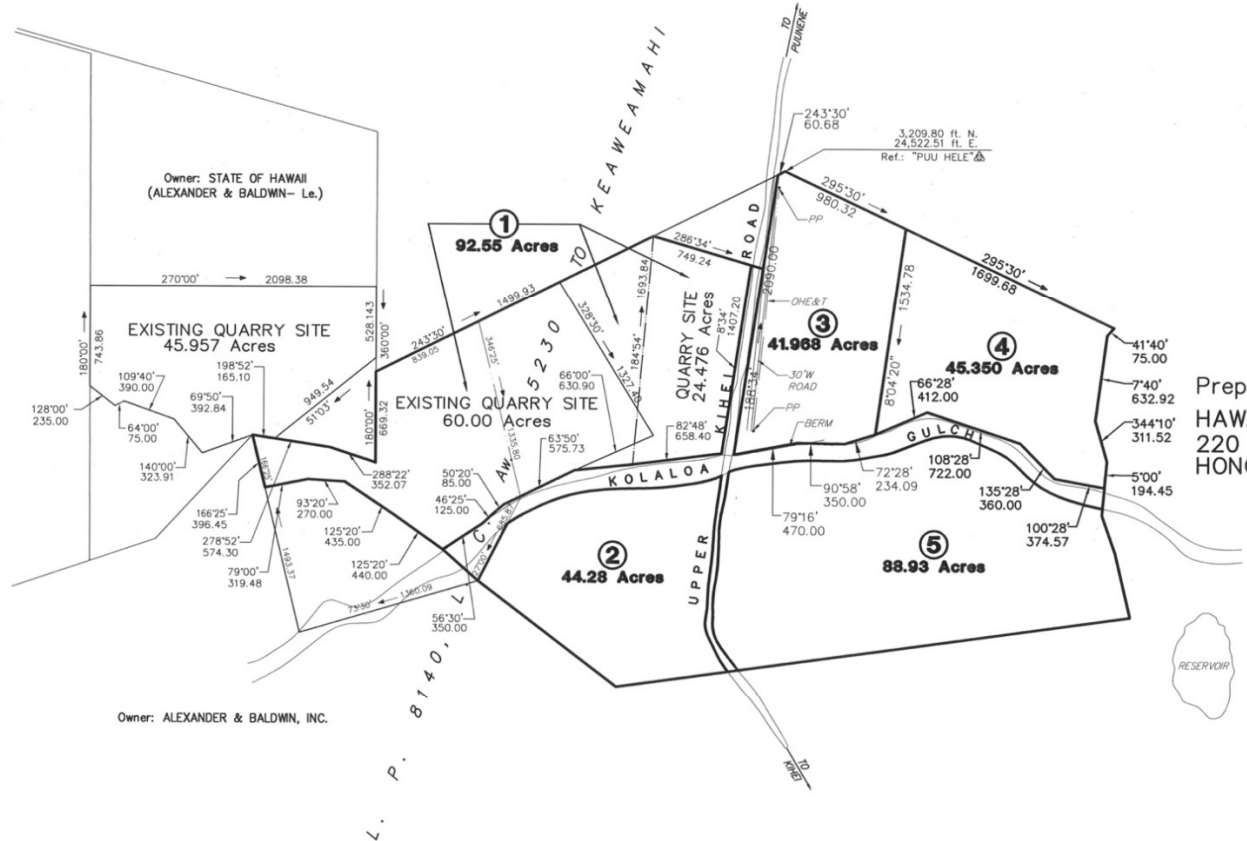


Figure 3: Google Earth satellite image (Date 1/13/2013) showing project area location.

\\S01\SERVER\BELL\User\Public\Documents\DRAW\2005\05-065\2019-11-11_LICMNT_QUARRY SITE RECONCILIATION MAP.dwg, Layout1, 11/11/2019 11:49:48 AM, Nancy, Ledger (11 x 17)

TRUE NORTH
 SCALE: 1 in. = 800 ft.



Prepared for:
 HAWAIIAN CEMENT
 220 SOUTH KING STREET
 HONOLULU, HAWAII 96813

**PLAN SHOWING NEW
 HAWAIIAN CEMENT QUARRY MINING SITE
 AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII**



REVISED: NOVEMBER 11, 2019
 REVISED: MARCH 06, 2019
 REVISED: OCTOBER 26, 2018
 REVISED: JUNE 14, 2012
 DECEMBER 10, 2007

Tax Map Key (2) 3-8-04: 01 (Portion)

871 KOLU STREET, SUITE 201
 WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
 LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-065

Figure 4: Hawaiian Cement quarry plan identifying mining site increments 1 through 5 (Courtesy R.T. Tanaka Engineers Inc. 2019).

GEOGRAPHIC EXTENT

As defined by the Hawaii State Office of Environmental Quality Control (OEQC 1997:11), the geographic extent should be greater than the proposed project area in order to ensure that cultural practices occurring outside of it that may still be affected are included in the assessment. For example, a project that may not itself physically impact traditional gathering practices, although it may block access to them, would be included in the assessment. The concept of geographical expansion is recognized by using, as an example, “the broad geographical area, e.g., district or *ahupua‘a*. In some cases, the geographical extent could extend beyond the *ahupua‘a* if cultural practices do so as well.

OEQC GUIDELINES FOR ASSESSING CULTURAL IMPACTS

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control:

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, which support such cultural beliefs. [OEQC 1997:12]

The meaning of “traditional” is explained in *National Register Bulletin* as referring to:

Those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices. [Parker and King 1998:1]

This CIA was prepared in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 1997:11-13). In outlining the “Cultural Impact Assessment Methodology,” the OEQC states that “information may be obtained through scoping community meetings, ethnographic interviews and oral histories” (OEQC 1997:11). The Guidelines recommend that preparers of assessments analyzing cultural impacts adopt the following protocol:

- Identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua‘a*,

- Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action,
- Receive information from, or conduct ethnographic interviews and oral histories, with persons having knowledge of the potentially affected area,
- Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research,
- Identify and describe the cultural resources, practices and beliefs located within the potentially affected area, and
- Assess the impact of and alternatives to the proposed action, and mitigation measures on the identified cultural resources, practices, and beliefs.

CULTURAL IMPACT ASSESSMENT CONTENTS

The Guidelines state that an assessment of cultural impacts should address, but not be limited to, the following:

- Discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the obtained information.
- Description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of undertaken effort.
- Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the obtained information.
- Biographical information concerning the individuals and consulted organizations, their particular expertise and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
- Discussion concerning consulted historical and cultural source materials, the searched institutions and repositories, and the level of undertaken effort. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
- Discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location in the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.

- Discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources in the project area affected directly or indirectly by the proposed project.
- Explanation of confidential information that has been withheld from public disclosure in the assessment.
- Discussion concerning any conflicting information in regard to identified cultural resources, practices, and beliefs.
- Analysis of the potential effect of any proposed physical alteration on cultural resources, practices, or beliefs, the potential of the proposed action to isolate cultural resources, practices, or beliefs from their setting, and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- A bibliography of references and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified, assessments of the potential effects on the cultural resources and recommendations for their mitigation can be proposed.

PROJECT METHODOLOGY

This report contains archival and documentary research, as well as communication with organizations and individuals with knowledge of the project area, its cultural resources, and practices and beliefs characteristic of it. An example of the initial letter of inquiry is presented in Appendix A, an example of the follow up letter is presented in Appendix B, and a copy of the posted newspaper notice and affidavit are presented in Appendix C. Permission to include each interview summary in the form of signed information release forms and emails, are presented in the Interview section. This CIA was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 1997:13) whenever possible. The assessment concerning cultural impacts may include, but not be limited to, the following items.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These include legendary accounts of native and foreign writers, early historical journals and narratives, historical maps and accounts, land records such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records, and previous archaeological reports.

Historical and cultural sources used for this CIA can be found in the References. Scholars Samuel Kamakau, Martha Beckwith, Jon J. Chinen, Lilikalā Kame‘eleihiwa, R. S. Kuykendall, Marion Kelly, E. S. C. Handy and E.G. Handy, John Papa ‘Ī‘Ī, Gavan Daws, A. Grove Day, Elspeth P. Sterling, Mary Kawena Puku‘i and Samuel H. Elbert continue to contribute to our knowledge and understanding of Hawai‘i’s past and present. Their works and others were consulted and incorporated in this report where appropriate. Land use document research was supplied by the Waihona ‘Aina (2020) database, the Office of Hawaiian Affairs Kipuka database (2020), and the County of Maui County Real Property Assessment Division database (2020).

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws and guidelines when knowledgeable individuals are able to identify traditional cultural practices and/or resources in the project area or its environs. If they have knowledge of traditional stories, practices, beliefs, and resources associated with a project area, or if they know of historical properties within IT, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input and suggest further avenues of inquiry, as well as specific individuals to interview. This process does not include formal or in-depth ethnographic interviews or oral histories as described in the OEQC’s Guidelines for Assessing Cultural Impacts (1997). The assessments are intended to identify potential impacts to ongoing cultural practices or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then summarized. These draft summaries are returned to each of the participants for their review and comments. After corrections are made, each individual is to sign an information release form, making the interview available for this study. When telephone interviews occur, a summary of the information is also sent for correction and approval, or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

KA PA‘A KAI O KA‘AINA V. LAND USE COMMISSION, STATE OF HAWAI‘I

The Land Use Commission (LUC) is also required to apply the analytical framework set forth by the Hawaii Supreme Court in *Ka Pa‘akai O Ka‘Aina v. Land Use Commission, State of Hawai‘i*, 94 Hawai‘i 31, 7 P.3d 1068 (2000) (hereinafter, “*Ka Pa‘akai*”). In this case, a coalition of Native Hawaiian community organizations challenged an administrative decision by the Land Use Commission (LUC) to reclassify nearly 1,010 acres of land from conservation to urban use, to allow for the development of a luxury project including upscale homes, a golf course, and other amenities. The Hawaiian organizations appealed, arguing that their Native Hawaiian members would be adversely affected by LUC’s decision because the proposed development would infringe upon the exercise of their traditional and customary rights. Noting that “article XII, section 7 of the Hawaii Constitution obligates the LUC to protect the reasonable exercise of customarily and traditionally exercised rights of Native Hawaiians to the extent feasible when granting a petition for reclassification of district boundaries,” the Hawai‘i Supreme Court held that the LUC did not provide a sufficient basis to determine “whether [the agency] fulfilled its obligation to preserve and protect customary and traditional rights of Native Hawaiians” and, therefore, the LUC “failed to satisfy its statutory and constitutional obligations” (*Ka Pa‘akai*, 94 Hawai‘i at 46, 53, 7 P.3d at 1083, 1090).

The Hawai‘i Supreme Court in *Ka Pa‘akai* provided an analytical framework in an effort to effectuate the State’s obligation to protect Native Hawaiian customary and traditional practices while reasonably accommodating competing private interests. In order to fulfill its duty to preserve and protect customary and traditional Native Hawaiian rights to the extent feasible, the LUC must—at a minimum—make specific findings and conclusions as to the following:

- A. The identity and scope of “valued cultural, historical, or natural resources” in the petition area, including the extent to which traditional and customary Native Hawaiian rights are exercised.
- B. The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action.
- C. The feasible action, if any, to be taken by the LUC to reasonably protect Native Hawaiian rights if they are found to exist (*Ka Pa‘akai*, 94 Hawai‘i at 47, 7 P.3d at 1084).

To fulfill these purposes outlined by *Ka Pa‘akai*, the Cultural Impact Assessment has reviewed historical research and suggestions from contacts knowledgeable about traditional cultural practices conducted within the project area and in the surrounding environs. The potential effect of the proposed project on cultural resources, practices, or beliefs, its potential to

isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place has been analyzed, as required by the OEQC (1997).

ENVIRONMENTAL SETTING

The island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago. It was formed by two volcanoes, Mauna Kahalawai in the west and Haleakalā in the east. They are joined together by an isthmus containing dry, open country (or *kula*, from Hawaiian, “pasture”). The isthmus between the two volcanoes is primarily composed of alluvial fans made of out-washed silts and gravels overlain by coralline sands blown inland from the coast. Lower sand strata have become firmly lithified, forming a soft rock known as eolianite (Stearns 1966:10).

Mauna Kahalawai dominates the western part of Maui, and its highest peak Pu‘u Kukui stands 1,764 m above mean sea level (amsl). The mountain is composed of large, heavily eroded amphitheater valleys containing well-developed permanent stream systems that water fertile agricultural lands extending to the coast. West Maui’s deep valleys and associated coastal areas have been a witness to many battles in ancient times and were coveted productive landscapes.

The younger of the two volcanoes, Haleakalā, soars 2,727 m (10,023 ft.) amsl with its highest summit Pu‘u ‘Ula‘ula, and dominates the larger Eastern section of the island. Unlike the amphitheater valleys of West Maui, the flanks of Haleakalā are distinguished by gentle slopes. Although receiving more rain than their counterparts in the west, the permeable lavas of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. The few perennial streams on the windward side of Haleakalā originate from springs located at low elevations. Valleys and gulches were formed by intermittent water run-off.

PROJECT AREA LOCATION

The project area (see Figure 4) encompasses a total of 336 acres, and is comprised of vacant, quarried out, and actively quarried areas. The project area is situated in the southern section of the Maui isthmus, on the open plain below the western slopes of Haleakalā, approximately 5.5 miles (9 km) south of Kahului Bay, 3 miles (4.5 km) north of Mā‘alaea Bay, and 2 miles east of Mokulele Highway. The quarry is positioned approximately between 300 and 340 feet amsl on lands owned by Alexander and Baldwin LLC. The Puunene Quarry is bounded on the north, east, south and west by former sugar cane fields. Kolaloa Gulch extends through the center of the quarry, and Upper Kihei Road bisects the eastern portion of the existing quarry.

CLIMATE

According to Giambelluca et al. (2013), the project area receives no more than eighteen inches per year, occurring mostly during December and January. Unlike the coast, higher elevations of Pūlehu Nui Ahupua‘a receives more precipitation because of fog drip and lower temperatures. The frequency of upland wash in the project area receiving depends on the amount of water accumulated upslope and the available water drainages in and near the project area.

Given the absence of consistent water resources in the proposed project area, traditional (i.e., pre-1778 C.E.) crops such as dryland sweet potato may have been the only feasible subsistence resource planted in the area prior to the advent of large-scale plantation-type irrigation systems. Upland, gravitational wash also may have contributed to soil movement through the proposed project area environs during the Pre-Contact Period.

SOILS

According to Foote et. al. (1972: Sheet 106; Figure 5), the Puunene Quarry is comprised of three distinct Soil Series: the Waiakoa Series (specifically WGBS, WvB, and WID2), the Alae Series (specifically Aca and AaB), and the Pulehu Series (specifically PpB, PrB, PsA and PtA). These soil types are briefly described below.

WAIAKOA SOIL SERIES

Soils of the Waiakoa Series occur in the northwestern, southwestern, and northeastern portions of the quarry. In general, the well-drained soils of the Waiakoa Series developed from decomposing basalt between 100 and 1,000 feet amsl in areas receiving 12 to 20 inches of annual rainfall. Waiakoa very stony silty clay loam, 3 to 7 percent slopes (WGBS), occurs in the northwestern portion of the project area. This soil exhibits a moderate permeability, slow runoff, and a slight erosion hazard. The WGBS soils are used for the commercial production of sugarcane, pasture, and as wildlife habitats (Foote et al. 1972: 126–127).

Waiakoa extremely stony silty clay loam, 3 to 7 percent slopes (WvB) comprises the southwestern section of the quarry. Basalt pebbles and cobbles cover 3 to 15 percent of the ground surface of areas in WvB soils. Like the WGBS soils, the WvB soils are used for the commercial production of sugarcane, pasture, and as wildlife habitats (Foote et al. 1972: 127). Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes (WID2), is located in the northeastern corner of the project area. These well-drained soils occur on the upland slopes of Maui, between 100 to 1,000 feet amsl, in areas receiving 12 to 20 inches of annual rainfall (Foote et al. 1972: 126). The WID2 soils are characterized by eroded surface with stones covering 3 to

15 percent of the ground, medium runoff, and a severe erosion hazard. Areas comprised of WID2 soils are used for ranchlands and as habitats for wildlife (Foote et al. 1972:127).

ALAE SERIES

Soils on the eastern and southern portion of the project are comprised of the Alae Series, specifically Alae cobbly sandy loam, 0 to 3 percent slopes (AcA), and Alae sandy loam, 3 to 87 percent slopes (AaB). The Alae Series are well-drained soils derived from decomposing volcanic ash and recently deposited alluvium occurring between 50 and 600 feet amsl. in areas receiving annual rainfall of 12 to 20 inches. The AcA soils occurs on alluvial fans and exhibit rapid permeability, slow runoff and a very slight erosion hazard, and are used in the commercial cultivation of sugarcane and as pastureland. The AaB soils are similar to the AcA soils, but do not have cobblestones on the ground surface. AaB soils exhibit slow runoff and a light erosion hazard (Foote et al. 1972:2 14, 26).

PULEHU SOIL SERIES

The remainder of the quarry is comprised of soils of the Pulehu Series. The well-drained igneous soils of the Pulehu Series form on alluvial fans, stream terraces, and in basins. They occur between sea level and 300 feet amsl in areas receiving 10 to 35 inches of annual rainfall. In general, soils of the Pulehu Series are used in the commercial cultivation of sugarcane and vegetables, pastures, residential areas, and as wildlife habitats.

One of the specific types of Pulehu Soils identified within the Puunene Quarry is Pulehu silt loam, 3 to 7 percent slopes (PpB). These soils exhibit slow runoff and a slight erosion hazard. Also common are the Pulehu cobbly silt loam, 3 to 7 percent slopes (PrB), which are characterized by surface covered in basalt cobbles, slow runoff, and by a slight erosion hazard. The Pulehu clay loam, 0 to 3 percent slopes (PsA), which are common in the central and western parts of the project area, exhibit moderate permeability, slow runoff, and a slight erosion hazard. The Pulehu cobbly clay loam, to 7 percent slopes (PtA), are soil series similar to the PsA, except that they exhibit a cobbly ground surface (Foote et al. 1972: 115-116).

TRADITIONAL AND HISTORICAL CONTEXT

Archaeological settlement data suggest that initial settlement of the Hawaiian Islands occurred on the windward shores of the main islands between 850 and 1100 C.E., with populations eventually extending to drier leeward areas during later periods (Kirch 2011:22). Environmental factors and resource availability heavily influenced Pre-Contact settlement patterns. Although an extensive population was occupied the uplands above the 30-inch rainfall line where crops could easily be grown, coastal settlement was also common (Kolb et al. 1997).

SETTLEMENT PATTERN

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua'a* across the Hawaiian Islands. Traditionally, there were two types of agriculture, wetland and dryland, both of which were dependent upon regional geographic conditions. River valleys provided ideal conditions for wetland *kalo* (taro, *Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai'a* (banana, *Musa spp.*), were also grown in wetter areas, and where appropriate dryland crops such as *'uala* (sweet potato, *Ipomoea batatas*) were also produced. Traditionally, this was the typical agricultural pattern seen on the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985).

PAST POLITICAL BOUNDARIES

Traditionally, the Island of Maui was divided into twelve districts: Lāhainā, Kula, Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko'olau, Hāmākualoa, Hāmākuapoko, Wailuku, and Kā'anapali (Sterling 1998:3; Figure 6). The division of Maui's land into districts (*moku*) and sub-districts was performed by a *kahuna* ("priest, expert") named Kalaiha'ōhia, during the time of the *ali'i* ("chief") Kaka'alaneo (Beckwith 1979: 383); Fornander (1919-20, Vol. 6:248) places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century. Land was considered property of the king, or the *ali'i 'ai moku* (literally, "district eating chief"), and was thought to be held in trust for the gods by him. The title of *ali'i 'ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted, while giving lands to his higher chiefs, who in turn distributed smaller parcels to lesser chiefs. The *maka'āinana* ("commoners") worked the individual plots of land.

In general, the terms *moku*, *ahupua'a*, *'ili* or *'ili 'āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua'a*), which customarily continued inland from the ocean and upland into the mountains. Thus, people living in each *ahupua'a* were able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua'a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *'ili 'āina*, or *'ili*, were smaller land divisions administered by the chief who controlled the *ahupua'a* in which they were located (Lyons 1875: 33; Lucas 1995:40). The *mo'o'āina* were narrow strips of land within an *'ili*. The land holding of a tenant, or *hoa 'āina*, residing in an *ahupua'a* was called a *kuleana* (Lucas 1995:61).

PRE-CONTACT PERIOD (PRE-1778)

The proposed Puunene Quarry Expansion Project area is located in the traditional District of Kula. Taken literally, “*kula*” means “pasture” and refers to open land or plains (Pukui and Elbert 1992:70).

The height of Haleakalā to the east prevents moisture from reaching its southern and western flanks, causing the semiarid conditions of leeward Maui, including the project area. According to Handy and Handy:

This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams.

Kula was always an arid region, throughout its long, low seashore, vast stony *kula* lands, and broad uplands. [Handy and Handy 1972:510]

Kula is characterized by its dry, semiarid lands that are vacant of perennial streams. In fact, the word *kula* is also used in general to describe lands that are dry and inaccessible to water other than rainfall (Malo 1951). According to Handy and Handy (1972:510), the word was often used to differentiate between dry land and wet-taro land. Handy (1940:105) also stated that, “the bounds of cultivation ... were strictly drawn by limitation of water for irrigation.” According to Kolb et al. (1997), the key component of the economy in the district of Kula was dryland agriculture in and near the upland forests. *'Uala* (sweet potato, *Ipomoea batatas*) does not grow in very wet areas, but was the primary staple of Kula. According to Handy and Handy:

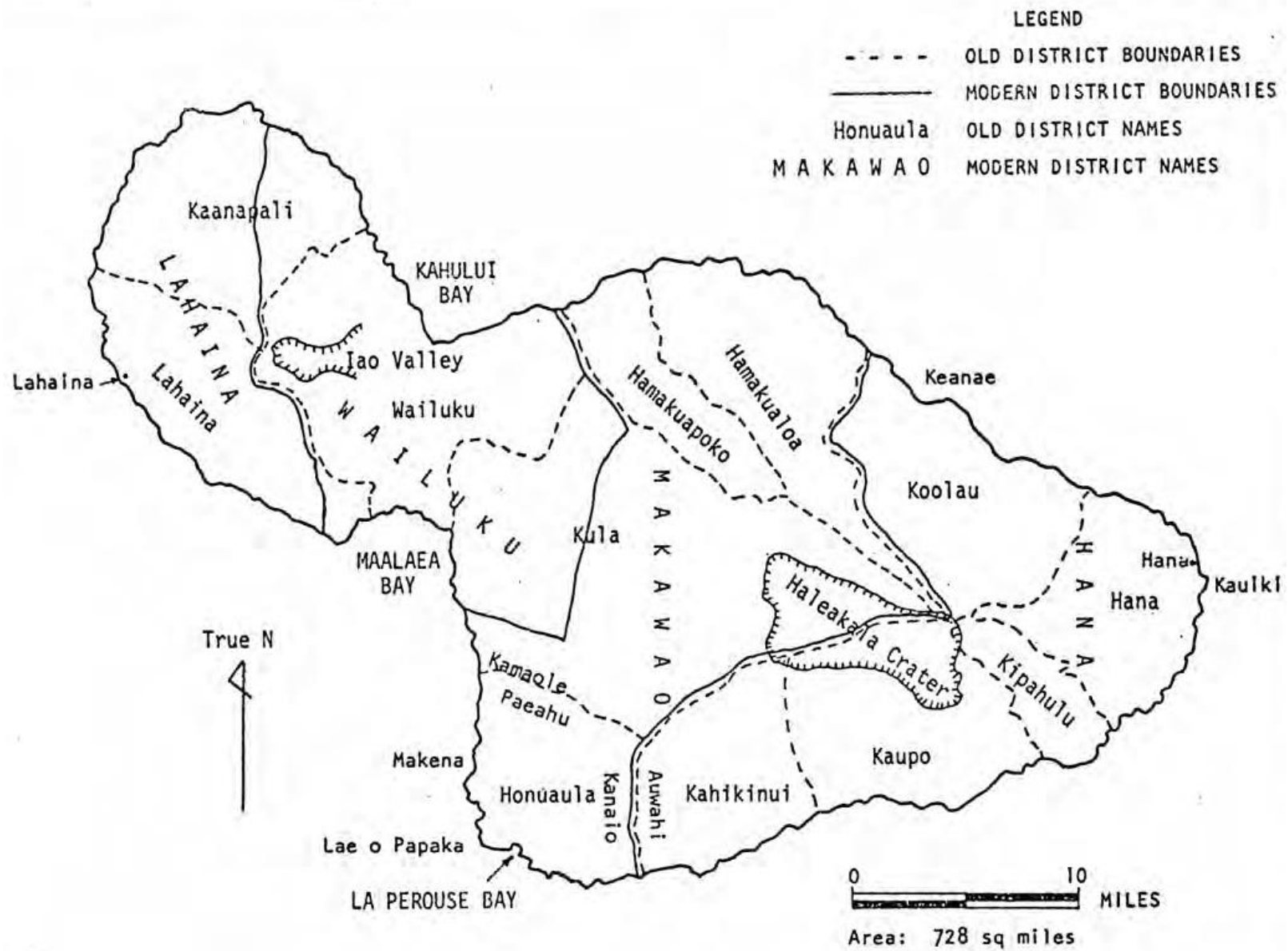


Figure 6: Traditional and modern districts of Maui (c. 1875; from Barrère 1975: 31).

Both on the coast, where fishing was good, and on the lower westward slopes of Haleakala a considerable population existed. So far as we could learn Kula supported no Hawaiian taro, and the fishermen in this section must have depended for vegetable food mainly on *poi* brought from the wet lands of Waikapu and Wailuku to westward across the plain to supplement their usual sweet-potato diet....Kula was widely famous for its sweet-potato plantations. *'Uala* was the staple of life here. [Handy and Handy 1972:510–511]

Handy and Handy also describe the planting methods in Kula's drier sections:

Where potatoes are planted in crumbling lava with humus, as on eastern Maui and in Kona, Hawaii, the soil is softened and heaped carelessly in little pockets and patches using favorable spots on slopes. The crumbling porous lava gives ample aeration without much mounding. [Handy and Handy 1972:131]

An early witness to the lack of significant agricultural productivity on leeward Maui was Captain George Vancouver. During his second visit to Hawai'i in 1793 he anchored in Mā'alaea Bay, which he describes as follows (Vancouver 1984:852):

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the water side, and the inhabitants who came off to us, like those seen the day before, had little to dispose of.

Not much had changed twenty-four years later (1817) when Peter Corney sailed this way bound for O'ahu. He made special reference to Keālia Pond (now part of the Keālia Pond and Wildlife Refuge), located a short distance southwest of the project area:

Next morning we passed Morokenee (Molokini), and made sail up Mackerey (Maalaea) bay.... This bay is very deep and wide, and nearly divides the island, there being but a narrow neck of land and very low, keeping the two parts of the island together.... On this neck of land are their principal salt-pans, where they make most excellent salt [Corney 1965:70-71].

The project area is located in the *ahupua'a* of “Pūlehu Nui.” Since *pūlehu* translates as “to broil” and *nui* means “large” (Pukui et al.:1974: 353), the name might refer to the intensity of the sun in this area. The *ahupua'a* extends across the Kula plain up through Makawao, to the edge of Haleakalā and would have included agriculturally productive areas, and not just the semiarid plains. Of note is that historically the “ancient and true” western boundary of Pūlehu Nui Ahupua'a was disputed by the owners of the adjacent land of Waikapū, and was settled in court by the Commissioner of Boundaries in 1897 (J. McCully cited in Sterling 1998: 254-257). The point of contention was the western boundary line claimed by the owners of Waikapū Ahupua'a which cut Pūlehu Nui Ahupua'a “off from the sea.” After listening to the testimonies of many witnesses, the Boundary Commissioner determined that the western boundary of Pūlehu Nui “includes about 2,000 feet along the sea coast from a sand spit known as Kihei to a point of rocks called Kalaepohaku” (J. McCully cited in Sterling 1998: 254-257, Figure 7).

In the Pre-Contact Period, Kula had several fishponds, primarily in the vicinity of Kīhei; Waiohuli, Kēōkea-kai, and Kalepolepo Pond (also known by the ancient name of Kō'ie'ie Pond, Kolb et al. 1997). These fishponds had been constructed on the boundary between Ka'ono'ulu and Waiohuli Ahupua'a, and were some of the most important royal fishponds on Maui.

Keālia Pond National Wildlife Refuge is a coastal salt marsh located along the southern coast of central Maui, near the border between Wailuku District and Kula. At one time Keālia was a large fishpond fed by the water of Kolaloa Gulch located on the southern border of the project area. According to Ashdown (1970:69), a legend states that:

Kealia was the huge fishpond attributed to King Umi-a-Loa after the death of Piilani in Lahaina. The reason it was called the pond of Ka-lepo-lepo was, in one story, that Umi made his people carry him atop the huge *akua-stone* which was to be placed at one part of the pond. The load was so heavy that the workmen dropped it and the king fell into the dust (lepolepo). Others have insisted that the great chief never did suffer such an indignity, like a commoner, but that the name should be Kalepa, meaning the fluttering of the flags of canoes there when the area was a port of call since ancient times. The Kalepolepo name has remained in use because it is such a windblown and dusty area since the plowing of that whole central valley of Maui.

WAHI PANA (“LEGENDARY PLACES”)

“Wahi Pana” can be defined as celebrated or noted places or landmarks of historical significance (Pukui and Elbert 1986:313, 376). These places have distinctive features (such as mountain peaks, streams, wind, rain, etc.) that are given specific names. Legendary places participate in the history of an area, allowing it to be passed down from generation to generation through chants and legends.

S. W. Na‘ili‘ili (cited in Sterling 1998:243) states that the District of Kula was:

a land famed for the attempt (of some of the people) to scale off the suckers of the squid’s tentacles; for the Hau wind that blows the columns of smoke of Kula low over the ground, that go by so silently and swiftly. Arise, O ye native sons that shake the mamane trees [*Sophora chrysophylla*] of Kula.

A. von Tempski (cited in Sterling 1998:243) also mentions the famed winds of Kula:

I listened avidly while Makalii told me about the Cloud Warriors, Naulu and Ukiuki—trade-wind-driven clouds split by the height and mass of Haleakala into two long arms. Naulu traveled along the southern flank of the mountain, Ukiuki along the northern and they battled forever to possess the summit. Usually Ukiuki was victorious, but occasionally Naulu pushed him back. Sometimes both Cloud Warriors called a truce and withdrew to rest, leaving a clear space between the heaped white masses of vapor looming against the blue of the sky. The space, Makalii told me, was called Alanui o Lani—The Highway to Heaven.

The Kama‘oma‘o Plains are the area known as an “*ao kuewa*” or “realm of the homeless or wandering souls” (Kamakau 1987:47), where a dead man who had “no rightful place” in the realm of the ‘*aumakua* (“ancestral deities”) wandered “amongst the underbrush,” feeding on moths and spiders. While there are no well-defined boundaries for the Kama‘oma‘o Plains, Kamakau (1987:156) identifies the area as the “plain on the isthmus between East and West Maui,” a definition that includes the project area and its vicinity.

Kumu Kī‘ope Raymond, formerly of the Hawaiian Studies Program in the Department of Humanities at the University of Hawaii, Maui College (personal communication September 9, 2020) confirms that the Kama‘oma‘o Plains is “one (of many) area where spirits wander.” Kumu Hokulani Holt, Director, Ka Hikina O Ka Lā Hawai‘i, Papa o Ke Ao University of Hawaii, Maui College (personal communication, August 10, 2020) further explains:

While there are no clear-cut delineation lines for the *ao kuewa* located in Kama'oma'o, the area known as Kama'oma'o is the "neck" part of Maui. It is the flatland that is arid and does not produce food, and where the spirits wander who have not been accepted into the *ao 'aumakua*. The native families of an area know if the area is frequented by spirits or not. Those of us who were raised on Maui know that driving the Mokulele Highway. on dark nights was not good.

According to Beckwith (1970:154):

The worst fate that can befall a soul is to be abandoned by its aumakua and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place, feeding upon spiders and night moths. Such spirits are believed to be malicious and to take delight in leading travelers astray; hence the wild places which they haunt on each island are feared and avoided. Such are the plains of Kama'oma'o In these desolate places lost spirits wander until some friendly aumakua takes pity upon them.

HISTORIC LAND USE (POST-1778)

In Hawai'i, the Post-Contact Period began with the arrival of Captain James Cook and his British fleet in 1778. Within approximately 50 years, significant natural and cultural changes took place throughout the islands not only due to contact with westerners, but also because of internal social and environmental restructuring, and external social and environmental factors (e.g., introduced foreign ideologies and species). These combined to have a severe impact on Hawaiian environments, land-tenure, and social structures.

THE MĀHELE

During the mid-1800s, extreme modification to traditional land tenure occurred throughout the Hawaiian Islands. The transition from traditional communal land use to private ownership has commonly been referred to as the Māhele (from Hawaiian, "division"). The Māhele of 1848 set the stage for vast changes to land holdings on the islands as it introduced the concept of land ownership. Although it remains a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III established laws changing the traditional Hawaiian system of land tenure, which were intended to keep lands in the hands of the Hawaiians. The laws, however, provided an opportunity for foreigners to obtain land, resulting in unforeseen changes in land ownership (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165–166, 170, Daws 1968:111, Kelly 1983:45, Kame'eleihiwa 1992:169–170, 176). Once Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, the legal process of private land ownership was begun.

The Māhele divided the lands of the Kingdom of Hawai‘i among the king (crown lands), the *ali‘i* and *konohiki* (*ahupua‘a* headman), and the government. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once they were made available and private ownership was instituted, through the Kuleana Act of 1850 the *maka‘ainana* (commoners), were able to claim land plots upon which they had been cultivating and living. These claims did not include any previously cultivated land that was left to fallow, stream fisheries, or many other resources necessary for traditional survival (Kelly 1983, Kame‘eleihiwa 1992:295, Kirch and Sahlins 1992). If commoners were able to prove occupation with the testimony of two witnesses, they were awarded the claimed LCA and issued a Royal Patent, after which they could take possession of the property (Chinen 1961:16). The process for foreigners was made possible by the Alien Landownership Act of 1850. Oftentimes, foreigners were simply given lands by the *ali‘i*. However, commoners would make claims only if they had first been made aware of foreign concepts and procedures (*kuleana* lands, land commission awards, etc.). Commoners claiming house lots in Honolulu, Hilo, and Lāhainā were also required to pay commutation to the government before obtaining a patent for their awards (Chinen 1961:16).

The Waihona Aina Database (2020) indicates thirteen Land Commission Awards (*kuleana*) were claimed in Pūlehu Nui during the Māhele. According to the Office of Hawaiian Affairs’ Kipuka Database (2020), “Keaweamahi claims ahupuaa of Pulehunui, minus LCA in Buke Mahele vol.9 pgs.675-6.” In 1902, the Land Commission awarded the entire *ahupua‘a* comprising 16,687.78 acres to Keaweamahi under LCA 5230/Royal Patent 8140 (Waihona ‘Aina Database 2020; Appendix D). The project area is located within LCA 5230 (Figure 8).

PLANTATION ERA

As the sugar industry developed in the mid-1800s, more and more land was leased or purchased for what had become an intensely profitable endeavor. Further impetus was given by the Reciprocity Treaty of 1875, which granted a duty-free market for Hawaiian sugar in the U.S. Since water was an issue, especially on leeward Maui, in 1876 the Hamakua Ditch Company (Alexander and Baldwin) was formed. Within two years, the company was bringing water from the streams of Haleakalā to four plantations in East Maui (Dorrance and Morgan 2000:68).

Also in 1876, the Reciprocity Treaty's ratification notice arrived by steamer, along with California sugar magnate Claus Spreckels. He evaluated the sugar market, and decided to return two years later and turn the dry plains of Maui into a garden of cultivated cane (Van Dyke 2008: 100). By various questionable means, he was able to acquire half interest in 16,000 acres of land in Waikapū commons and was able to lease 24,000 acres of Crown Lands on the Wailuku plains in central Maui for \$1,000 a year (Van Dyke 2008: 100).



Figure 8: A map of coastal Kula District showing major land owners and LCAs in the vicinity of the project area.

Having seen the success of Hamakua Ditch, which brought mountain water to the otherwise dry and unproductive East Maui fields, but having lost his battle to control this water, Spreckels started the Hawaiian Commercial Company and decided to construct his own ditch system (Wilcox 1996:62). Located above Hamakua, Haiku Ditch extended 30 miles from Honomanu Stream to the Kīhei boundary and carried water used to irrigate Spreckels' cane lands in the central Maui plains (Wilcox 1996:62). Haiku Ditch now ends at the Haiku Reservoir.

In 1882, Spreckels reorganized his company into a corporation called Hawaiian Commercial and Sugar Company, or HC&S (Wilcox 1996:62). Later, he constructed another water system known as the Waihee Ditch. It brought water over a stretch of 15 miles from an elevation of 435 ft. to Kalua, where it was emptied into Waiale Reservoir (Wilcox 1996:63).

The ensuing years brought trials and tribulations to Spreckels, his associates, and Maui sugar planters in general. In 1898 Spreckels sold his HC&S stock, which was at an all-time low, to James Castle in partnership with Alexander and Baldwin, and departed Hawai'i (Dorrance and Morgan 2000:69). Henry Baldwin and Lorrin Thurston formed the Kihei Sugar Company in 1899 to grow cane on their ranch lands, which included the project area (Dorrance and Morgan 2000:70). Sugar was sent to the mill at Pu'unēnē to be ground, but, although production was high, it was not enough to cover the costs (Dorrance and Morgan 2000:71).

After the 1898 annexation, some Maui planters, including Alexander and Baldwin, decided to combine plantations to reap maximum profit. They formed the Maui Agricultural Company, a co-partnership that initially encompassed seven plantations and two mills. In 1904, five new plantations became part of it: the Kula, Makawao, Pulehu, Kailua and Kaliaui Plantation Companies, formed by carving up the unprofitable Kihei Plantation land (Dorrance and Morgan 2000:71). Condé and Best (1973:230) describe it as a "relatively short-lived" "Annexation" plantation; in 1948, it merged with HC&S (Dorrance and Morgan 2000:59).

The import of foreign workers during the Plantation Era set the stage for the diverse ethnic makeup of modern Hawai'i. Condé and Best (1973:211) state that in 1901 HC&S countered the labor shortage by bringing "Alabama Negroes" and considering "Puerto Rican Nationals" for the Kihei Plantation. Workers and their families lived in villages or camps owned by the plantations and distributed across the sugarcane fields. The camps were segregated by ethnicity, as well as by geography, and were usually named accordingly (i.e., Japanese Camp, Portuguese Camp, Filipino Camp, Kihei Camp 1, etc.; Figure 9). As shown in Figure 2, Kihei Camp 3 was located immediately adjacent and south of the Puunene Quarry. The historic Upper

PAIA and PUUNENE plantation camps: 1930s



Figure 9: Paia and Puunene plantation camps circa 1930 (from an Ethnic Studies oral history project).

Kihei Road, which now bisects Puunene Quarry, was once one of the main roads used by HC&S to transport cane from the fields to their processing plant (mill) (Dave Gomes, General Manager of Hawaiian Cement, personal communication July 2020).

Kihei Plantation President H.P. Baldwin, noted in the annual report for 1899:

The Kihei Plantation, under contract, is to cut and load their cane on their own cars and deliver same to the main railway line to be drawn by HC&S Co. locomotives to the sugar factory, there to be ground and manufactured into sugar to be delivered to the Kihei Plantation. [Condé and Best 1973:210]

There is no record of the actual start date of the railroad which transported the raw sugarcane from the fields to the mill (Condé and Best 1973:230). However, the annual report for 1899 stated:

RAILROAD — It was our intention to complete the main road only as far as Camp #2, or for about two miles, but as the development of Camp # 3 required the pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February. We also have two and a half miles of portable track, which we laid temporarily in the direction of the H.C.&S. Co.; also one half mile of track from the wharf to the Worthington pump station, making a total road completed at the present time six and one half miles. [Condé and Best 1973:230]

WORLD WAR II

A portion of the cane fields located west of the project area were turned into a civil airfield for the Territory of Hawai‘i in 1937, as the one located at Mā‘alaea had become too small to accommodate the demand. Two years later, Inter-Island Airways began service to Maui, conveniently landing at Puunene Airport. As war loomed on the horizon in 1940, the Navy began using the airport along with a small Army Air Corps support base at the airfield. At this time, the air station was being used to support Squadron VU-3 aircraft, to tow targets, and operate drones for the fleet. Shortly after the United States entered WWII, in 1942 land near the airport, including the project area (parcel 2-C), was condemned (Bureau of Conveyances, Honolulu). The airport was expanded and commissioned as Naval Air Station Maui (NAS). One hundred and six squadrons and carrier groups passed through NAS during WWII. By 1945, the base consisted of a total of 2,202 acres, supporting over 3,300 personnel and 271 aircraft. There were two paved runways, taxiways, ramps, hangers, and auxiliary buildings (Freeman 2016).

The Navy released the airfield to the Territory of Hawai‘i in 1947. It was apparently used as the official inter-island airport until at least 1952 when the Kahului Airport became available for civic use (Freeman 2016). However, the Maui/Pu‘unēnē airstrip serviced crop-dusters and other smaller aircraft, and was not abandoned as a landing strip until sometime between 1961 and 1977 (Freeman 2016).

PREVIOUS ARCHAEOLOGY

Professional archaeological studies on Maui began in the early 20th century under the auspices of the Bernice Pauahi Bishop Museum with work conducted by T. Thrum (1909), J. Stokes (1909–1916), and Winslow M. Walker (1931). These surveys also included areas of leeward Maui in the vicinity of the project area, and inventoried both coastal and upland sites of Kula District.

Walker's pioneering research (1933 cited in Sterling 1998:253) listed two *heiau* in Pūlehu Nui: Haleokane and Nininiwai. The former (Walker Site 221) is located 150 yards above the main road at Poonahoahoa. Walker (1933 cited in Sterling 1998:253) further described Haleokane Heiau (Walker Site 221) as:

A small heiau platform 22 by 30 feet.... In spite of its small size the natives attach considerable importance to it and report the noise of drums on the nights of Kane. The name Haleokane was given by the old woman on whose property the heiau stands but the other kamaainas did not regard her information as very accurate.

Walker (1933 cited in Sterling 1998:253) described Nininiwai Heiau (Walker Site 222 and 223) as located “on the mauka side of the main road near the branch road. It was destroyed in clearing the land for pineapples. The other heiau is located on a hill in the mist of the cactus a mile and a half below the main road and near the branch road.” It was further described as:

A medium-sized walled heiau, 50 × 50 feet. It is double-terraced on the north side and the wall is here 10 feet thick. Elsewhere it is 6 feet thick. There is a small enclosure in one corner. Cattle are continually trampling over this heiau and will in a short time reduce it to a shapeless pile of rocks. [Walker 1933, cited in Sterling 1998:253]

A number of more recent archaeological projects have been conducted at Puunene Quarry and the surrounding environment (Figure 10). A brief summary of these works is presented below in a chronological order.

Archaeological Consultants Hawai'i (Kennedy 1990) conducted an archaeological reconnaissance survey of the area now used as the Hawaiian Cement Puunene Quarry located at Pūlehunui Ahupua'a, Wailuku (Kula) District, Maui Island, TMK: (2) 3-8-004:001 (por.) and 3-8-004:002 (por.). The archaeological walk-through did not identify any historically significant properties.

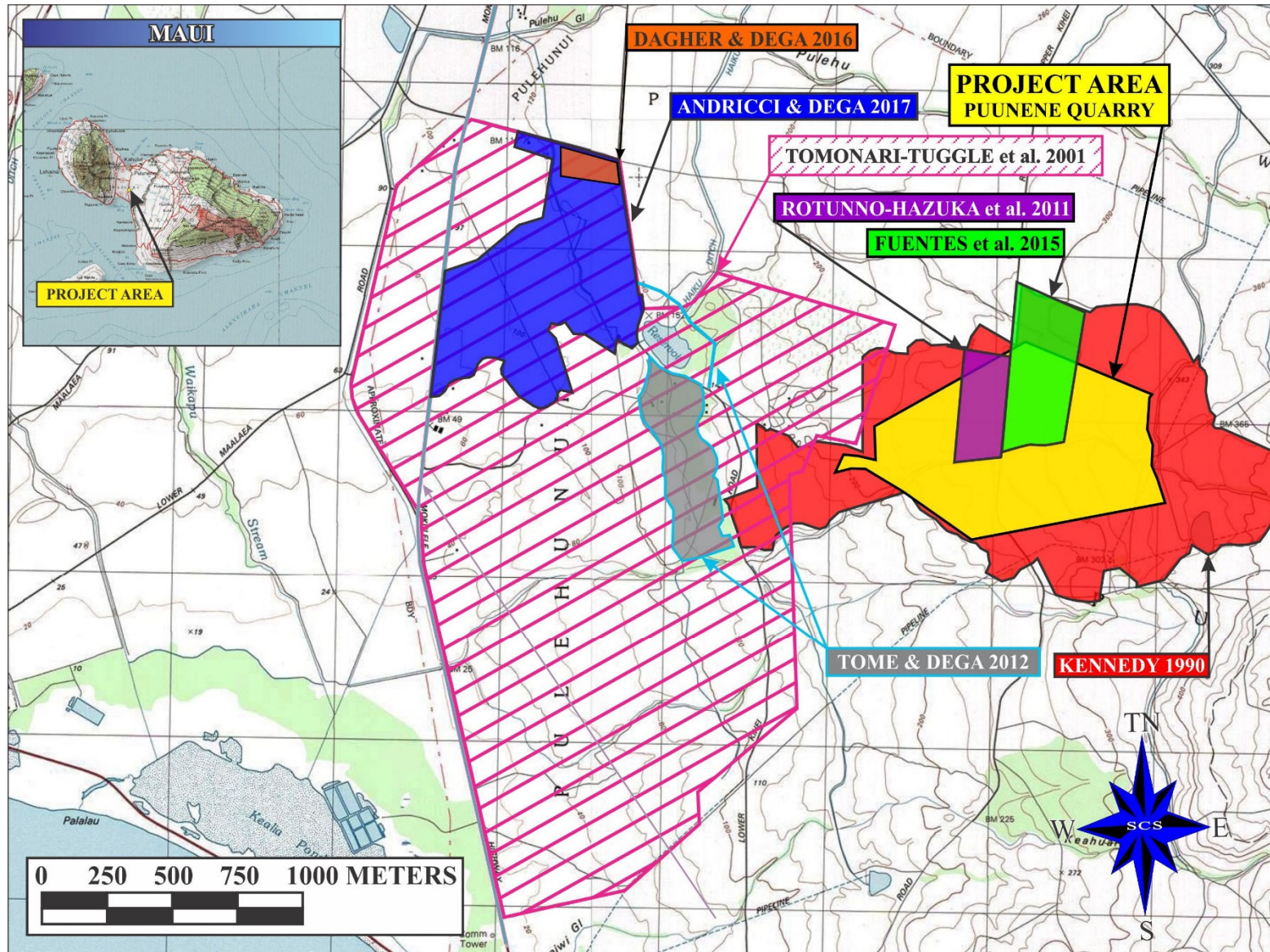


Figure 10: USGS quadrangle (Maalaea, HI 1996; 1:24,000) map showing locations of previous archaeology in the project area and its vicinity.

International Archaeological Research Institute, Inc. (Tomonari-Tuggle et al. 2001) conducted an archaeological inventory survey of the former Naval Air Station (State Site 50-50-09-4164) located in Pu‘unēnē, Pūlehu Nui Ahupua‘a, on lands adjacent to the west of the current project area. During the survey three sites were identified (State Site 50-50-09-4800, -4801, and -4802). State Site 50-50-09-4800 consisted of seven features associated with the Plantation-Era and two complexes of corrals, fences, troughs associated with Post-World War II ranching. State Site 50-50-09-4801 consisted of another Post-World War II cattle ranching site. State Site 50-50-09-4802 consisted of the Old Kihei Railroad Bed (State Site 50-50-09-4802) and 5 features associated with the Haiku Ditch and Reservoir (Tomonari-Tuggle et al. 2001).

Archaeological Services Hawaii, LLC (Rotunno-Hazuka et al. 2011) conducted an archaeological inventory survey of a 24.476-acre proposed rock quarry expansion site located on land partially overlapping with and adjacent to the project area in Pūlehu Nui Ahupua‘a, Kula Moku; Wailuku District, Island of Maui [TMK: (2) 3-8-004:001 pors.]. The survey consisted of surface investigation and twenty mechanically excavated backhoe test trenches. No historic properties were identified. The findings indicated the project area had been disturbed continuously, over the years, by intensive commercial sugar cane cultivation and rock mining (Rotunno-Hazuka et al. 2011).

In 2011, Scientific Consultant Services, Inc. (Tome and Dega 2012), conducted an archaeological inventory survey for the Puunene Heavy Industrial Subdivision Project on an approximately 917-meter long alternate access road corridor [TMK: (2) 3-8-008: pors. 005 and 006] and the surrounding 86.029 acres [TMK: (2) 3-8-008: 019] in Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui, Hawai‘i. A portion of the Puunene Naval Air Station was located within the project area. Thus, portions of the former Puunene Naval Air Station (State Site 50-50-09-4164) and a post-World War II cattle ranching site (State Site 50-50-09-4801) were re-located during the survey (Tome and Dega 2012).

Archaeological Services Hawaii, LLC (Fuentes et al.2015) conducted an archaeological inventory survey of 41.968 acres for the proposed Hawaiian Cement rock quarry expansion located within a larger 2008-acre property at Pūlehu Nui Ahupua‘a, Wailuku District, Kula Moku, Island of Maui, Hawai‘i [TMK: (2) 3-8-004:001 pors.]. This project area overlaps with increment 3 and is located immediately adjacent and west of the currently proposed quarry expansion site overlapping with increment 4 (see Figure 4). The survey consisted of a surface investigation and the mechanical excavation of seventeen backhoe trenches and two dozer cuts. No historic properties were identified (Fuentes et al.2015).

Scientific Consultant Services, Inc. (Dagher and Dega 2016) conducted an archaeological inventory survey of a 20.3-acre property in Pu‘unēnē, Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui, Hawai‘i [TMK: (2) 3-8-008:001 por.]. The project area is in the vicinity of the current project area and is located on lands owned by the State of Hawai‘i, Department of Land and Natural Resources. Full pedestrian survey was conducted, as and 20 stratigraphic trenches (ST-1 through ST-20) were mechanically excavated. No historic properties were identified on the ground surface or in subsurface contexts (Dagher and Dega 2016).

Finally, Scientific Consultant Services, Inc. (Andricci and Dega 2017) conducted an archaeological inventory survey of 285 acres inclusive of the area surveyed by Dagher and Dega (2016) for the DLNR Industrial and Business Park in Pu‘unēnē, Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui, Hawai‘i [TMK: (2) 3-8-008: 001]. One historic property was identified and interpreted as a Post-Contact irrigation ditch associated with sugar cane cultivation (State Site 50-50-04-8481). Subsurface testing yielded negative findings (Andricci and Dega 2017).

CONSULTATION

Consultation was conducted via telephone, e-mail, the U.S. Postal Service, and via Zoom. No in-person individual interviews, group interviews, or inter-island travels were conducted because of the ongoing COVID-19 epidemic. Information pertaining to traditional cultural practices conducted within the project area or in Pūlehu Nui Ahupua‘a in general was sought from the following 41 individuals and organizations:

1. Roy Newton, Office of Hawaiian Affairs
2. Kai Markell, Compliance Manager, Office of Hawaiian Affairs
3. Lui K. Hokoana, President, Central Maui Hawaiian Civic Club
4. Thelma Shimaoka, Community Outreach Coordinator III, Office of Hawaiian Affairs
5. Mr. William Ho‘ohuli, community member
6. Leimana DaMate, Executive Director, Aha Moku Advisory Committee
7. Chris “Ikaika” Nakahashi, Cultural Historian, State Historic Preservation Division
8. Andrew “Kealana” Phillips, Burial Sites Specialist, State Historic Preservation Division

9. Albert Perez, Executive Director, Maui Tomorrow Foundation
10. Lucienne de Naie, Vice-President, Maui Tomorrow Foundation
11. Maui Sierra Club
12. Hale Mahaolu
13. Kapulani Antonio, Former Chair, Maui/Lāna‘i Island Burial Council
14. Ke‘eaumoku Kapu, CEO, Aha Moku O Maui, Inc.
15. Timothy Bailey, Kula Mauka Moku Representative, Na Hono A‘o Pi‘ilani
16. Randall Moore, former HC&S employee
17. Kamika Kepa‘a, Native Hawaiian Preservation Council
18. Patty Nishiyama, Nā Kupuna O Maui
19. Johanna Kamaunu, Wailuku District Representative, Maui/Lāna‘i Islands Burial Council
20. Kaniloa Kamaunu, Na Hono A‘o Pi‘ilani
21. James “Jay” Carpio, community member and cultural practitioner
22. Hōkūao Pellegrino, Hui o Nā Wai ‘Eha, cultural practitioner and cultural and lineal descendant of Waikapū and Wailuku Ahupua‘a, Wailuku Moku, Maui
23. Foster Ampong, formally recognized cultural descendant of inadvertently discovered iwi kupuna (“ancestral bones”) of Wailuku Ahupua‘a, a lineal and cultural descendant of ‘ōiwi (“native”) ancestors who lived in Wailuku Moku, Maui, Hawai‘i
24. Clyde Kahalehau, Po‘o, Wailuku Moku, Na Hono A‘o Pi‘ilani
25. Vernon Kalanikau, Kula Kai District Representative, Aha Moku O Maui, life-long resident of Kula Kai (coastal Kula)
26. Jade “Alohalani” Smith, Kaupo Moku Representative, Aha Moku O Maui, born and raised in Kula Kai
27. Torrie Nohara, Na Ala Hele Program, Department of Land and Natural Resources, Division of Forestry and Wildlife

28. Bob Hobdy, Botanist and Environmental Consultant
29. Carol “Kaonohi” Lee, Honua‘ula Moku Representative, Aha Moku O Maui
30. Kyle Nakanelua, Maui Po‘o- Moku O Kahekili, Aha Moku Advisory Council
31. Jill Pridemore, Director, Alexander and Baldwin Sugar Museum
32. Dr. Scott Fisher, Associate Executive Director of Conservation, Hawai‘i Island Land Trust
33. Darla Palmer-Ellingson, Former Director, Alexander and Baldwin Sugar Museum
34. Kumu Hokulani Holt, Director, Ka Hikina O Ka Lā Hawai‘i, Papa O Ke Ao, University of Hawaii Maui College, cultural practitioner
35. Holly Buland, Assistant Director, Alexander & Baldwin Sugar Museum
36. Maui Historical Society
37. Bailey House Museum
38. Maui News Index
39. Robert Hill, Archaeologist
40. Kumu Kī‘ope Raymond, Formerly of the Hawaiian Studies Program, Department of Humanities, University of Hawaii, Maui College
41. Jon Kamakawiwo‘ole Osorio, Dean, Hawai‘inuiākea School of Hawaiian Knowledge, University of Hawai‘i at Mānoa

The initial letters of inquiry (Appendix A) were mailed between October 17, 2019, and October 31, 2019, to the above-listed individuals and organizations. The follow-up letters of inquiry were sent via e-mail and USPS on November 14, 2019. An example follow-up letter is attached as Appendix B. A Cultural Impact Assessment Notice was published in the November 2019 issue of the OHA newsletter, *Ka Wai Ola* (Appendix C). The notice stated that Scientific Consultant Services, Inc. is seeking information on cultural resources and traditional activities in the area of the proposed project, provided locational information (the *ahupua‘a*, traditional and modern names of the District, Island, State, and property Tax Map Key designations), and requested that responses be sent within 30 days to Cathleen Dagher

SITE VISIT

At the request of several of the cultural consultants, and with the permission of Dave Gomes, General Manager of Hawaiian Cement, Scientific Consultant Services, Inc. invited those among the people and organizations listed above who had indicated interest in participating in a site visit of the Puunene Quarry. The purpose of the visit was to obtain additional perspective and understanding of the land, its vegetation, and the location of roads. On August 17, 2020, SCS sent an email notifying the following individuals that the site visit would be conducted on Saturday, August 29, 2020, at 8 am:

- Vernon Kalanikau, Kula Kai District Representative, Aha Moku O Maui, life-long resident of Kula Kai
- Lucienne de Naie, Vice-President, Maui Tomorrow Foundation
- Carol “Kaonohi” Lee, Honua‘ula Moku Representative, Aha Moku O Maui
- Jade “Alohalani” Smith, Kaupo Moku Representative, Aha Moku O Maui, born and raised in Kula Kai
- Darla Palmer-Ellingson, Former Director, Alexander and Baldwin Sugar Museum
- Foster Ampong, formally recognized cultural descendant of inadvertently discovered *iwi kupuna* (“ancestral bones”) of Wailuku Ahupua‘a, a lineal and cultural descendant of *‘ōiwi* (“native”) ancestors who lived in the Wailuku Moku, Maui, Hawai‘i

In addition to:

- Trevor Yucha, Project Manager, Cultural Surveys Hawai‘i, who graciously agreed to guide the site visit and answer various questions.

Those who attended the site visit to Puunene Quarry were:

- Vernon Kalanikau
- Lucienne de Naie
- Jade “Alohalani” Smith
- Trevor Yucha

In addition to:

- Dave Gomes, General Manager of Hawaiian Cement, who kindly allowed the visit.

The site visit was conducted on August 29, 2020. In an email dated September 1, 2020, Mr. Yucha, Project Manager, Cultural Surveys Hawai‘i, provided the following summary of it:

Hello Cathy,

I was glad to participate in the site visit. Thank you for coordinating everything! I agree that it went well. Vernon, Lucienne, and Alohalani seemed to enjoy the opportunity to see the entire area and learn about the quarrying operation. The site visit took about 3 hours (8-11AM) starting with an orientation inside Dave’s [Gomes, General Manager of Hawaiian Cement] office conference room, followed by a 4WD tour of the property. The participants expressed concerns about the gulch area and that it may have archaeological sites. Vernon was also concerned with any impacts to drainage downslope toward Kealia Pond and Kula kai. The participants were interested in the place name of the gulch “Kolaloa” and the intent of its meaning “much sexual excitement” – Pukui et al. (1974). Dave confirmed that the gulch will be preserved with a buffer throughout the quarrying operation. Any work in the gulch would require review/permitting by the Army Corps.

All three participants also expressed concerns about the potential for archaeological sites/burials that could be disturbed by quarrying. I explained that the previous archaeological surveys found no evidence of archaeology or burials in the project area and that future work in Expansion Areas 2 and 4 will be addressed by the archaeological monitoring plan that CSH has prepared. To date, the SHPD has not reviewed future work in Expansion Area 5 (location of former Kihei Camp 3).

The participants did not share any knowledge of on-going cultural practices in the project area with me.

Let me know if you need any additional details.

Thank you,

Trevor Yucha

Project Manager

Cultural Surveys Hawai‘i

Note: Efforts to protect Kolaloa Gulch and the drainage system, archaeological sites, and human burials from potential impacts associated with quarrying activities are currently in place.

An archaeological monitoring plan (Yucha and Hammatt 2020) has been prepared in advance of quarry activities in Quarry Mining Site Increments 2 and 4. Dave Gomes, General Manager of Hawaiian Cement, stated via an email dated September 28, 2020, that there are access roads on either side of Kolaloa Gulch and berms are located between the roads. The berms were created to keep the HC&S trucks from entering the gulch. The berms will be kept in place to act as “buffers” between the quarry operations and the gulch. In a subsequent telephone conversation, on November 6, 2020, Mr. Gomes further explained that the existing roads are the buffers and the existing berms, located between the roads and the quarry, are standard federal regulatory safety measures to keep people from falling into the quarry.

RESULTS OF CONSULTATION

No responses were received as a result of posting a CIA notice in the OHA newsletter *Ka Wai Ola*. However, consultation yielded responses from 17 individuals via e-mail, one telephone interview, and one Zoom interview (see Interview section). Based on these responses and interviews, assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

WRITTEN REPOSESES

CHRIS “IKAIKA” NAKAHASHI, CULTURAL HISTORIAN, STATE HISTORIC PRESERVATION DIVISION

Mr. Nakahashi responded via an e-mail dated November 1, 2019. In his e-mail, Mr. Nakahashi provided the following recommendations:

Aloha Cathy,

Mahalo for contacting me regarding the CIA for the proposed Puunene Quarry Expansion Project in the ahupua‘a of Pūlehunui, in the Moku of Kula, Maui.

I recommend SCS to utilize the media (e.x. OHA’s Ka Wai Ola, Maui News, etc.) to solicit additional information for this CIA.

I recommend SCS to meet with:

- Ke‘eaumoku Kapu – ‘Aha Moku o Maui Inc.
- Hōkūao Pellegrino – Hui o Nā Wai ‘Eha

I recommend SCS to meet with the native tenants and people that currently live or previously lived in the ahupua‘a of Pūlehunui on Maui for information about the cultural resources and practices for this CIA.

Please let me know if I can assist with anything else.

A hui hou,

Christopher “Ikaika” Nakahashi, M.S.

Cultural Historian

Department of Land & Natural Resources

State Historic Preservation Division

Concerns: No concerns were expressed at this time.

Note: Ke‘eaumoku Kapu, ‘Aha Moku o Maui Inc., and Hōkūao Pellegrino, Hui o Nā Wai ‘Eha, were included in the consultation process for this project and invited to participate. Unfortunately, SCS did not receive responses from them.

ANDREW “KEALANA” PHILLIPS, BURIAL SITES SPECIALIST, STATE HISTORIC PRESERVATION DIVISION

Mr. Phillips provided the response below via an email dated February 25, 2020: “I will forward to burial council.”

Concerns: No concerns were expressed at this time.

LUCIENNE DE NAIE, VICE-PRESIDENT, MAUI TOMORROW FOUNDATION

Ms. de Naie sent the email below on July 9, 2020:

Mahalo Cathy,

I will check it out and pass around to folks who may be familiar with the area.

The map is too limited to place the project area, but I have attached a larger and older (c. 1950’s) map that shows the same area [Figure 11].

Just off the top of my head I would ask what happens to the Historic Upper Kihei road? Will there be research done to find former families who lived in Camp K-3?



Figure 11: Portion of USGS (c. 1950s) Quadrangle Map (Courtesy of Lucienne de Naie, personal communication July 9, 2020).

Will there be research done on the history of Kolaloa Gulch which runs right thru the proposed quarry area and may be completely altered by the quarrying operations?

Will the relationship of Kolaloa gulch to Kealia Pond be discussed? It appears that the Gulch at one time flowed into the pond/wetlands

Is there a site tour of the area proposed, by landowners, where interested cultural users can share information.

Lucienne de Naie

And in an email dated July 15, 2020, Ms. de Naie provided guidance and helpful suggestions:

Mahalo for the studies.

Historic roads, and access to them have a strong policy for protection in many of our Community plans. That's why a site visit would make sense.....

Site tours are being done by others. I am going on one of the proposed Kamaole solar site this Friday.

I would like to request that one be offered for this site, as part of CIA consultation.

As for Camp K-3 residents. Here's a few ideas, if you haven't already pursued them.

Did you check old Maui News index? Maybe an article on when the Camp was shut down?

Did you check Bailey House files?

HC&S Plantation Camp info that may be available [sic] at Maui Sugar Museum?

Give the director a call they have a Camp registry: A number of years ago, the Sugar Museum displayed the plantation camp maps of the Hawaiian Commercial & Sugar Co. (HC&S) in Puunene, and Maui Agricultural Co. (MACo) in Paia in its gallery, along with a registry form inviting former camp residents or their families to contribute information. This was the start of the Plantation Camp Registry. The registry also includes plantation camps in Spreckelsville, Hamakua Poko, Kihei, Wailuku and Lahaina....

Best

Lucienne

Concerns: No concerns were expressed at this time. Please see the Interview section of this report.

Note: SCS followed-up on Ms. de Naie’s suggestions. However, the Maui News Index was not available on-line. Scientific Consultant Services, Inc. contacted the Maui Historical Society, Bailey House Museum via telephone. The Bailey House Museum voice message indicated they were closed indefinitely due to the COVID-19 epidemic. SCS contacted Darla Palmer-Ellingson, Former Director of the Alexander and Baldwin Sugar Museum, via email, Jill Pridemore, Director, Alexander and Baldwin Sugar Museum, and Holly Buland, Assistant Director, Alexander & Baldwin Sugar Museum, regarding the Museum’s registry of former plantation camp residents. In addition, SCS contacted Randal Moore, former HC&S employee, in an effort to obtain information about K-3, the Plantation Village. A site visit of the Puunene Quarry was conducted on August 29, 2020, and Ms. de Naie attended.

Ms. de Naie sent the email below on August 29, 2020, following the August 29, 2020, Puunene Quarry site visit. “Thanks. I may have some ideas. We had a good tour of the Puunene quarry today. I am willing to be interviewed for that CIA. Lucienne de Naie.”

Concerns: Ms. de Naie did not express any concerns at this time. She was subsequently interviewed for this CIA report (see Interview section).

HOLLY BULAND, ASSISTANT DIRECTOR, ALEXANDER & BALDWIN SUGAR MUSEUM

Ms. Buland provided the email below on August 8, 2020:

Aloha Cathy,

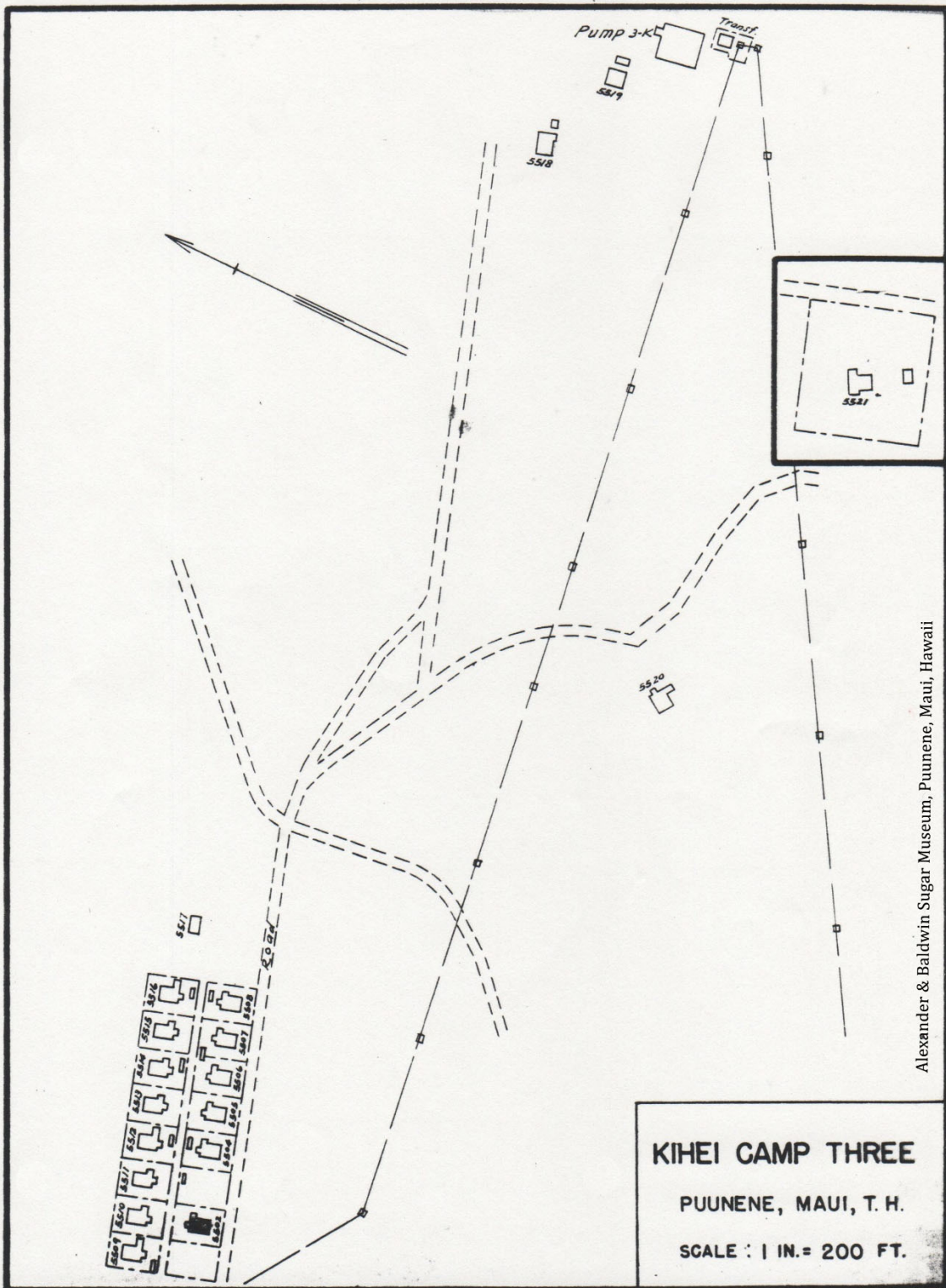
Thank you for your inquiry. We only have information attached:

Kihei Camp 3 map from early 1950s [Figure 12].

An HC&S retiree named Randall Moore commented on our Facebook page:

The camp was located near Well 3, above North Kihei. The camp area was cleared and planted in sugarcane in 1956 according to field maps.

Location on Google map: 20°48'34.1"N 156°25'57.1"W [Figure 13] <https://goo.gl/maps/8pWHw1mGRqhtDkDg7>.



Alexander & Baldwin Sugar Museum, Puunene, Maui, Hawaii

3-8-04-1 3-8-04-2 29

Figure 12: Kihei Camp 3, Puunene, Maui, T.H. (Alexander and Baldwin Sugar Museum, Puunene, Maui, Hawaii; Courtesy of Holly Buland, Assistant Director, Alexander & Baldwin Sugar Museum, personal communication August 8, 2020).

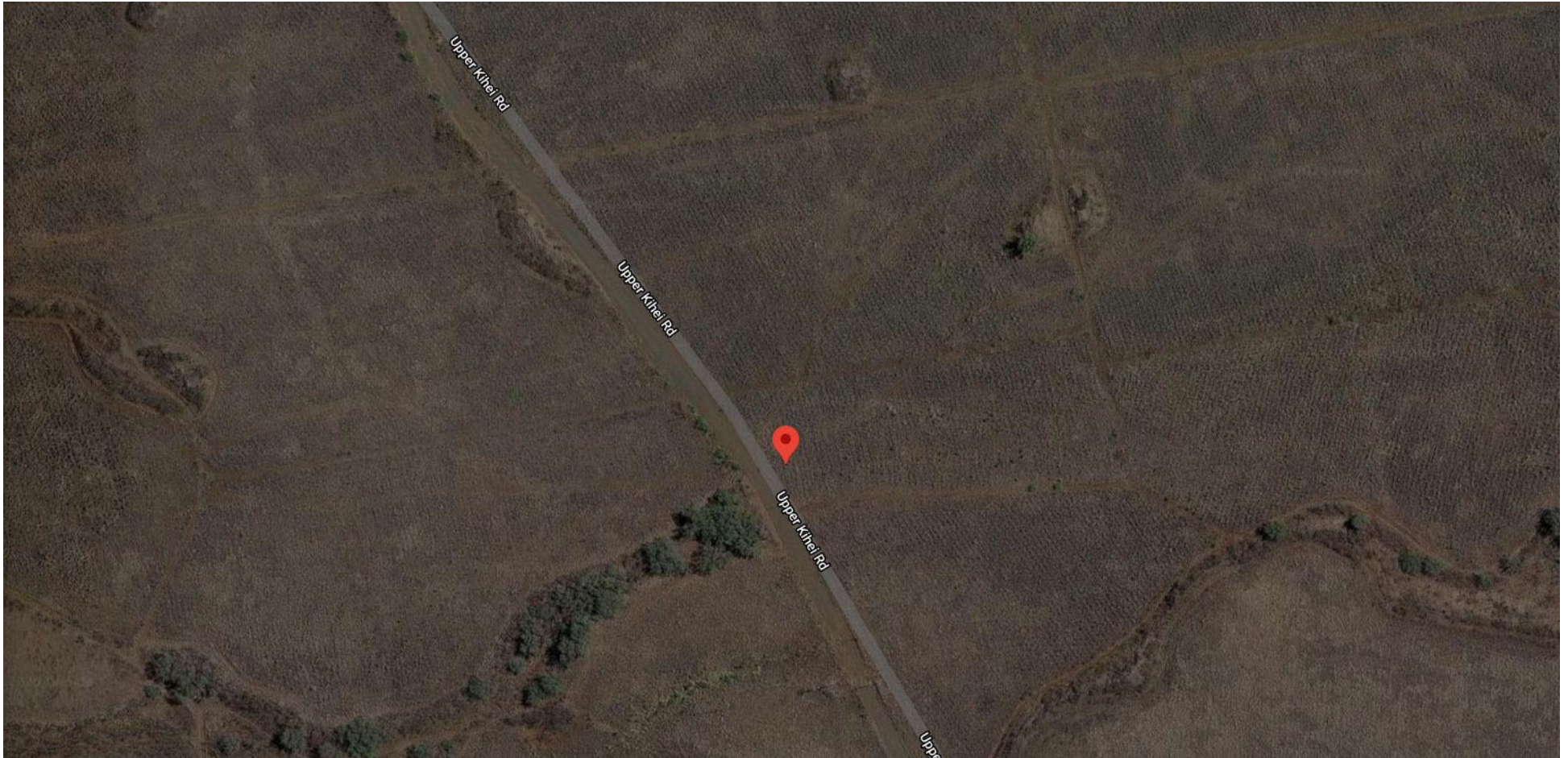


Figure 13: Satellite Image (Google; Courtesy of Holly Buland, Assistant Director, Alexander & Baldwin Sugar Museum).

Have you tried the Maui Historical Society? They may have information pertaining to Hawaiian cultural uses.

Holly Buland

Assistant Director

Alexander & Baldwin Sugar Museum

Concerns: No concerns were expressed.

RANDALL MOORE, FORMER HC&S EMPLOYEE

Mr. Moore provided the comments via an email dated October 28, 2019:

Cathy,

This area was in sugar cultivation while I was working at HC&S from 1974 to 2011. I do not know about any cultural resources that might be affected by the quarry expansion.

Let me know if you need more information.

Sincerely,

Randall Moore

Concerns: No concerns were expressed at this time.

JAMES “JAY” CARPIO, COMMUNITY MEMBER AND CULTURAL PRACTITIONER

In an email dated February 24, 2020, Mr. Carpio said, “Aloha Cathy, Mahalo for the opportunity to assist again. I will review and get back to you expeditiously. Jay.”

In a subsequent email dated April 7, 2020, Mr. Carpio, reiterated: “Mahalo Cathy i want to help. Let me review the next two nights.”

Concerns: No concerns were expressed at this time. Mr. Carpio did not respond to SCS’s follow-up emails, which were sent to him between November 15, 2019 and September 3, 2020.

CAROL “KAONOHI” LEE, HONUA‘ULA MOKU REPRESENTATIVE, AHA MOKU O MAUI

Ms. Lee sent the email below on August 3, 2020:

Aloha Ahiahi e Cathy,

I'm doing well given the current "new normal" which is annoying at times but thankful for less visitors and special places having the chance to "breath". Hope you are doing well.

Thank you for reaching out on this project. I am looking at the attachments and can't really pinpoint the exact spot of this project. Therefore, I would very much like to be a part of the site visit. I will also reach out to others who may be interested in providing information on the project and depending on the specifics regarding the site visit, they may want to participate.

Look forward to hearing from you.

Me ka ha'aha'a,

Ka'onohi

Concerns: No concerns were expressed at this time.

Ms. Lee was notified via email of the site visit scheduled for August 29, 2020, but in a subsequent email dated August 18, 2020, she indicated that she would be unable to attend:

Aloha Cathy and Vernon

Thank you Cathy for setting this up. Unfortunately because it took a while for this site visit to be set up, I now have a meeting scheduled for that day that I cannot reschedule.

Vernon, I hope you will be able to participate and if we (you and I) can get together to debrief about the site visit and so I can get an idea of where this place is!

me ka ha'aha'a,

Ka'onohi

DARLA PALMER-ELLINGSON, FORMER DIRECTOR OF THE ALEXANDER AND BALDWIN SUGAR MUSEUM

Darla Palmer-Ellingson, Former Director of the Alexander and Baldwin Sugar Museum, sent the email below on August 3, 2020:

I am the former director of the A & B Sugar museum, and have been out of touch with them for a while, but I would be happy to contact the new director...The museum has a close relationship with Alexander and Baldwin company, the landowner of the subject property. As such it would be ideal to look at community sources for input. I will reach out to a couple of contacts to see if they might have cultural information regarding the area you are researching.

Perhaps then I could give you some better leads on who to contact.

Best regards,

Darla Palmer-Ellingson

Concerns: No concerns were expressed at this time.

FOSTER AMPONG, FORMALLY RECOGNIZED CULTURAL DESCENDANT OF INADVERTENTLY DISCOVERED *IWI KUPUNA* OF WAILUKU AHUPUA‘A, LINEAL AND CULTURAL DESCENDANT OF ‘*OIWI* ANCESTORS WHO LIVED IN WAILUKU MOKU, MAUI, HAWAI‘I

In an email received July 27, 2020, Mr. Ampong stated:

Aloha, Cathy

Yes. We are indeed fortunate no harm came to us as a result of Hurricane Douglas.

Yes. I am be interested on this site visit [sic]. Please include me.

Mahalo

Foster

Concerns: No concerns were expressed at this time.

Note: Mr. Ampong was unable to attend the site visit conducted on August 29, 2020. He was subsequently interviewed for this CIA report. However, he did not provide a permission for SCS to publish his interview.

JADE “ALOHALANI” SMITH, KAUPU REPRESENTATIVE, AHA MOKU ISLAND COUNCIL

Ms. Smith provided the following comments via an email:

Hi Cathy,

Glad our Islands were spared and we can continue to move forward.

I would love to join you folks on a site visit. I believe it’s important. Thank you for coordinating this visit should we be granted.

J. Alohalani Smith

Concerns: The Puunene Quarry site visit was conducted on August 29, 2020, and Ms. Smith was in attendance. No concerns were expressed at this time.

**TORRIE NOHARA, NA ALA HELE PROGRAM, DEPARTMENT OF LAND AND NATURAL RESOURCES,
DIVISION OF FORESTRY AND WILDLIFE**

On August 6, 2020, Ms. Nohara provided the following information via email:

Cathy, thank you for contacting Na Ala Hele for information about cultural resources and cultural practices in the vicinity of the quarry. I'm sure at some time there were some trails that went through the area, but we were unable to locate anything on the old maps we have. So at this time, we have no comments. Good luck with your projects.

Torrie Nohara, Trails & Access Specialist

Na Ala Hele Program

Concerns: No concerns were expressed at this time.

**VERNON KALANIKAU, KULA KAI DISTRICT REPRESENTATIVE, AHA MOKU O MAUI AND LIFE-
LONG RESIDENT OF KULA KAI**

Mr. Kalanikau sent the comments below via email on July 22, 2020:

Aloha Cathy

I'm contacting you on the Quarry Expansion to where it is at as far as the CIA, etc.

First the proposed project is in Moku 'O Kula in the Pulehunui Ahupua'a and not in Moku 'O Wailuku.

Next, who have you consulted with for the CIA? I'm not sure if you did reach out to me or others from our Moku. Please relive if I missed anything.

Please contact me when you have a chance.

Included in this thread are consultants to me:

Foster Ampong from Wailuku

Jade Smith from Kaupo

Mahalo,

Vernon Kalanikau

Concerns: No concerns were expressed at this time.

A subsequent email sent by Mr. Kalanikau on July 27, 2020, stated:

Aloha Cathy

E mahalo for the info. I'm just learning about this CIA request has been in the oven for some time. I appreciate the invite to possibly weight in [sic] to this proposed project.

The request I have is there anyway [sic] we can do a site visit?

Mahalo,

Vernon

Concerns: No concerns were expressed at this time. The Puunene Quarry site visit was conducted on August 29, 2020, and Mr. Kalanikau was in attendance.

Mr. Kalanikau provided the email below on August 31, 2020, following the site visit to Puunene Quarry.

Hi Cathy

For me I don't have any cultural related or traditional practices to the proposed quarry expansion project. The concern I had was the gulch which we all did have a chance to view which is quite small but noticeable. Will the gulch be compromised from quarry work? Mr. Gomes indicated a distance barrier will be set up between mining and the gulch which will be enough apart so the gulch will not be impacted at all.

Of course plenty Uhaloa [*Waltheria* sp.] throughout the areas we visited [sic]. Saw some tobacco plants [*Nicotiana glauca*] here and there both on Mahi Pono and Hawaiian Cement parcels.

Other than that the visit was educational. Had no idea the work that is involved to make cement and technology to make it all work. Amazing!!

Mahalo for the opportunity to participate, along with Lucienne and Jade.

Vernon

Concerns: Mr. Kalanikau expressed concern that Kolaloa Gulch may be compromised by the quarrying operations.

Note: In an email dated September 28, 2020, Dave Gomes, General Manager of Hawaiian Cement, provided the following comment, concerning the placing of protective buffers during mining operations:

Currently on both sides of the gulch there is an access road that was used by HC&S pickup trucks. Between that road and the gulch was a small berm made from either dirt or rocks. I believe it was there to ensure the pickup trucks could not enter the gulch. We intend to keep this in place, thus providing a “buffer” between our operations and the gulch.

In a subsequent telephone conversation, on November 6, 2020, Mr. Gomes further explained that the roads are the buffers and the berms, which are located between the roads and the quarry, are a standard federal regulatory safety measures that they are obligated to have in place to keep people from falling into the quarry.

INTERVIEWS

SCS conducted three interviews, two via telephone, and one via Zoom. Dr. Scott Fisher, Associate Executive Director of Conservation, Hawai‘i Island Land Trust; Ms. Lucienne de Naie, Vice-President, Maui Tomorrow Foundation; and Mr. Foster Among, formally recognized cultural descendant of inadvertently discovered *iwi kupuna* of Wailuku Ahupua‘a, a lineal and cultural descendant of ‘*ōiwi* ancestors who lived in Wailuku, graciously allowed SCS to interview them. Dr. Fisher’s signed information release form, granting permission for his interview summary to be included in this document is likewise presented below (Figure 14). Ms. de Naie granted permission via an email dated November 11, 2020, which is presented below. Unfortunately, Mr. Among did not respond to SCS’s emails requesting he review and edit his interview summary or provide his permission for his interview summary to be included in this document. Thus, only Dr. Fisher’s and Ms. de Naie’s interview summaries are reproduced here.

DR. SCOTT FISHER, ASSOCIATE EXECUTIVE DIRECTOR OF CONSERVATION HAWAI‘I ISLAND LAND TRUST

Dr. Fisher was interviewed via Zoom on August 7, 2020, by SCS Senior Archaeologist Cathleen Dagher, B.A. Dr. Fisher began the interview by stating that he had looked over the materials SCS sent him and that the area in which the Puunene Quarry is located was the *ao kuewa*, the place of wandering spirits. In traditional Hawaiian spiritual after-life thinking, there was the *ao* [day] and there was the *po* [night]. The world we live in is the *ao* and the *po* is the after-world. But that middle ground where spirits who had lost their connection to their ‘*ohana* [family], specifically to their ‘*aumakua* [deified ancestors], were caught in this *ao kuewa*. Samuel Kamakau talks about the *ao kuewa* as where the spirits of the dead would live off of moths and spiders. This is a dark place and not a place where you would want to end up. So, not that it’s not worthy of being treated respectfully as ‘*aina* [land], but it is relatively devoid of cultural resources.

Up until probably around World War II, or maybe even more recently, the general area was a plantation. When Dr. Fisher was in graduate school, he did an oral history project with Maui

residents' recollections of World War II. One of his informants may have lived in Kihei Camp 3 [Camp K-3], because he said it was located right around the Puunene Naval Air Station. He actually joined the army and fought in World War II with the 442nd. But, he had some descriptions of what camp life was like at Camp 3. Unfortunately, the Bailey House can't seem to locate those documents. The Bailey House has oral histories from people who are now gone, people who have passed on.

The main cultural resource to protect there would be the Puunene Naval Air Station. Some fairly famous people flew in and out of there, like Lieutenant Commander Butch O'Hare, medal of honor recipient in World War II, naval aviator who shot down five planes in the Battle of the Coral Sea, and the O'Hare International Airport was named in his honor. Lieutenant Commander O'Hare flew in and out of the Puunene Naval Air Station and some of Dr. Fisher's oral history informants talked about how they had met him and were able to get his autograph.

Dr. Fisher's father was a manager at Hawaiian Commercial and Sugar (HC&S). He was in charge of irrigation and later he oversaw the harvesting of the sugarcane. Dr. Fisher frequently drove up and down the cane haul roads and he and his father would often drive from the HC&S mill to Kihei on all of the back roads. Dr. Fisher stated he is familiar with area and does not recall any traditional cultural resources in the area. In 2013, some live ordinance was found in the general area of the Puunene Quarry. Dr. Fisher's understanding is that the ordinance was found a little bit closer to Puunene Mill. Dr. Fisher went on to say that following World War II, the military left open pits throughout the area, not necessarily within the proposed project area, but in the area. Dr. Fisher wasn't sure if the pits were naturally occurring features or were intentionally excavated. But anything that was pit-like, the military immediately filled up with trash and did not back-fill them. When Dr. Fisher's father encountered these open pits, he would go down into them and find them filled with tons and tons of trash from the World War II era. It is possible that these pits also contain live ordinance.

Dr. Fisher did not identify any traditional cultural practices in close proximity to the Puunene Quarry or express any concerns pertaining to them. However, Dr. Fisher did identify the area in which the quarry is located as part of a larger cultural landscape, i.e., the *ao kua*. Dr. Fisher also identified the Puunene Naval Air Station and Kihei Camp 3 (Camp K-3) as near-by historic properties.

Concerns: Dr. Fisher did not express any concerns pertaining to traditional cultural practices or cultural resources. However, Dr. Fisher did make the following recommendations pertaining to the landscape and environment:

- Aesthetic remediation (i.e., smoothing the excavated areas over) should be done on the existing mined out areas of the quarry
- It should be made sure that Kolaloa Gulch is not infilled with any materials during mining operations
- The public should be aware of materials that may have been discarded during World War II, in particular, pits containing refuse materials and potentially unexploded ordinance
- Scientific Consultant Services, Inc. should include Robert Hill in the consultation process, as according to Dr. Fisher, Hill is a foremost authority on the history of the Puunene Naval Air Station.

Note: See the email dated September 28, 2020, by Dave Gomes, General Manager of Hawaiian Cement on pages 39 and 51 of the current document.

In a subsequent telephone conversation on November 6, 2020, Mr. Gomes further explained that the roles for the buffers and the berms (see pages 39 and 51 of the current document).

Scientific Consultant Services, Inc. has included Robert Hill in the consultation process for the current CIA. His *mana'o* (“opinions”) are presented in the Additional Written Response section of this document. Yucha and Hammatt (2020) have prepared an archaeological monitoring plan which includes the area in which Kihei Camp 3 (Camp K-3) is located (see Figure 9). Please see the relevant discussion in the Conclusions and Recommendations section concerning the treatment of World War II refuse materials and associated pit features.

In a telephone conversation between Mr. Gomes and the Ms. Dagher on November 23, 2020, Mr. Gomes stated that Alexander and Baldwin LLC has a reclamation plan in place, which was prepared with the intent to restore the property back for agricultural use so that HC&S could plant sugar cane once the quarry mining excavations were completed.

INFORMATION RELEASE FORM

I, the undersigned, personally participated in a virtual interview with Cathleen Dagher, B.A., of Scientific Consultant Services, Inc., via Zoom, on August 7, 2020

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as part of a Cultural Impact Assessment report prepared in advance of the proposed Puunene Quarry Expansion Project. The proposed project area will be located in Pūlehu Nui Ahupuaʻa, Wailuku (Kula) District, Island of Maui, Hawaiʻi [TMK: (2) 3-8-004:001 por. and 002 por.]. This information will be subject to publication which will be submitted to the public for general review.

I have read the summary of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc., for the purpose outlined above (i.e., making the contents of this interview available for publication to the general public).

Print Name: Scott Fisher

Signature: Scott G. Fisher

Release Dated: October 8th 2020

Figure 14: Dr. Scott Fisher's written permission for the publication of his statement to SCS, Inc.

LUCIENNE DE NAIÉ, VICE-PRESIDENT, MAUI TOMORROW FOUNDATION

Ms. de Naie was interviewed via Zoom on September 8, 2020, by SCS Senior Archaeologist Cathleen Dagher, B.A. Ms. de Naie granted permission for publication via an email dated November 11, 2020 (on file at SCS).

Ms. de Naie started the interview by stating she was glad they got the site visit in, because there was a huge fire the next day. She said it did not burn the quarry, but it did kind of burn the edges around it. It burned the existing baseyard – the area around the SOS Metals Island Recycling of Maui, Hawai‘i [now Schnitzer Steel], to the northwest of the Puunene Quarry. The fire burned about 1,000 acres of Mahi Pono farmland that are former sugarcane land where the sugarcane remnants and weeds haven’t been tilled or plowed into the soil. So, it’s just dried brush, basically.

Ms. de Naie reiterated that she really enjoyed the site visit. She further stated that Dave [Gomes, General Manager of Maui Cement] was great and very gracious and that Trevor Yucha [Project Manager, Cultural Surveys Hawai‘i] was very helpful. She, also, was very appreciative of the opportunity for Vernon [Kalanikau], Alohalani [Jade Smith], and herself to be able to participate in the site visit.

During the site visit, they looked at specific areas. They looked at Kolaloa Gulch and drove on the historic Upper Kihei Road [which bisects the Puunene Quarry]. They saw several pūnāwai [agricultural freshwater storage reservoirs] and portions of East Maui Irrigation’s (EMI’s) Lowrie ditch system. They drove over to the area where it is likely that the Kihei Camp 3 (Camp K-3) Plantation Village was located, Ms. de Naie observed some glass and pottery fragments on the ground surface, as did Mr. Yucha.

Ms. de Naie said that the first thing she noticed was that there seemed to be inconsistencies in terms of the level of review [archaeological coverage] that was done for the quarry because a number of the areas designated for impact were not covered in the Fuentes et al. (2014) archaeological inventory survey report. Trevor [Yucha] did indicate that he has been asked to conduct a form of archaeological coverage for Quarry Mining Site Increment 5 [see Figure 4], which is where the K-3 Village was located. Ms. de Naie adds that people always assume that because these lands were covered in sugarcane “there’s no more nothing” and they also assume “that no one ever lived here anyway because it’s so dry and terrible and this and that.” However, she said, they did discuss with Trevor [Yucha] and Dave [Gomes] the cultural importance of the gulches because even if people did not live along them, they often walked along them. So, there are traditional trails and stories associated with them. Trevor [Yucha] looked up the meaning of the name of Kolaloa Gulch [“much sexual excitement,” Pukui et al.

1974:116]. That is a very strange name, so it would be very worthwhile to try to find out any knowledge among traditional practitioners if there are other interpretations of that name and if there is a kaona [“hidden meaning,” Pukui and Elbert 1986: 130] about what that really means. The name of that gulch is an important cultural clue.

Ms. de Naie understands the mining operations “is not going to directly disturb the gulch.” During the site visit, Ms. de Naie walked a significant a section of the gulch, as much as she could, starting from the historic Upper Kihei Road, she walked approximately 400 or 500 feet in each direction. It appeared to her that as she went further uphill, there were some beautiful rock formations. There were things that suggested to her that people could have utilized the gulch as a transport area because there were [geographical] markers identifying where you were and where you were going. It looked like the gulch had been silted-in over time from both the nearby fields and probably from upslope, as well. The bottom of the gulch was just full of this very, very loose, very, very fine dirt that was finer than the surrounding dirt. She had also walked out into the surrounding fields and examined the soil.

Those are some of the things that she was taught - you notice the type of soil, did the soil change, did the kinds of rock change. These are clues. While there is no water in the gulch, at present, Ms. de Naie thought it was obvious that the gulch still gets some flowing water because in the areas along the road, it is now shored-up with cement and rock-like buttresses. That shows her they need to protect the roadbed. So, there is currently water that flows in the gulch during storms and passes through drainage pipes under the road, to the downhill part of the Kolaloa Gulch. She doesn’t think the water flows over the road. Ms. de Naie said it is obvious the gulch would have some flow, because it originates on a mountain. Kolaloa Gulch, at one time, fed the Keālia Pond area. If you look on the old maps, the gulch ran all the way to Keālia Pond and it was one of those mauna [mountain] water sources. You had the streams from Pōhākea and Waikapū on the Mauna Kahālāwai-side and on the Haleakalā-side, you had this gulch and several other gulches that flowed towards the Keālia Pond. So, the gulch is kind of an important part of the cultural landscape, whether or not it had cultural modifications. So, the quarrying activity should definitely have protective buffers. They mentioned that they would, but she would like to reiterate that. It would be interesting to take core samples in those gulches just to see where they start and where they end. Ms. de Naie said she knows these guys don’t want to do any more archaeology but, maybe if they’re working on Quarry Mining Site Increment 5 [see Figure 4], if they’re having anyone going out there to do any trenching, they could have someone come in with a coring machine and take a couple of core samples to see what it looks like. That would be a recommendation from Ms. de Naie, who is a person that is a researcher with very, very deep roots in receiving instructions from kupuna in “how to observe natural areas and look for cultural things.” Those are her roots. Ms. de Naie never had an archaeology class, she took

one anthropology class in college, but she has spent hundreds, and hundreds, and hundreds of hours with Hawaiian people who have shared their mana‘o [ideas or thoughts] while working on cultural sites. She spent every Saturday for two years working at Honokōwai and Hanaka‘ō‘ō Valleys, in West Maui, with Maui Cultural Lands to locate, clear, and analyze archaeological sites. She has no credentials, other than that. She has no degrees, no nothing, but she does hope in some small way, since most of the people who shared this knowledge with her are no longer on this planet, but a few are, she does hope in some small way their mana‘o can get passed on. That is why she volunteers to be interviewed for some of these studies. She doesn’t pretend to be a Hawaiian cultural practitioner. She is not Hawaiian and it is not her culture. But she certainly can speak to what she has heard Hawaiians say they see as important things to know about their history when you are walking land and looking at land.

An example of a gulch that had changed through time is Kūlanihāko‘i Gulch, on Kīhei-side, in the Kula Kai area. Ms. de Naie walked this gulch with cultural practitioners, Auntie Lani and Uncle Brian Nae‘ole. Auntie Lani had told Ms. de Naie that she used to walk that gulch with her brother (Brian’s dad) and her dad, who had both worked for Kaonoulu Ranch. Auntie Lani said that Brian had ridden his horse down there, in Kūlanihāko‘i Gulch, and that she had walked in the gulch. Ms. de Naie relayed that both Auntie Lani and Uncle Brian were amazed at how deep Kūlanihāko‘i Gulch is now because, the big water has eroded the gulch away. They said, “Wow! When we were younger and we walked this in the ‘60s and ‘70s, you could reach up almost to the top of the [gulch] wall,” which was about 6 or 7 feet high and is now about 15 or 20 feet deep.

Ms. de Naie said she had a chance to witness the flooding of Kūlanihāko‘i Gulch a few years ago when she and her husband and a few friends walked up there to see what they thought might be a traditional quarry site. They got a phone call while they were walking in the gulch from a friend who lives in Kula that they had invited to come on the walk, but couldn’t come. The friend had called to tell them it was starting to rain in Kula and they were having terrible flooding in the gulch right by their house. He warned them that if they were still in the gulch, they should get out immediately! They got out of the gulch and about 15 minutes later, this wall of brown water came down. Ms. de Naie said there was not a cloud in the sky in Kīhei that day, it was bright and sunny. So, they could see how the gulch got scoured out.

Kolaloa Gulch, obviously, has not had that happen at that level. Instead, it probably had been gradually filling in as a result of all the wind – it’s very windy there – and from the tilling that’s been happening for years. Ms. de Naie’s point is that the gulches can really shift and she has seen this, first hand.

During the Puunene Quarry site visit, they noticed an area that would be towards the Puunene Mill, to the north of the quarry. Ms. de Naie said they drove along the Upper Kihei Road and then they cut over to the [north] edge of the existing quarry site, probably along the edge Quarry Mining Site Increments 3 and 4 [see Figure 4]. There was a fence line there and Mahi Pono land was on the other side of the fence line. Trevor [Yucha] told them that the Lowrie Ditch, which is at the east end of the existing quarry, formed the eastern boundary of the quarry, separating the quarry from the Mahi Pono lands. Along that northern edge of the quarry boundary were areas that looked like a rock wall. They stopped and climbed up there in order to take a closer look and to take photographs. Ms. de Naie said this was not a formally constructed wall, but there appeared to be evidence of some stacking. The stacked rocks did not appear to be the result of bulldozer push, as there was no evidence of scarring. The stacked rocks appeared to have been there a long time and were located along the edge of a ridge. The feature was too irregular to be a wall, even a disturbed wall. It appeared to be more like a series of intermittent areas of naturally occurring pohaku [rock] formations with loosely stacked rocks filling in between them, which Ms. de Naie interpreted as a cultural feature. However, it is not located in close proximity to the quarry. You just hate for things to be dismissed because the prevailing opinion is that “oh, no one ever lived there” and “no one ever used it because it was too dry,” or “only the haoles came in and made it productive.” Ms. de Naie would like to get rid of all those stories and look at what we see and see if it tells us a different story. Ms. de Naie suggests that this feature could have contained shelters for people who walked along that ridge, but she wasn’t there long enough to really tell a lot about it.

Before all of the fields were altered by all of the grazing, that was a dryland forest out there. There are accounts from the 1820s, or so, talking about the isthmus and how it has these sparse shrubs and these different looking trees, which were *wiliwili* trees [*Erythrina sandwicensis*]. So, this area functioned as a traditional dryland forest. The vegetation wasn’t thick, it was sparse. And then when all of the grazing animals came in they let all these goats and sheep roam the land and they modified the landscape by eating the naturally occurring vegetation. In one of the historic accounts Ms. de Naie read from the early part of the 1800s, someone was fearful that the deforestation was going to lead to dust storms and erosion because the goats and sheep were just chewing up everything and that area was really dry.

These were totally western comments, but one of the things her Hawaiian kumu always taught her was, “do not to look at a place like it is today, or even the way it was the last 50 years of your lifetime, but go back.” 500 years ago you could have had different water patterns, different wind patterns, and different vegetation patterns. It could have been a very different landscape. Not necessarily as different as day and night, but somewhere in between. Ms. de Naie references Michael Kolb’s (1997) work on the Hawaiian Homelands in Kahikinui, but there were very different plant communities were identified in his core samples, pollen, and phytoliths that dated back to the 1300s and 1400s, from what you see out there today. There were big loulu [*Pritchardia spp.*] forests and so forth. We don’t see that now and may never see it again. It was very different times.

Ms. de Naie references data collected from core samples at Keālia Pond that date back 5,000 years ago. The plant data collected there originated in the mountains on East and West Maui, because the water rushed in and carried those pollens and so forth. There were just a lot of things growing where we see barren, empty, slopes and barren, empty fields. Ms. de Naie states that she just thinks it’s important that this information is brought up, even if the Hawaiians don’t bring it up, that it be brought up through Hawaiians who have passed on their knowledge to non-Hawaiians.

Ms. de Naie also noticed during the site visit, as they were driving back near Quarry Mining Site Increments 3 and 4 [see Figure 4] along the Lowrie Ditch, on the Mahi Pono-side of the Lowrie Ditch, there were quite a lot of the native tree tobacco [*Nicotiana glauca*] that is used as the host habitat for the *Manduca* [spp.] [an endemic moth.]. Some of the native tree tobacco [*Nicotiana glauca*] was growing on Quarry Mining Site Increment 4 [see Figure 4], too, as you got nearer to Kolaloa Gulch.

Ms. de Naie mentioned that she didn’t know if this information was noted in any botanical survey. It certainly wasn’t mentioned in the Fuentes et al. (2014) archaeological inventory survey report. Ms. de Naie pointed out that at the time the inventory survey was conducted, the areas under survey were in active sugarcane fields and that it appeared the only place the test units were placed was under the cane haul roads. Trevor [Yucha] pointed out that testing in the cane roads provided a good representative sample of cultural materials. However, Ms. de Naie has found that even in cultivated areas, that remnants of cultural activities have been identified in subsurface contexts.

Ms. de Naie mentions that Theresa Donham found artifacts, including an adze blank, some sort of pounding stone, and flakes, in subsurface contexts in the old pineapple fields above Māliko Gulch. Ms. de Naie has always urged that agricultural areas not just be written off as “nothing’s there,” as that is not necessarily true. Ms. de Naie mentions Wes Wong’s dad who used to be our State Forester. Mr. Wong had a huge collection of Hawaiian artifacts that he had collected from the sugarcane fields. Ms. de Naie said she, Vernon, and Alohalani all said that the monitoring that was going to be conducted at the quarry be conducted as the soil is removed. So, Trevor [Yucha] explained that as the soil was being removed, there would be an archaeological monitor on site watching the excavation. Vernon [Kalanikau] asked if that dirt would be screened. Trevor [Yucha] wasn’t sure. Ms. de Naie expressed her opinion that during the quarry excavations any sub-surface features that were present would not be seen. She adds that over in Wai‘ale, SCS did come across one subsurface hearth. The ground surface had been previously altered, as it had been under sugarcane at one time and later it was grazing land. That area had terrain similar to the terrain in the vicinity of the quarry. Ms. de Naie adds that at the Grand Wailea, burials were encountered well over two meters deep, they were about 10 to 15 feet deep. These were intentional burials, placed in prepared burial pits with capstones. Ms. de Naie believes subsurface cultural features are more likely to be encountered in these deeper deposits in areas that have been subjected to shifting weather patterns, i.e., in areas where there have been hurricanes, extreme flooding, etc.

Ms. de Naie stated that she has concerns as an historical researcher and as a person who reads a lot of reports and knows what gets found under different conditions. Ms. de Naie would like it on record that for this project, monitoring the dirt by sight only [i.e., not screening the excavated materials], it is possible subsurface cultural features will be missed. We have no guarantees. There are no stories to say whether there are or whether there aren’t any subsurface cultural features. The quarry has been in operation for years and no one knows if subsurface features were present because monitoring was not conducted in the old days. That’s more of a new thing.

Concerns: While Ms. de Naie did not express any concerns pertaining to traditional cultural practices, she made the following suggestions:

- In an effort to know more about the K-3 plantation village, Ms. de Naie suggested excavation in the form of trenches there
- An effort should be made to contact the families of the former residents, as it is difficult for the public and families who might have stories to learn when development is planned

- Core samples or mechanical trenching in Kolaloa Gulch should be conducted to examine the depths and types of deposits
- Excavated materials from the archaeological monitoring should be screened
- Buffers should be in place during mining activities in an effort to protect Kolaloa Gulch
- In effort to know more about the meaning of the name of Kolaloa Gulch, Ms. de Naie suggested contacting Kumu Kīʻope Raymond, formerly of the Hawaiian Studies Program Department of Humanities at the University of Hawaii, Maui College, or John Osorio, Dean of the University of Hawaiʻi at Mānoa, Hawaiʻinuiākea School of Hawaiian Knowledge.

Note: SCS followed-up on Ms. de Naie’s suggestions:

In an effort to obtain information on the K-3 Plantation Village, SCS checked Maui News Index, which was not available online. SCS contacted the Maui Historical Society, Bailey Houses Museum via telephone. The Bailey House Museum voice message indicated they were closed indefinitely due to the COVID-19 epidemic. SCS contacted via email Darla Palmer-Ellingson, Former Director, Jill Pridemore, Director; and Holly Boland, Assistant Director of the Alexander & Baldwin Sugar Museum regarding its registry of former plantation camp residents. In addition, SCS contacted Randal Moore, former HC&S employee.

Yucha and Hammatt (2020) prepared an archaeological monitoring plan for mining operations conducted in Quarry Mining Site Increments 2 and 4. Further determination recommendations for archaeological coverage (screening of excavated materials and conducting core sampling in Kolaloa Gulch) will be made by the State Historic Preservation Division.

In response to Ms. de Naie’s suggestion for protective buffers during mining operations, Dave Gomes provided a comment dated September 28, 2020 and previously referenced on pages 39 and 51 of this report. In a subsequent telephone conversation from November 6, 2020, he gave a further explanation referenced on pages 39 and 51.

In an effort to find out more about the deeper poetic meaning of the name of Kolaloa Gulch, SCS contacted Kumu Kīʻope Raymond, formerly of the Hawaiian Studies Program in the Department of Humanities at the University of Hawaii, Maui College, Kumu Hokulani Holt, Director of Ka Hikina O Ka Lā Hawaiʻi Papa O Ke Ao, University of Hawaii Maui College, and John Osorio, Dean of the University of Hawaiʻi at Mānoa, Hawaiʻinuiākea School of Hawaiian Knowledge. SCS sent an email to Dean Osorio on September 27, 2020, requesting the same information. To date, SCS has not received a response from Dean Osorio. Kumu Holt’s and Kumu Raymond’s responses are presented below:

In response to an email SCS sent Ms.de Naie on November 11, 2020, requesting her permission to include her interview summary in this report, she stated in an email of the same date, “YOU HAVE MY PERMISSION. MAHALO.”

**KUMU HOKULANI HOLT, DIRECTOR, KA HIKINA O KA LĀ HAWAI‘I, PAPA O KE AO,
UNIVERSITY OF HAWAII MAUI COLLEGE**

Kumu Holt was asked via an email dated September 8, 2020, if she had information about the poetic meaning or Hawaiian mythology associated with Kolaloa Gulch and the intent of its meaning “much sexual excitement” (Pukui et al. 1974:116). Kumu Holt responded via email on the same day, “I do not know the true translation for this word. You can look it up and figure out whether you like that definition for kola or one of the others.” In a subsequent email dated September 9, 2020, Kumu Holt was asked if she knew if Kolaloa Gulch is associated with any Hawaiian legends or song. In an email dated from the same day, she responded, “No I don’t.”

**KUMU KĪ‘OPE RAYMOND, FORMERLY OF THE HAWAIIAN STUDIES PROGRAM DEPARTMENT OF
HUMANITIES UNIVERSITY OF HAWAII, MAUI COLLEGE**

Kumu Raymond was asked the same question via an email dated September 8, 2020. On September 9, 2020, he provided the response below:

Aloha Cathy,

Mahalo for asking me to comment. I think highly of Lucienne and am honored she referred you to me.

The word kola has numerous meanings; not only in the Pukui-Elbert dictionary but also Andrews and Parker. It would take some research and time to come up with possible translations, though, certainly, "much sexual excitement" as Pukui-Elbert translates is one of them. The word "much" is added when the suffix "loa" is added to the word "kola". I have not seen any references, that I recall, that speak to why it would be so named.

Kama‘oma‘o is the plains area mentioned in Kamakau’s Ka Po‘e Kahiko: The People of Old when describing one (of many) area [sic] where spirits wander. This too, would need, further research regarding impact on Hawaiians today who might feel pain if the area where these spirits wander is disturbed.

Mahalo,

KĪ‘ope

SCS followed up on Kumu Raymond's suggestions and consulted Andrews (1865), whose work was subsequently revised by Reverend Henry H. Parker (1922).

Andrews (1865) defines "*kola*" as:

KO-LA

s. See KOOLA. The tail feathers of a cock

2. Kola is written for kohola, the whale; nui na lawaia i kii i na ia a pau, koe nae ke kola.

KO-LA

v. To spread out; to grow; to enlarge; to be thick together; to extend beyond, as the tail of a cock.

2. To be excited, as the animal passions.

And

KO-LA

adj. Unripe; used in reference to bananas put into the ground which do not ripen.

Parker (1922) defines Kola as:

Kola (kō'-la), adj.

1. Hard; rigid.

2. Unripe; said of any fruit which can not be ripened.

Kola (kō'-la), n.

1. The tail feathers of a cock.

2. Sexual excitement.

3. A wedge; a cleat.

and:

Kola (kō'-la), v.

1. To be spread out; to grow; to be enlarged; to be thick together; to extend beyond, as the tail of a cock.

2. To be excited, as the animal passions.

ADDITIONAL WRITTEN RESPONSE

Following upon Dr. Scott Fisher's suggestion, SCS obtained an additional written commentary by archeologist Robert Hill, B.A. His response is reproduced below.

ROBERT HILL, ARCHAEOLOGIST

Regarding: Traditional Background

Hawaiian Cement Facility, Pulehu Nui Ahupua'a, Maui.

Being a portion of Royal Patent 8140, Land Commission Award 5230 to Keaweamahi.

PULEHU NUI 17, Project Year 2020.

Pulehu Nui Ahupua'a

Hawaiian Cement Quarry Mining Site expansion at the Kolaloa Gulch.

Nearest traditional populations:

Native Hawaiian settlements were established at the shoreline of Ka'ono'ulu Ahupua'a, where the intermittent stream named Kūlanihāko'i flowed. A system of three fishponds were constructed here. [Kō'ie'ie fishpond investigation; Kikuchi, W.K. 1973. Hawaiian Aquacultural Systems. Thesis, University of Arizona. 229 pp.]

Early reference to the place-name "Kalepolepo."

Missionary Herald, For the Year 1829, Vol. XXV (25),

Boston, Crocker and Brewster, No. 47, W A. St.

"Tour Around Maui"

[An expedition by William Richards, Lorrin Andrews and Jonathan Green, which commenced on Monday, August 18, 1828, when the group left Lahaina to examine the government schools of the island of Maui. After completing a circuit of East Maui, the group stopped at Kalepolepo.]

"On August 29, the large canoe, which we regarded as most safe [departed Honua'ula]. About 8 o'clock, a.m., we arrived at Kalepolepo, a small village, on the neck of land which unites East and West Maui. Here we examined a small school. This concluded our examinations, and we soon

set off, by water, for Lahaina. We were now about twenty miles from home. We crossed, soon after our departure, a very spacious bay [Ma‘alaea a], not without apprehension of danger, as the wind became exceedingly strong, before we reached the opposite shore. We had a pleasant and prosperous passage, and, about three o’clock, p.m., reached Lahaina" (pp 250).

[David Malo was ordained to lead a church at the ocean in Kēōkea Ahupua‘a, as well as the Haleakala Church in Kēōkea Mauka.]

Missionary Herald, For the Year 1853

As received in Boston, under "Recent Intelligence" for January 1853:

"On the 2nd of September [1852] David Malo was ordained pastor of the church at Kēōkea, Kula. The services were as follows: - Introductory prayer by Mr. Dwight of Molokai, sermon by Mr. Green of Makawao, consecrating prayer and charge to the pastor by Mr. Baldwin of Lahaina; right hand of fellowship by Mr. Kauwealoha of Kauipale; charge to the people by Mr. Alexander of Lahainaluna; benediction by the new pastor."

Traditional and Historic Land Use:

The project site is located within Pulehu Nui Ahupua‘a, within the isthmus connecting Kahului and Ma‘alaea. The traditional translation for Pulehu Nui is given as "Great ash mound." [Ulukau Place Names Collection]

Other Traditional Land Use:

According to Theresa Donham, (consulted July 2001, during the use of a portion of the former NAS Puunene site as a transportation hub of the helicopter service to and from Kaho‘olawe Island during the UXB clearance project); the traditional activities of the region of the former Naval Station Puunene were confined to the use of trails used to traverse the region known as Ka-ma‘oma‘o. The threat of encountering wandering spirits of the dead was enough to keep most people from the region.

ESTABLISHMENT PERIOD

Naval Air Station Puunene

Historic Land Use:

In 1938, the Civilian Aviation Authority (C.A.A.) of the Territory of Hawaii called for a new airport for the island of Maui; as well as closing the airport facility at Ma‘alaea a Bay. In that same year, C.A.A. Engineer D. F. Balch approved new plans for a new civilian airport. Early in 1940, representatives of the U.S. Navy arrived on Maui to inspect the site of the new aircraft landing field planned at Puunene. By June 1940, the

Pacific Naval Air Base contractors had begun building the military quarters and messing facilities required to support the U.S. Navy operations at NAS Puunene. ["Building the Navy's Bases in World War II," Bureau of Yards and Docks, Civil Engineer Corps 1940-1946, Vol. II, U.S. Government Printing Office, Washington, D.C.] The full-scale expansion of the base to accommodate a U.S. Navy Air Group, meant the addition of facilities for up to 100 aircraft and 5,000 men. The number of civilians required to work on the new air base was also expected to be greater than originally forecast.

At the outbreak of WWII, all Japanese-Americans living in Camp Six, located close to an access gate to NAS Puunene, were relocated to other plantation camps away from the Air Station. In time, the entire camp was moved away from the air base. [Interview with John Arisumi, in "Fire on the Land," archaeological survey of NAS Puunene by Myra Tomonari-Tuggle, November 2001, International Archaeological Research Institute, Inc.]

NEXT: Plan View of NAS PUUNENE

History of the Naval Air Base NAS Puunene. (continued)

The resident population of the air base at Puunene changed with the number of work projects undertaken at the site. Pacific Naval Air Base construction contractors arrived in mid-1940 to construct Navy-designed housing for the air base personnel. These contractors were assisted by heavy equipment operators from the Hawaiian Commercial & Sugar Company. In December 1941, after war was declared, [following the Japanese attack at Pearl Harbor], different U.S. Navy Construction Battalions (C. B. or "SeaBees") were assigned to the various work projects on each of the Hawaiian Islands.

By March 1942, engineers from the U.S. Army based on Oahu had taken over all work at NAS Puunene. This included the relocation of a plantation camp away from the area of the Naval Air Station, to a location closer to the Puunene Mill, where other plantation camps were located.

In February 1943, the 39th SeaBees arrived at Maui. Top priority was given to the construction of a rock crusher, in the vicinity of the NAS, from which volcanic rock could be crushed to cinder, and used to pave the new runways at NAS Puunene. [NOTE: construction cinder for NAS Puunene came from Pu'u Hele, a small cinder cone at Ma'alaea Bay.] The 39th C.B.s left Maui in September 1944, for the combat zone of the Marianas Islands. In March 1943, the 48th SeaBees arrived on Maui. This construction battalion built the runways and taxiways for the new airfield at Puunene, as well as the

water and sewer systems of the camp. They also rotated into duty stations in the combat zone of the Marianas Islands [most notably Guam, where they built a hospital.]. The 48th SeaBees were replaced by the 127th Seabees in June 1944. The 127th moved into the combat area of the Philippine Islands in May 1945. This construction battalion built additional facilities to add more personnel to NAS Puunene, including special barracks for the U.S. Navy WAVES who arrived at NAS Puunene in December 1944.

DEVELOPMENT PERIOD

With the arrival of thousands of servicemen at the air base at Puunene, a twice-monthly newspaper was started. The Navy published the NAS Puunene "Island Breeze." NAS Puunene was not only populated by aviators and U.S. Navy staff, but were joined in late 1944 by U.S. Navy WAVES (Women Accepted for Volunteer Emergency Services) as an aid to manpower shortages caused by the wartime draft. Civilians were also essential to the war effort at the military air bases on Maui. According to the NAS Puunene records, as of 1 July 1945, eight WAVE officers and 92 WAVE enlisted personnel were based there, out of the 565 officers and 2,798 enlisted personnel remaining on the base. Aircraft on hand on the eve of the end of WWII: 271.

DISESTABLISHMENT

The last year of WWII, in 1945, the air base continued to function as a training center for aircraft carrier air groups, as the aircrews completed additional combat training. By July 1945, NAS Puunene had on hand 565 officers and 2,798 enlisted men. WAVE women numbered 8 officers and 92 enlisted. Once the two atomic bombs had been deployed in Japan in August 1945, some equipment was moved to the newer, larger and more modern Naval Air Station Kahului. By September, after the surrender of Japan, the air base had been marked for closure. The formal deactivation of the base occurred 1 November 1945.

POST-WAR

Navy housing constructed during the war in "Area A" of the base plan view map, was converted to civilian plantation housing after the NAS Puunene base was abandoned. This became known as "Airport Camp." In some cases, civilians were allowed to purchase these structures and move them to lots at Kahului, where fee simple lots were sold by Alexander & Baldwin after the war.

Concerns: Mr. Hill did not provide any concerns.

CULTURAL RESOURCES IDENTIFIED

As stated elsewhere in this document, the purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then to assess the potential for impacts on these cultural resources. The OEQC Guidelines (1997:11) state that the geographic extent of the CIA study area should be greater than the area over which the proposed project extends in order to ensure that potentially vulnerable cultural practices occurring outside of it are included in the assessment. Thus, this CIA considers the entire *ahupua'a* in addition to the project area more narrowly in identifying the relevant cultural resources.

During the consultation process, two types of botanical cultural resources were identified on lands leased by Hawaiian Cement for the quarry: *'uhaloa* (*Waltheria sp.*) and tree tobacco (*Nicotiana glauca*). *'Uhaloa* was found to be plentiful throughout the area, while tree tobacco plants were scattered on both the Mahi Pono property and the land leased by Hawaiian Cement.

'Uhaloa, also known as *hala 'uhaloa*, *'ala'ala pū loa*, *hi'a loa* and *kanaka loa*, is a small shrub that is native to tropical America (Neal 1965:575). It has traditionally been used by Hawaiians as a medicinal plant. According to Neal (1965:575), “the bitter root is used medicinally by the Hawaiians, for it has the same effect as aspirin, for example, the juice relieves sore throats.” Pukui and Elbert (1986: 363) state that the “leaves and inner bark of the root are... used for tea or chewed to relieve sore throat.” According to legend, the *'uhaloa* plant is one of the many plants in which Kamapua'a, the pig demi-god, manifests himself (Pukui and Elbert 1986: 363).

Tree tobacco, also known as wild tobacco, *makahala*, and *paka*, is a smooth shrub or a small tree that is native to Argentina and Uruguay, although it also grows wild in Hawai'i (Neal 1965:751). This plant has no known traditional use to Hawaiians and is considered to be poisonous to man and several species of mammals and birds (Neal 1965:571).

Following Pukui and Elbert (1986:313, 376), “*Wahi Pana*” has been defined on page 23 of this document as “celebrated or noted places or landmarks of historical significance.” Although the boundaries of the Kama'oma'o Plains have not been definitively ascertained, the lands currently leased by Hawaiian Cement for the Puunene Quarry have been identified as possibly within them. The larger Kama'oma'o Plains are considered *ao kuewa*, or “realm of the homeless or wandering souls” (Kamakau 1987:47).

According to Slaiby and Mitchell (2003:10), a “cultural landscape,” as currently used by the U.S. National Park Service, is defined as:

a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. (Cultural Resource Management Guidelines, NPS-28).

While not located within the formal boundaries of NAS, the Hawaiian Cement quarry at Puunene is on adjacent lands that have been associated with WWII military activities.

CULTURAL IMPACT ASSESSMENT SUMMARY

This CIA was prepared in accordance with the Guidelines for Assessing Cultural Impacts (OEQC 1997:11-13). The Guidelines recommend that a CIA consult relevant individuals and organizations, conduct ethnographic interviews and archival and historical research, identify cultural resources and practices located within the project area or in proximity, and finally, assess the impact of the proposed action and its mitigation measures on the cultural practices or resources identified.

Letters of inquiry were sent to 41 individuals and organizations that may have knowledge or information pertaining to the collection of cultural resources and/or practices currently, or previously, conducted in the vicinity of the proposed project area. In addition, a Cultural Impact Assessment Notice was published in the November 2019 issue of the OHA newsletter, Ka Wai Ola (see Appendix C).

The consultation process resulted in SCS receiving responses from 17 individuals via e-mail, and conducting three interviews. Two of the interviews were conducted via telephone, and one was conducted via Zoom. Permission to include the interview summaries in this document was obtained from two of the individuals, while the third did not respond to SCS's attempts to acquire permission. In addition, a site visit was conducted on the Puunene Quarry, which was attended by three of the cultural participants.

The information obtained during the consultation process indicates that the land leased by Hawaiian Cement for the Puunene Quarry is located in an area rich with legends and customary activities spanning the Pre-Contact Period, the Plantation Era of the Post-Contact Period, and the World War II Era, and currently contains a native plant traditionally used for medicinal purposes. However, based on historical research, the negative results of archaeological studies previously conducted within and near the Puunene Quarry, and the above listed responses, it is reasonable to conclude that there is no evidence of traditional cultural practices related to the gathering of, or seeking access to, resources (i.e., medicinal plants), or other customary activities (i.e., burials) in the currently proposed quarry expansion area or its adjacent lands leased by Hawaiian Cement for Puunene Quarry.

Based on the information obtained during the consultation process portion of the current CIA, ground altering activities associated with the proposed Puunene Quarry Expansion Project may have the potential to impact the landscape (i.e., Kolaloa Gulch, the drainage within Kolaloa Gulch, and the excavated quarry lands will be an eyesore to the community). Such activities may also impact remnants of previously conducted cultural materials (i.e., traditional and historic artifacts, traditional Hawaiian burials, and remnants of NAS Puunene activities) encountered within subsurface contexts and in Kolaloa Gulch during quarrying activities. Note that the archaeological work conducted within the Puunene Quarry (Kennedy 1990, Rotunno-Hazuka et al. 2011, Fuentes et al. 2015) yielded negative results (see the Previous Archaeology section), and that the section of Kolaloa Gulch adjacent to Puunene Quarry has not been subjected to an archaeological inventory survey.

CONCLUSIONS AND RECOMMENDATIONS

The findings of the current CIA did not identify any traditional cultural practices previously or currently conducted within the Puunene Quarry Expansion project area, nor were valued cultural and natural resources identified within the proposed expansion project area. This determination has been substantiated by traditional and historical background, summarized results of prior archaeological studies in the quarry, and in the concerns expressed by the cultural informants during the consultation process of the current CIA. Thus, the current analysis finds that specific cultural activities are not currently conducted on lands within the Puunene Quarry Expansion project area which may potentially be impacted by the proposed project.

However, the consultation process did identify specific concerns pertaining to the potential for human burials and cultural materials associated with the continuous use of the area from the Pre-Contact Period through the Plantation Era (including Camp K-3), and WWII Era that may still be present in subsurface contexts. The archaeological monitoring plan prepared by Yucha and Hammatt (2020) has been prepared to document and provide appropriate recordation and treatment of any cultural properties inadvertently encountered in subsurface contexts during ground altering activities associated with the quarry expansion project. Thus, it is recommended the tenets specified in the archaeological monitoring plan (Yucha and Hammatt 2020) are followed.

Other concerns identified during the consultation process pertain to potential impacts to Kolaloa Gulch, its drainage, and traditional and historic cultural materials, including human burials which may be present in the gulch. Efforts to protect them are currently in place. General Manager of Hawaiian Cement Dave Gomes stated that there are access roads on either side of Kolaloa Gulch and berms are located between the roads created to keep the HC&S trucks from entering the gulch. The berms will be kept in place to act as buffers between quarry operations and the gulch. In a subsequent conversation Mr. Gomes explained that the existing roads and berms are standard federal regulatory safety measures implemented to prevent people from falling into the quarry.

The final concern identified through the CIA consultation process pertained to the excavated quarry being perceived as an eye-sore. As part of their lease agreement, Hawaiian Cement has a reclamation plan, which is in place to return the property back for agricultural use once the quarry mining excavations have been completed. The plan was prepared with the intent was to restore the property back for agricultural use so that HC&S could plant sugar cane again.

It is recommended that the measures specified in the reclamation plan prepared by Alexander and Baldwin LLC are followed.

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APPENDIX A: EXAMPLE LETTER OF INQUIRY

Aloha kāua:

At the request of David Gomes, General Manager of Hawaiian Cement, Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed Puunene Quarry Expansion Project. The proposed project area will be located in Pūlehu Nui Ahupua‘a, Wailuku (Kula) District, Island of Maui, Hawai‘i [TMK: (2) 3-8-004:001 por. and 002 por.]. The 336-acre project area is situated on lands owned by Alexander and Baldwin LLC.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the proposed project area and the surrounding ahupua‘a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices and beliefs identified as a result of the proposed Project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kūpuna or elders and kama‘āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua‘a
- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana‘o regarding nā iwi kūpuna will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

Enclosed are maps showing the proposed project area. I invite you to contact me at the Scientific Consultant Services, Honolulu, office at (808) 597-1182 or send me an email at cathy@scshawaii.com, within 30 days, with any information or recommendations concerning this Cultural Impact Assessment. I would greatly appreciate hearing from you!

Mahalo and Aloha,



Cathleen Dagher
Senior Archaeologist
Enclosures (3)

APPENDIX B: EXAMPLE FOLLOW-UP LETTER

Aloha kāua,

This is our follow-up letter to our October 16, 2019, letter which was in compliance with the statutory requirements of the State of Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law, and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i, on November 19, 1997.

At the request of David Gomes, General Manager of Hawaiian Cement, Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed Puunene Quarry Expansion Project. The proposed project consists of expanding an existing and active quarry located in Pūlehu Nui Ahupua'a, Wailuku (Kula) District, Island of Maui, Hawai'i [TMK: (2) 3-8-004:001 por. and 002 por.]. The 336-acre project area is situated on lands owned by Alexander and Baldwin LLC.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the project area and the surrounding ahupua'a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices, and beliefs identified as a result of the proposed project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kūpuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a
- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana'o regarding nā iwi kūpuna will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

The CIA is in compliance with the Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i on November 19, 1997 (and revised in 2012).

According to the Guidelines for Assessing Cultural Impacts (Office of Environmental Quality Control 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs...The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs...

Please contact me within 30 days at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information you would like to share or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

A handwritten signature in cursive script that reads "Cathleen Dagher". The signature is written in black ink and is positioned above the printed name and title.

Cathleen Dagher
Senior Archaeologist

**APPENDIX C: CIA NOTICE PUBLISHED IN THE NOVEMBER 2019 ISSUE OF KA
WAIOLA**

**BURIAL NOTICE: HALEWAI'OLU,
HONOLULU AHUPUA'A
O'AHU, HAWAII**

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that human skeletal remains were identified by Cultural Surveys Hawai'i, Inc. during the course of an archaeological inventory survey related to the Halewai'olu Senior Residences, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu, TMK: [1] 1-7-060:120.

Following the procedures of Hawai'i Revised Statutes (HRS) Section 6E-43, and Hawai'i Administrative Rules (HAR) Chapter 13-300, these remains are considered "previously identified." Based on the context of the finds, they are over 50 years old and most likely Native Hawaiian.

Background research indicates that this burial was located in the 'ili of Kala wahine, within the boundaries of a Land Commission Award (LCA) to Huanu for Labilani, daughter of Francisco Manini (Francisco Marin). On an 1871 Lyons map this particular award is identified as LCA 3:189; on an 1893 Dodge and Wall map it is identified as LCA 2938. Nearby LCAs include an award to Kaukoke (identified variously as LCA 2:1025 'Āpana 3 and LCA 11082), an award to Makahopu (LCA 141-2), and an award to Keikenui no Makahopu (LCA 141-3).

The project proponent is the City and County of Honolulu—contact the Department of Land Management, ATTN: Director,

558 S. King Street, Honolulu, Hawai'i 96813 [Tel: (808) 768-4277].

The project proponent has proposed preservation in place for these remains; however, the decision to preserve in place or relocate these previously identified human remains shall be made by the O'ahu Island Burial Council in consultation with the State Historic Preservation Division (SHPD) and any recognized lineal and/or cultural descendants, per the requirements of HAR Section 13-300-33. Appropriate treatment shall occur in accordance with HAR Section 13-300-38.

All persons having any knowledge of the identity or history of these human remains are requested to immediately contact Ms. Regina Hilo, SHPD Burial Site Specialist, at 601 Kamokila Boulevard, Room 555, Kapolei, Hawai'i 96707 [Tel: (808) 692-8015, Fax: (808) 692-8020, Email: Regina.Hilo@hawaii.gov].

All interested parties shall respond within thirty (30) days of this notice and file descendant claim forms and/or provide information to the SHPD adequately demonstrating lineal descent from these designated burials or cultural descent from ancestors buried in the same ahupua'a (district).

'ĀAO VALLEY

Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment for the 'Āao Valley Master Plan Project. The area of focus consists of lands owned by the State of Hawai'i, the County of Maui, and the Hawai'i Nature Center in 'Āao Valley, Wailuku Ahupua'a, Wailuku District, Island

of Maui, Hawai'i [TMK: (2) 3-3-003:005, 006, 008, 012, 013, and 019]. SCS is seeking information on cultural resources and traditional cultural practices, previously or currently, conducted within or near 'Āao Valley. Please respond within 30 days to Cathleen Dagher, Senior Archaeologist, at (808) 597-1182 or via email (cathy@scshawaii.com).

LAHAINA

Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment in advance of the proposed Lahaina, Front Street Sidewalk, Railing and Seawall Project. We are seeking information on cultural resources and traditional, previously or on-going, cultural activities within or near the proposed project area, located along the southwest (ma kai) edge of Front Street, from Lahainaluna Road to just north of Dickenson Street and from Baker Street to just south of Pāpalaua Street, in Historic Lahaina Town, Paunau Ahupua'a, Lahaina (Lāhainā) District, Maui Island, Hawai'i [TMK: (2) 4-6009 and 4-5-002]. The proposed project area corridor is located on lands owned by the County of Maui. The project area is within the Lahaina National Historic Landmark, National Park Service (NPS reference number 66000302) (State Site 50-50-03-3001).

PU'UNENE QUARRY

Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed Pu'unene Quarry Expansion Project. SCS is seek-

ing information on cultural resources and traditional cultural practices, previously or currently, conducted within or near the 336-acre proposed project area, located within Pūlehu Nui Ahupua'a, Wailuku (Kula Moku) District, Island of Maui, Hawai'i [TMK: (2) 3-8-004:001 por. and 002 por.]. Please respond within 30 days to Cathleen Dagher, Senior Archaeologist, at (808) 597-1182.

**DEPARTMENT OF DEFENSE
INSTRUCTION (DODI) 4710.03:
CONSULTATION WITH NATIVE
HAWAIIAN ORGANIZA-
TIONS (UPDATE PLANNED)**

The Department of Defense (DoD) is in the beginning stages of updating its consultation policy titled, Department of Defense Instruction (DoDI) 4710.03: Consultation With Native Hawaiian Organizations, by October 2021.

DoD looks forward to hearing ideas from Native Hawaiian Organizations (NHOs) about how the Department can improve this consultation policy and help ensure pre-decisional, meaningful, and respectful consultation with the Native Hawaiian community.

DoD invites all NHOs to submit written comments about the policy. The current DoD policy is available to download at www.denix.osd.mil/na/policy. Please submit comments to DoD_NativeAffairs@keresnm.com by December 30, 2019. ■

APPENDIX D: LAND COMMISSION AWARD 5230

Number: 05230

Claim Number: **05230**

Claimant: **Keaweamahi**

Other claimant:

Other name:

Island: **Maui**

District: **Kula,Lahaina**

Ahupuaa: **Pulehunui, Polaiki**

Ili:

Apana:	5	Awarded:	1
Loi:	7	FR:	
Plus:		NR:	252v6
Mala Taro:		FT:	181v7
Kula:	2	NT:	63v5
House lot:		RP:	8140, 8252
Kihapai/Pakanu:		Number of Royal Patents:	2
Salt lands:		Koele/Poalima:	No
Wauke:		Loko:	No
Olona:		Lokoia:	No
Noni:		Fishing Rights:	No
Hala:		Sea/Shore/Dunes:	Yes
Sweet Potatoes:		Auwai/Ditch:	No
Irish Potatoes:		Other Edifice:	No
Bananas:		Spring/Well:	No
Breadfruit:		Pigpen:	No
Coconut:		Road/Path:	No
Coffee:		Burial/Graveyard:	No
Oranges:		Wall/Fence:	No
Bitter Melon/Gourd:		Stream/Muliwai/River:	No

Sugar Cane:		Pali:	No
Tobacco:		Disease:	No
Koa/Kou Trees:		Claimant Died:	No
Other Plants:		Other Trees:	
Other Mammals:	No	Miscellaneous:	Kula and Lahaina

No. 5230, Keaweamahi, Lahaina, 29 January 2848

N.R. 252v6

Greetings to you, the Land Commissioners, William L. Lee, J.S. Smith, Z. Kaauwai, John Ii, and N. Namaau: I hereby state to you may claim for land on Maui. Its name is Pulehu, it is a land at Kula, and I am the one with the right there, forever.

Also, at Lahaina are seven mo`o. One lo`i is in this land. Kanaina is the one who has the land and we are the people on the land.

There is a pauku of land inland, named Puuopapai. the mo`os are there with this pauku of land. The land in Lahaina, is at Polanui. That is where the aforesaid things are.

KEAWEAMAHI

F.T. 181-182v7

Cl. 5230, Keaweamahi

Kaiakeakua, sworn - Nothing intelligible could be got out of this witness.

Paulo Kauhihope, sworn, The claimant has 3 pieces of lands in "Polanui," Lahaina and one piece of kula called Pulehu which I do not well know.

No. 1 is a pauku of land.

No. 2 consists of 7 moos.

No. 3 is one loi.

The claimant received these lands from Kakaulia in 1837 and his title has never been disputed.

No. 1 is bounded:

Mauka by Malaekahana's land

Olowalu by "Kamani"

Makai by Rabati J. White's land

Kaanapali by "Kooka."

No. 2 is bounded:

Mauka by Kuhalake's land

Olowalu by "Kamani"

Makai by Rabati J. White's land

Kaanapali by "Kooka."

No. 3 is bounded:

Mauka by Kui's land

Olowalu and Makai sides by the same

Kaanapali by "Kooka."

Z. Kaauwai, sworn, I know the claimant's kula Pulehu in East Maui. I have always understood that the claimant received this from the King in 1843 and I never heard his title disputed (he, Keoni Ana and the King in reference to this land)

It is bounded:

Mauka by the "Haleakala" mountains

Honuauia by "Palehuiki"

Makai by the sea shore

Makawao by Omaopio.

There are a great many natives on this land.

N.T. 63-64v5

No. 5230, Keaweamahe

Kaiakekua, sworn, this witness was unaware of the inaccuracy of his statement, he has been sworn again as indicated below.

P. Kauhahape, sworn, He has seen 3 sections in the Polanui ahupuaa which were from Makaulia in 1837, no objections to the present time.

No. 2 - Pasture.

Mauka by Kuhalake's land

Olowalu by Kamani land

Makai by Polaiki land

Kaanapali by Kooka land.

No. 3 - Patch.

Mauka, Olowalu and Makai Kini's land

Kaanapali by Kooka land.

No. 1 - A patch and pasture.

Mauka by Malae Kahana's land

Olowalu by Kahaia

Makai by Kaalokai

Kaanapali by Wainee 2 land.

SEE 316, vol. 10.

Z. Kaauwai, sworn, he has seen the Pulehu ahupuaa in Kula, Maui, Keaweamaahi had received it in 1843, no one had objected to him.

The boundaries of that ahupuaa are:

Mauka by Haleakala mountain

Honuaula by Pulehu iki ahupuaa

Makai by Kekai

Makawao by Omaopio ahupuaa.

Many people live in here.

N.T. 316v10

No. 5230, Keaweamaahi, 28 September 1853

Keaweamahei's land in the Book of the Mahele.

Pulehu ahupuaa, Kula, Maui.

True Copy

A.G. Thruston, Clerk, Interior Department

28 September 1853


[Award 5230; Land Patent 8140 Pulehunui Kula; 1 ap. (ahupua`a; Ap. 2); 1668.78 Acs; Land Patent 8252; Polanui Lahaina; 4 ap. 1 Ac. 1 rods]



PRELIMINARY DRAINAGE
AND SOIL EROSION
CONTROL STUDY

APPENDIX

F



PRELIMINARY DRAINAGE & SOIL EROSION CONTROL STUDY

FOR

PROPOSED NEW QUARRY SITE

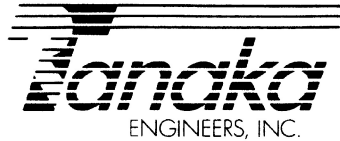
AT PULEHUNUI, WAILUKU, MAUI, HAWAII

TAX MAP KEY: (2) 3-8-04:01 (PORTION)

PREPARED FOR:

**HAWAIIAN CEMENT
P. O. BOX 488
KAHULUI, HAWAII - 96732**

PREPARED BY:



CIVIL ENGINEERING • LAND SURVEYING • CONSTRUCTION MANAGEMENT & INSPECTIONAL SERVICES

**871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII - 96793
JOB 05-065**

MARCH 2019

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I. INTRODUCTION:

Hawaiian Cement plans to lease additional lands for quarrying purposes to replace its existing quarry sites which is anticipated to be completely mined out shortly.

The proposed quarry site (45.350 acres) is located about 2 miles east (mauka) of Mokulele Highway in Pulehunui, Wailuku, Maui, Hawaii. The site is part of Parcel 1 of Tax Map Key (2) 3-8-04. The land is presently a follow sugar cane field. The general location, vicinity and plat maps are shown on Figures 1, 2 and 3, respectively.

Quarrying is expected to be done incrementally at a maximum area of 15 acres in keeping with the requirements of Chapter 20.08 - Soil Erosion and Sedimentation Control, of the Maui County Code. After mining is completed for each increment, the exposed areas will be backfilled (using topsoil that was removed and stockpiled) and the area stabilized.

The existing crusher and batching plants and related accessories at the present quarry site will be used in conjunction with the proposed mining operations at the proposed new quarry site.

II. PURPOSE:

The purpose of this preliminary study are as follows:

- A. to determine the effect of this project on drainage conditions;
- B. to determine the 100-year discharge and inundation limits of Kolaloa Gulch that traverse along the proposed quarry site; and

- C. to determine the requirements for grading and Best Management Practices (BMPs) to control soil erosion during quarry operations.

III. BASIS OF STUDY:

The Drainage Study is based on the design criteria as set forth by the “Rules of the Design of Storm Drainage Facilities” in the County of Maui [1] hereinafter referred to as “Maui County Drainage Standards”. Soil erosion control measures to be instituted during mining operations of the project will be in accordance with the requirements of Chapter 20.08 of the Maui County Code (MCC) and Construction BMPs for the County of Maui [6].

IV. EXISTING ONSITE SOIL:

The predominant type of soil at the site belongs to Waiakoa, Pulehu and Alae Series [2]. Waiakoa Series includes extremely stony silty clay loam (WID2) on 3 to 25 percent slopes. Pulehu Series include Silt Loam (PpB) on 3 to 7 percent slopes and Cobbly Clary Loam (PtA) on 0 to 3 percent slopes. Alae Series include Cobbly Sandy Loam (AcA) on 0 to 3 percent slopes. All these types of soils are characterized by moderate to rapid permeability, slow runoff and slight to no more than slight erosion hazard. See Figure 4 for Soils Map.

V. ONSITE DRAINAGE:

A. Existing Conditions:

The proposed quarry site is presently fallow former sugar cane lands. This site has an average slope of about 3 percent. The ground

elevation ranges from approximately 300 to 340 feet above mean sea level.

The proposed site lies to the north of Kolaloa Gulch. An existing drainageway lies to the north of the project site.

Runoff from the southern half of the proposed quarry site flows towards Kolaloa Gulch where it is blocked from directly entering the gulch by a dirt berm along the top bank of the gulch. The runoff flows along a dirt road to the Southwest corner of the new quarry area where it enters the gulch (Figure 5).

Runoff from the northern half of the site is directed to the northwest where it flows and ponds in a low area adjacent to the A.C. paved cane haul road.

Runoff from the fallow sugar cane fields above the project area are also directed to Kolaloa Gulch by existing diversionary ditches. Hence, runoff from these areas is not anticipated to affect the proposed new quarry site.

B. Onsite Runoff:

The proposed new quarry site encompassing 45.35 acres of leased land, will be mined in increments. Areas not in active quarrying will remain as fallow sugar cane fields. Therefore, for hydrologic analysis, a typical area of 15 acres with an overland flow of 800 feet long will be considered.

The rational method was used to determine runoff rate and volume for a 10-year and 50-year storm intensity, respectively. It was estimated that a typical 15-acre area in active quarry operations will increase the

existing 10-year runoff rate by 15.2 c.f.s., from 13.3 c.f.s. to 28.5 c.f.s., while the increase of 50-year runoff volume is about 27,225 c.f. or 1,815 c.f. for each acre of grading area. The 50-year runoff volume increase will be the minimum volume to be retained onsite in order to attain a zero runoff increase during mining operations.

Drainage calculations are shown in the attached Preliminary Drainage Calculations.

VI. OFFSITE RUNOFF - KOLALOA GULCH DRAINAGE BASIN:

A. Drainage Basin:

The Kolaloa Gulch drainage basin (Figures 8 and 8A) is located on the northwesterly slope of Haleakala and extends from 300 feet elevation to the upper slopes at elevation 9,600 feet. It is about 75,400 feet long with an average slope of about 13 percent. The total drainage area including Hapapa Gulch watershed, is about 3,861 acres or 6.03 square miles.

Land uses varies throughout the drainage basin. The upper portion consist of poor range land and pasture land. The central portion consists of diversified agriculture and pasture lands. The lower portion consist of pasture lands and fallow cane fields in the vicinity of the quarry site.

Soils within the drainage basin are classified under hydrologic soil groups A, B and D as defined by U. S. Department of Agriculture Soil Conservation Services [2 and 5]. Group A soils have low runoff potential; Group B soils have moderately low runoff potential; Group D soils have

high runoff potential. The predominant soils within the drainage basin are under hydrologic soil Group B.

B. Runoff Rate:

Kolaloa Gulch is anticipated to generate a 100-year, 24-hour storm flow of 2,480 c.f.s. This was determined by employing the NRCS (formerly SCS) Hydrograph Method. Calculations are given in the attached Preliminary Drainage Calculations.

C. Floodway Limits:

The inundation limits, were determined by using FEMA's Guide for Obtaining and Developing Base (100-Year) Flood Elevations [7]. Preliminary results show that the floodways will be confined within the stream banks. The average depth of flow is about 5.5 feet.

Cross-sections were taken along the existing stream. The approximate cross-sectional areas and the slopes were determined from an aerial topographic map of the site.

VII. PROPOSED DRAINAGE FACILITIES AND GRADING:

The proposed mining operations is anticipated to increase the storm runoff especially during active excavation when the ground is bare.

Increase in runoff volume (50-year, 1-hr. storm) due to mining operations will be retained onsite by means of retention ponds to be constructed at the downstream end of the grading area(s). In keeping with the requirements of the County Drainage Standards, the ponds will be sized to contain at least the 50 year, 1-hour runoff volume increase. Aside from keeping the runoff at pre-

quarrying levels, the retention ponds will also have the effect of reducing or precluding the potential for sediment contained in the runoff from entering downstream properties and Kolaloa Gulch.

A typical cut section of the graded area is shown on Figure 7. Each incremental grading will be limited to 15 acres maximum.

When quarrying is completed on each increment, the exposed areas will be backfilled with two (2) feet of topsoil and replanted.

VIII. FLOODING HAZARD:

The proposed new quarry site is located within Zone X as plotted on Panel 1500030580F of the Flood Insurance Rate Map for the County of Maui. Zone X is designated as areas of minimal flooding. Refer to Figure 6.

Kolaloa Gulch runs adjacent to the proposed quarry site. The calculated stream flow, based on 100-year, 24-hour recurrence interval, is about 2,480 c.f.s. This flow is anticipated to be confined within the stream banks. There is no plan to disturb or alter the existing stream. Mining will be confined to areas outside of the stream. Under these conditions, the proposed quarry operations will not be affected.

IX. BEST MANAGEMENT PRACTICES:

Generally, the control of soil erosion and sediment will be in conformance with the applicable sections of the County of Maui Construction Best Management Practices [6].

The following are some of the measures to control soil erosion during quarrying operations.

- A. Construct temporary drainage swales or berms to direct storm runoff away from mining area to natural drainageway or ground or to retention basins. Diverting runoff away from graded areas will minimize erosion of the bare soil especially over the cut slopes.
- B. Construct drainage basin(s) at downstream end of mining areas. Grade in such manner that runoff from mining area will flow into the retention basin(s).
- C. Mine area incrementally to extent possible. Exposed area at any given time should not be larger than 15 acres.
- D. Areas where mining is completed should be stabilized or provided with top soil and replanted with suitable ground cover.

X. CONCLUSION:

Based on this preliminary study, the following conclusion and recommendations are:

- A. The proposed mining operation will slightly increase the existing runoff quantities, however it is not anticipated to have adverse drainage effects on Kolaloa Gulch and downstream properties. The retention pond(s) to be constructed at the lower reaches of each incremental grading will keep or lower pre-quarrying runoff levels. The retention basin will also have the effect of reducing the potential for sediment contained in the runoff from entering neighboring properties or Kolaloa Gulch.

Further, after mining is completed in each increment, the area will be backfilled with two (2) feet of topsoil and be stabilized.

There will be no appreciable offsite runoff that will flow into the quarry area. Most of the offsite flows will be intercepted by several diversionary ditches, diverting the flow to either Kolaloa Gulch or to the drainageways that are running outside the quarry sites.

- B. Kolaloa Gulch is anticipated to generate a 100-year storm flow of 2,480 c.f.s. which was determined by the SCS Hydrograph method in conformance with the Guidelines of the Maui County Drainage Standards.

Preliminary analysis of the stream channel capacity, using method established by FEMA [7], showed that the 100-year flow will be confined within the stream banks.

Quarrying will be performed outside of the gulch area; therefore, as long as the stream banks are not disturbed, the 100-year flood is not expected to affect the quarry operations.

XI. REFERENCES:

1. Rules for the Design of Storm Drainage Facilities in the County of Maui, Title MC-15, Department of Public Works and Waste Management, County of Maui, Chapter 4.
2. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, August 1972.
3. Flood Insurance Rate Maps for the County of Maui, September 19, 2012.
4. Rainfall-Frequency Atlas of the Hawaiian Islands, Technical Paper No. 43, U. S. Department of Commerce, Weather Bureau, 1962.

5. Erosion and Sediment Control Guide for Hawaii, prepared by U. S. Department of Agriculture, Soil Conservation Service, March 1981.
6. Construction Best Management Practices (BMPs) for the County of Maui, Dept. of Public Works and Waste Management, County of Maui, May 2001.
7. Guide for Obtaining and Developing Base (100-Year) Flood Elevations, prepared by Federal Emergency Management (FEMA), April, 1995.

PRELIMINARY DRAINAGE CALCULATIONS

I. Onsite

A. Reference: Rules for the Design of Storm Drainage Facilities in the County of Maui

B. Methodology: Rational Method

Recurrence Interval: 10-year, 1-hour rainfall (runoff rate)
50-year, 1-hour rainfall (runoff volume)

Drainage Area: 15 acres

Time of Concentration, T_c : Determined from Plate 1

Runoff Coefficient, C :

Existing Condition: $C = 0.30$ (unimproved)

New Condition: $C = 0.50$ (bare soil)

C. Runoff Rate

1. Existing Condition:

$$I_{10} = 2''$$

$$L = 800'$$

$$S = 3\%$$

$$T_c = 26 \text{ min. (Plate 1)}$$

$$i = 2.95 \text{ (Plate 2)}$$

$$Q = CiA$$

$$= 0.30 \times 2.95 \times 15 = 13.3 \text{ c.f.s.}$$

2. New Condition (During Quarrying):

$$I_{10} = 2''$$

$$L = 800'$$

$$S = 2\%$$

$$T_c = 16 \text{ min. (Plate 1)}$$

$$i = 3.8 \text{ (Plate 2)}$$

$$Q = CiA$$

$$= 0.50 \times 3.8 \times 15 = 28.5 \text{ c.f.s.}$$

3. Increase of Runoff Rate During Active Quarry Operations for Each Incremental Area of 15 Acres:

$$\text{Increase} = 28.5 - 13.3$$

$$= 15.2 \text{ c.f.s.}$$

D. Runoff Volume:

1. Existing Conditions:

$$I_{50} = 2.5''$$

$$V = \text{Rainfall} \times C \times A$$

$$= \frac{2.5''}{12} \times 0.30 \times 15$$

$$= 0.9375 \text{ ac.-ft.}$$

2. New Condition (During Quarrying):

$$V = \frac{2.5''}{12} \times 0.50 \times 15$$

$$= 1.5625 \text{ ac.-ft.}$$

3. Increase in Volume:

$$= 1.5625 - 0.9375$$

$$= 0.625 \text{ ac.-ft.}$$

$$= 27,225 \text{ cubic feet}$$

$$\text{Increase/Acre} = \frac{27,225}{15}$$

$$= 1,815 \text{ c.f.}$$

4. Minimum Runoff Volume to be Retained Onsite

= 1,815 c.f. For each acre of grading area

II. Kolaloa Gulch

- A. Reference: Rules for the Design of Storm Drainage Facilities in the County of Maui
- B. Methodology: SCS Hydrograph Method
- C. Drainage Area: 3,861 Acres (Refer to Figure 9 & 9A)
- D. Hydrologic Soil Group (HSG) and Curve Number (CN)
(Maps 106, 107, 116 and 117) [2]
(Tables 14, 25 and 26) [5]

<u>Land Use</u>	<u>HSG</u>	<u>Acres</u>	<u>CN</u>	<u>CN x Acres</u>
Range Land - Poor Condition	A	305	68	20,740
	B	99	79	7,821
	D	163	89	14,507
Range Land - Good Condition	B	2,878	61	175,558
Sugar Cane Field (Limited Cover)	A	93	65	6,045
	B	323	75	24,225
Total		3,861		248,896

$$CN = \frac{248,846}{3,861} = 64.5$$

Use CN = 65

E. Runoff Rate:

1. Rainfall (P): 100-year, 24-hour rainfall

$$P = 10.0" \text{ (average)}$$

2. Time of Concentration, Tc:

Time of flow is based on velocities indicated on Table 4 [1]

Tc₁ (300 ft. elev. to 4,200 ft. elev.):

$$L = 54,100 \text{ ft.}$$

$$S = \frac{4,200 - 280}{54,100} = 7.3\%$$

$$V = 4.0 \text{ fps (use for Natural Channel Flow)}$$

$$T_{c_1} = \frac{54,110}{4.0} \times \frac{1}{60} = 225 \text{ minutes}$$

T_{c_2} (4,200 ft. elev. to 9,600 ft. elev.)

$$L = 21,300 \text{ ft.}$$

$$S = \frac{9,600 - 4,200}{21,300} = 25\%$$

$$V = 4.5 \text{ fps (use for Overland Flow)}$$

$$T_{c_2} = \frac{21,300}{4.5} \times \frac{1}{60} = 79 \text{ minutes}$$

$$\begin{aligned} \text{Total } T_c &= T_{c_1} + T_{c_2} \\ &= 225 + 79 = 304 \text{ minutes} \end{aligned}$$

3. Peak Discharge = 2,480 c.f.s.

(See attached Hydrologic Report)

F. Inundation Limits:

Approximate inundation limits were determined by computing the normal depth of the 100 year storm flow at few sections of the gulch using the programs developed by the Federal Emergency Management Agency (FEMA) [7]. The average depth of flow is estimated at 5.5 feet.

Table 1

GUIDE FOR THE DETERMINATION OF RUNOFF COEFFICIENTS FOR BUILT-UP AREAS*

WATERSHED CHARACTERISTICS	EXTREME	HIGH	MODERATE	LOW
INFILTRATION	NEGLIGIBLE 0.20	SLOW 0.14	MEDIUM 0.07	HIGH 0.0
RELIEF	STEEP (> 25%) 0.08	HILLY (15 - 25%) 0.06	ROLLING (5 - 15%) 0.03	FLAT (0 - 5%) 0.0
VEGETAL COVER	NONE 0.07	POOR (< 10%) 0.05	GOOD (10 - 50%) 0.03	HIGH (50 - 90%) 0.0
DEVELOPMENT TYPE	INDUSTRIAL & BUSINESS 0.55	HOTEL - APARTMENT 0.45	RESIDENTIAL 0.40	AGRICULTURAL 0.15

*NOTE: The design coefficient "c" must result from a total of the values for all four watershed characteristics of the site.

OPPOSITE AREA - TABLE 1

Table 2

RUNOFF COEFFICIENTS

Type of Drainage Area	Runoff Coefficient C
Parks, cemeteries	0.25
Playgrounds	0.35
Railroad yard areas	0.40
Unimproved areas	0.30
Streets:	
Asphaltic	0.95
Concrete	0.95
Brick	0.85
Driveway and walks	0.85
Roofs	0.95
Lawns:	
Sandy soil, flat, 2%	0.10
Sandy soil, avg., 2-7%	0.15
Sandy soil, steep, 7%	0.20
Heavy soil, flat, 2%	0.17
Heavy soil, avg., 2-7%	0.22
Heavy soil, steep, 7%	0.35

Table 3

MINIMUM RUNOFF COEFFICIENTS FOR BUILT-UP AREAS

Residential areas	C=0.55
Hotel, apartment areas	C=0.70
Business areas	C=0.80
Industrial areas	C=0.80

The type of soil, the type of open space and ground cover and the slope of the ground shall be considered in arriving at reasonable and acceptable runoff coefficients.

Table 4

APPROXIMATE AVERAGE VELOCITIES OF RUNOFF FOR CALCULATING TIME OF CONCENTRATION

TYPE OF FLOW	VELOCITY IN FPS FOR SLOPES (in percent) INDICATED			
	0-3%	4-7%	8-11%	12-15%
OVERLAND FLOW:				
Woodlands	1.0	2.0	3.0	3.5
Pastures	1.5	3.0	4.0	4.5
Cultivated	2.0	4.0	5.0	6.0
Pavements	5.0	12.0	15.0	18.0
OPEN CHANNEL FLOW:				
Improved Channels	Determine Velocity by Manning's Formula			
Natural Channel* (not well defined)	1.0	3.0	5.0	8.0

*These values vary with the channel size and other conditions so that the ones given are the averages of a wide range. Wherever possible, more accurate determinations should be made for particular conditions by Manning's formula.

DRAINAGE — RUNOFF — 2

Q = Aci RATIONAL FORMULA (Logical approach).

Q = RUNOFF = Peak discharge of watershed in cubic feet per second (c.f.s.) due to maximum storm assumed. See Figs. A to F, Pg. 18-01 (Usually 10-25 years).

A = Area of watershed in acres.

C = Coefficient of runoff, Table B below (Measure of losses due to infiltration, etc.).

i = Intensity of rainfall in inches per hour based on concentration time, See Pg. 18-01. Concentration time = time required for rain falling at most remote point to reach discharge point. Concentration time may include overland flow time, Fig. H, Pg. 18-01, and Channel flow time, Pg. 18-05, 18-06, 18-69 and 18-71.

TABLE A-COMPUTATION FORM FOR RATIONAL FORMULA.

LOCATION			A		TIME OF FLOW - MIN.						DESIGN					PROFILE				
STREET	FROM	TO	INCRE- MENT	TOTAL	C	TO INLET	IN CHAN- NEL	TIME OF CONC	L *	Q c.f.s.	CHAN- NEL OR PIPE SIZE	SLOPE ft. per ft.	n	CAPA- CITY FULL c.f.s.	V ft. per sec.	LENGTH ft.	FALL ft.	OTHER LOSSES ft. †	INV. ELEV. UPPER END	INV. ELEV. LOWER END
MAIN RD.	B	C	1.9	3.7	.50		2.5	16.8	3.7	6.8	D-2	.011	.030	12.0	2.8	420	4.62	0	81.52	76.90
" "	C	D	2.0	5.7	.50		1.8	19.3	3.5	10.0	21"	.007	.015	11.1	4.5	480	3.36	2.20	74.70	70.34

* Note that the sequence of design as in example, Fig. J, Pg. 18-01 involves trial assumptions in determining i.

† Fall in manhole.

TABLE B - VALUES OF C = $\frac{\text{RUNOFF}}{\text{RAINFALL}}$		VALUE PROPOSED		VALUE BY OTHER AUTHORITY		
SURFACES		MIN.	MAX.	MIN.	MAX.	
ROOFS, slag to metal.		0.90	1.00	0.70	0.95	
PAVEMENTS	Concrete or Asphalt.	0.90	1.00	0.95	1.00	
	Bituminous Macadam, open and closed type.	0.70	0.90	0.70	0.90	
	Gravel, from clean and loose to clayey and compact.	0.25	0.70	0.15	0.30	
R.R. YARDS		0.10	0.30	0.10	0.30	
EARTH SURFACES	SAND, from uniform grain size, no fines, to well graded, some clay or silt.	Bare	0.15	0.50	0.01	0.55
		Light Vegetation	0.10	0.40	0.01	0.55
		Dense Vegetation	0.05	0.30	0.01	0.55
	LOAM, from sandy or gravelly to clayey.	Bare	0.20	0.60		
		Light Vegetation	0.10	0.45		
		Dense Vegetation	0.05	0.35		
	GRAVEL, from clean gravel and gravel sand mixtures, no silt or clay to high clay or silt content.	Bare	0.25	0.65		
		Light Vegetation	0.15	0.50		
		Dense Vegetation	0.10	0.40		
	CLAY, from coarse sandy or silty to pure colloidal clays.	Bare	0.30	0.75	0.10	0.70
		Light Vegetation	0.20	0.60	0.10	0.70
		Dense Vegetation	0.15	0.50	0.10	0.70
COMPOSITE AREAS	City, business areas.	0.60	0.75	0.60	0.95	
	City, dense residential areas, vary as to soil and vegetation.	0.50	0.65	0.30	0.60	
	Suburban residential areas, " " "	0.35	0.55	0.25	0.40	
	Rural Districts, " " "	0.10	0.25	0.10	0.25	
	Parks, Golf Courses, etc., " " "	0.10	0.35	0.05	0.25	

NOTE: Values of "C" for earth surfaces are further varied by degree of saturation, compaction, surface irregularity and slope, by character of subsoil, and by presence of frost or glazed snow or ice.

- ① Bryant & Kuichling, Report, Back Bay Sewerage District, Boston, 1909.
- ② Metcalf and Eddy, American Sewerage Practice, 1928. M^c Graw-Hill.
- ③ Used by City of Boston, reported by Metcalf & Eddy.
- ④ Used by City of Detroit, reported by Metcalf & Eddy.
- ⑤ L. C. Urquhart, Civil Engineering Handbook, 1940. M^c Graw-Hill.

TABLE 25. Runoff curve numbers for selected agricultural, suburban, and urban land use

Land use description	Hydrologic soil group			
	A	B	C	D
Cultivated land ¹				
without conservation treatment	72	81	88	91
with conservation treatment	62	71	78	81
Pasture or range land				
poor condition	68	79	86	89
good condition	39	61	74	80
Meadow				
good condition	30	58	71	78
Wood or Forest land				
thin stand, poor cover, no mulch	45	66	77	83
good cover ²	25	55	70	77
Open Spaces, lawns, parks, golf courses, cemeteries, etc.				
good condition				
grass cover on 75% or more of the area	39	61	74	80
fair condition				
grass cover on 50% to 75% of the area	49	69	79	84
Commercial and business areas (85% impervious)	89	92	94	95
Industrial districts (72% impervious).	81	88	91	93
Residential ³				
Average lot size				
Average % Impervious ⁴				
1/4 acre or less	65			
1/4 acre	38	77	85	90
1/2 acre	30	61	75	83
3/4 acre	25	57	72	81
1 acre	20	54	70	80
1 acre	20	51	68	79
1 acre	20	51	68	79
1 acre	20	51	68	79
Paved parking lots, roofs, driveways' etc.	95	95	95	95
Streets and roads				
paved with curbs and storm sewers	95	95	95	95
gravel	76	85	89	91
dirt	72	82	87	89

1. For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Section 4, Hydrology, Chapter 9, Aug. 1972.
2. Good cover is protected from grazing and litter and brush cover soil.
3. Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawns where additional infiltration could occur.
4. The remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.

TABLE 26. Runoff curve numbers for sugarcane in Hawaii

Cover and Treatment	Hydrologic Soil Group			
	A	B	C	D
Limited cover, straight row	67	78	85	89
Partial cover, straight row	49	69	79	84
Complete cover, straight row	39	61	74	80
Limited cover, contoured	65	75	82	86
Partial cover, contoured	25	59	75	83
Complete cover, contoured	6	35	70	79

NOTES:

Limited cover: Cane newly planted, or ratooned cane with a limited root system; canopy over less than 1/2 the field area.

Partial cover: Cane in the transition period between limited cover and complete cover; canopy over 1/2 to nearly the entire field area.

Complete cover: Cane from the stage of growth when full canopy is provided to the stage at harvest.

Straight-row planting is up and down hill or cross-slope on slopes greater than 2 percent. Contoured planting is the usual contouring or cross-slope planting on slopes less than 2 percent.

TABLE 27. Runoff curve numbers for pineapple in Hawaii

Cover and Treatment	Hydrologic Soil Group			
	A	B	C	D
Partial cover, cross-sloped	67	78	85	89
Complete cover, cross-sloped	49	69	79	84
Partial cover, cross-sloped & terraced	65	75	82	86
Complete cover, cross-sloped & terraced	39	61	74	80
Partial cover, contoured & terraced	62	71	78	81
Complete cover, contoured & terraced	25	59	75	83

NOTES:

Partial cover: Stage of growth between time when crop is newly planted until initial closing in.

Complete cover: Stage of growth when crop is completely closed in, including ratoon crops.

HYDROLOGIC REPORT

Kolaloa/Hapapa Gulches
 100-Yr., 24-Hr.....
 Discharge.....

Hyd. No. 1

Hydrograph type = S.C.S. RUNOFF	Peak discharge = 2480.18 cfs
Storm frequency = 100 yr	Time interval = 5 min
Basin area = 3861 ac	Basin curve No. = 65
Ave basin slope = 13 %	Hydraulic len = 75400 ft
Basin lag = 182.4 min	Time of concen = 304.00 min
Total precip. = 10.00 in	Distribution = S.C.S. I

HYDROGRAPH DISCHARGE TABLE

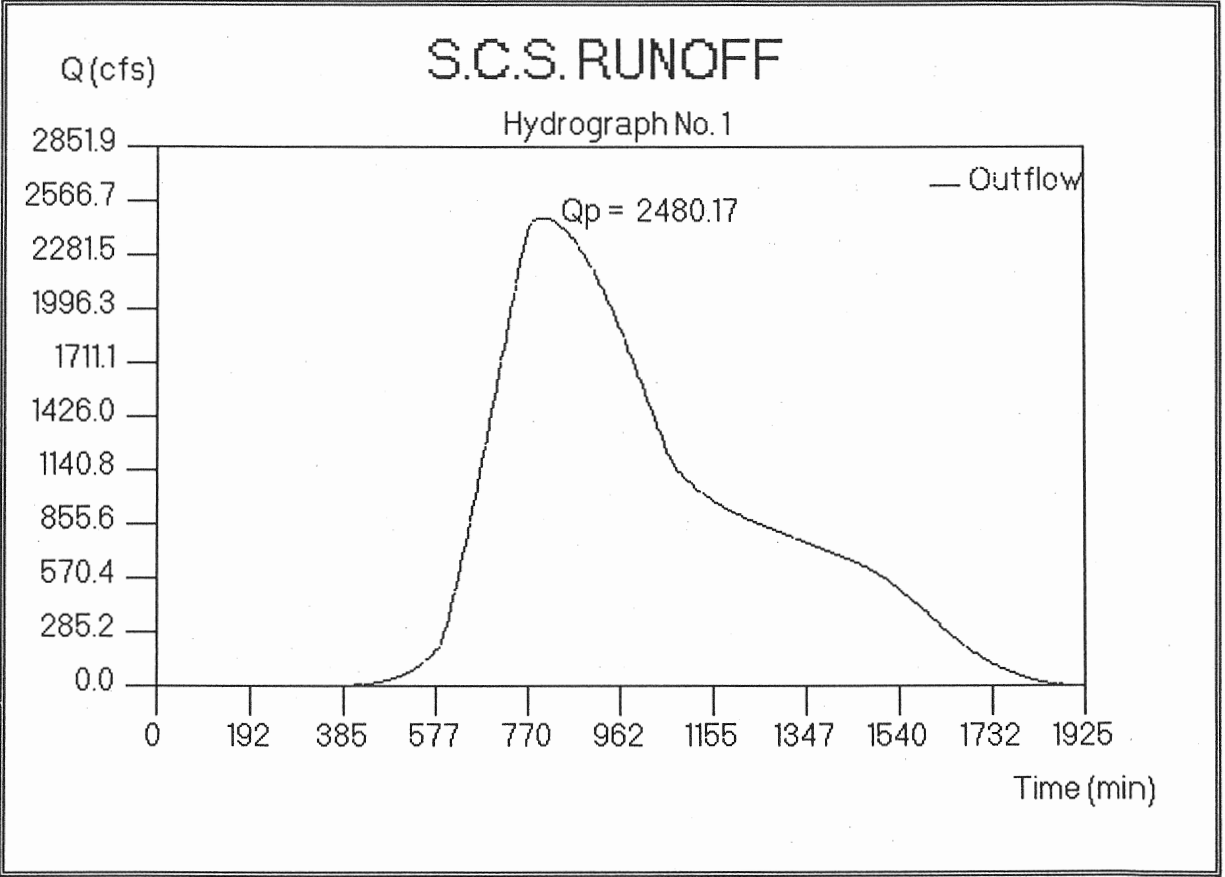
TIME--OUTFLOW	TIME--OUTFLOW	TIME--OUTFLOW	TIME--OUTFLOW
(hrs cfs)	(hrs cfs)	(hrs cfs)	(hrs cfs)
6.08 0.66	6.17 0.89	6.25 1.17	6.33 1.50
6.42 1.90	6.50 2.37	6.58 2.92	6.67 3.55
6.75 4.28	6.83 5.12	6.92 6.07	7.00 7.15
7.08 8.35	7.17 9.70	7.25 11.21	7.33 12.86
7.42 14.69	7.50 16.69	7.58 18.87	7.67 21.24
7.75 23.82	7.83 26.60	7.92 29.60	8.00 32.82
8.08 36.29	8.17 40.03	8.25 44.07	8.33 48.44
8.42 53.19	8.50 58.33	8.58 63.89	8.67 69.91
8.75 76.43	8.83 83.47	8.92 91.08	9.00 99.30
9.08 108.18	9.17 117.79	9.25 128.21	9.33 139.50
9.42 151.76	9.50 165.06	9.58 179.90	9.67 197.22
9.75 218.10	9.83 246.44	9.92 285.27	10.00 331.03
10.08 379.19	10.17 429.57	10.25 481.98	10.33 536.17
10.42 591.91	10.50 648.96	10.58 707.16	10.67 766.46
10.75 826.77	10.83 888.04	10.92 950.19	11.00 1013.16
11.08 1076.88	11.17 1141.29	11.25 1206.32	11.33 1271.89
11.42 1337.94	11.50 1404.38	11.58 1471.14	11.67 1538.12
11.75 1605.26	11.83 1672.45	11.92 1739.61	12.00 1806.64
12.08 1873.42	12.17 1939.82	12.25 2005.68	12.33 2070.87
12.42 2135.21	12.50 2198.54	12.58 2260.05	12.67 2318.19
12.75 2371.18	12.83 2412.78	12.92 2438.06	13.00 2452.72
13.08 2463.96	13.17 2472.00	13.25 2477.16	13.33 2479.77
13.42 2480.18	13.50 2478.73	13.58 2475.65	13.67 2471.00
13.75 2464.86	13.83 2457.31	13.92 2448.42	14.00 2438.27
14.08 2426.90	14.17 2414.37	14.25 2400.68	14.33 2385.88
14.42 2369.99	14.50 2353.06	14.58 2335.10	14.67 2316.17
14.75 2296.29	14.83 2275.49	14.92 2253.82	15.00 2231.30
15.08 2207.98	15.17 2183.87	15.25 2158.99	15.33 2133.36
15.42 2107.02	15.50 2079.98	15.58 2052.26	15.67 2023.89

HYDROGRAPH DISCHARGE TABLE Cont'd

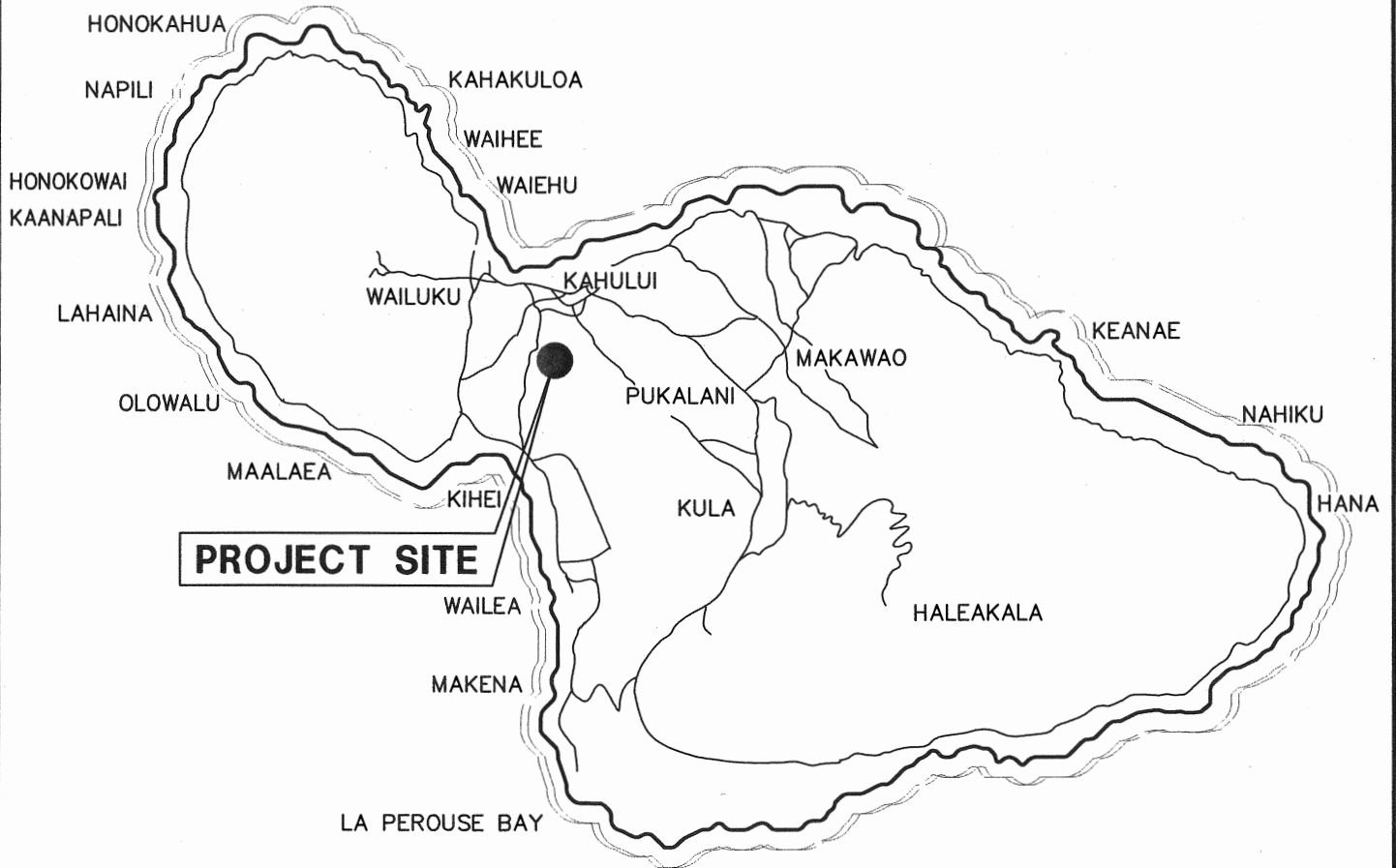
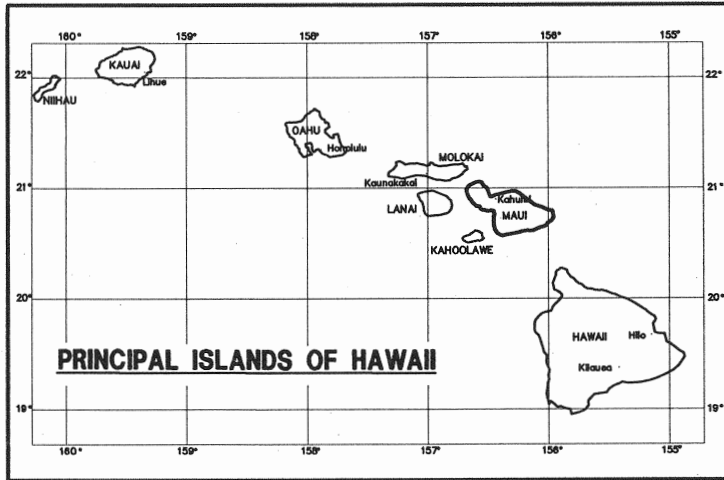
TIME--OUTFLOW (hrs cfs)	TIME--OUTFLOW (hrs cfs)	TIME--OUTFLOW (hrs cfs)	TIME--OUTFLOW (hrs cfs)
15.75 1994.89	15.83 1965.28	15.92 1935.10	16.00 1904.35
16.08 1873.08	16.17 1841.32	16.25 1809.10	16.33 1776.47
16.42 1743.47	16.50 1710.13	16.58 1676.50	16.67 1642.63
16.75 1608.55	16.83 1574.31	16.92 1539.97	17.00 1505.56
17.08 1471.14	17.17 1436.75	17.25 1402.45	17.33 1368.29
17.42 1334.32	17.50 1300.60	17.58 1267.44	17.67 1235.41
17.75 1205.18	17.83 1179.08	17.92 1158.95	18.00 1142.66
18.08 1127.49	18.17 1113.38	18.25 1100.18	18.33 1087.77
18.42 1076.03	18.50 1064.81	18.58 1054.03	18.67 1043.66
18.75 1033.67	18.83 1024.03	18.92 1014.71	19.00 1005.67
19.08 996.89	19.17 988.37	19.25 980.09	19.33 972.05
19.42 964.23	19.50 956.63	19.58 949.23	19.67 942.03
19.75 935.00	19.83 928.15	19.92 921.46	20.00 914.92
20.08 908.52	20.17 902.26	20.25 896.13	20.33 890.12
20.42 884.23	20.50 878.45	20.58 872.77	20.67 867.19
20.75 861.71	20.83 856.31	20.92 850.99	21.00 845.74
21.08 840.55	21.17 835.43	21.25 830.36	21.33 825.34
21.42 820.35	21.50 815.40	21.58 810.47	21.67 805.56
21.75 800.67	21.83 795.78	21.92 790.88	22.00 785.98
22.08 781.06	22.17 776.14	22.25 771.20	22.33 766.24
22.42 761.28	22.50 756.30	22.58 751.32	22.67 746.32
22.75 741.31	22.83 736.29	22.92 731.26	23.00 726.22
23.08 721.17	23.17 716.10	23.25 711.03	23.33 705.95
23.42 700.86	23.50 695.75	23.58 690.64	23.67 685.52
23.75 680.39	23.83 675.25	23.92 670.10	24.00 664.94
24.08 659.52	24.17 653.85	24.25 647.93	24.33 641.76
24.42 635.34	24.50 628.68	24.58 621.78	24.67 614.64
24.75 607.27	24.83 599.68	24.92 591.85	25.00 583.81
25.08 575.54	25.17 567.06	25.25 558.37	25.33 549.47
25.42 540.36	25.50 531.05	25.58 521.54	25.67 511.84
25.75 501.94	25.83 491.85	25.92 481.58	26.00 471.12
26.08 460.48	26.17 449.67	26.25 438.69	26.33 427.53
26.42 416.21	26.50 404.73	26.58 393.08	26.67 381.28
26.75 369.33	26.83 357.22	26.92 344.97	27.00 332.58
27.08 320.45	27.17 308.57	27.25 296.96	27.33 285.59
27.42 274.48	27.50 263.62	27.58 253.01	27.67 242.65
27.75 232.53	27.83 222.66	27.92 213.03	28.00 203.64
28.08 194.48	28.17 185.57	28.25 176.89	28.33 168.44
28.42 160.23	28.50 152.24	28.58 144.49	28.67 136.95
28.75 129.65	28.83 122.56	28.92 115.70	29.00 109.05
29.08 102.63	29.17 96.41	29.25 90.41	29.33 84.62
29.42 79.05	29.50 73.67	29.58 68.51	29.67 63.55
29.75 58.79	29.83 54.23	29.92 49.87	30.00 45.71
30.08 41.74	30.17 37.97	30.25 34.39	30.33 30.99
30.42 27.79	30.50 24.77	30.58 21.93	30.67 19.27
30.75 16.80	30.83 14.50	30.92 12.38	31.00 10.43

HYDROGRAPH DISCHARGE TABLE Cont'd

TIME--OUTFLOW		TIME--OUTFLOW		TIME--OUTFLOW		TIME--OUTFLOW	
(hrs	cfs)	(hrs	cfs)	(hrs	cfs)	(hrs	cfs)
31.08	8.66	31.17	7.06	31.25	5.62	31.33	4.36
31.42	3.25	31.50	2.31	31.58	1.54	31.67	0.92

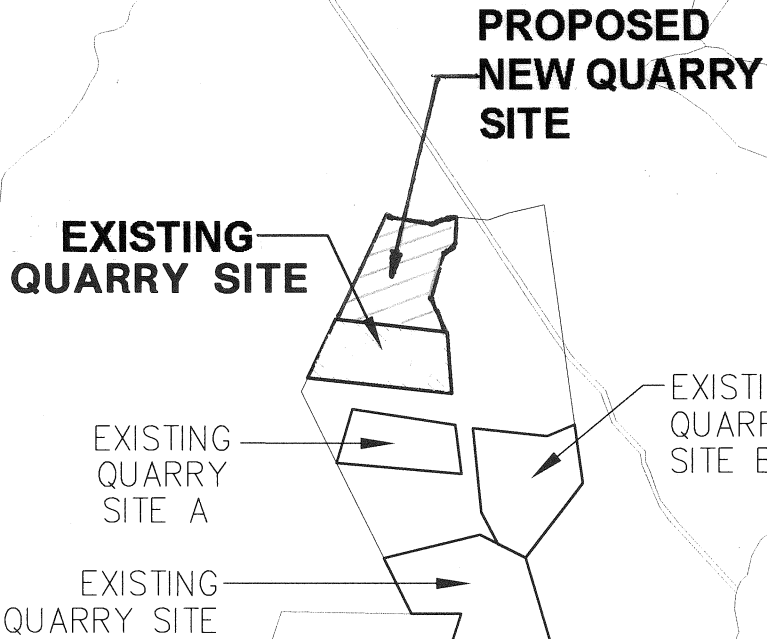
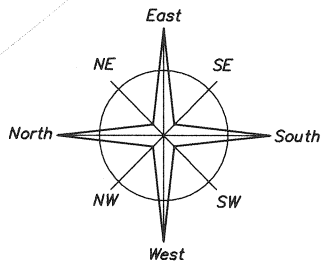


[F1] Screen [F2] Print [F3] Edit [P] Hard Copy [Esc] Menu [Space] More



**LOCATION MAP
ISLAND OF MAUI**

(Layout1)
 Z:\DRAW1\2005\05-065\PROP-QJARRY-SITE-ADDITION-LOCATIONMAP.dwg 22-OCT-2012 : Revised BY:Nancy



VICINITY MAP

NOT TO SCALE

(Layout1)
Z:\DRAW1\2005\05-065\PROP-QUARRY-SITE-ADDITION-VICINITYMAP.dwg 05-OCT-2012 : Revised BY:Nancy

Tax Map Key (2) 3-8-04: 01 (Portion)

871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

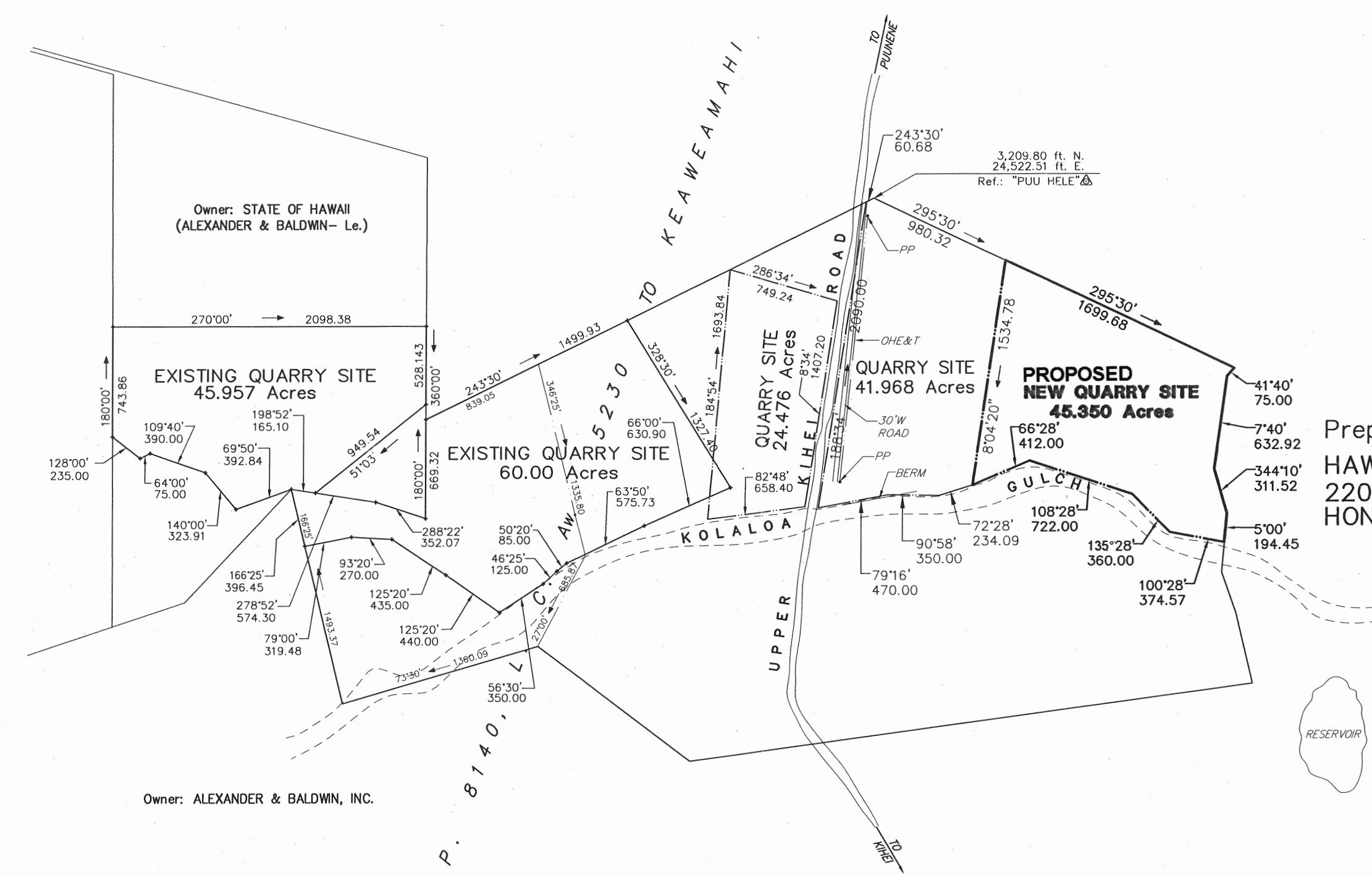
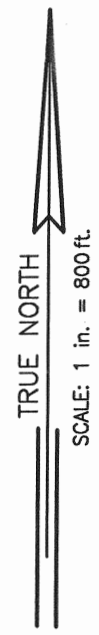
R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

OCTOBER 2012

JOB NO. 05-065

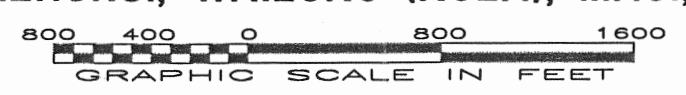
FIGURE 2

\\2015SERVERDEL\Users\Public\Documents\DRAW1\2005\05-065\6-5-12_IICMNT_QUARRY_SITE.dwg, Layout1, 3/6/2019 4:17:23 PM, Nancy



Prepared for:
HAWAIIAN CEMENT
220 SOUTH KING STREET
HONOLULU, HAWAII 96813

PLAN SHOWING NEW HAWAIIAN CEMENT QUARRY MINING SITE AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII



REVISED: MARCH 06, 2019
REVISED: OCTOBER 26, 2018
REVISED: JUNE 14, 2012
DECEMBER 10, 2007

Tax Map Key (2) 3-8-04: 01 (Portion)

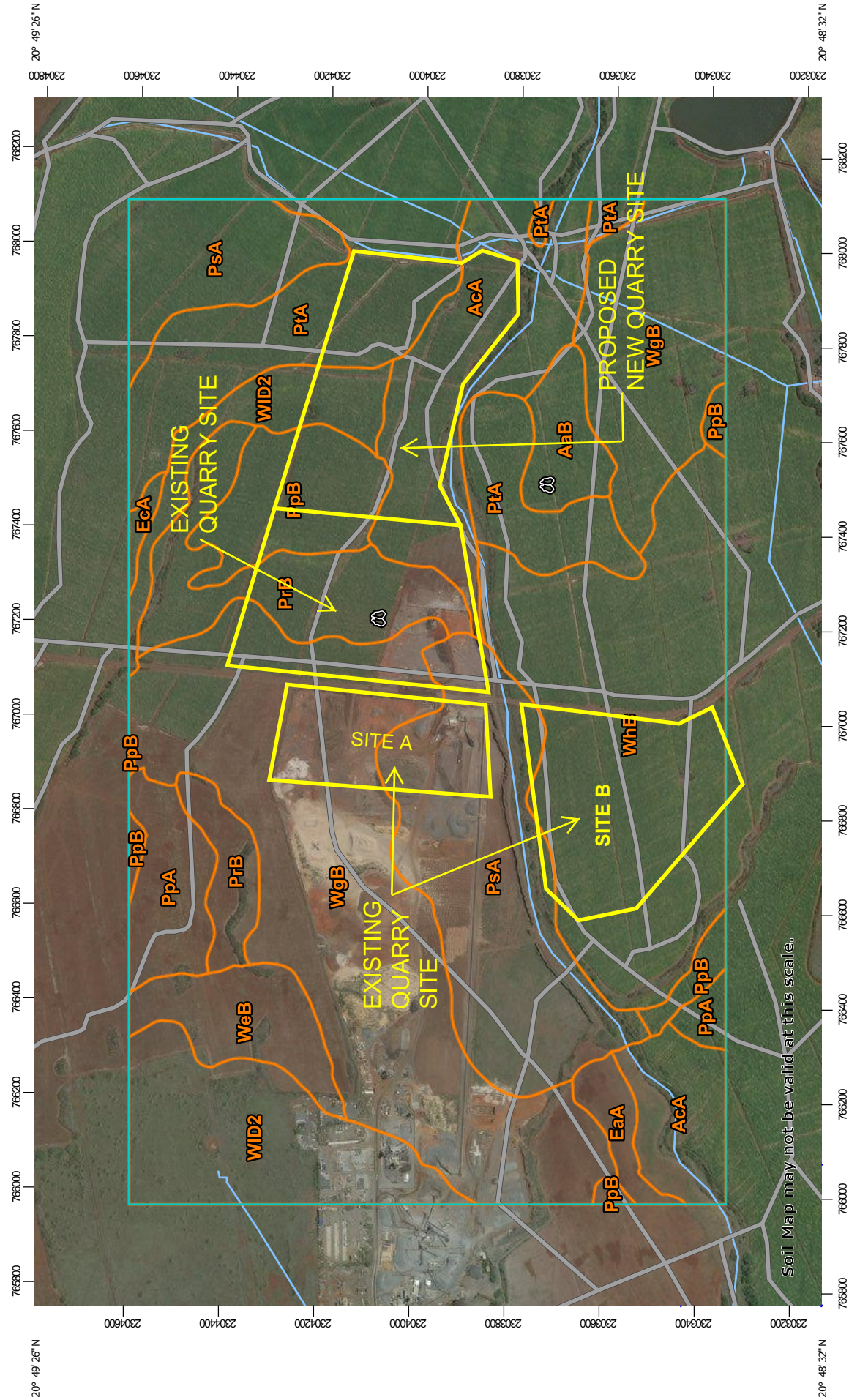
871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

JOB NO. 05-065

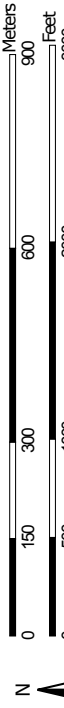
FIGURE 3

20° 49' 26" N 156° 26' 47" W 20° 49' 26" N 156° 25' 19" W



20° 48' 32" N 156° 25' 19" W

Map Scale: 1:11,700 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 4N WGS84




FIGURE 4


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Island of Maui, Hawaii
 Survey Area Data: Version 16, Sep 11, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Feb 14, 2017

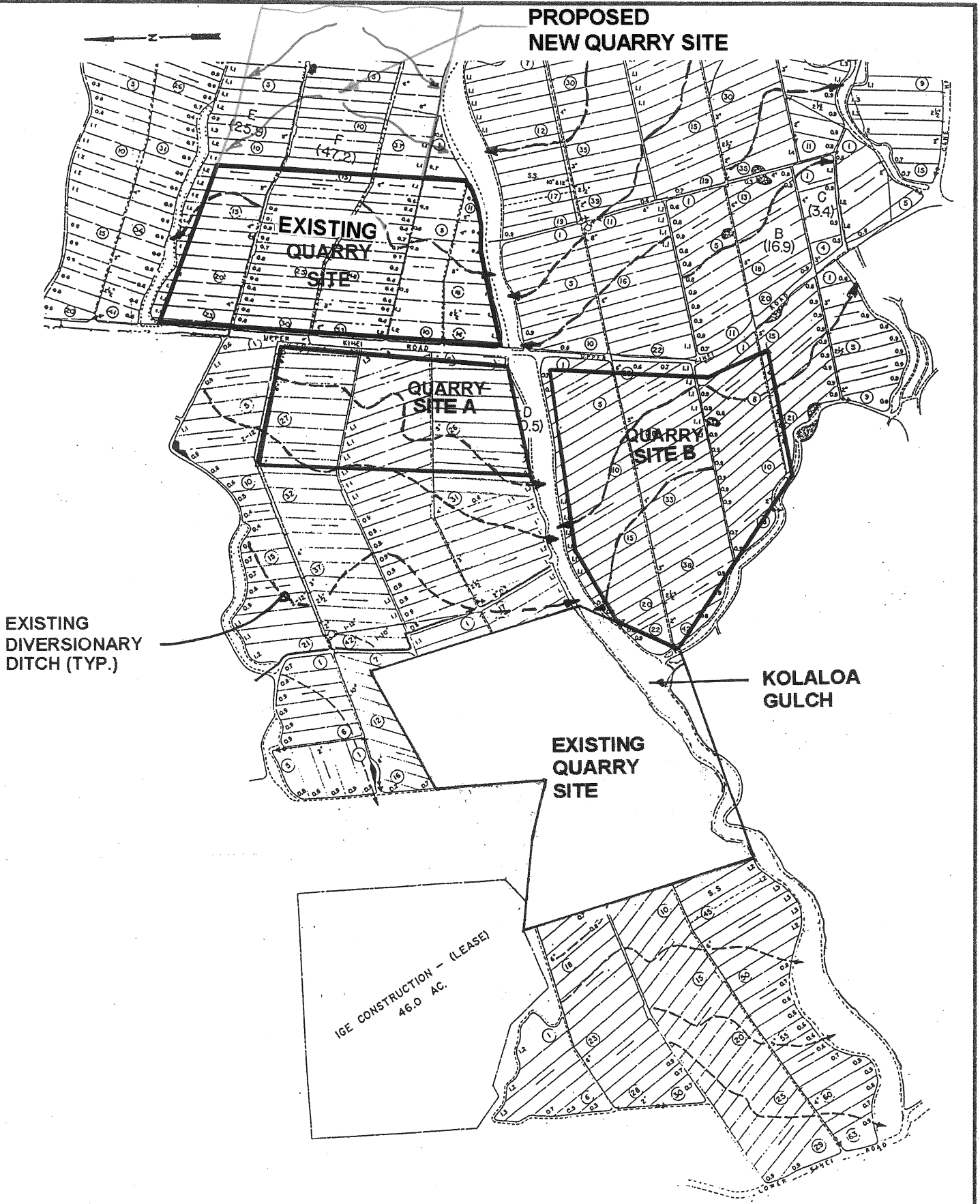
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

FIGURE 4

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AaB	Alae sandy loam, 3 to 7 percent slopes	10.9	1.7%
AcA	Alae cobbly sandy loam, 0 to 3 percent slopes	63.2	9.6%
EaA	Ewa silty clay loam, 0 to 3 percent slopes	6.2	0.9%
EcA	Ewa cobbly silty clay loam, 0 to 3 percent slopes	1.8	0.3%
PpA	Pulehu silt loam, 0 to 3 percent slopes	18.4	2.8%
PpB	Pulehu silt loam, 3 to 7 percent slopes	29.0	4.4%
PrB	Pulehu cobbly silt loam, 3 to 7 percent slopes	39.6	6.0%
PsA	Pulehu clay loam, 0 to 3 percent slopes , MLRA 163	89.6	13.6%
PtA	Pulehu cobbly clay loam, 0 to 3 percent slopes	64.3	9.7%
WeB	Waiakoa silty clay loam, 3 to 7 percent slopes	17.9	2.7%
WgB	Waiakoa very stony silty clay loam, 3 to 7 percent slopes	164.8	24.9%
WhB	Waiakoa extremely stony silty clay loam, 3 to 7 percent slopes, MLRA 157	97.7	14.8%
WID2	Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded, MLRA 157	57.3	8.7%
Totals for Area of Interest		660.7	100.0%

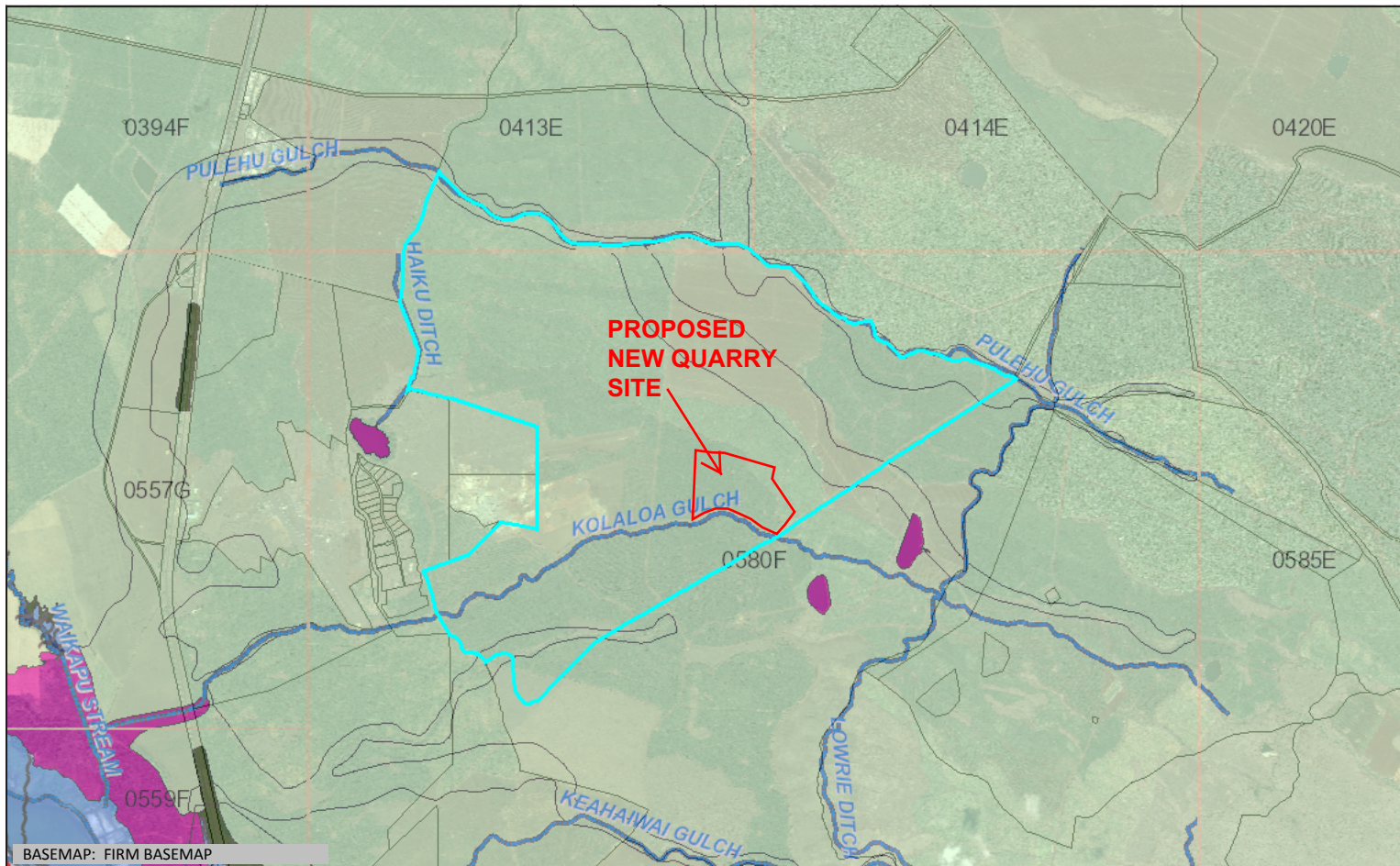
**PROPOSED
NEW QUARRY SITE**



EXISTING ONSITE DRAINAGE PATTERN

Scale 1" = 800'

FIGURE 5



Flood Hazard Assessment Report

www.hawaiiinfip.org

Property Information

COUNTY: MAUI
 TMK NO: (2) 3-8-004:001
 WATERSHED: WAIAKOA
 PARCEL ADDRESS:

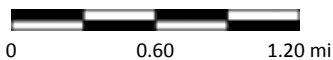
Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 04, 2015
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL - EFFECTIVE DATE: 1500030413E - SEPTEMBER 25, 2009
 1500030580F - SEPTEMBER 19, 2012

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: YES (MA-0086; MA-0087)
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

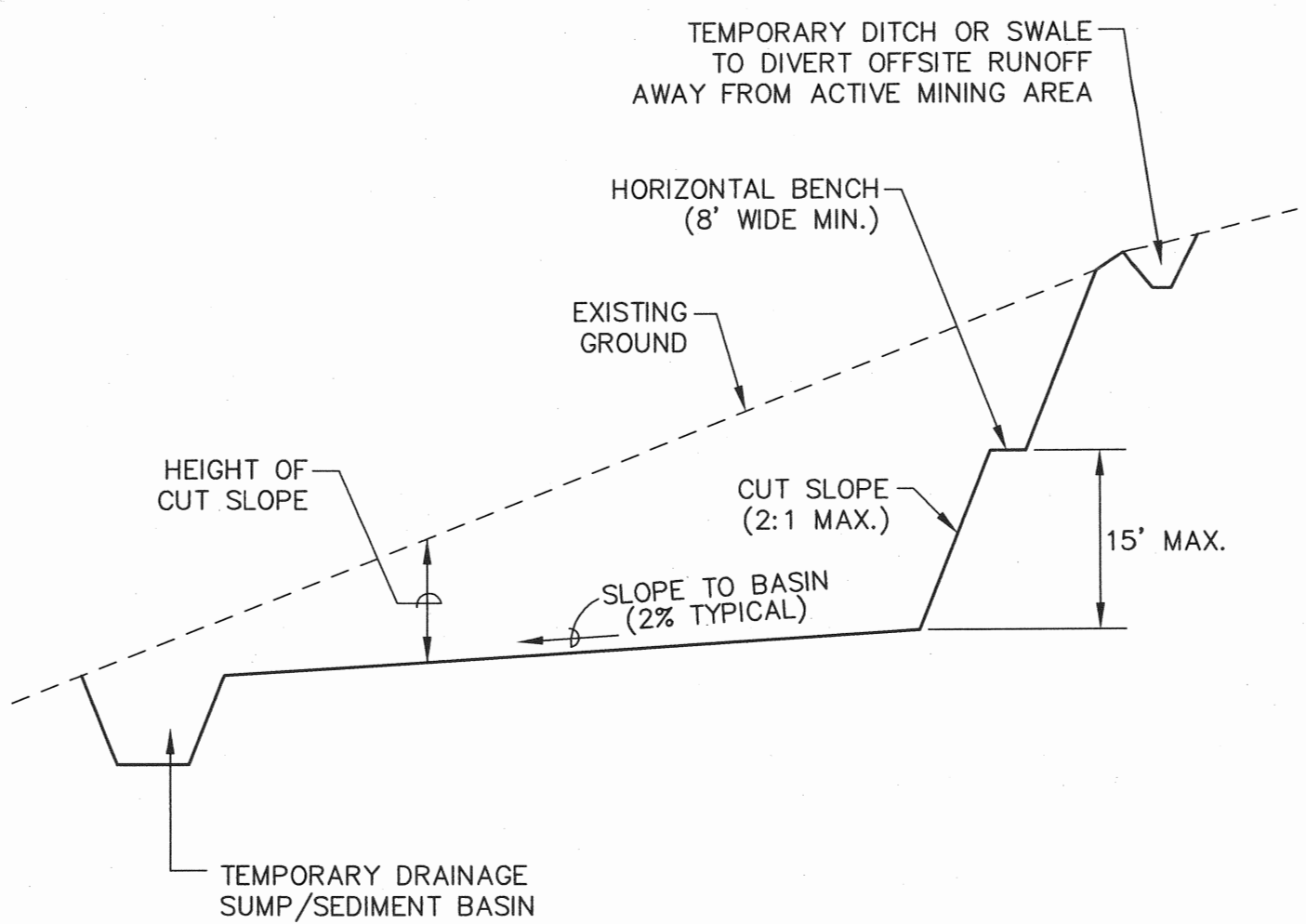
	Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase applies, but coverage is available in participating communities.
--	---

FIGURE 6

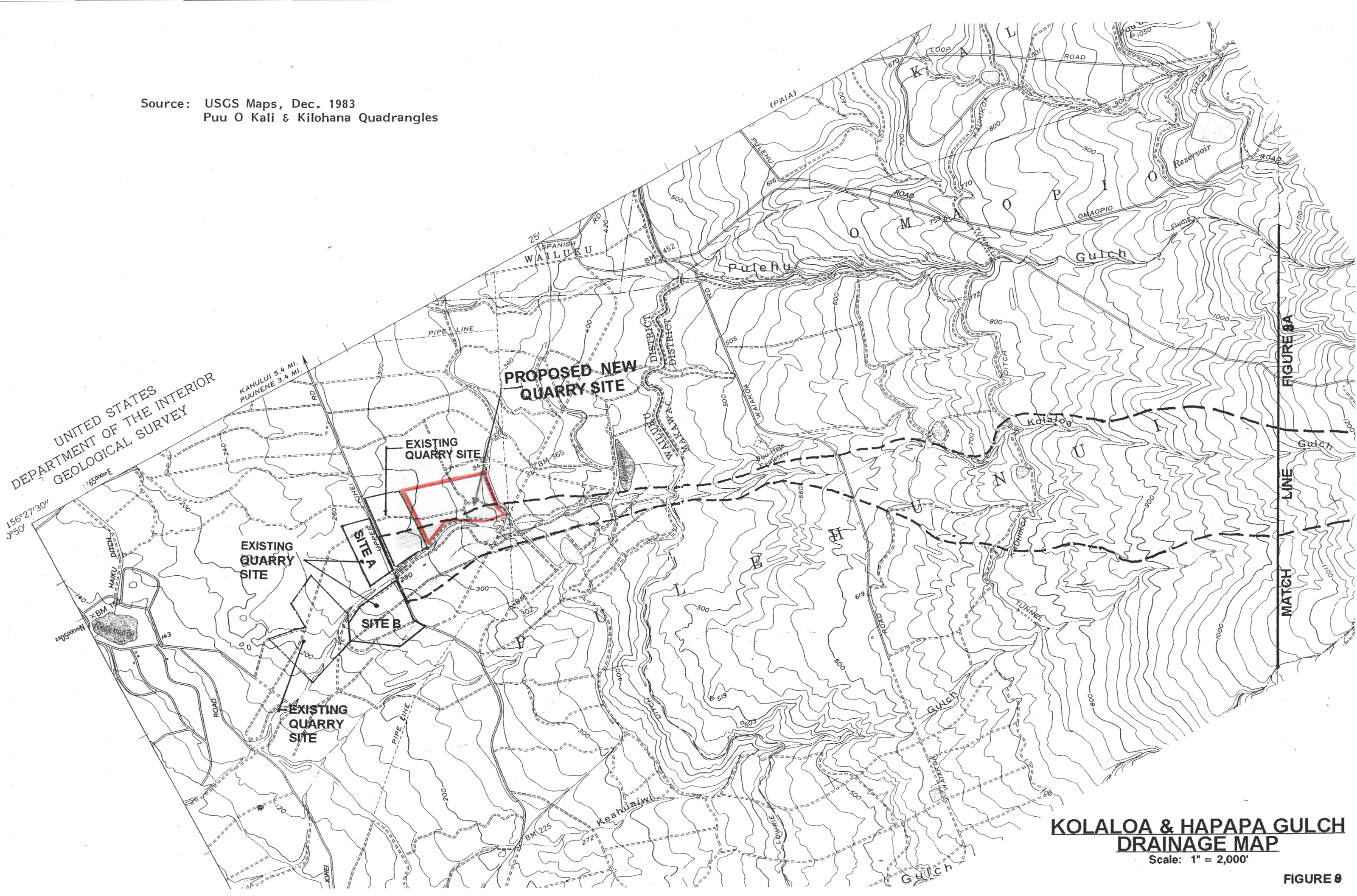
(Layout1)
Z:\DRAW1\2005\05-065\PROP-QUARRY-SITE-ADDITION-CUTSECTION.dwg 05-OCT-2012 : Revised BY:Nancy



TYPICAL CUT SECTION

NOT TO SCALE

Source: USGS Maps, Dec. 1983
Puu O Kali & Kilohana Quadrangles



**KOLALOA & HAPAPA GULCH
DRAINAGE MAP**

Scale: 1" = 2,000'

FIGURE 8



FIGURE 6A
KOLALOA & HAPAPA GULCH DRAINAGE MAP
 Scale: 1" = 2,000'
 REF.: USGS MAP, DECEMBER 1983
 PUU O KALI & KULOHANA QUADRANGLES



2020 STATE SPECIAL
USE PERMIT ANNUAL
COMPLIANCE REPORT

APPENDIX

G



January 31, 2020

Dan Orodenker, Executive Officer
State of Hawaii
State Land Use Commission
P.O. Box 2359
Honolulu, Hawai'i 96804

Michele McLean, Director
County of Maui
Attention: Paul Fasi
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: State Special Use Permit for Puunene Rock Quarry, TMK: (2)3-8-004:001(por.), and 002(por.), (2)3-8-008:001(por.) and 031(por.), Pulehunui, Wailuku, Hawai'i (SP 92-380) (SUP1 91-0013)

Dear Mr. Orodenker and Ms. McLean:

The State Land Use Commission (SLUC) at a regularly scheduled meeting on November 20, 2014, voted to approve a time extension request and amendments to the existing State Special Use Permit (SUP) (SP92-380) for the Puunene Quarry. The SUP time extension was granted through July 21, 2032. The approval of the time extension request was subject to 11 conditions. See **Exhibit "A"**.

Condition Number 11 of the SUP approval stated:

"An annual progress report shall be submitted to the Planning Director and the State Land Use Commission prior to the anniversary date of the approval of the permit. The report shall include, but not be limited to, the status of the development and to what extent the conditions of approval are being complied with. This condition shall remain in effect until all conditions of approval have been complied with and the Planning Director acknowledges that further reports are not required."

On behalf of the SUP permit holder, Hawaiian Cement, we are submitting this compliance report to meet Condition No. 11 of the SUP. No changes in the operations have occurred since 2013.

Condition No. 1

That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extensions by the Land Use Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

Response: The permittee concurs with the condition and will comply with the extension request procedures. We note that the SUP for the Puunene Quarry would expire in July 2032.

Condition No. 2

That the conditions of this Land Use Commission Special Use Permit shall be enforced pursuant to Sections 205-12 and 205-13, Hawaii Revised Statutes. Failure to comply with one or more of the conditions herein shall result in a notice of violation issued by the appropriate enforcement agency, notifying the permit holder of the violation and providing the permit holder no more than sixty (60) days to cure the violation. If the permit holder fails to cure the violation within sixty (60) days of said notice, the appropriate enforcement agency shall issue an order which may require one or more of the following: that the violative activity cease; that the violative development be removed; that a civil fine be paid not to exceed ONE THOUSAND AND NO/100 DOLLARS (\$1,000.00) per violation; that a civil fine not to exceed FIVE THOUSAND AND NO/100 DOLLARS (\$5,000.00) shall be issued if violation not cured within six months of the issuance of the order. The order shall become final thirty (30) days after the date of its mailing or hand-delivery unless written request for a hearing is mailed or delivered to the planning department within said (30) days. Upon receipt of a request for a hearing, the Planning Department shall specify a time and place for the permit holder to appear and be heard. The hearing shall be conducted by the Planning Director or the Director's designee in accordance with the provisions of Chapter 91, HRS, as amended.

Response: The permittee concurs with this condition.

Condition No. 3

That the subject State Land Use Commission Special Use Permit shall not be transferred without the prior written approval of the Land Use Commission. The appropriate Planning Commission shall make a recommendation to the Land Use Commission. However, in the event that a contested case hearing preceded issuance of said State Land Use Commission Special Use Permit, a public hearing shall be held by the appropriate Planning Commission upon due published notice, including actual written notice to the last known addresses of parties to said contested case and their counsel.

Response: The permittee concurs with this condition. No permit transfer request is anticipated for the SUP.

Condition No. 4

That the applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject State Land Use Commission Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this State Land Use Commission Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS (\$1,000,000.00) naming the County of Maui and State of Hawaii as an additional named insured, insuring and defending the applicant, County of Maui and State of Hawaii against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the nonobservance or nonperformance of any of the terms and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department within ninety (90) calendar days from the date of transmittal of the decision and order.

Response: Please find attached, as Exhibit "B", current Certificate of Insurance for the Puunene Quarry, naming the State of Hawai'i as an additional insured.

Condition No. 5

That full compliance with all applicable governmental requirements shall be rendered.

Response: The permittee concurs with the condition.

Condition No. 6

That a restoration plan be submitted, showing upon termination of operations, depleted and excavated areas shall be graded to blend with the surrounding natural contours and that appropriate vegetative cover consisting of trees, shrubs, and ground cover shall be established.

Response: The permittee understands this condition. A restoration plan, approved by the landowner, has previously been submitted to the SLUC upon termination of the quarry operations. See **Exhibit "C"**.

Condition No. 7

That a detailed drainage plan be submitted to the Department of Public Works and Department of Transportation for their review and approval.

Response: A detailed drainage plan was submitted and approved by the Department of Public Works (DPW). Said plan approvals have been previously submitted by the applicant.

Condition No. 8

That a detailed solid waste management plan be submitted to the Public Works for their review and approval.

Response: A solid waste management plan was submitted to the DPW for their review and approval. Said plan approval has been previously submitted by the applicant.

Condition No. 9

That a regular maintenance program for the access road be submitted to Department of Transportation Highways Division and Department of Public Works for review and approval to ensure that loose aggregate, which may have fallen from trucks coming from the quarry site, shall be removed.

Response: A maintenance program was for the access road and was submitted to the SDOT, Highway Division and DPW for review and approval. The SDOT approved said plan. See **Exhibit “D”**.

Condition No. 10

That the applicant shall continue to comply with air pollution control and all other permits for rock crushing, asphalt batching, and all other operations, including the restoration of the site.

Response: The permittee understands this condition and is continuing to comply with air pollution control and other related permits for the quarry operation. Copies of the Covered Source Permit (which expired on April 19, 2016) and an acceptance letter from the Department of Health for a renewal application are attached as **Exhibit “E”**. It is noted that approval of the renewal application is pending.

Condition No. 11

An annual progress report shall be submitted to the Planning Director and the State Land Use Commission prior to the anniversary date of the approval of the permit. The report shall include, but not be limited to the status of the development and to what extent the conditions of approval are being complied with. This condition shall remain in effect until all of the conditions of approval have been complied with and the Planning Director acknowledges that further reports are not required.

Response: This report is being submitted to satisfy this condition for the years 2014, 2015, 2016, 2017, 2018, and 2019.

To date, approximately 77 percent of the acres in the permitted area have been quarried for use.

Condition No. 12

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Transportation regarding a maintenance program for the driveway and surrounding roadway.

Response: As previously noted in the response to Condition No. 9, the SDOT has approved the maintenance program for the Puunene Quarry. Refer to **Exhibit “D”**.

Condition No. 13

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall provide evidence of approval from the State Department of Health regarding modifications to the Clean Air Branch permit.

Response: The permittee understands this condition. As noted, a Covered Source Permit renewal application has been filed and an approval is pending. Refer to **Exhibit “E”**.

Condition No. 14

That prior to commencement of quarry operations into the Expansion Areas, the applicant shall submit an archaeological inventory survey to the State Historic Preservation Division for their review; and shall comply with their subsequent comments.

Response: The permittee had an archaeological inventory survey report prepared for the expansion area at the Puunene Quarry. The report was submitted to the State Historic Preservation Division (SHPD) for review and approval on January 24, 2011. SHPD approved said report via letter dated August 8, 2012. See **Exhibit “F”**. The SHPD concurred that no further archaeological work is required for the site.

Condition No. 15

That the new quarry operations shall be confined to the areas depicted on Exhibit 2 of the Planning Department staff report as “24.476 Acres” and “41.968 Acres” (attached as “Proposed Quarry Mining Site” map, dated July 7, 2005).

Response: The permittee understands this condition. New quarry activities are limited to the expansion area identified on the “Proposed Quarry Mining Site” map that was attached to the SLUC Decision and Order.

It is noted that a request to amend the SUP to add approximately 51.67 acres to the quarry operation was approved by the SLUC in December 2014.

Condition No. 16

That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

Response: The Applicant had an Archaeological Assessment prepared for Quarry Site "C" and the document was submitted to the State Historic Preservation Division (SHPD) in October 2014. The SHPD provided comments on the report via letter in May 2015. See **Exhibit "G"**. A revised report was revised and re-submitted to SHPD by the Applicant's consultant in July 2015. See **Exhibit "H"**. The Applicant is continuing to coordinate with SHPD on their review of the aforementioned reports.

Condition No. 17

That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled Plan Showing Hawaiian Cement Quarry Mining Sites (Revised December 13, 2013).

Response: The Applicant concurs with this condition and has confined the Quarry Site "C" operations as illustrated in the map attached to the December 2014 Decision and Order document. Refer to **Exhibit "A"**.

Dan Orodenker and Michele McLean
January 31, 2020
Page 8

Should you have any further questions regarding this report, please do not hesitate to contact me at (808) 983-1233.

Very truly yours,



Bryan Esmeralda, AICP
Senior Associate

BE:la
Enclosures

cc: **Dave Gomes, Hawaiian Cement (w/enclosures)**
K:\DATA\HawnCemt\PuuneneQuarry\SUP Compliance Report\SUP Compliance Report 2020.docx

EXHIBIT A.

Decision and Order Approving a Time Extension to a Special Use Permit



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12:05

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT; AND
Operation And Related Uses On	)	CERTIFICATE OF SERVICE
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

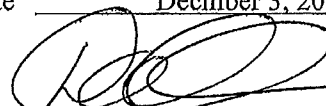
DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE

THIS IS TO CERTIFY THAT THIS IS A TRUE AND CORRECT
COPY OF THE DOCUMENT ON FILE IN THE OFFICE OF THE
STATE LAND USE COMMISSION, HONOLULU, HAWAII.

Date December 3, 2014

BY 
Executive Officer



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12: 05

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT; AND
Operation And Related Uses On	)	CERTIFICATE OF SERVICE
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

AND

CERTIFICATE OF SERVICE



BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Application Of	)	DOCKET NO. SP92-380
)	
HAWAIIAN CEMENT	)	DECISION AND ORDER
	)	APPROVING AN
For An Amendment To Special Use Permit	)	AMENDMENT TO SPECIAL
That Established A Rock Quarrying/Crushing	)	USE PERMIT
Operation And Related Uses On)	
Approximately 172.401 Acres Of Land Situated)	
Within The State Land Use Agricultural)	
District At Pulehunui, Wailuku, Maui,)	
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)	
And 3-8-08: Portion Of 1 And Portion Of 31)	
_____)	

DECISION AND ORDER APPROVING AN AMENDMENT
TO SPECIAL USE PERMIT

On February 20, 2013, Hawaiian Cement ("Applicant") filed a request with the County of Maui Department of Planning ("DP") to amend the special use permit issued in the above-entitled docket pursuant to section 205-6, Hawai'i Revised Statutes ("HRS"), and sections 15-15-95 and 15-15-96, Hawai'i Administrative Rules ("HAR") by (1) expanding the existing Pu'unēnē Quarry by an additional 41.968 acres of land identified as Tax Map Key ("TMK"): 3-8-04: por. 1 ("Quarry Site 'C'"); (2) including 9.697 acres of land identified as TMK: 3-8-04; por. 1 within the existing quarry operation as part of the permitted area; (3) deleting Condition Number 16 of the

Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extending the life of the special use permit by 15 years (collectively "Request").

On May 27, 2014, the County of Maui Planning Commission ("Planning Commission") considered the Applicant's Request. There was no public testimony received by the Planning Commission. After due deliberation, at its meeting on May 27, 2014, the Planning Commission recommended approval of the Request to the State of Hawai'i Land Use Commission ("LUC").

On July 30, 2014, the LUC received a copy of the decision and a portion of the record of the Planning Commission's proceedings on the Applicant's Request. On October 15, 2014, the LUC received the remaining portion of the record.

The LUC has jurisdiction over the Applicant's Request. Section 205-6, HRS, and sections 15-15-95 and 15-15-96, HAR, authorize the LUC to approve special use permits and amendments thereto for areas greater than 15 acres.

On November 20, 2014, the LUC met in Kahului, Maui, Hawai'i, to consider the Applicant's Request. Karlynn Fukuda and Dave Gomes appeared on behalf of the Applicant. Kristin Tarnstrom, Esq., and Paul Fasi appeared on behalf of the DP. Bryan C. Yee, Esq., and Rodney Funakoshi also were present on behalf of the State of Hawai'i Office of Planning ("OP").

At the meeting, the Commission heard public testimony from Wil Cambra, Keoni Gomes, Clare Apana, and Johanna Kamaunu. Following the receipt of public testimony, the Applicant provided a presentation on its Request.

As part of its testimony, the DP noted that it had thoroughly reviewed the Applicant's Request and affirmed the Planning Commission's recommendation on the matter. Upon questioning, the DP acknowledged receipt of the December 10, 2007, revised map of the boundaries of the then 105.957-acre Pu'unēnē Quarry approved pursuant to the Findings of Fact, Conclusions of Law, and Decision and Order filed November 25, 1996.

The OP stated that it had no objections to the Applicant's Request.

Following discussion, a motion was made and seconded to approve the Applicant's Request, subject to the following amendment to Condition Number 1 and additional Condition Numbers 16 and 17 as follows:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

16. That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.

17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

Following deliberation by the Commissioners, a vote was taken on the motion. There being a vote tally of 7 ayes, 0 nays, and 1 excused, the motion carried.

ORDER

The LUC, having duly considered the complete record of the Applicant's Request and the oral arguments presented by the Applicant, OP, and the DP, and a motion having been made at a meeting on November 20, 2014, in Kahului, Maui, Hawai'i, and the motion having received the affirmative votes required by section 15-15-13, HAR, and there being good cause for the motion,

HEREBY ORDERS that the Applicant's Request to (1) expand the existing Pu'unēnē Quarry by an additional 41.968 acres of land identified as TMK: 3-8-04: por. 1 and further identified as Quarry Site "C"; (2) include 9.697 acres of land identified as TMK: 3-8-04: por. 1 within the existing quarry operation as part of the permitted area; (3) delete Condition Number 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006; and (4) extend the life of the special use permit by 15 years be APPROVED, subject to the following amendment to Condition Number 1:

1. That the State Land Use Commission Special Use Permit shall be valid to July 21, 2032, subject to further extension by the Land Use

Commission upon a timely request for extension filed at least one-hundred twenty (120) days prior to its expiration. The appropriate Planning Commission shall make a recommendation to the Land Use Commission and may require a public hearing on the time extension.

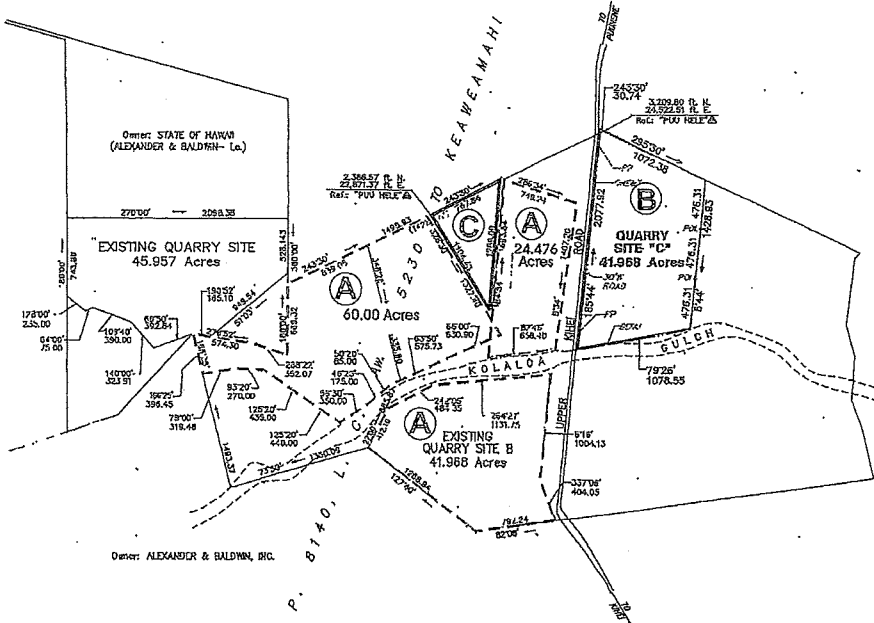
IT IS FURTHER ORDERED that the Applicant's Request be APPROVED, subject to the following additional Condition Numbers 16 and 17:

- 16.¹ That prior to commencement of quarry operations on Quarry Site "C," the Applicant shall submit an archaeological inventory survey of Quarry Site "C" to the State Historic Preservation Division for their review and shall comply with their subsequent comments.
17. That the new quarry operations on Quarry Site "C" shall be confined to the area identified as Quarry Site "C" on the attached Exhibit "A" entitled *Plan Showing Hawaiian Cement Quarry Mining Sites* (Revised December 13, 2013).

IT IS FURTHER ORDERED that all other conditions to the Decision and Order Approving a Time Extension filed July 15, 2005, and the Decision and Order Approving Amendment to Special Use Permit filed December 18, 2006, shall remain in full force and effect.

¹ This new condition replaces the previous Condition No. 16 of the Decision and Order Approving Amendment to Special Permit filed December 18, 2006, which is deleted with this Decision and Order.

TRUE NORTH
SCALE: 1 in. = 600 ft.



KEY

- (A) Area included in SUP and CUP approvals for Quarry
- (B) Proposed 41.9-acre expansion location for quarry
- (C) 9.7-acre site that was previously quarried

Prepared for:
HAWAIIAN CEMENT
220 SOUTH KING STREET
HONOLULU, HAWAII 96813

**PLAN SHOWING
HAWAIIAN CEMENT QUARRY MINING SITES
AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII**



Tax Map Key (2) 3-8-04: 01 (Portion)
871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96783

R. T. TANAKA ENGINEERS, INC.
LAND SURVEYORS - CIVIL & STRUCTURAL ENGINEERS

REVISED: DECEMBER 13, 2013
REVISED: OCTOBER 18, 2012
REVISED: JUNE 14, 2012
DECEMBER 10, 2007

HoweCamPlan-microcopy/copycat.dwg JOB NO. 05-095

EXHIBIT "A"

ADOPTION OF ORDER

This ORDER shall take effect upon the date this ORDER is certified by this Commission.

Done at Honolulu, Hawai'i, this 3rd, day of December, 2014, per motion on November 20, 2014.

LAND USE COMMISSION

APPROVED AS TO FORM

STATE OF HAWAII

Diane Jackson
Deputy Attorney General

By Chad McDonald
Chad McDonald
Chairperson and Commissioner

Filed and effective on:

12/3/14

Certified by:

Daniel Orodenger

DANIEL ORODENKER
Executive Officer



LAND USE COMMISSION
STATE OF HAWAII

2014 DEC -3 P 12:05

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In The Matter Of The Application Of) DOCKET NO. SP92-380
)
HAWAIIAN CEMENT) CERTIFICATE OF SERVICE
)
For An Amendment To Special Use Permit)
That Established A Rock Quarrying/Crushing)
Operation And Related Uses On)
Approximately 172.401 Acres Of Land Situated)
Within The State Land Use Agricultural)
District At Pulehunui, Wailuku, Maui,)
Hawai'i, Tax Map Keys: 3-8-04: Portion Of 1)
And 3-8-08: Portion Of 1 And Portion Of 31)
_____)

CERTIFICATE OF SERVICE

I hereby certify that a DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT was served upon the following by either hand delivery or depositing the same in the U.S. Postal Service by regular or certified mail as noted:

CERTIFIED KARLYNN FUKUDA
MAIL: Munekiyo & Hiraga Inc.
305 S. High Street
Wailuku, Hawai'i 96793
Petitioner Representative

DEL.: LEO ASUNCION, Acting Director
State Office of Planning
P. O. Box 2359
Honolulu, Hawai'i 96804-2359

REGULAR BRYAN C. YEE, Esq.
MAIL: Deputy Attorney General
425 Queen Street
Honolulu, Hawai'i 96813
Attorney for State Office of Planning

REGULAR KRISTIN TARNSTROM, Esq.
MAIL: Department of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawai'i 96793
Attorney for the County of Maui

REGULAR WILLIAM SPENCE, Director
MAIL: Department of Planning
County of Maui
200 South High Street
Wailuku, Hawai'i 96793

Dated: Honolulu, Hawai'i, December 3, 2014



DANIEL ORODENKER

Executive Officer

EXHIBIT B.

Certificates of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
12/19/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh USA Inc. 333 South 7th Street, Suite 1400 Minneapolis, MN 55402-2400 Attn: MDU.CertRequest@marsh.com	CONTACT NAME: _____	
	PHONE (A/C, No. Ext): _____	FAX (A/C, No.): _____
E-MAIL ADDRESS: _____		
INSURER(S) AFFORDING COVERAGE		NAIC #
CN102299309-HAWAC-GAWX-20- 2010 2037 HAWCE AI Y	INSURER A : Liberty Mutual Fire Ins Co	23035
INSURED HAWAIIAN CEMENT 99-1300 HALAWA VALLEY STREET AIEA, HI 96701	INSURER B : Associated Electric & Gas Ins Services Ltd	3190004
	INSURER C : Liberty Insurance Corporation	42404
	INSURER D :	
	INSURER E :	
INSURER F :		

COVERAGES CERTIFICATE NUMBER: CHI-007164517-56 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDSUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER: _____		TB2-641-005097-040	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		A12-641-005097-050	01/01/2020	01/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$		XL5063409P	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below.	Y/N <input checked="" type="checkbox"/> N N/A	WA7-64D-005097-020 (Regulated) WA7-64D-005097-010 (AOS) "INCLUDES *STOP-GAP*"	01/01/2020	01/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Re: Puunene Quarry and the TMKs (TMK 3-8-004: 001 and 002; TMKs 3-8-008: 001 and 031)
 County of Maui is included as an additional insured as required by permits SP92-380, SUP1 91/0013 and CUP 2008/0002 as respects the General Liability and Auto Liability. Blanket Additional Insured for General Liability is included per attached CG 2010 and CG 2037 Endorsements and does not include professional liability coverage. Blanket Additional Insured for Automobile Liability is included per attached designated Insured Endorsement CA 20 48. Excess liability applies to general liability, products and completed operations, automobile liability, and employers liability.

CERTIFICATE HOLDER County of Maui Department of Planning 200 S. High Street Wailuku, Maui, HI 96793	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
--	---



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
12/19/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh USA Inc. 333 South 7th Street, Suite 1400 Minneapolis, MN 55402-2400 Attn: MDU.CertRequest@marsh.com	CONTACT NAME: _____	
	PHONE (A/C, No, Ext): _____	FAX (A/C, No): _____
E-MAIL ADDRESS: _____		
INSURER(S) AFFORDING COVERAGE		NAIC #
CN102299309-HAWAC-GAWX-20- 2010 2037 HAWCE AI Y	INSURER A : Liberty Mutual Fire Ins Co	23035
INSURED HAWAIIAN CEMENT 99-1300 HALAWA VALLEY STREET AIEA, HI 98701	INSURER B : Associated Electric & Gas Ins Services Ltd	3190004
	INSURER C : Liberty Insurance Corporation	42404
	INSURER D :	
	INSURER E :	
INSURER F :		

COVERAGES **CERTIFICATE NUMBER:** CHI-007164668-53 **REVISION NUMBER:** _____

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INBR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: _____		TB2-641-005097-040	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		A12-641-005097-050	01/01/2020	01/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ _____ BODILY INJURY (Per accident) \$ _____ PROPERTY DAMAGE (Per accident) \$ _____
B	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$		XL5063409P	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N N/A	WA7-64D-005097-020 (Regulated) WA7-64D-005097-010 (AOS) "INCLUDES *STOP-GAP*"	01/01/2020	01/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Re: Puunene Quarry and the TMKs (TMK 3-8-004: 001 and 002; TMKs 3-8-008: 001 and 031)
 The State of Hawaii is included as an additional insured as required by permits SP92-380 and SUP1 91/0013 as respects the General Liability and Auto Liability. Blanket Additional Insured for General Liability is included per attached CG 2010 and CG 2037 Endorsements and does not include professional liability coverage. Blanket Additional Insured for Automobile Liability is included per attached designated Insured Endorsement CA 20 48. Excess liability applies to general liability, products and completed operations, automobile liability, and employers liability.

CERTIFICATE HOLDER State of Hawaii Land Use Commission P.O. Box 2357 Honolulu, HI 96804-2359	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
---	---

EXHIBIT C.

Restoration Plan

RECLAMATION PLAN

EXHIBIT "C"

1. Objective

To reclaim, for sugar cane cultivation, all areas quarried under subject licenses.

2. Specifications

The reclaimed areas shall be prepared as per specifications issued by HC&S Co. from time to time. Initially, these specifications shall be as follows:

- a. Overburden (soil) shall be placed over the quarry floor at a depth not less than 18" and no deeper than the original overburden existing in the general area prior to quarrying. No rocks over 6" diameter shall be utilized. It is the intent to provide 18" of rock-free soil if at all possible, given the nature of the overburden.
- b. The overburden shall be spread over the quarry floor as evenly as possible with crawler equipped bulldozers. The surface slope should not exceed 5% and should be considered ready for harrowing without further leveling operations.
- c. Where the overburden depth permits, the topsoil shall be removed and stored separately from the underlying subsoil. During reclamation, the subsoil shall be spread first and the final layer spread shall consist of topsoil.

3. Methodology

- a. As soon as the open area at the quarry face exceeds 15 acres in size, reclamation activities shall be initiated. Reclamation shall proceed at a pace equal to or exceeding the pace of quarrying.
- b. Reclaimed land shall be turned over to the Planation within six months of initiation of reclamation activities.
- c. Cane shall be taken to avoid drainage problems in areas to be reclaimed. Berms and cut-off ditches shall be used to prevent unwanted drainage into low lying reclaimed canefield areas.

- d. Annually, the Licensee shall submit to the Planation, on or before December 31st of each year, a specific reclamation plan for their review and approval. The area selected for reclamation shall be selected after careful consideration of the following factors:
 - (1) location, relative to Licensee's quarrying operations to minimize interference between Planation and Licensee activities
 - (2) location, relative to availability of irrigation water, access to haul cane roads, etc.
 - (3) relationship of area chosen to adjoining field configurations, etc.
 - (4) other factors that may relate to early utilization of land for cane
 - e. All costs of the reclamation plan shall be borne by the Licensee. This shall include the cost of installing irrigation mains and sub-mains required for drip irrigation. The Plantation shall assume the costs involved in harrowing, planting and drip tubing installation.
4. Disputes relative to the reclamation plan or activities therein shall be subject to arbitration is otherwise provided in the basic agreement.
-

EXHIBIT D.

State Department of Transportation Approval of Maintenance Plan

Gomes, David

From: Karlynn Kawahara [karlynn@mhinonline.com]
Sent: Wednesday, October 31, 2007 10:59 AM
To: Gomes, David
Subject: FW: Hawaiian Cement Maintenance Plan

Attachments: 081506 Transmittal to DOT Regarding Letter from Hawaiian Cement.pdf



081506
mittal to DOT R
Hi Dave,

Got your message. I am researching the original permit and will try to e-mail to you soon. This is the DOT message on the maintenance plan.

Thank you,
Karlynn

Karlynn Kawahara
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Telephone: (808) 244-2015
Facsimile: (808) 244-8729
Email: karlynn@mhinonline.com

CONFIDENTIAL COMMUNICATION: This message is intended for the use of the designated recipient(s) named above. If you have received this message in error, kindly notify us immediately by email or telephone. Thank you.

-----Original Message-----
From: Douglas.Meller@hawaii.gov [mailto:Douglas.Meller@hawaii.gov]
Sent: Wednesday, November 15, 2006 3:18 PM
To: Karlynn Kawahara
Subject: Hawaiian Cement Maintenance Plan

Here are Freddie's comments on the proposed maintenance plan.

----- Forwarded by Douglas Meller/HWY/HIDOT on 11/15/2006 03:01 PM -----

Ferdinand
Cajigal/HWY/HIDOT

To 11/15/2006 12:34 PM
cc Antonie Wurster/HWY/HIDOT@HIDOT
Ronald Tsuzuki/HWY/HIDOT@HIDOT,
Douglas Meller/HWY/HIDOT@HIDOT,
David Shimokawa/ADMIN/HIDOT@HIDOT

Subject

Hawaiian Cement Maintenance Plan

Toni: I understand that the matter will be heard by State Land Use Commission tomorrow. The maintenance plans is acceptable to us --- therefore recommend approval of the special use permit. My understanding is that the Maui Planning Commission granted the applicant a 3 year extension, thus, we recommend the same. Fifteen years would be too long for us..... Fred

----- Forwarded by Ferdinand Cajigal/HWY/HIDOT on 11/15/2006 12:29 PM

"Karlynn
Kawahara"
<karlynn@mhincorl
To ine.com> <ferdinand.cajigal@hawaii.gov>
cc 11/15/2006 12:01 "David Gomes"
PM <Dave.Gomes@hawaiiancement.com>
Subject Hawaiian Cement Maintenance Plan

Hi Freddie,

Per your request, please see attached transmittal and maintenance plan for

Hawaiian Cement. Please let me know if you have trouble opening the file or if you have questions.

Thank you,
Karlynn

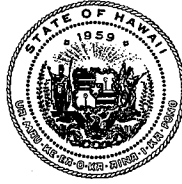
Karlynn Kawahara
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793
Telephone: (808) 244-2015
Facsimile: (808) 244-8729
Email: karlynn@mhinonline.com

CONFIDENTIAL COMMUNICATION: This message is intended for the use of the designated recipient(s) named above. If you have received this message in error, kindly notify us immediately by email or telephone. Thank you.
(See attached file: 081506 Transmittal to DOT Regarding Letter from Hawaiian Cement.pdf)

EXHIBIT E.

Current Permits

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

April 20, 2011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
(7009 0960 0000 3848 6299)

11-251E CAB
File No. 0252-01

Mr. John DeLong
President
Hawaiian Cement
99-1300 Halawa Valley Street
Aiea, Hawaii 96701

Dear Mr. DeLong:

Subject: Covered Source Permit (CSP) No. 0252-01-C
Application for Renewal and Significant Modification No. 0252-06
Hawaiian Cement
653 TPH Aggregate Processing Facility
Located at: Camp 6, Puunene, Maui
Date of Expiration: April 19, 2016

The subject covered source permit is issued in accordance with Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1. The issuance of this permit is based on the plans, specifications, and information that you submitted as part of your application received on February 26, 2008 and the additional information that you submitted as part of your application received on June 19, August 2, September 10 and 27, 2010, and February 11, 2011. The permit supersedes in its entirety covered Source Permit No. 0252-01-C issued on September 23, 2003.

The covered source permit is issued subject to the conditions/requirements set forth in the following attachments:

- Attachment I: Standard Conditions
- Attachment II: Special Conditions
- Attachment II – INSIG: Special Conditions – Insignificant Activities
- Attachment III: Annual Fee Requirements
- Attachment IV: Annual Emissions Reporting Requirements

Mr. John DeLong
April 20, 2011
Page 2

The following forms are enclosed for your use and submittal as required:

Compliance Certification Form
Annual Emissions Report Form: Diesel Engine Generator and
Stone Processing Plant
Monitoring Report Form: Diesel Engine Generator
Monitoring Report Form: Facility Production
Monitoring Report Form: Opacity Exceedances

The following forms are enclosed for your use and submittal as required:

Visible Emissions Form Requirements, State of Hawaii
Visible Emissions Form

This permit: (a) shall not in any manner affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment; and (c) in no manner implies or suggests that the Hawaii Department of Health, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to personal injury or property damage caused by, resulting from or arising out of the design, installation, maintenance, or operation of the equipment.

Sincerely,



STUART YAMADA, P.E., CHIEF
Environmental Management Division

CL:smk

Enclosures

c: Blake Shiigi, EHS – Maui
CAB Monitoring Section

**ATTACHMENT I: STANDARD CONDITIONS
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

This permit is granted in accordance with the Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control, and is subject to the following standard conditions:

1. Unless specifically identified, the terms and conditions contained in this permit are consistent with the applicable requirement, including form, on which each term or condition is based.

(Auth.: HAR §11-60.1-90)
2. This permit, or a copy thereof, shall be maintained at or near the source and shall be made available for inspection upon request. The permit shall not be willfully defaced, altered, forged, counterfeited, or falsified.

(Auth.: HAR §11-60.1-6; SIP §11-60-11)²
3. This permit is not transferable whether by operation of law or otherwise, from person to person, from place to place, or from one piece of equipment to another without the approval of the Department of Health, except as provided in HAR, Section 11-60.1-91.

(Auth.: HAR §11-60.1-7; SIP §11-60-9)²
4. A request for transfer from person to person shall be made on forms furnished by the Department of Health.

(Auth.: HAR §11-60.1-7)
5. In the event of any changes in control or ownership of the facilities to be constructed or modified, this permit shall be binding on all subsequent owners and operators. The permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, copies of which will be forwarded to the Department of Health and the U.S. Environmental Protection Agency (EPA), Region 9.

(Auth.: HAR §11-60.1-5, §11-60.1-7, §11-60.1-94)
6. The facility covered by this permit shall be constructed and operated in accordance with the application, and any information submitted as part of the application, for the Covered Source Permit. There shall be no deviation unless additional or revised plans are submitted to and approved by the Department of Health, and the permit is amended to allow such deviation.

(Auth.: HAR §11-60.1-2, §11-60.1-4, §11-60.1-82, §11-60.1-84, §11-60.1-90)

7. This permit (a) does not release the permittee from compliance with other applicable statutes of the State of Hawaii, or with applicable local laws, regulations, or ordinances, and (b) shall not constitute, nor be construed to be an approval of the design of the covered source.

(Auth.: HAR §11-60.1-5, §11-60.1-82)

8. The permittee shall comply with all the terms and conditions of this permit. Any permit noncompliance constitutes a violation of HAR, Chapter 11-60.1 and the Clean Air Act and is grounds for enforcement action; for permit termination, suspension, reopening, or amendment; or for denial of a permit renewal application.

(Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-19, §11-60.1-90)

9. If any term or condition of this permit becomes invalid as a result of a challenge to a portion of this permit, the other terms and conditions of this permit shall not be affected and shall remain valid.

(Auth.: HAR §11-60.1-90)

10. The permittee shall not use as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the terms and conditions of this permit.

(Auth.: HAR §11-60.1-90)

11. This permit may be terminated, suspended, reopened, or amended for cause pursuant to HAR, Sections, 11-60.1-10 and 11-60.1-98, and Hawaii Revised Statutes (HRS), Chapter 342B-27, after affording the permittee an opportunity for a hearing in accordance with HRS, Chapter 91.

(Auth.: HAR §11-60.1-3, §11-60.1-10, §11-60.1-90, §11-60.1-98)

12. The filing of a request by the permittee for the termination, suspension, reopening, or amendment of this permit, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(Auth.: HAR §11-60.1-90)

13. This permit does not convey any property rights of any sort, or any exclusive privilege.

(Auth.: HAR §11-60.1-90)

14. The permittee shall notify the Department of Health and U.S. EPA, Region 9, in writing of the following dates:

- a. The **anticipated date of initial start-up** for each emission unit of a new source or significant modification not more than sixty (60) days or less than thirty (30) days prior to such date;
- b. The **actual date of construction commencement** within fifteen (15) days after such date; and
- c. The **actual date of start-up** within fifteen (15) days after such date.

(Auth.: HAR §11-60.1-90)

15. The permittee shall furnish, in a timely manner, any information or records requested in writing by the Department of Health to determine whether cause exists for terminating, suspending, reopening, or amending this permit, or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Department of Health copies of records required to be kept by the permittee. For information claimed to be confidential, the Director of Health may require the permittee to furnish such records not only to the Department of Health but also directly to the U.S. EPA, Region 9, along with a claim of confidentiality.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

16. The permittee shall notify the Department of Health in writing, of the **intent to shut down air pollution control equipment for necessary scheduled maintenance** at least twenty-four (24) hours prior to the planned shutdown. The submittal of this notice shall not be a defense to an enforcement action. The notice shall include the following:
 - a. Identification of the specific equipment to be taken out of service, as well as its location and permit number;
 - b. The expected length of time that the air pollution control equipment will be out of service;
 - c. The nature and quantity of emissions of air pollutants likely to be emitted during the shutdown period;
 - d. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period; and
 - e. The reasons why it would be impossible or impractical to shut down the source operation during the maintenance period.

(Auth.: HAR §11-60.1-15; SIP §11-60-16)²

17. **Except for emergencies which result in noncompliance with any technology-based emission limitation in accordance with HAR, Section 11-60.1-16.5, in the event any emission unit, air pollution control equipment, or related equipment malfunctions or breaks down in such a manner as to cause the emission of air pollutants in violation of HAR, Chapter 11-60.1 or this permit, the permittee shall immediately notify the Department of Health of the malfunction or breakdown, unless the protection of personnel or public health or safety demands immediate attention to the malfunction or breakdown and makes such notification infeasible. In the latter case, the notice shall be provided as**

soon as practicable. Within five (5) working days of this initial notification, the permittee shall also submit, in writing, the following information:

- a. Identification of each affected emission point and each emission limit exceeded;
- b. Magnitude of each excess emission;
- c. Time and duration of each excess emission;
- d. Identity of the process or control equipment causing the excess emission;
- e. Cause and nature of each excess emission;
- f. Description of the steps taken to remedy the situation, prevent a recurrence, limit the excessive emissions, and assure that the malfunction or breakdown does not interfere with the attainment and maintenance of the National Ambient Air Quality Standards and state ambient air quality standards;
- g. Documentation that the equipment or process was at all times maintained and operated in a manner consistent with good practice for minimizing emissions; and
- h. A statement that the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

The submittal of these notices shall not be a defense to an enforcement action.

(Auth.: HAR §11-60.1-16; SIP §11-60-16)²

18. The permittee may request confidential treatment of any records in accordance with HAR, Section 11-60.1-14.

(Auth.: HAR §11-60.1-14, §11-60.1-90)

19. This permit shall become invalid with respect to the authorized construction if construction is not commenced as follows:

- a. Within eighteen (18) months after the permit takes effect, is discontinued for a period of eighteen (18) months or more, or is not completed within a reasonable time.
- b. For phased construction projects, each phase shall commence construction within eighteen (18) months of the projected and approved commencement dates in the permit. This provision shall be applicable only if the projected and approved commencement dates of each construction phase are defined in Attachment II, Special Conditions, of this permit.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

20. The Department of Health may extend the time periods specified in Standard Condition No. 19 upon a satisfactory showing that an extension is justified. Requests for an extension shall be submitted in writing to the Department of Health.

(Auth.: HAR §11-60.1-9, §11-60.1-90)

21. The permittee shall submit fees in accordance with HAR, Chapter 11-60.1, Subchapter 6.

(Auth.: HAR §11-60.1-90)

22. All certifications shall be in accordance with HAR, section 11-60.1-4.

(Auth.: HAR §11-60.1-4, HAR §11-60.1-90)

23. The permittee shall allow the Director of Health, the Regional Administrator for the U.S. EPA and/or an authorized representative, upon presentation of credentials or other documents required by law:

- a. To enter the premises where a source is located or emission-related activity is conducted, or where records must be kept under the conditions of this permit and inspect at reasonable times all facilities, equipment, including monitoring and air pollution control equipment, practices, operations, or records covered under the terms and conditions of this permit and request copies of records or copy records required by this permit; and
- b. To sample or monitor at reasonable times substances or parameters to ensure compliance with this permit or applicable requirements of HAR, Chapter 11-60.1.

(Auth.: HAR §11-60.1-11, §11-60.1-90)

24. Within thirty (30) days of **permanent discontinuance of the construction, modification, relocation, or operation of a stationary source covered by this permit**, the discontinuance shall be reported in writing to the Department of Health by a responsible official of the source.

(Auth.: HAR §11-60.1-8; SIP §11-60-10)²

25. Each permit renewal application shall be submitted to the Department of Health and the U.S. EPA, Region 9, no less than twelve (12) months and no more than eighteen (18) months prior to the permit expiration date. The Director may allow a permit renewal application to be submitted no less than six (6) months prior to the permit expiration date, if the Director determines that there is reasonable justification.

(Auth.: HAR §11-60.1-101, 40 CFR §70.5(a)(1)(iii))¹

26. The terms and conditions included in this permit, including any provision designed to limit a source's potential to emit, are federally enforceable unless such terms, conditions, or requirements are specifically designated as not federally enforceable.

(Auth.: HAR §11-60.1-93)

27. The compliance plan and compliance certification submittal requirements shall be in accordance with HAR, Sections 11-60.1-85 and 11-60.1-86. As specified in HAR,

Section 11-60.1-86, the compliance certification shall be submitted to the Department of Health and the U.S. EPA, Region 9, once per year, or more frequently as set by any applicable requirement.

(Auth.: HAR §11-60.1-90)

28. **Any document (including reports) required to be submitted by this permit shall be certified as being true, accurate, and complete by a responsible official in accordance with HAR, Sections 11-60.1-1 and 11-60.1-4, and shall be mailed to the following address:**

**Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814**

Upon request and as required by this permit, all correspondence to the State of Hawaii Department of Health associated with this Covered Source Permit shall have duplicate copies forwarded to:

**Chief
Permits Office, (Attention: Air-3)
Air Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105**

(Auth.: HAR §11-60.1-4, §11-60.1-90)

29. To determine compliance with submittal deadlines for time-sensitive documents, the postmark date of the document shall be used. If the document was hand-delivered, the date received ("stamped") at the Clean Air Branch shall be used to determine the submittal date.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

¹The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

²The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

**ATTACHMENT II: SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In addition to the standard conditions of the covered source permit, the following special conditions shall apply to the permitted facility:

Section A. Equipment Description

1. This permit encompasses the following equipment and associated appurtenances for the 653 TPH Stone Processing Plant:
 - a. One 720 TPH Pioneer Grizzly Feeder, Model 50x24, Serial No. 408532.
 - b. One 653 TPH Pioneer (Primary) Jaw Crusher, Model 4450, Serial No. 408531.
 - c. One 840 TPH JCI 3-Deck Screen, Model JCI620332LP, Serial No. 00LP12132.
 - d. One 525 TPH Deister 2-Deck Screen, Model 5x14, Serial No. 2001169.
 - e. One 645 TPH Cedarapids (Secondary) Rollercone Crusher, Model MVP450.
 - f. One 400 TPH Canica (Tertiary No. 1) Impact Crusher, Model 100VSI, Serial No. 125120-87.
 - g. One 600 TPH Canica (Tertiary No. 2) Impact Crusher, Model 125VSI, Serial No. 125140-92.
 - h. Two Simplicity 8' x 20' Triple Deck Tertiary Screens, Serial Nos. 3820-M160A-3887 and 3820-M160A-3886.
 - i. 150 TPH Fisher Industries Stationary Air Classifier, Serial No. AS-67-607347.
 - j. 525 TPH Syntron Feeder, Model F-480, Serial No. T102615.
 - k. Two Jeffrey Feeders, Model 250, Serial Nos. 884516 and 884517.
 - l. One Surge Rock Feeder.
 - m. Various Conveyors;
 - n. Enclosures; and
 - o. Water spray system.
 - p. One 950 HP Caterpillar Diesel Engine Generator, CAT C27 ATAAC Diesel Engine and CAT SR4B Generator, Diesel Engine Serial No. MJE00535.

Backup Equipment:

- q. One 700 TPH Cedarapids Apron Feeder with Hopper, Model VGF4220-15, Serial No. 50058 (backup for 720 TPH Pioneer Grizzly Feeder).
- r. One 800 TPH Pioneer Jaw Crusher, Model 3042, Serial No. UH-3769 (backup for 653 TPH Pioneer Jaw Crusher).
- s. One 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen, Model HRVX-9, Serial No. C001061401 (backup for 840 TPH JCI 3-Deck Screen).

(Auth.: HAR §11-60.1-3)

2. An identification tag or name plate shall be displayed on each crusher, screen, feeder, and diesel engine generator listed above to show model no., serial/identification no., and manufacturer. The identification tag or name plate shall be permanently attached to the equipment in a conspicuous location.

(Auth.: HAR §11-60.1-5, §11-60.1-90)

Section B. Applicable Federal Regulations

1. The stone processing plant, excluding the 800 TPH Pioneer Jaw Crusher, Model 3042, is subject to the provisions of the following federal regulations:
 - a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions; and
 - b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.1, §60.670)¹

2. The diesel engine generator is subject to the provisions of the following federal regulations:
 - a. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart A, General Provisions;
 - b. 40 CFR Part 60, Standards of Performance for New Stationary Sources, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines;
 - c. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart A, General Provisions; and
 - d. 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR § 60.1, § 60.4200, § 63.1, § 63.6585)¹

3. The permittee shall comply with all of the applicable provisions of these standards, including all emission limits, notification, testing, monitoring, and reporting requirements. The major requirements of these standards are detailed in the special conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR Part 60)¹

Section C. Operational and Emission Limitations

1. Operating Limits Diesel Engine Generator

- a. The total operating hours of the diesel engine generator shall not exceed 4,380 hours in any rolling twelve-month (12-month) period.
- b. The diesel engine generator shall be fired only on fuel oil no. 2 with:
 - i. A maximum sulfur content not to exceed 0.0015% by weight; and
 - ii. A cetane index or aromatic content as follows:
 - 1) Minimum cetane index of forty (40); or
 - 2) Maximum aromatic content of thirty-five (35) volume percent.
- c. For any six (6) minute averaging period, the diesel engine generator shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during start-up, shutdown, or equipment breakdown, the diesel engine generator may exhibit visible emissions greater than twenty (20) percent opacity but not exceeding sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minutes.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-38, §11-60.1-90; SIP §60.1-24)²

2. Minimum Stack Height Diesel Engine Generator

The stack height for the diesel engine generator shall be at least twenty-four (24) feet above base elevation.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

3. Operating Limits Stone Processing Plant

- a. The maximum production of material from the facility shall not exceed 1,000,000 tons in any rolling twelve-month (12-month) period.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

- b. The permittee shall not cause to be discharged into the atmosphere from the 653 TPH Pioneer (Primary) Jaw Crusher, fugitive emissions which exhibit greater than twelve (12) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

- c. The permittee shall not cause to be discharged into the atmosphere, fugitive emissions which exhibit greater than seven (7) percent opacity, from the:

- i. 840 TPH JCI 3-Deck Screen;
- ii. 525 TPH Deister 2-Deck Screen;
- iii. Any transfer point on the belt conveyors (starting from the 720 TPH Pioneer Grizzly Feeder up to and including conveyor C9 and the conveyor transfer points from the Canica tertiary crushers to the Simplicity tertiary screens of application 0252-06 rev 100618); or
- iv. Any other affected facility (as defined in § 60.670 and 60.671).

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

- d. The permittee shall not cause to be discharged into the atmosphere, fugitive emissions which exhibit greater than fifteen (15) percent opacity, from the:
 - i. 645 TPH Cedarapids (Secondary) Rollercone Crusher;
 - ii. 400 TPH Canica (Tertiary No. 1) Impact Crusher; and
 - iii. 600 TPH Canica (Tertiary No. 2) Impact Crusher.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

- e. The permittee shall not cause to be discharged into the atmosphere from the two (2) Simplicity 8' x 20' Triple Deck Tertiary Screens, any transfer point on the belt conveyors (beginning with conveyor C6 of application 0252-06 rev 100617 and all conveyor transfer points following conveyor C6 in the process line, excluding the conveyor transfer points from the Canica tertiary crushers to the Simplicity tertiary screens) or from any other affected facility (as defined in § 60.670 and 60.671), fugitive emissions which exhibit greater than ten (10) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

f. Backup Equipment

- i. The permittee shall not cause to be discharged into the atmosphere from the 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen and all associated conveyor transfer points, fugitive emissions which exhibit greater than ten (10) percent opacity.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.672)

- g. The stone processing plant shall be configured to the layout identified in the covered source permit application, or to an alternate configuration meeting the following:
 - i. The permittee shall not operate the stone processing plant in a configuration that would result in an increase in the number of emission points, such as the addition of more transfer or stacking conveyors; and
 - ii. The permittee shall not operate the stone processing plant in a configuration that would cause an increase in the capacity of the process flow.

iii. The permittee shall not operate the backup equipment at the same time as the equipment it replaces. The permittee may replace the:

- 1) 720 TPH Pioneer Grizzly Feeder with the 700 TPH Cedarapids Apron Feeder with Hopper;
- 2) 653 TPH Pioneer Jaw Crusher with the 800 TPH Pioneer Jaw Crusher; and
- 3) 840 TPH JCI 3-Deck Screen with the 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

4. Fugitive Emission Control

a. The permittee shall take measures to control fugitive dust (e.g., wet suppression, enclosures, dust screens, etc.) at the crushers, screens, material transfer points, stockpiles, and throughout the facility. The Department of Health may at any time require the permittee to further abate fugitive dust emissions if an inspection indicates poor or insufficient control.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

b. The permittee shall not cause or permit fugitive dust to become airborne without taking reasonable precautions and shall not cause or permit the discharge of visible emissions of fugitive dust beyond the lot line of the property boundary on which the emissions originate.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

c. Water spray bars shall be installed, maintained, and utilized as needed during operation of the plant to minimize fugitive dust at the following material drop off points:

- i. Exit of the Primary Crusher;
- ii. Exit of Secondary Crusher to Secondary Screen Exit Conveyor;
- iii. Entrance and Exit of the Tertiary Crushers;
- iv. Entrance to Tertiary Screens;
- v. Entrance to Tertiary Crushing Bin from Secondary Screen Exit Conveyor and Recirculating Conveyor;
- vi. Secondary Screen Exit Conveyor to Tertiary Screens Feed Conveyor;
- vii. Tertiary Crushers Exit Conveyor to Tertiary Screens Feed Conveyor;
- viii. Tertiary Screens Feed Conveyor to Tertiary Screens;
- ix. Conveyor Transfer Points (P)C2 to (P)C4 and (P)C3 to (P)C4; and
- x. Conveyor discharge to all stockpiles.

The Department of Health at any time may require additional water sprays, manual water spraying, and/or enclosures at pertinent locations if an inspection indicates that more fugitive dust control is needed.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

- d. The stone processing plant shall not be operated if observation, or the routine inspection required in Special Condition D.3.b indicates a significant drop in water pressure and/or flow rate, plugged nozzle(s), leak in the piping system, or other problems which affect the efficiency of its water spray system. The permittee shall investigate and correct the problem before resuming operations. The normal operating flow rate (gal/min) for the water spray system shall be established in the performance test conducted pursuant to this Attachment, Section F, and may be incorporated into the permit.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

- e. A water spray system and/or an on-site water truck shall be maintained and utilized during the facility's operating hours and at other times as necessary to minimize fugitive dust on haul roads, facility grounds, and storage piles.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

5. Maintenance

The stone processing plant, including the water spray system and enclosures, shall be maintained in good operating condition at all times with scheduled inspections and maintenance as recommended by the manufacturer, or as needed.

(Auth.: HAR §11-60.1-3, §11-60.1-33, §11-60.1-90)

6. Alternate Operating Scenario

- a. The permittee may replace the diesel engine generator with a temporary replacement unit if any repair reasonably warrants the removal of the diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation), permit requirements for the permitted diesel engine generator do not conflict with those required for the replacement unit, and the following provisions are adhered to:
 - i. The installation/operation of the temporary replacement diesel engine generator shall not exceed twelve (12) consecutive months.
 - ii. A request for replacing the diesel engine generator with a temporary replacement unit shall be submitted in accordance with Special Condition E.8.a.
 - iii. The temporary replacement unit must be similar in size to the diesel engine generator being replaced with equal or lesser emissions.

- iv. The temporary replacement unit shall comply with all applicable conditions required for the primary unit including all air pollution control equipment requirements, operating restrictions, and emission limits.
 - v. The diesel engine generator shall be repaired and returned to service at the same location in a timely manner.
 - vi. Removal and return information shall be submitted as required by Special Condition E.8.b.
-
- b. The Department of Health may require an ambient air quality assessment of the temporary unit, and/or provide a conditional approval to impose additional monitoring, testing, recordkeeping, and reporting requirements to ensure the temporary unit is in compliance with the applicable requirements of the permitted unit being temporarily replaced.
 - c. Records shall be maintained in accordance with Special Condition D.10.
 - d. The terms and conditions under each operating scenario shall meet all applicable requirements, including the special conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section D. Monitoring and Recordkeeping Requirements

1. Records

All records, including support information, shall be maintained for at least five (5) years from the date of the monitoring sample, measurement, test, report, or application. Support information includes all maintenance, inspection, and repair records, and copies of all reports required by this permit. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department of Health or its representative(s) upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-81, §11-60.1-90)

2. Production

Invoice and inventory records shall be maintained to document the total amount of product produced from the facility on a monthly and twelve-month (12-month) rolling basis for the purpose of the limitation specified in Special Condition C.3.a and for annual emissions reporting. Monthly records shall include the type (e.g., cinder, gravel, fines, etc.) and the amount of material (tons) processed.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

3. Water Spray System

- a. A non-resetting water meter shall be installed, operated and maintained for the water spray system of the 653 TPH stone processing plant to determine the cumulative gallons of water used for fugitive dust control and gallon per minute flow rate of the water spray system for the plant.
- b. The water spray system, to include the water pump, piping system, spray nozzles and any gauges (i.e., water pressure, water flow meter, etc.) shall be checked routinely or at least once per week to insure proper operation of the water spray system.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

4. Visible Emissions (VE)

- a. The permittee shall conduct **monthly** (calendar month) VE observations of the diesel engine generator by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For each month, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals. For the VE observations of the diesel engine generator, the observer shall comply with the following additional requirements:
 - i. The distance between the observer and the emission source shall be at least three (3) stack heights, but not more than 402 meters (0.25 miles); and
 - ii. The observer shall, when possible, select a position that minimizes interference from other sources of visible emissions. The required observer position relative to the sun (Method 9, 40 CFR Part 60, Appendix A-4, Section 2.1) shall be followed.
- b. Except in those months where a performance test is conducted pursuant to Special Condition D.5 below, the permittee shall conduct **monthly** (*calendar month*) VE observations for the stone processing plant. Observations shall be made at emission points subject to an opacity limit, and shall be performed by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For the monthly observation, two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each emission point. The observer shall comply with the following additional requirements:
 - i. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet);
 - ii. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources. The required observer position relative to the sun (Method 9; Section 2.1) shall be followed; and
 - iii. The observer shall record the operating capacity (ton/hr) of the plant at the time the observations were made.

The Department of Health may allow observation of a portion of the total emission points at the stone processing plant, if it can be demonstrated that operations have been in compliance with the permit. At a minimum, at least three (3) emission points

from the stone processing plant shall be observed each month. At a minimum, the three (3) selected points from the plant shall include one (1) crusher, one (1) screen, and one (1) transfer point or those points as specified by the Department of Health. The points observed shall be rotated so that each crusher, screen, and transfer point is eventually observed. The Department may require additional emission points to be observed. Allowance to observe a portion of the total required emission points shall be obtained in writing from the Department of Health.

- c. Records shall be completed and maintained in accordance with the **Visible Emissions Form Requirements**.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90)

5. Performance Test

Source performance tests shall be conducted on the stone processing plant pursuant to this Attachment, Section F. Test plans, summaries and results shall be maintained in accordance with the requirements of this section.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

6. Operating Hours

A non-resetting hour meter shall be installed, operated, and maintained on the diesel engine generator for the permanent recording of the total hours operated. The non-resetting meter shall not allow the manual resetting or other manual adjustments of the meter readings. The installation of any new non-resetting meters or the replacement of any existing non-resetting meters shall be designed to accommodate a minimum of five (5) years of equipment operation, considering any operational limitations, before the meter returns to a zero reading.

The meter shall permanently record the total hours of operation for the purpose of the hour limitations specified in Special Condition C.1.a. The following information shall be recorded for the diesel engine:

- a. Date of meter readings;
- b. Beginning and ending meter readings for each month;
- c. Total hours of operation for each month; and
- d. Total hours of operation on a rolling twelve-month (12-month) basis.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

7. Fuel Specification

Fuel purchase receipts, showing the fuel type, sulfur content (percent by weight), minimum cetane index or maximum aromatic content (volume percent), date of delivery, and amount

(gallons) of fuel delivered for the diesel engine generator shall be maintained for purposes of the fuel limits specified in Special Condition C.1.b, and annual emissions reporting. Fuel sulfur content, cetane index, and aromatic content may be demonstrated by providing the supplier's fuel specification sheet for the type of fuel purchased and received.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

8. Inspection, Maintenance, and Repair Log

Equipment inspection, maintenance, and repair work. An inspection, maintenance and repair log shall be maintained for the equipment covered under this permit. Inspection of, and replacement of parts and repairs to the diesel engine generator, crushers, screens, conveyors, and water spray system, shall be well documented. At a minimum, the following records shall be maintained:

- a. The date of the inspection/maintenance/repair work;
- b. A description of the part(s) inspected or repaired;
- c. A description of the findings and any maintenance or repair work performed; and
- d. The name and title of the personnel performing inspection/work.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

9. Operation of Backup Equipment

The permittee shall record the following information for each period of time the Backup Equipment is operated:

- a. The date the Backup Equipment begins operating;
- b. The date the Backup Equipment stops operating; and
- c. All periods of time during which the Backup Equipment and the equipment it is allowed to replace, as specified in Special Condition C.3.g.iii, are operated simultaneously. Record the start date and end date of simultaneous operation.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

10. Alternate Operating Scenario

The permittee shall contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility, the scenario under which it is operating.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section E. Notification and Reporting Requirements

1. Standard Conditions Reporting

Notification and reporting pertaining to the following events shall be done in accordance with Attachment I, Standard Condition Nos. 14, 16, 17, and 24, respectively:

- a. Anticipated date of initial start-up, actual date of construction commencement, and actual date of start-up;
- b. Intent to shut down air pollution control equipment for necessary scheduled maintenance;
- c. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and
- d. Permanent discontinuance of construction, modification, relocation, or operation of the facility covered by this permit.

(Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90; SIP §11-60-10, §11-60-16)²

2. Deviations

The permittee shall report (in writing) **within five (5) working days** any deviations from permit requirements, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventive measures taken. Corrective actions may include a requirement for additional testing, or more frequent monitoring, or could trigger implementation of a corrective action plan.

(Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

3. Notification of Constructed Stack Height

The permittee shall submit to the Department of Health written notification of the final constructed stack height of the diesel engine generator **within fifteen (15) days** following receipt of this covered source permit.

4. Annual Emissions Reports

- a. As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall report **annually** the total tons per year emitted of each regulated pollutant, including hazardous air pollutants. The report is due **within sixty (60) days** following the end of each calendar year. The following enclosed forms shall be used for reporting:

Annual Emissions Report Form: Diesel Engine Generator and Stone Processing Plant

- b. Upon the permittee's written request, the deadline for annual emissions reporting may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

5. Monitoring Reports

The permittee shall submit **semi-annually** the following reports to the Department of Health. The reports shall be submitted **within sixty (60) days** after the end of each semi-annual calendar period (January 1 - June 30 and July 1 - December 31), shall be signed and dated by a responsible official, and shall include the following:

- a. The total production (tons) of the stone processing plant on a monthly and twelve-month (12-month) rolling basis;
- b. The total operating hours of the diesel engine generator on a monthly and twelve-month (12-month) rolling basis;
- c. Identification of the type of fuel fired in the 950 HP Diesel Engine Generator. Including:
 - i. The maximum sulfur content (percent by weight) of the fuel; and
 - ii. The minimum cetane index or maximum aromatic content of the fuel.
- d. All periods of time during which the Backup Equipment and the equipment it is allowed to replace, as specified in Special Condition C.3.g.iii, are operated at the same time; and
- e. Identification of any opacity exceedances as determined by the required VE monitoring of the stone processing plant. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reason for exceedance, duration of exceedance, and corrective actions taken. If there were no exceedances, the permittee shall submit in writing a statement indicating that for each equipment there were no exceedances for that semi-annual period for the stone processing plant.

The following enclosed **Monitoring Report Forms: Diesel Engine Generator; Facility Production; and Opacity Exceedances** shall be used.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

6. Performance Testing

- a. At least **thirty (30) days prior** to conducting a source performance test pursuant to Attachment II, Section F, the permittee shall submit a written performance test plan to the Department of Health in accordance with Special Condition F.4.

- b. Written reports of the results of the performance tests conducted to demonstrate compliance shall be submitted to the Department of Health **within sixty (60) days** after the completion of the performance test, and shall be in conformance with Special Condition F.6.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR § 60.676)¹

7. Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA, Region 9, the attached **Compliance Certification Form** pursuant to HAR, §11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall be submitted **within ninety (90) days after the end of each calendar year**, and shall be signed and dated by a responsible official. The compliance certification shall include, at a minimum, the following information:

- a. The identification of each term or condition of the permit that is the basis of the certification;
- b. The compliance status;
- c. Whether compliance was continuous or intermittent;
- d. The methods used for determining the compliance status of the source currently and over the reporting period;
- e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and
- f. Any additional information as required by the Department of Health including information to determine compliance. Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

8. Alternate Operating Scenario

- a. The permittee shall submit a written request and receive prior written approval from the Department of Health before exchanging a permitted diesel engine generator with a temporary replacement unit. The written request shall identify, at a minimum, the reasons for the replacement of the diesel engine generator from the site of operation and the estimated time period/dates for the temporary replacement, type, size, and manufacturing date of the temporary unit, emissions data, and stack parameters.

- b. Prior to the removal and return of the permitted diesel engine generator, the permittee shall submit to the Department of Health written documentation on the removal and return dates and on the make, size, model, and serial numbers for both the temporary replacement unit and the installed unit.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90)

Section F. Testing Requirements

1. Performance Testing

a. Initial and Annual Testing

Within sixty (60) days after achieving the maximum production rate at which the equipment will be operated but not later than one-hundred eighty (180) days after the initial startup of the equipment, and annually thereafter the permittee shall conduct or cause to be conducted, performance tests on the equipment subject to the opacity limits of Special Condition C.3.b. and C.3.c.

b. Annual Testing

On an annual basis the permittee shall conduct or cause to be conducted, performance tests on the equipment subject to the opacity limits of Special Condition C.3.d, C.3.e, and C.3.f.

- c. The Department of Health may require testing at other points in the facility if an inspection indicates poor or insufficient controls.

- d. Source performance testing is not required for a specific calendar year, for the following equipment, under the following circumstances:

- i. The 600 TPH Metso Minerals 4' x 8' Double Deck Scalping Screen is not operated at any time during the specific calendar year;
- ii. The 653 TPH Pioneer Jaw Crusher is not operated at any time during the specific calendar year; and
- iii. The 840 TPH JCI 3-Deck Screen is not operated at any time during the specific calendar year.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; §11-60.1-161, 40 CFR §60.675, SIP §11-60.15)^{1,2}

2. Performance Test Methods

- a. The performance tests for the stone processing plant shall be conducted by a certified reader using Method 9 of 40 CFR Part 60, Appendix A-4, and the procedures in 40 CFR §60.11 with the following additions for the fugitive emissions observations:
 - i. The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet);
 - ii. The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, 40 CFR Part 60, Appendix A-4, Section 2.1) shall be followed; and
 - iii. The observer shall record the operating capacity (tons/hr) of the crushing plant at the time observations were made.
- b. When determining compliance with the fugitive emissions standards of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, the duration of Method 9 observations must be thirty (30) minutes (five (5) 6-minute averages). Compliance with the applicable fugitive emission limits specified in Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f must be based on the average of the five (5) 6-minute averages.
- c. When determining compliance with the fugitive emissions standards of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, if emissions from two (2) or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
 - i. Use for the combined emission stream, the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream; or
 - ii. Separate the emissions so that the opacity of emissions from each affected facility can be read.
- d. When determining compliance with the fugitive emissions standard of Special Condition C.3.b, C.3.c, C.3.d, C.3.e, and C.3.f, a single visible emission observer may conduct visible emission observations for up to three (3) fugitive emission points within a fifteen-second (15-second) interval if the following conditions are met:
 - i. No more than three (3) emission points may be read concurrently;
 - ii. All three (3) emission points must be within a seventy (70) degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three (3) points; and
 - iii. If an opacity reading for any one (1) of the three (3) emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two (2) points and continue reading just that single point.

- e. If, after **thirty (30) days** notice for an initially scheduled performance test, there is a delay, for example, due to operational problems, in conducting any rescheduled performance test required by Section F, the permittee shall submit a notice to the Department of Health at least **seven (7) days prior** to any rescheduled performance test.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.675)¹

3. Performance Test Expense and Monitoring

The performance tests shall be made at the expense of the permittee and shall be conducted at the maximum expected operating capacity of the stone processing plant. All performance tests may be monitored by the Department of Health.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; §11-60.1-161, 40 CFR §60.675)¹

4. Performance Test Plan

At least thirty (30) days prior to conducting the performance test, the permittee shall submit a written performance test plan to the Department of Health and U.S. EPA, Region 9, that includes date(s) of the test, test duration, test locations, test methods, source operation, locations of visible emissions readings, and other parameters that may affect the test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A test plan or quality assurance plan that does not have the approval of the Department of Health may be grounds to invalidate any test and require a retest.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90; 40 CFR 60.8, SIP §11-60.1-15)^{1,2}

5. Deviations

Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations are approved by the Department of Health before the tests are performed.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

6. Performance Test Report

Within sixty (60) days after completion of the performance test, the permittee shall submit to the Department of Health and U.S. EPA, Region 9, the test report which shall include the operating conditions of the facility at the time of the test (e.g., operating rate in tons/hr, water meter flow rate in gal/min, etc.), locations where the visible emissions were read, visible emission readings, location of water sprays, summarized test results, comparative

results with the permit emission limits, other pertinent support calculations, and field/laboratory data. The results shall be recorded and reported in accordance with 40 CFR Part 60, Appendix A, and §60.8.

The normal operating water flow rate (gal/min) of the water spray system shall be determined by the water flow rate used during the performance test that demonstrates compliance with the opacity limits of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.675; SIP §11-60-15)^{1,2}

7. Performance Test Waiver

Upon written request and justification, the Department of Health may waive the requirement for, or a portion of, a specific source performance test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior performance test indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous source test.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

Section G. Agency Notification

Any document (including reports) required to be submitted by this covered source permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

¹ The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

² The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.

**ATTACHMENT II - INSIG
SPECIAL CONDITIONS - INSIGNIFICANT ACTIVITIES
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In addition to the Standard Conditions of the Covered Source Permit, the following Special Conditions shall apply to the permitted facility:

Section A. Equipment Description

This attachment encompasses insignificant activities listed in HAR, §11-60.1-82(f) and (g) for which provisions of this permit and HAR, Subchapter 2, General Prohibitions, apply.

(Auth.: HAR §11-60.1-3)

Section B. Operational Limitations

1. The permittee shall take measures to operate applicable insignificant activities in accordance with the provisions of HAR, Subchapter 2 for visible emissions, fugitive dust, incineration, process industries, sulfur oxides from fuel combustion, storage of volatile organic compounds, volatile organic compound water separation, pump and compressor requirements, and waste gas disposal.

(Auth.: HAR §11-60.1-3, §11-60.1-82, §11-60.1-90)

2. The Department of Health may at any time require the permittee to further abate emissions if an inspection indicates poor or insufficient controls.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-82, §11-60.1-90)

Section C. Monitoring and Recordkeeping Requirements

1. The Department of Health reserves the right to require monitoring, recordkeeping, or testing of any insignificant activity to determine compliance with the applicable requirements.

(Auth.: HAR §11-60.1-3, §11-60.1-90)

2. All records shall be maintained for at least five (5) years from the date of any required monitoring, recordkeeping, testing, or reporting. These records shall be true, accurate, and maintained in a permanent form suitable for inspection and made available to the Department of Health or its authorized representative upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section D. Notification and Reporting

Compliance Certification

During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA, Region 9, the attached *Compliance Certification Form* pursuant to HAR, Subsection 11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall include, at a minimum, the following information:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent;
4. The methods used for determining the compliance status of the source currently and over the reporting period;
5. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the requirements of Section 114(a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and
6. Any additional information as required by the Department of Health including information to determine compliance.

The compliance certification shall be submitted **within ninety (90) days** after the end of each calendar year, and shall be signed and dated by a responsible official.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

In lieu of addressing each emission unit as specified in *Compliance Certification Form*, the permittee may address insignificant activities as a single unit provided compliance is met with all applicable requirements. If compliance is not totally attained, the permittee shall identify the specific insignificant activity and provide the details associated with the noncompliance.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

Section E. Agency Notification

Any document (including reports) required to be submitted by this Covered Source Permit shall be done in accordance with Attachment I, Standard Condition No. 28.

(Auth.: HAR §11-60.1-4, §11-60.1-90)

**ATTACHMENT III: ANNUAL FEE REQUIREMENTS
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

The following requirements for the submittal of annual fees are established pursuant to Hawaii Administrative Rules (HAR), Title 11, Chapter 60.1, Air Pollution Control. Should HAR, Chapter 60.1 be revised such that the following requirements are in conflict with the provisions of HAR, Chapter 60.1, the permittee shall comply with the provisions of HAR, Chapter 60.1:

1. Annual fees shall be paid in full:
 - a. Within **sixty (60) days** after the end of each calendar year; and
 - b. Within **thirty (30) days** after the permanent discontinuance of the covered source.
2. The annual fees shall be determined and submitted in accordance with Hawaii Administrative Rules, Chapter 11-60.1, Subchapter 6.
3. The annual emissions data for which the annual fees are based shall accompany the submittal of any annual fees and be submitted on forms furnished by the Department of Health.
4. The annual fees and the emission data shall be mailed to:

**Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814**

**ATTACHMENT IV: ANNUAL EMISSIONS REPORTING REQUIREMENTS
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions.

1. Complete the attached form(s):

Annual Emissions Report Form: Diesel Engine Generator and Stone Processing Plant

2. The reporting period shall be from January 1 to December 31 of each year. All reports shall be submitted to the Department of Health within **sixty (60) days** after the end of each calendar year and shall be mailed to the following address:

**Clean Air Branch
Environmental Management Division
Hawaii Department of Health
919 Ala Moana Boulevard, Room 203
Honolulu, HI 96814**

3. The permittee shall retain the information submitted, including all emission calculations. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health upon request.
4. Any information submitted to the Department of Health without a request for confidentiality shall be considered public record.
5. In accordance with HAR, Section 11-60.1-14, the permittee may request confidential treatment of specific information, including information concerning secret processes or methods of manufacture, by submitting a written request to the Director and clearly identifying the specific information that is to be accorded confidential treatment.

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C**

PAGE 1 OF ____

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the following certification at least annually, or more frequently as requested by the Department.

(Make Copies of the Compliance Certification Form for Future Use)

For Period: _____ Date: _____

Company/Facility Name: _____

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by Department of Health as public record. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, and any permit issued thereof.

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
(CONTINUED, PAGE 2 OF ___)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

The purpose of this form is to evaluate whether or not the facility was in compliance with the permit terms and conditions during the covered period. If there were any deviations to the permit terms and conditions during the covered period, the deviation(s) shall be certified as *intermittent compliance* for the particular permit term(s) or condition(s). Deviations include failure to monitor, record, report, or collect the minimum data required by the permit to show compliance. In the absence of any deviation, the particular permit term(s) or condition(s) may be certified as *continuous compliance*.

Instructions:

Please certify Sections A, B, and C below for continuous or intermittent compliance. Sections A and B are to be certified as a group of permit conditions. Section C shall be certified individually for each operational and emissions limit condition as listed in the Special Conditions section of the permit (list all applicable equipment for each condition). Any deviations shall also be listed individually and described in Section D. The facility may substitute its own generated form in verbatim for Sections C and D.

A. Attachment I, Standard Conditions

<u>Permit term/condition</u> All standard conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
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B. Special Conditions - Monitoring, Recordkeeping, Reporting, Testing, and INSIG

<u>Permit term/condition</u> All monitoring conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
<u>Permit term/condition</u> All recordkeeping conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
<u>Permit term/condition</u> All reporting conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
<u>Permit term/condition</u> All testing conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
<u>Permit term/condition</u> All INSIG conditions	<u>Equipment</u> All Equipment listed in the permit	<u>Compliance</u> <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
(CONTINUED, PAGE ____ OF ____)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

C. Special Conditions - Operational and Emissions Limitations

Each permit term/condition shall be identified in chronological order using attachment and section numbers (e.g., Attachment II, B.1, Attachment IIA, Special Condition No. B.1.f, etc.). Each equipment shall be identified using the description stated in Section A of the Special Conditions (e.g., unit no., model no., serial no., etc.). Check all methods (as required by permit) used to determine the compliance status of the respective permit term/condition.

<u>Permit term/condition</u>	<u>Equipment</u>	<u>Method</u>	<u>Compliance</u>
		<input type="checkbox"/> monitoring <input type="checkbox"/> recordkeeping <input type="checkbox"/> reporting <input type="checkbox"/> testing <input type="checkbox"/> none of the above	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
		<input type="checkbox"/> monitoring <input type="checkbox"/> recordkeeping <input type="checkbox"/> reporting <input type="checkbox"/> testing <input type="checkbox"/> none of the above	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
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(Make Additional Copies if Needed)

**COMPLIANCE CERTIFICATION FORM
COVERED SOURCE PERMIT NO. 0252-01-C
(CONTINUED, PAGE ___ OF ___)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

D. Deviations

<u>Permit Term/ Condition</u>	<u>Equipment / Brief Summary of Deviation</u>	<u>Deviation Period time (am/pm) & date (mo/day/yr)</u>	<u>Date of Written Deviation Report to DOH (mo/day/yr)</u>
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	
		Beginning: Ending:	

(Make Additional Copies if Needed)

**ANNUAL EMISSIONS REPORT FORM
DIESEL ENGINE GENERATOR AND STONE PROCESSING PLANT
COVERED SOURCE PERMIT NO. 0252-01-C
(PAGE 1 of 2)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

1. Report the diesel engine fuel consumption as follows:

Model	Capacity	Maximum % Sulfur Content by Weight	Total Fuel Oil No. 2 Consumption (gal/yr)

**ANNUAL EMISSIONS REPORT FORM
DIESEL ENGINE GENERATOR AND STONE PROCESSING PLANT
COVERED SOURCE PERMIT NO. 0252-01-C
(PAGE 2 of 2)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

2. Report the quantity of material processed:

Type of Operation	Maximum Tons/hour of Material Entering (Tons/hr)	Materials Processed: Type (cinder, gravel, fines, etc.) and Amount (tons/yr)	Air Pollution Control Measures in Use	Control Efficiency (% Reduction)
Pioneer Grizzly Feeder (Special Condition A.1.a.)				
Pioneer Primary Jaw Crusher (Special Condition A.1.b.)				
JCI 3-Deck Screen (Special Condition A.1.c.)				
Deister 2-Deck Screen (Special Condition A.1.d.)				
Cedarapids Secondary Crusher (Special Condition A.1.e.)				
Canica Tertiary Crusher #1 (Special Condition A.1.f.)				
Canica Tertiary Crusher #2 (Special Condition A.1.g.)				
Two Simplicity Tertiary Screens (Special Condition A.1.h.)				
Fisher Stationary Air Classifier (Special Condition A.1.i.)				
Syntron Feeder (Special Condition A.1.j.)				
Two Jeffrey Feeders (Special Condition A.1.k.)				
Surge Rock Feeder (Special Condition A.1.l.)				
Conveyor Transfer (Special Condition A.1.m.)				
Backup: Cedarapids Apron Feeder (Special Condition A.1.q.)				
Backup: Pioneer Jaw Crusher (Special Condition A.1.r.)				
Backup: Metso Minerals Screen (Special Condition A.1.s.)				
Active Stockpiles	NA			
Truck Loading	NA			

Note: Control measures include water sprays, housing and duct work to baghouses.
Use the following Control Efficiencies, unless documentation is available to show otherwise:
Water sprays, or Enclosure: 70% Subsequent transfer points of water sprayed material: 70-(5*n)%
Efficiency factors may be reduced by the Department of Health, if there are any indications that a source's air pollution control device is not operating at the specified efficiency.

**MONITORING REPORT FORM
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0252-01-C
(Page 1 of 2)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

1. Report the total operating hours of the 950 HP diesel engine generator for the reporting period:

Month	Total Operating Hours Monthly Basis	Total Operating Hours 12-Month Rolling Basis	Notes
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

**MONITORING REPORT FORM
DIESEL ENGINE GENERATOR
COVERED SOURCE PERMIT NO. 0252-01-C
(Page 2 of 2)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

2. Report the maximum fuel sulfur content (% by weight) of fuel oil no. 2, cetane index (or aromatic content) for the reporting period:

Equipment Description	Types of Fuel Fired	Maximum Sulfur Content (% by Weight)	Cetane Index (or Aromatic Content in Volume %)
950 HP Diesel Engine Generator			

If not already on file at the Department of Health, provide the supplier's fuel specification sheet for the type of fuel indicated in the above table. The fuel specification sheet shall indicate the percent sulfur content by weight.

**MONITORING REPORT FORM
 FACILITY PRODUCTION
 COVERED SOURCE PERMIT NO. 0252-01-C
 (Page 1 of 1)**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

In accordance with the Hawaii Administrative Rules, Title 11, Chapter 60.1, Air Pollution Control, the permittee shall report to the Department of Health the nature and amounts of emissions:

(Make Copies for Future Use)

For Period: _____ Date: _____

Company name: _____

Facility name: _____

Equipment location: _____

Equipment description: _____

Serial/ID Number: _____

Serial/ID Number: _____

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Responsible Official (Print): _____

Title: _____

Responsible Official (Signature): _____

For the reporting period:

- Report production on a monthly and 12-month rolling basis for the reporting period:

Month	Monthly Production (Tons)	Total Production (Tons) on a 12-Month Rolling Basis	Notes
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

**VISIBLE EMISSIONS FORM REQUIREMENTS
STATE OF HAWAII
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

The **Visible Emissions (VE) Form** shall be completed **monthly** (*each calendar month*) for each equipment subject to opacity limits in accordance with 40 CFR Part 60, Appendix A, Method 9. At least **annually** (*calendar year*), VE observation shall be conducted for each equipment subject to opacity limits by a certified reader in accordance with Method 9. The VE Form shall be completed as follows:

1. VE observations shall take place during the day only. The opacity shall be noted in five (5) percent increments (e.g., 25%).
2. Orient the sun within a 140 degree sector to your back. Provide a source layout sketch on the VE Form using the symbols as shown.
3. For VE observations of stacks, stand at least three (3) stack heights but not more than a quarter mile from the stack.
4. For VE observations of fugitive emissions from crushing and screening plants, stand at least 4.57 meters (15 feet) from the visible emissions source, but not more than a quarter mile from the visible emission source.
5. Two (2) consecutive six (6) minute observations shall be taken at fifteen (15) second intervals for each stack or emission point.
6. The six (6) minute average opacity reading shall be calculated for each observation.
7. If possible, the observations shall be performed as follows:
 - a. Read from where the line of sight is at right angles to the wind direction.
 - b. The line of sight shall not include more than one (1) plume at a time.
 - c. Read at the point in the plume with the greatest opacity (without condensed water vapor), ideally while the plume is no wider than the stack diameter.
 - d. Read the plume at fifteen (15) second intervals only. Do not read continuously.
 - e. The equipment shall be operating at the maximum permitted capacity.
8. If the equipment was shut-down for that period, briefly explain the reason for shut-down in the comment column.

The permittee shall retain the completed VE Forms for recordkeeping. These records shall be in a permanent form suitable for inspection, retained for a minimum of five (5) years, and made available to the Department of Health, or their representative upon request.

Any required initial and annual performance test performed in accordance with Method 9 by a certified reader shall satisfy the respective equipment's VE monitoring requirements for the month the performance test is performed.

**VISIBLE EMISSIONS FORM
COVERED SOURCE PERMIT NO. 0252-01-C**

Issuance Date: April 20, 2011

Expiration Date: April 19, 2016

(Make Copies for Future Use for Each Stack or Emission Point)

Company Name: _____

For stacks, describe equipment and fuel: _____

For fugitive emissions from crushers and screens, describe:

Fugitive emission point: _____

Plant Production (tons/hr): _____

(During observation)



Draw North Arrow



Observers Position

140

Sun Location Line

Site Conditions:

Emission point or stack height above ground (ft): _____

Emission point or stack distance from observer (ft): _____

Emission color (black or white): _____

Sky conditions (% cloud cover): _____

Wind speed (mph): _____

Temperature (°F): _____

Observer Name: _____

Certified? (Yes/No): _____

Observation Date and Start Time: _____

Method of observation (Method 9): _____

MINUTES	Seconds				COMMENTS
	0	15	30	45	
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Observation Date and Start Time: _____

Method of observation (Method 9): _____

MINUTES	Seconds				COMMENTS
	0	15	30	45	
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

DAVID Y. IGE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to
File:

15-303E CAB
File No. 0252

May 19, 2015

Mr. John DeLong
President
Hawaiian Cement
99-1300 Halawa Valley Street
Aiea, Hawaii 96701

Dear Mr. DeLong:

**SUBJECT: Renewal Application No. 0252-10
Covered Source Permit No. 0252-01-C
653 TPH Aggregate Processing Facility
Located At: Camp 6, Puunene, Maui**

The Department of Health, Clean Air Branch (CAB), acknowledges receipt of your renewal application for the subject permit on April 21, 2015. Your renewal application has been assigned **No. 0252-10**. Please reference this number in future correspondence. A receipt for the application filing fee of \$500.00 is enclosed.

The CAB completed a preliminary review of your permit application and has determined the application to be complete. Please note that pursuant to Hawaii Administrative Rules, Chapter 11-60.1, during the processing of an application that has been deemed complete, if it is determined that additional information is necessary to evaluate or take final action on the application, the CAB may request for additional information.

If there are any questions regarding this matter, please contact Mr. Jensen I. Kennedy of my staff at (808) 586-4200.

Sincerely,

NOLAN S. HIRAI, P.E.
Manager, Clean Air Branch

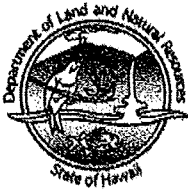
JIK:dh
Enclosure

c: CAB Monitoring Section

EXHIBIT F.

**State Historic Preservation
Division Approval Letter,
Dated August 8, 2012**

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 355
KAPOLEI, HAWAII 96707

WILLIAM J. AILA
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PAUL CONRY
INTERIM FIRST DEPUTY

WILLIAM M. TAM
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

August 8, 2012

Mr. Jeffrey Pantaleo, Principal Investigator
C/O Ms. Lisa Rutunno-Hazuka
Archaeological Services Hawai'i
Via Email: lisa@ashMaui.com

LOG NO: 2011.0298
LOG NO: 2011.0340
DOC NO: 1208JP01

Aloha Ms. Rotunno-Hazuka:

**SUBJECT: Chapter 6E-42 Historic Preservation Review-
Archaeological Assessment Report for the Hawaiian Cement Quarry Expansion Project
Pulehunui Ahupua'a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)**

Thank you for the opportunity to review the report titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pars., Pulehunui Ahupua'a, Kula Moku, Wailuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011). The report was originally received on January 26, 2011. We apologize for the delayed response.

The archaeological survey with negative findings was conducted for the 24.476-acre proposed rock quarry expansion site. A surface investigation occurred along with twenty excavated mechanical backhoe test trenches. Over the years, the project area has been disturbed continuously by intensive agricultural propagation and rock mining. Approximately 9.5 acres are active sugarcane fields. No further archaeological work is recommended for the project area, we concur with this recommendation.

The report contains information as required for assessment reports, pursuant to Hawaii Administrative Rule (HAR) 13-284 and 13-276-5; it is accepted as final. We request that a few corrections to be included in the final report (see attachment). Please send one hardcopy of the corrected final document, clearly marked **FINAL**, along with a copy of this review letter and a text-searchable PDF version on CD to the Kapolei SHPD office, attention SHPD Library. Please send a corrected final report to the Maui SHPD office as well. For questions about this letter, please contact Jenny at (808) 243-5169 or Jenny.L.Pickett@Hawaii.gov.

Mahalo,

A handwritten signature in black ink, appearing to read "Theresa K. Donham".

Theresa K. Donham
Archaeology Branch Chief

cc: County of Maui, Planning fax: (808) 270-7634
County of Maui DSA fax: (808) 270-7972

ATTACHMENT

Requested corrections for: *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK [2] 3-8-04:001 pors., Pulehunui Ahupua'a, Kula Moku, Waialuku District, Island of Maui* by Rotunno-Hazuka, Fuentes, O'Claray and Pantaleo (January 2011).

Previous Archaeological Studies

- 1) Please add the recent Cultural Surveys Hawaii archaeological surveys (2007 etc) to the map (Figure 9) and to the previous archaeology background text.

Lab Work

- 2) Please edit this section to indicate nothing was identified, collected, or being curated.

Trench Descriptions

- 3) Please correct the associated trench Figures to correspond with the accurate text references.

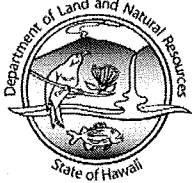
Additional Comment

- 4) Please adjust the contents regarding archaeological recommendations for adjacent areas accordingly. In the final copy of the report, please adjust the associated contents accordingly. As we recently discussed in meeting regarding the project report, individual projects are usually treated separately so each project needs to be evaluated on a case-by-case basis. We hope to continue evaluating and providing recommendations regarding future proposed projects for the surrounding areas.

EXHIBIT G.

**Letter from State Historic
Preservation Division
Dated May 12, 2015**

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

KEKOA KALUHIWA
FIRST DEPUTY

W. ROY HARDY
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

May 12, 2015

Jeffrey Pantaleo, M.A.
c/o Lisa Rotunno-Hazuka
Archaeological Services Hawaii, LLC
PO Box 1015
Puunene, Hawaii 96784
Via email to: lisa@ashmaui.com

LOG NO: 2014.04654
DOC NO: 1505MD19
Archaeology

Aloha Mr. Pantaleo:

**SUBJECT: Chapter 6E-42 Historic Preservation Review–
Draft Archaeological Assessment for the Hawaiian Cement Quarry
Pūlehu Nui Ahupua‘a, Wailuku District, Island of Maui
TMK (2) 3-8-004:001 (por.)**

Thank you for the opportunity to review the submittal titled *Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at TMK: [2] 3-8-0047:001 pars., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui* by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014). We received the submitted report on October 13, 2014 and apologize for the delay in our reply.

An archaeological survey was conducted prior to planned expansion of the existing Hawaiian Cement Quarry at the request of Mr. Gomes for the owner. This report documents an archaeological inventory survey of 41.968 acres, a portion of the 2,008 acres contained in parcel 001. Fieldwork occurred on the 14th and 28th of June and the 3rd and 12th of July in 2014. 33.168 acre were cultivated in sugarcane at that time, while 8.8 acres were cleared following harvest. Pedestrian survey was performed by one archaeologist and was followed by 19 mechanical excavations, including 17 backhoe trenches and two bulldozer cuts. No historic properties were identified in any of the excavations or above ground.

We are requesting revisions to the report as detailed in the attachment to this letter. Please contact me at (808) 243-4641 or Morgan.E.Davis@hawaii.gov if you have any questions or concerns about this letter.

Mahalo,

A handwritten signature in black ink that reads "Morgan E. Davis".

Morgan E. Davis
Lead Archaeologist, Maui Section

Attachment

*Draft Archaeological Assessment Report for Hawaiian Cement Quarry Expansion Located at
TMK: [2] 3-8-0047:001 pors., Pūlehu Nui Ahupua'a, Wailuku District, Island of Maui
by Fuentes, Rotunno-Hazuka, O'Claray-Nu and Pantaleo (October 2014)*

1. Executive Summary, page 2, first paragraph: please replace “As detailed in” for “The” before ‘background research.’
 - a. Fifth paragraph: please delete everything after the second paragraph, beginning with the sentence beginning “Similarly” – these statements regarding areas outside of the survey area are out of scope for this report.
2. Introduction, page 9, first paragraph: please include a citation for the prior AA work in the nearby 42 acres mentioned here.
3. Figure 2, page 11: please provide a more detailed/closeup view (or a second map showing a portion, not all, of parcel 001) of the APE including the boundaries of Camps 3 and 13.
4. Existing Conditions, page 12, Environmental Setting first paragraph, first sentence: please replace “piece of land district” with “section of land.”
 - a. Second to last sentence, same page: please replace “Kula District” with either “Makawao District” or “Kula Moku.”
 - b. Last sentence: please clarify which “this” *ahupua'a* is referring to, as two were mentioned above.
5. Previous Archaeology, page 17, second entry: please note that Sinoto and Pantaleo 1991 does not appear on figure 8; please include.
 - a. Page 18, ASH 2010 AA, end of page: please provide a citation for the information about adding marine shells as a soil conditioner to provide phosphorous.
 - b. Page 19, final sentence: please replace lead-in “Unfortunately” with “However.”
6. Field Work, page 21, second paragraph: please indicate the transect spacing used in pedestrian survey.
 - a. Third paragraph, second sentence: please revise – testing was not “systematic random” because it was worked around actively-farmed acreage, approximately 70% of the parcel was farmed in sugarcane at the time.
7. Results of Survey, page 22, third sentence: please revise as necessary, the sentence appears to have been cut off/incomplete after the number 17.
 - a. Somewhere in here, the inconsistency of excavation results needs to be addressed. Some trenches contained only a single layer, while others were up to five deep; yet all this was within a generally consistent depth. Please revise as necessary.
8. Table 1, pages 24-25: please continue the header on both pages.
 - a. Please provide a key for the null (?) value appearing first in the entry of Layer V, Trench #1.
9. Discussion and Recommendations, page 54, paragraph 2: please revise to include an explanation for variety observed in the findings and questioned in item 7a above.

- a. Fourth paragraph, sentence beginning “Similarly” and below – delete text between this word and the final sentence, these statements regarding areas outside of the survey area are out of scope for this report.
10. Appendix A, beginning on page 60: please review and revise. There are too many trench profiles labelled “TR 3” to be accurate; and only TRs 1-6 appear to be present. Also, specifically anomalous trenches like TR 9 are missing.

EXHIBIT H.

Archaeological Assessment Report Revised July 2015

**ARCHAEOLOGICAL ASSESMENT REPORT FOR HAWAIIAN
CEMENT QUARRY EXPANSION**

LOCATED AT TMK: [2] 3-8-004:001 pors.,

PŪLEHU NUI *AHUPUA*'A, KŪLA *MOKU*;

WAILUKU DISTRICT

ISLAND OF MAUI

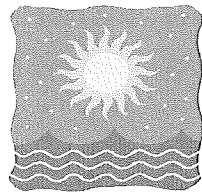
FOR: Mr. Dave Gomes Hawaiian Cement

BY: Mr. Nico Fuentes (B.A.), Ms. Lisa J. Rotunno-Hazuka, (B.A.),

Ms. Jenny O'Claray-Nu (B.A.) and Jeffrey Pantaleo (M.A.)

REVISED JULY 2015

OCTOBER 2014



ARCHAEOLOGICAL SERVICES HAWAII, LLC.

POB 1015; PU'UNĒNĒ, HI 96784

"Protecting, Preserving, Interpreting the Past While Planning the Future"

EXECUTIVE SUMMARY

Under contract to Mr. David Gomes of Hawaiian Cement, and pursuant to recommendations by the State Historic Preservation Division-SHPD (Doc. No. 0603JP55), Archaeological Services Hawaii, LLC (ASH) conducted an archaeological assessment of the proposed rock quarry expansion site comprised of 41.968 acres. The subject parcel is located within a larger 2008-acre parcel, Parcel 1, situated along the isthmus of Maui, Pūlehu Nui *ahupua'a*, Wailuku District, Kula *Moku*, TMK [2] 3-8-004:001 pors.

Pūlehu Nui was actively settled during both the pre-Contact and historic periods and most of the population appeared to be centered within the *mauka* and *makai* areas. However during the historic period, these marginal or intermediate zones were utilized for commercial sugar and or ranching and contained Plantation Camps dispersed across the landscape.

The subject parcel is presently under various stages of cultivation, 8.8 acres in the southwest corner was recently harvested of sugarcane and the remaining 33.168 acres is actively cultivated. The inventory level procedures consisted of background research, a pedestrian survey and subsurface testing. The 8.8 acres The fieldwork procedures were performed on the 14th & 28th of June 2014 and the 3rd & 12th of July 2014 by Mr. Reynaldo N. Fuentes (B.A.). Overall coordination was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.), was the Principal Investigator.

A total of 17 backhoe trenches and 2 dozer cuts were executed within the approximate 42 acre parcel and all were negative for cultural remains. Documentation of the soil profiles indicated agricultural disturbances and alluvial deposits in the upper layers. Five test trenches (TR's 1-5) and two bulldozer cuts (BD 1-2) were placed in this 8.8 acre section and all trenching was devoid of cultural remains. The remaining 33.168 acres was cultivated in sugarcane and TR's 6-17 were executed in the cane haul roads of this section. The seventeen trenches averaged 4.0 m long by 1.00 m wide with a depth varying between 1.0 m-3.0 m. The two bulldozer cuts ranged from 12.0 to 15.0 m long by 5.0 m wide with an overall depth of 1.6 m.

The negative results of the current investigation were anticipated as the pedestrian survey and archival research indicated that no surface architectural or cultural remains were extant and no former Plantation Camps were located within the boundaries of the subject parcel. Pursuant to Chapter §13-284-7 (1) "no historic properties affected" and due to the negative findings, the project will have no effect on historic properties and no further work including monitoring appears warranted for the subject parcel.

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INTRODUCTION

Under contract to Mr. David Gomes of Hawaiian Cement located at Mokulele Hwy, Pu`unēnē, HI 96753 and pursuant to recommendations by the State Historic Preservation Division-SHPD (Log. No. and Doc. No. 0603JP55), Archaeological Services Hawaii, LLC. (ASH) conducted an archaeological assessment (AA) of the proposed 41.968 acre rock quarry expansion site situated in Pūlehu Nui *ahupua`a*, Wailuku District, Kula *Moku*, TMK [2] 3-8-004:001 por (Figures 1-4). This revised AA report was prepared according to recommendations by SHPD (Log. No. 2014.04654 and Doc. No. 1505MD19) and the rules and regulations set forth in the Hawaii Administrative Rules (HAR) §13-284-5 (5) (A) and 276-5 (a) (c).

The proposed activity encompasses a long-term project comprised of rock mining within fallow and cultivated sugarcane fields. Due to a lack of surface structural remains during the pedestrian survey, inventory level testing through mechanical excavations was deemed appropriate. A total of 19 trench and bulldozer excavations (TR1-19) were conducted to determine presence/absence, extent and significance (if applicable) of subsurface historic properties including burial features. All mechanical test excavations were negative for buried cultural remains.

PROJECT AREA

The project area, comprised of 41.968 acres, is situated within a larger 2008.69 acre parcel on the isthmus of Maui approximately 5.6 km (3.5 mi) to 6.0 km (4.0 mi) inland from the Mā`alaea coastline and 0.75 km (.5 miles) east (*mauka*) of the intersection Mokulele Highway and Meha Meha Loop (road to Hawaiian Cement and the Animal Shelter). The subject parcel area is bounded to the west by a prior archaeological assessment (Rotunno-Hazuka et. al. 2011) and a paved access road designated Upper Kihei Road, to the south by Kolaloa Gulch, to the north by an irrigation ditch and active sugar cane fields, and east by active sugar cane. As exhibited on Figures 2 and 3, two former historic plantation camps, Kihei Camp 3 and Camp 13. Kihei Camp 3 appeared to be located approximately 2500 ft. (762 m) SE and across Kolaloa Gulch. Camp 13 was approximately 7500 ft. (2286 m) north from the current project area.

The entire parcel (2008-acres) including the 41.968-acre project area has been altered through compounded disturbances from sugar cane cultivation and prior rock mining. The subject parcel is comprised of two sections. One section contains 8.8 acres and is located within the southwestern portion of the project area and the remaining section consists of over 33.0 acres (Figure 4).

This intermittent zone has been actively utilized for sugar cane (*Saccharum officinarum*) and in the more recent past, for rock mining activities. Portions of the central isthmus area contain relatively shallow soil layers overlying decomposing basalt and or bedrock. Due to this depositional environment, this area, like the Central Maui landfill locality is utilized for rock mining and or rock quarries. The project area was subjected to a walk-through reconnaissance survey over two decades ago in 1990 by Archaeological Consultants of Hawaii (ACH). During this investigation, no historic properties were identified and ACH opined that no further archaeological work was necessary (Kennedy 1990: 2).

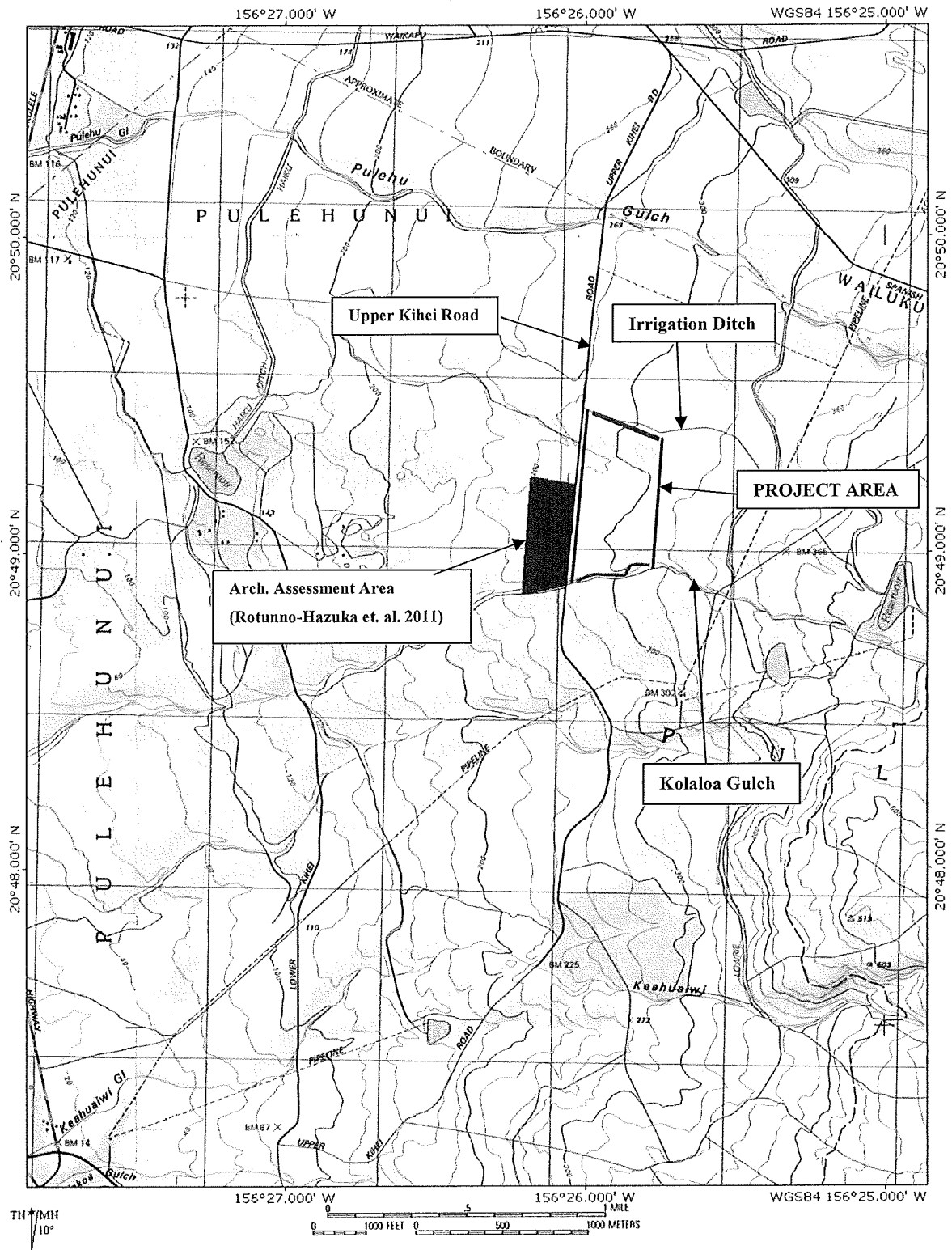


Figure 1. Location of Current Project Area (purple) and Previous Archaeological Assessment (red)

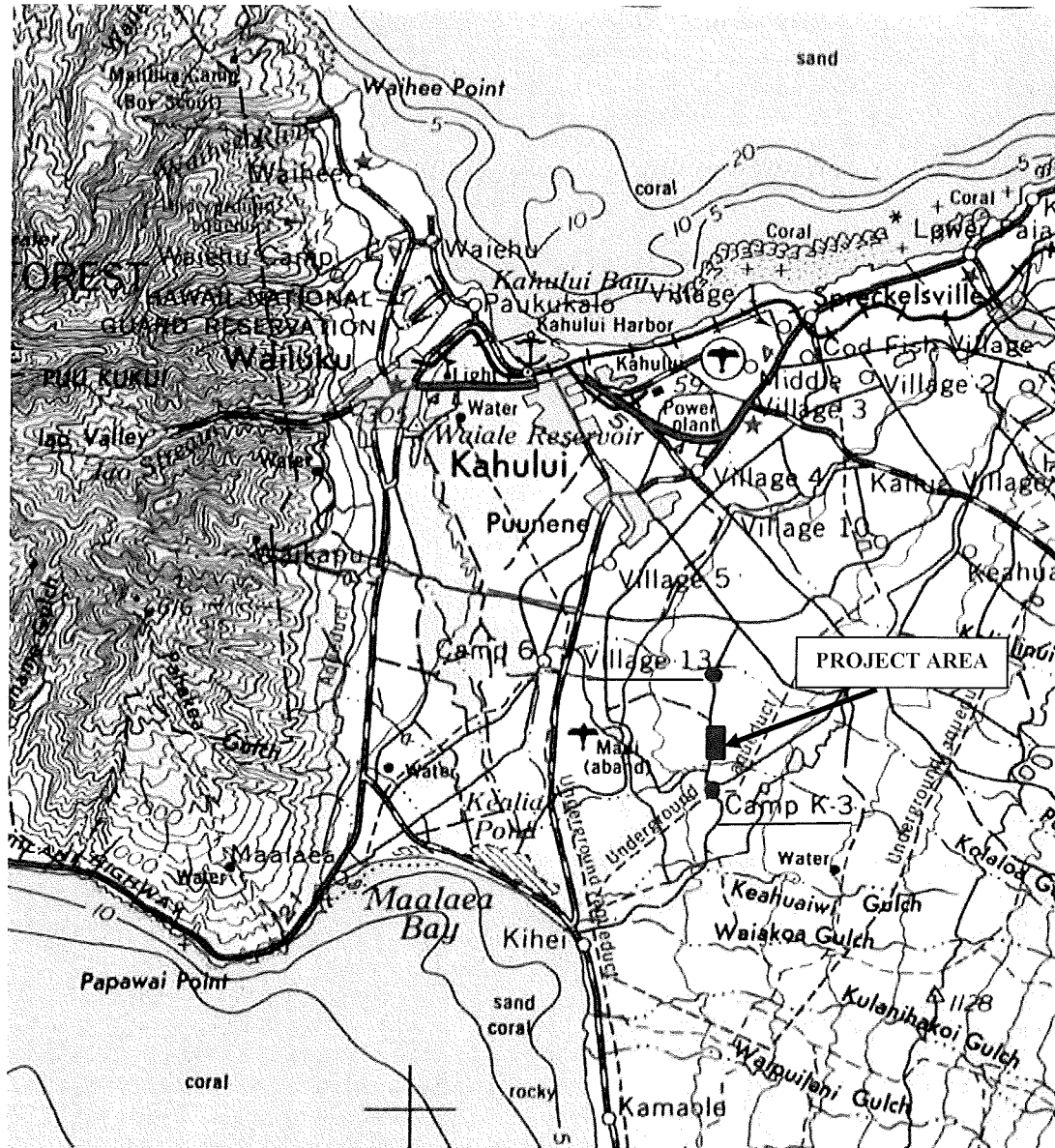


Figure 2. USGS Quadrangle Showing Location of Project Area (purple and red) and Various Plantation Camps Including Kihei Camp 3 and Camp 13

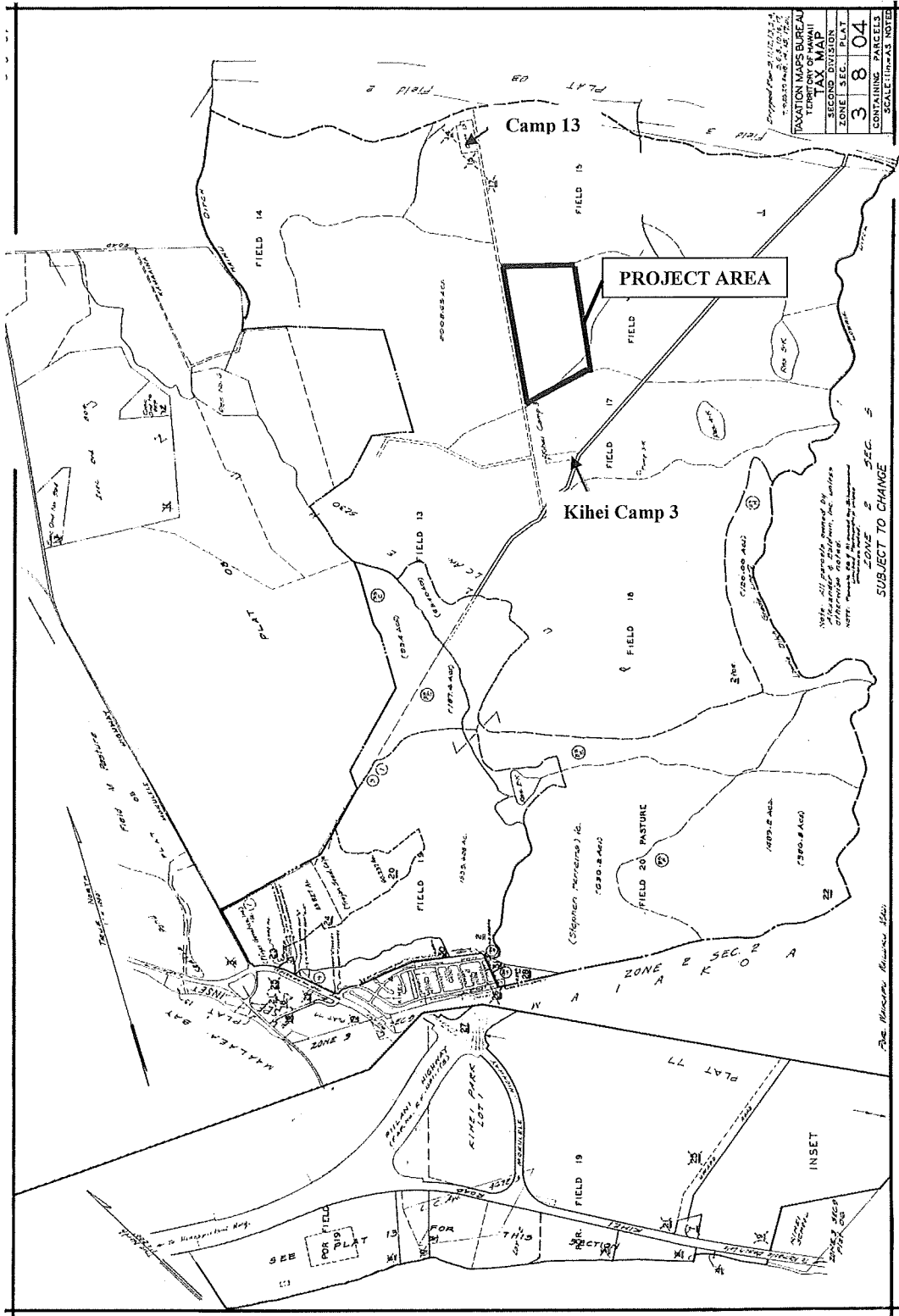


Figure 3. Location of Project Area (purple), Plantation Camps 13 and 3 and LCA 5230 on Tax Map Key [2] 3-8-04:001

EXISTING PROJECT CONDITIONS

The subject parcel is presently under various stages of cultivation. The first test area comprised an 8.8 acre section located in the southwest corner of the project area. This portion was previously harvested and a drainage basin was constructed. The area adjacent to the drainage contains large linear stockpiles for safety purposes, to prevent vehicular and pedestrian traffic from entering the drainage area. The remaining acreage of the project area was cultivated in sugar cane.



Figure 4. Overview from the south of 8.8 acre portion of Project Area

ENVIRONMENTAL SETTING

The subject parcel is within the *ahupua`a* of Pūlehu Nui, a narrow triangular shaped section of land that stretches 15 miles at its base on the sand plains of central Maui, abutting and east of Waikapū *ahupua`a*, to a point at the peak of Kilohana on the rim of Haleakala (Tuggle 2001:12). Pūlehu Nui was part of the traditional *moku* Kula but is now part of the modern district Wailuku (Figure 5). As exhibited on Figure 5, Pūlehu Nui is bounded by Waikapū *ahupua`a* to the west, Wailuku *ahupua`a* to the north and is encompassed by Kula Moku on all sides except the west. Only a small portion of Pūlehu Nui appears to have been adjacent to the coast.

Soils of the project area according to the USDA and Soil Survey Maps shows six soil zones within the project area; Alae cobbly sandy loam (AcA) 0 to 3% slope, Pulehu silt loam (PpB) 3 to 7%, Pulehu cobbly silt loam (PrB) 3 to 7%, Pulehu clay loam (PsA) 0 to 3% slope, and Waiakoa very stony silty clay loam (WgB) 3 to 7% slope, and Waiakoa extremely stony silty clay loam (WhB) 3 to 7% slope (Figure 6). The total area is occupied by 4.8% AcA, 10.8% PpB, 52.9% PrB, 6.5% PsA, 24.3% WgB, and 0.7% WhB. The Pulehu series consist of well-drained soils on alluvial fans and stream terraces around Maui. They developed in alluvium washed from basic igneous rock. The soils are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The Waiakoa series consist of well-drained soils on uplands of Maui. These soils developed in material weathered from basic igneous rock. The upper part of profile is influenced by volcanic ash. These soils are gently sloping to moderately steep. Elevations range from 100 to 1,000 feet.

Both of the aforementioned soils can be utilized in multiple ways; truck crops, pasture lands, home sites and wildlife habitats, however in this instance the primary use was sugarcane cultivation and a rock quarry plant (Figure 7).

Test trenches were placed across the project area to obtain a representative sample of the subsurface conditions and indicate that soils generally consist of dark reddish brown to light brownish gray with moderate variability due to burning episodes associated with sugarcane (Figure 8). Soils contain high frequencies of cobbles, and the surface lacks humic layer components. Trenches near the southern boundary exhibit lenses of black cinders and is consistent with what mining operations have encountered while drilling and blasting (pers. Comm. with Mr. Gomes).

The climate for these two zones is typically dry, in particular the low elevation areas of which the current project are falls. Annual rainfall is less than 35 inches and occurs primarily in winter months; additionally mean annual air temperature falls between 73 and 75 degrees. Surface streams are absent however the large Kolaloa Gulch bounding the project area to the south may run under time of heavy rain.

Vegetation within the project area consists of the cultivated sugarcane (*Saccharum officinarum*) and various other unidentified weeds and grasses. It was observed that concentrations of these unidentified weeds and grass were present within Kolaloa Gulch (see Figure 7).

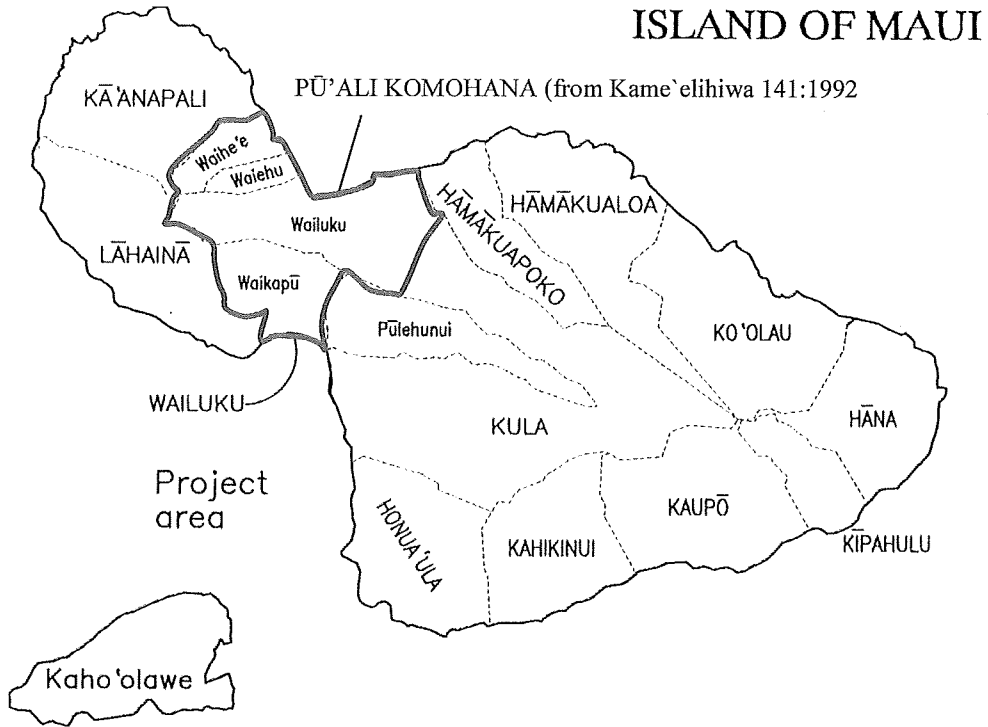


Figure 5. Map of Maui Showing Traditional Districts and Waikapū, Wailuku, Waiehu, Waihe'e and Pūlehu Nui Ahupua`a (from Tomonari-Tuggle-2001)



Figure 6. Location of Project Area on Web Soil Survey Map (outlined in blue)



Figure 7. Aerial Photograph of Project Area (purple outline)

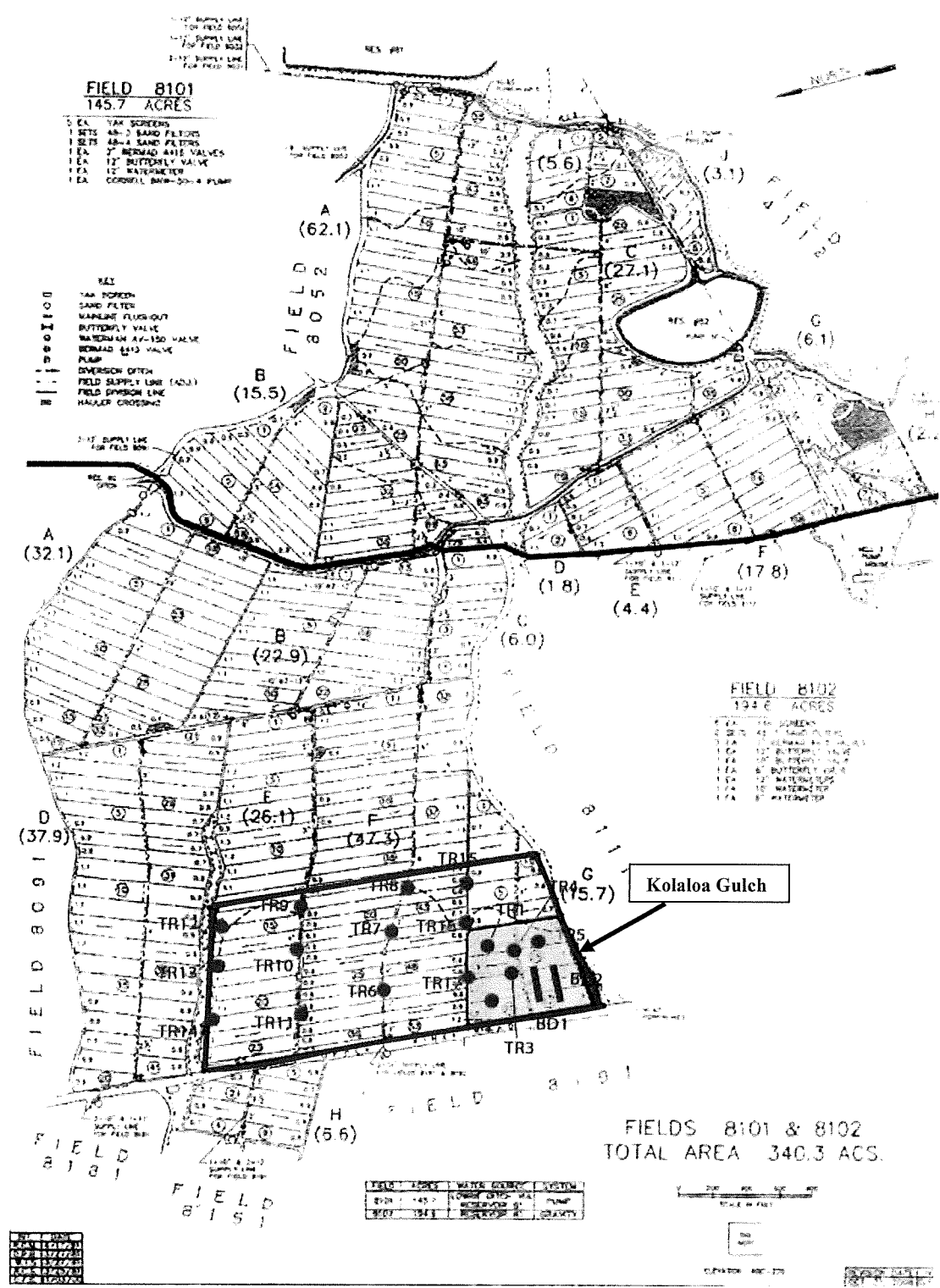


Figure 8. Sugar Cane Field Map Showing Project Area and Test Excavations (TR's 1-17 and BD's 1-2) (note yellow highlighted area is the 8.8 acre section of the project area)

BACKGROUND

As this report is an archaeological assessment, a brief background of the subject parcel and its surroundings is presented here. For a detailed background study of the Pulehu Nui and Waikapu *ahupua`a*, the reader is referred to Tomonari-Tuggle et al. (2001) and Hill et al. (2007).

Based on the background research, it appears that Pūlehu Nui was actively settled during both the pre-Contact and historic period era's and that most of the population appeared to be centered within the *mauka* and *makai* areas. After the Plantation Camps were razed, cultivation of sugarcane continued and ranching also became a dominant activity within this intermittent zone.

LAND TENURE

The project area is situated within LCA 5230 which is comprised of approximately 1668 acres and was awarded to Keawemahi by the King in 1843 (see red arrows Figure 3). This grant was subsequently assigned Royal Patent 8140 but unfortunately no land use was ascribed to Keawemahi's land grant (Waihona `Aina 2000). As exhibited on Figure 3, no other LCA or Grants are within the immediate vicinity; however thirteen land commission awards were applied for within the *ahupua`a* of Pulehu Nui, most of which were more inland and comprised of *kula* lands (Hill et. al. 2007:26). These *kula* lands were utilized for the cultivation of sweet potato and Irish potato. Hill also stated that one LCA was situated along the coast and referred to fishing rights.

PREVIOUS ARCHAEOLOGY

Few studies have been conducted within this central isthmus, intermittent area. The most notable investigations closest to the project area are presented below in Figures 9 and 10. A more comprehensive background section is presented in the Tomonari-Tuggle et. al. (2001) and Hill et al. (2007).

The project area was subjected to a walk-through reconnaissance survey over two decades ago in 1990 by Archaeological Consultants of Hawaii (ACH). During this investigation, no historic properties were identified and ACH opined that no further archaeological work was necessary (Kennedy 1990: 2).

In 1991, Sinoto and Pantaleo conducted an archaeological inventory survey for the Proposed Kihei Gateway Complex in North Kihei and identified the footings of a bridge, Site 50-50-09-31, that was probably related to a cane railroad and Kihei Camp 1 (Sinoto and Pantaleo 1991) (see Figure 10).

In August of 1995 an inventory survey was conducted by Scientific Consultant Services for the Puunene Bypass/ Mokulele Highway. The pedestrian survey covered a portion of the Pūlehu nui and Wailuku *ahupua'a*. The area covered was approximately 10 miles and consisted primarily of active sugar cane fields. Survey expectations suggested that minimal to no archaeological evidence would be identified. Reasons for the lack of archaeological evidence were provided in the original report and are cited below: “Several factors may account for the lack of archaeological remains: extensive disturbance associated with prior sugarcane cultivation, highway and private construction activities...and/or little or no prehistoric occupation or use of the area.” (Burgett and Spear 1997: 7).

In 1999 an AIS was conducted of The Naval Air Station Pu`unene (NASP) which was comprised of 1875 acres. The survey identified five sites composed of 180 features. The five sites are State Inventory of Historic Places 50-50-09-4164, Sugarcane plantation features Site 4800, Post-war ranching features, Site 4801, Old Kihei railroad bed Site 4802, and the Haiku Ditch and reservoir 4803 (Tuggle 2001:70). The NASP dates to just prior to WWII and was composed of multiple facilities, of which the “Hot Mix Plant” appears to be within the current project area (field 13). When the 1999 survey was conducted the proposed quarry location (current project area) was known and is shown in the eastern most portion of the NASP (Tuggle 2001:71). Features in the sugarcane plantation of Site 4800 consist of canals, roadbeds, and miscellaneous glass and porcelain fragments from Camp 6. Features interpreted as Post-war ranching elements from Site 4801 consist of corrals, watering troughs and fence post. The Old Kihei railroad bed, Site 4802 was identified as a concentration railway spikes and berm consistent with railroad berm forms.

The field inspection of 81.50 acres by Cultural Surveys Hawaii, Inc. (Hill et. al. in 2007) produced negative findings.

In 2010, ASH performed an Archaeological Assessment (AA) of 24.476 acres. During the procedures, a total of 20 backhoe trenches were executed across the project area that were negative for intact cultural remains. The excavations revealed that the project area had been disturbed by continuous agricultural activities and recent grading for rock mining. During the initial pedestrian surface survey, isolated marine shells, recent glass shards and concrete fragments along with agricultural materials consisting of plastic sheeting, irrigation tubing, PVC pipes and etc. were observed and scattered within the S-1 and S-2 areas (Rotunno-Hazuka et. al 2011). Documentation of the soil profiles exhibited that all trenches contained upper layers of the agricultural till zone within Layers I and II and these layers contained gravel, the above agricultural materials, fragments

of glass and metal bolts for machinery. Most trenches contained about 3.0 ft. of soil overlying decomposing bedrock and or dense bedrock, Layers III and IV. The thickest soil deposits within the project area were noted along Kolaloa Gulch, and appeared to be from episodic flooding and or intentional buildup of the road for flood control purposes. The marine shells noted on the surface likely originated from imported sand (Grade B) material which is utilized as a soil conditioner providing nutrients (phosphorus) for the sugarcane (personal communication with Hawaiian Cement personnel).

The AA further recommended that,

“..As no intact deposits of cultural materials were noted during the survey, no further archaeological work including monitoring is warranted for the subject parcel. Similarly, it appears that future archaeological investigations in the adjoining areas may be unwarranted unless historic plantation camps are situated within the subject parcels, and or significant deposits are discovered in the future. In those parcels which contain plantation camps, subsurface testing should be concentrated around the camp unless scattered cultural deposits or surface structural remains are noted elsewhere during the pedestrian sweep (Rotunno-Hazuka et. al 2011:63).

However, SHPD recommended that inventory survey procedures should be conducted prior to rock mining activities.

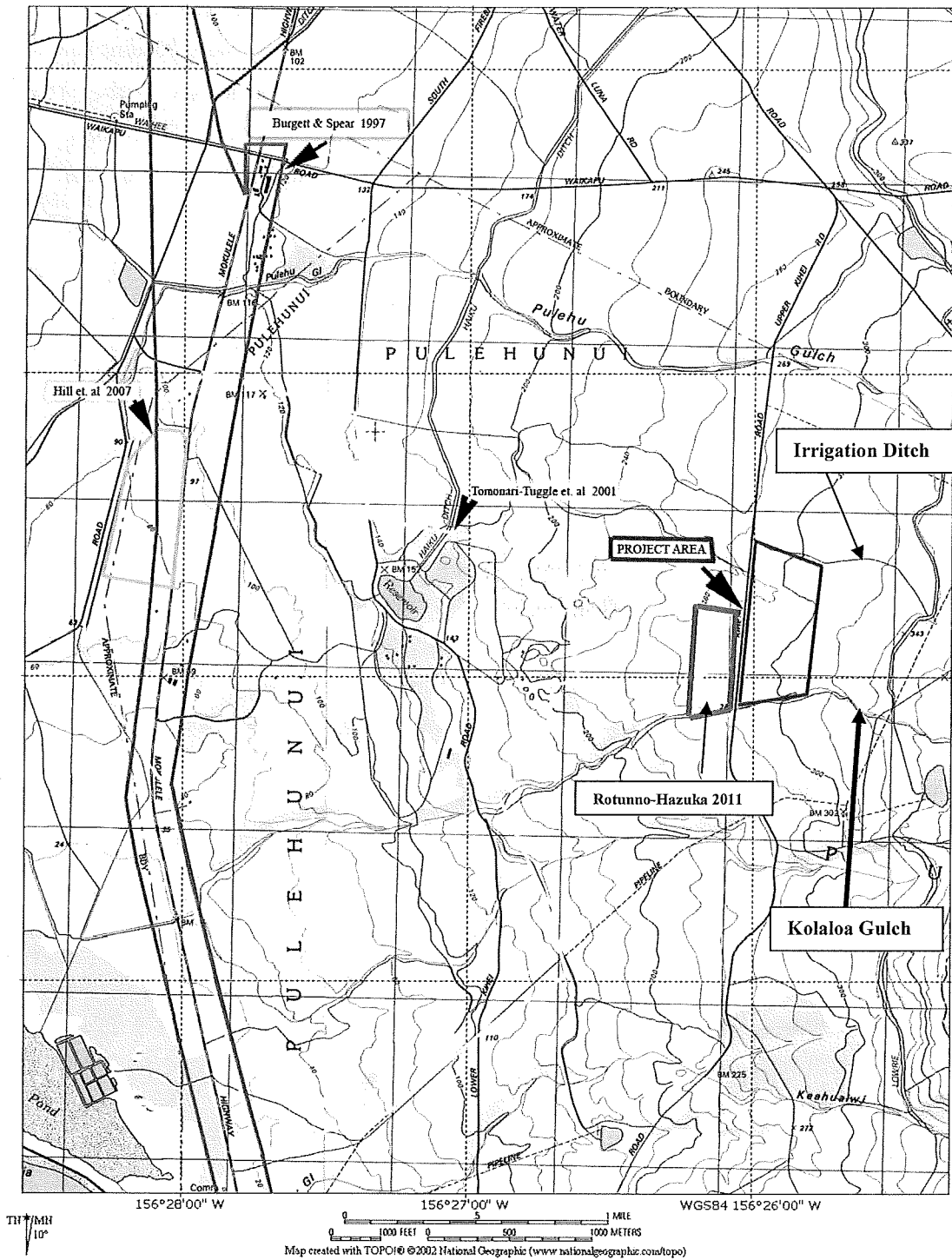


Figure 9. Plan View Map Showing Previous Archaeological Studies near the Project Area

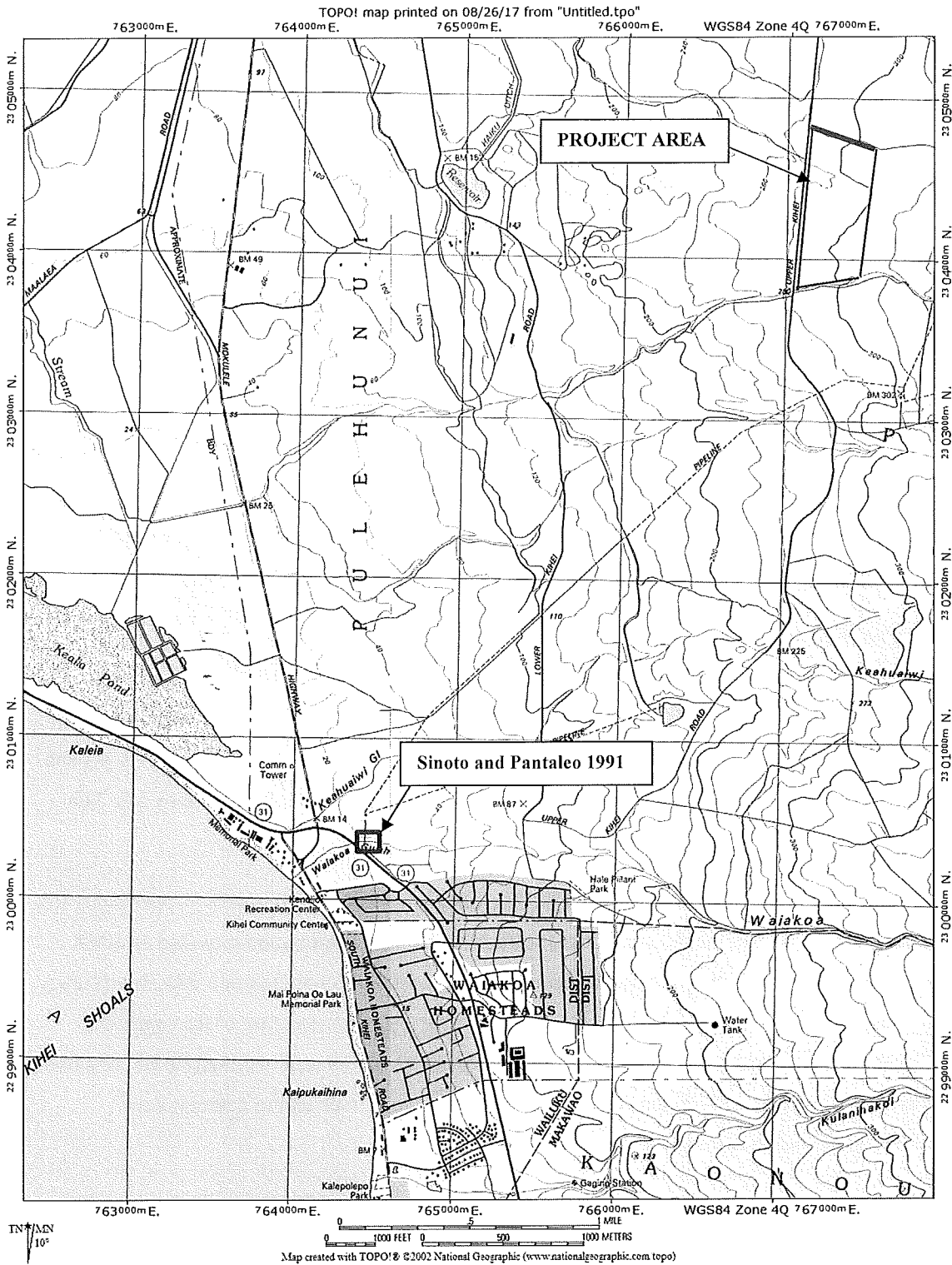


Figure 10. USGS Quadrangle Map Showing Previous Archaeological Studies near Project Area

SITE EXPECTABILITY

Based on the aforementioned information, the project area lies within the intermittent zone which was marginally occupied. It may have contained pre-Contact temporary habitation with small agricultural features, *mauka-makai* trails and possibly ceremonial structures such as *koa*.

Traditional settlement patterns would have centered around the shoreline and near the several fishponds within the area as well as along the lower and upper slopes of Haleakala. Historically, this same settlement pattern would have occurred but with the addition of Plantation Camps positioned along old access roads and railroads. Lastly, ranching era sites consisting of walled enclosures constructed from rock walls or barbed wire, cattle troughs, loading chutes and etc., may have been extant; however due to the extensive grading activities from sugar cane cultivation these historic properties may not have survived.

METHODS AND PROCEDURES

Prior to the commencement of field work, archaeological, historical and geographical archival researches were conducted at the SHPD and ASH libraries.

FIELD WORK

Fieldwork was conducted on the 14th & 28th of June 2014 and the 3rd & 12th of July 2014 by Mr. Reynaldo N. Fuentes (B.A.) and Ms. Lisa Rotunno-Hazuka for a total of 55 person hours. Overall coordination and supervision of the project was executed by Ms. Lisa Rotunno-Hazuka (B.A.) and Mr. Jeffrey Pantaleo (M.A.) was the Principal Investigator. Drafting was performed by Ms. Mia Watson.

The parameters of the project area were verified by comparing current landmarks (Upper Kihei Rd, Kolaloa Gulch, sugarcane fields) and natural features along with information provided on TMK maps and aerial photographs provided by the client. Field methods consisted of a pedestrian survey with 5.0 m transect intervals across the entire project area, with the exception of the sugarcane fields where only the cane roads were traversed. The purpose of this walk-through survey was two-fold; to ascertain if any cultural materials were present on the surface and to determine the placement of the backhoe trenches.

Due to an absence of surface structural remains, subsurface testing through backhoe test trenches was first performed. The testing method employed was systematic random sampling, where the areas to be analyzed are chosen at random with a subsequent pre-determined strategy (Hester et. al. 2009). "Use of this sample technique guarantees more uniform coverage of an area than would likely occur with simple random sampling" (Hester et. al. 2009:29). As defined by Hester et. al.,

“simple random sampling means each sample unit has an equal chance to be selected (Hester et. al. 2009:29),” and could result in all, or the majority of the sample units located within one section. With systematic random sampling, the sample units are chosen by a random procedure, such as every 50 m, utilizing a pre-determined strategy, for example, the un-cultivated zones at 8.8 acres and the cane haul roads.

Backhoe trenches were excavated utilizing a 3’ wide bucket. At all times during the excavations soil profiles were visually inspected by an archaeologist for any cultural material. A total of 17 excavator test trenches (TR) and 2 bulldozer cuts were placed within the subject parcel. Cultural materials if present would be collected with associated trench proveniences. If a significant amount of cultural materials were present during the backhoe trenching, controlled manual test units would be executed adjacent to the trench to further document the soil horizons and context of cultural remains. Trenches were plotted utilizing tape and compass to a known surveyed point.

After the trench excavations were conducted stratigraphic profiles (Appendix A) were drawn and soil color and texture were recorded utilizing the Munsell color system. Additionally, an overview photograph and profile of each trench was recorded.

LAB WORK

All soil samples collected during the undertaking will be accessioned and analyzed for color and texture utilizing the Munsell color system and the USDA textural classification system. No charcoal samples, midden and or artifacts were collected during the current course of work. All recovered samples, field notes, maps, and photographs generated in connection with the current project are the property of ASH, LLC and will be curated at Archaeological Services Hawaii, LLC, in Wailuku, Maui.

RESULTS

A total of 17 backhoe trenches (TR 1-17) and 2 bulldozer cuts (BD 1-2) were performed within the project area and averaged 4.0 m long by 1.00 m wide and ranged in depth from 0.80 m to 3.0 m (see Figures 8 and 11 and Table I). As previously discussed, the project area was divided into two sections, the 8.8 acre portion in the southwest corner and the remaining section comprised of over 33.0 acres. Trenches 1-5 and BD 1-2 were placed within the 8.8 acre section and TR's 6-17 were positioned in the 33.0 acres. The field survey observed agricultural materials scattered throughout all sections which consisted of black plastic, PVC pipe fragments, black irrigation lines.

All test trenches were negative for buried cultural remains and contained either a tripartite stratigraphic sequence or a four layer stratigraphic sequence. The four layer soil profile was comprised of two soil layers (Layers I and II), overlying a silty loam decomposing "saprolitic" basalt (Layer III) and bedrock (Layer IV). The three strata sequence consisted of Layers I-III where bedrock was absent. The project wide stratigraphic was as follows:

Layer I is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.

Trenches which exhibited the overall project stratigraphy comprised of four strata were TR's 1, 2, 4, 5 and BD1-2 and the tripartite soil profile was encountered at TR's 6, 10, 11, 15 and 17. The remaining trenches, with the exception of TR9, contained the above strata; however the overall sequence was interrupted by environmental or geological events such as alluvial deposition comprised of water worn pebbles and silt lenses, cinder (pyroclastic) lenses and coarse gravel lenses. TR9 contained a single disturbed layer overlying basalt bedrock (LIV). The stratum, identified at TR9 was Layer III of the overall stratigraphic record and therefore indicated the past disturbances of the area where Layers I and II were removed. Decomposing basalt and or bedrock was observed from 0.46 m (TR2) to 2.90 mbs (TR13) but averaged 0.80 m deep. Trenches 1-17 and BD1-2 are discussed below and stratigraphic profiles are presented in Appendix A.

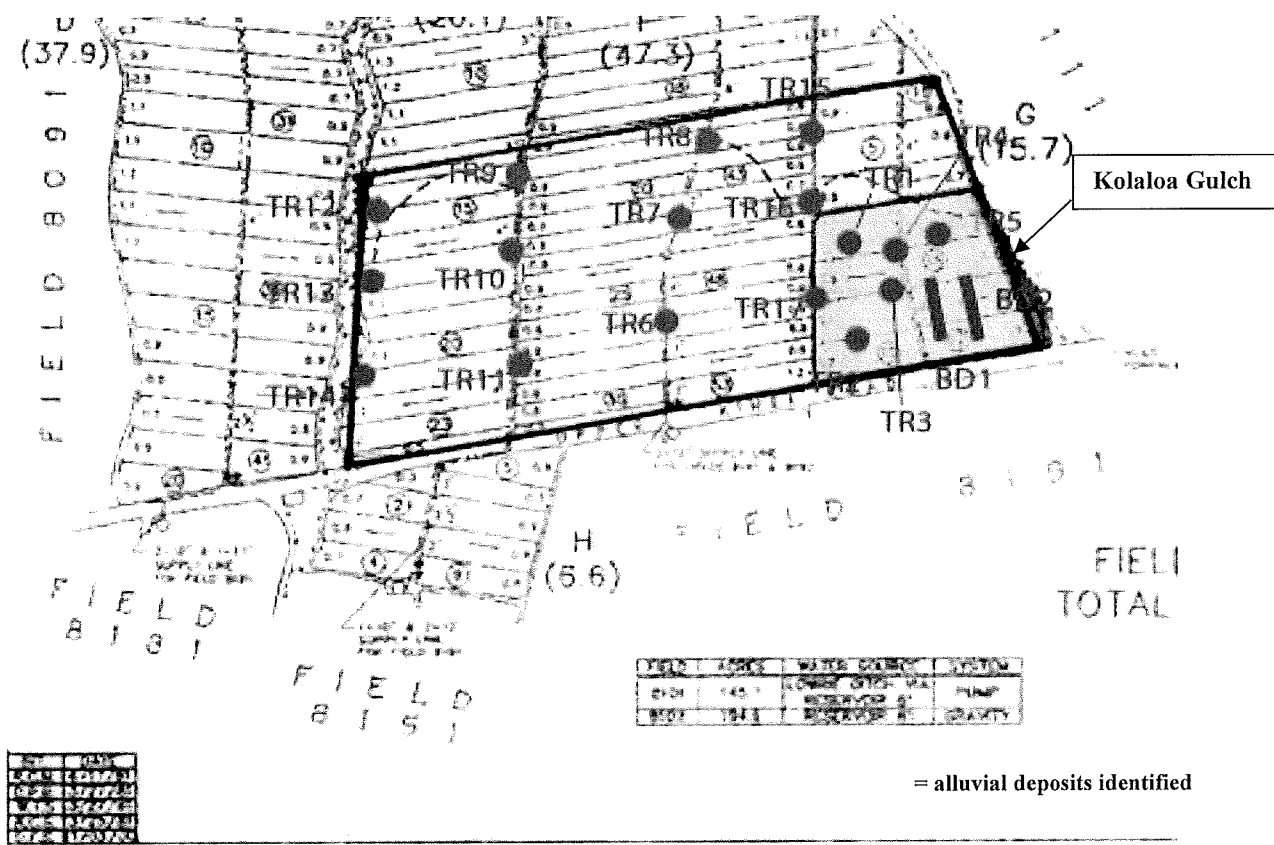


Figure 11. Enlarged Map Showing Location of TR's 1-17 and BD 1-2

Table I. Summary of Backhoe Trenches 1-17 and BD's 1 and 2

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENT TR / Profile	LAYER I	LAYER II	LAYER III	LAYER IV	LAYER V	LENS	COMMENTS
1	8	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
2	7	1.5	1.6	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
3	9	1.5	2	360° 270°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/4	10yr5/1	gravel	sterile
4	5	1.5	2	340° 70°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
5	9	1.5	2	360° 90°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	sterile
BD 1	12	5	1.4	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
BD2	15	5	1.6	270° 180°	7.5YR 3/3	5YR 3/4	10YR 5/4	10yr 5/1	n/a	NO	irrigation
6	4.1	1.5	1.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
7	3.9	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	Sterile
8	4	1.5	1.8	270° 360°	7.5YR 3/3	7.5yr 3/1	5YR 3/4	7.5yr 3/1	10yr5/4	alluvial	Sterile
9	3.9	1.5	0.8	270° 360°	10YR 5/4	n/a	n/a	n/a	n/a	NO	Sterile
10	4	1.5	2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	Sterile
11	4	1.5	2.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
12	4	1.5	2.6	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	7.5yr 2.5/1	10yr5/1	gravel/alluvial cinder	sterile
13	4	1.5	3	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/1	n/a	n/a	NO	Sterile
14	4	1.5	2.05	270° 360°	7.5YR 3/3	5YR 3/4	5YR 4/6	5YR 3/4	10YR 5/4	alluvial /gravel	Sterile
15	4	1.5	1.2	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile
16	4	1.5	1.45	270° 360°	7.5YR 3/3	5YR 3/4	7.5yr 2.5/1	n/a	n/a	NO	sterile
17	4	1.5	1	270° 360°	7.5YR 3/3	5YR 3/4	10YR 5/4	n/a	n/a	NO	sterile

TRENCH 1

TR-1 was placed within the 8.8 acre area in the NE corner of the project area (see Figure 11, Table I and Appendix A). It measured 8.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 12 and 13). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (39-70cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (68-140cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (136-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer.

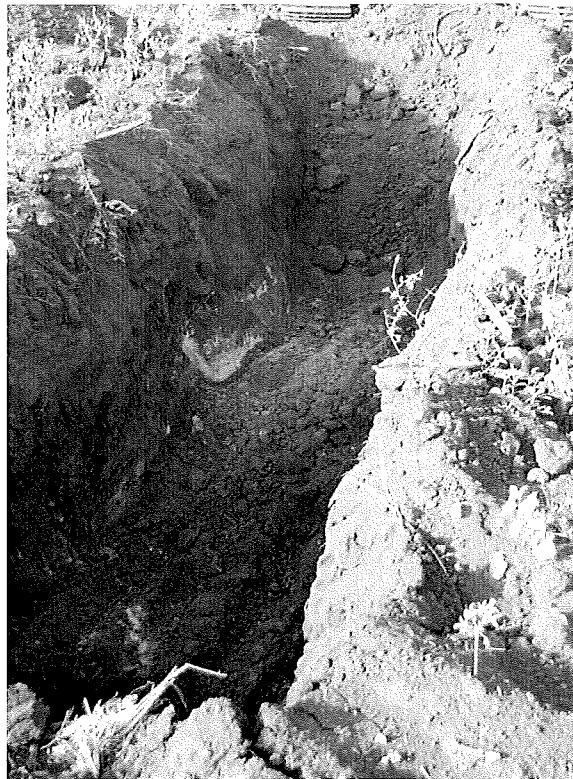


Figure 12. Overview Photograph of Trench 1 (View to North)



Figure 13. Photograph of Trench 1 West Wall

TRENCH 2

TR-2 was placed within the 8.8acre area in the NW corner of the project area (see Figure 11, Table I and Appendix A). It measured 7.0 m long by 1.5 m wide by 1.60 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 14). No cultural materials were observed.

Layer I (0-38cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (38-40cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (46-100cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (100-160cmbs+) is a gray (10yr 5/1), basalt layer, non plastic, non sticky, massive, indurated. This layer is the bedrock layer.



Figure 14. Photograph of Trench 2 East Wall

TRENCH 3

TR-3 was placed within the 8.8-acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 9.0 m long by 1.5 m wide by 2.0 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a five layer stratigraphic sequence (Figures 15 and 16). No cultural materials were observed.

Layer I (0-40cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (38-84cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (82-160cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Lens/Layer IV (159-200cmbs+) is a yellowish brown (10yr 5/4), gravelly sub-angular layer, non plastic, non sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the region.

Layer V (160-200cmbs+) is a gray (10yr 5/1), basalt layer, non plastic, non sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 15. Overview Photograph of Trench 3 (View to East)



Figure 16. Photograph of TR-3 North Wall

TRENCH 4

TR-4 was placed within the 8.8acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 5.0 m long by 1.5 m wide by 2.0 m deep and was oriented 340° degrees (Figure 17). This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 18). No cultural materials were observed.

Layer I (0-58cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (40-100cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed.

Layer III (98-142cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (138-200cmbs+) is a gray (10yr 5/1), basalt layer, non plastic, non sticky, massive, indurated. This is the bedrock layer.



Figure 17. Overview Photograph of Trench 4 (View to North)



Figure 18. Photograph of Trench 4 West Wall

TRENCH 5

TR-5 was placed within the 8.8 acre area in the SE portion of the project area (see Figure 11, Table I and Appendix A). It measured 9.0 m long by 1.5 m wide by 2.0 m deep and was oriented 360° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 19 and 20). No cultural materials were observed.

Layer I (0-42cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (38-45/102cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (98-184cmbs) is a greyish brown (10YR5/1) and yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (180-200cmbs+) is a gray (10yr 5/1), basalt bedrock, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 19. Overview Photograph of Trench 5 (View to North)



Figure 20. Photograph of Trench 5 West Wall

BULLDOZER CUT 1

BD-1 was placed within the 8.8 acre area in the SW portion of the project area (see Figure 11, Table I and Appendix A). It measured 12.0 m long by 1.5 m wide by 1.4 m deep and was oriented 270° degrees (Figure 21). This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figure 22). No cultural materials were observed.

Layer I (0-32cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (30-50cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (50-136cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (136-140cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 21. Overview Photograph of Bulldozer Cut 1 (View to West)



Figure 22. Photograph of Bulldozer Cut 1 North Wall

BULLDOZER CUT 2

BD-2 was placed within the 8.8 acre area in the SW portion of the project area (see Figure 11, Table I and Appendix A). It measured 15.0 m long by 1.5 m wide by 1.6 m deep and was oriented 270° degrees. This section had been previously grubbed during the harvesting of the sugar cane. Testing revealed a four layer stratigraphic sequence (Figures 23 and 24). No cultural materials were observed.

Layer I (0-38cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (36-100cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (98-139cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

Layer IV (136-160cmbs+) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer is the bedrock layer and is the target material for the mining operations.



Figure 23. Overview Photograph of Bulldozer Cut 2 (View to West)

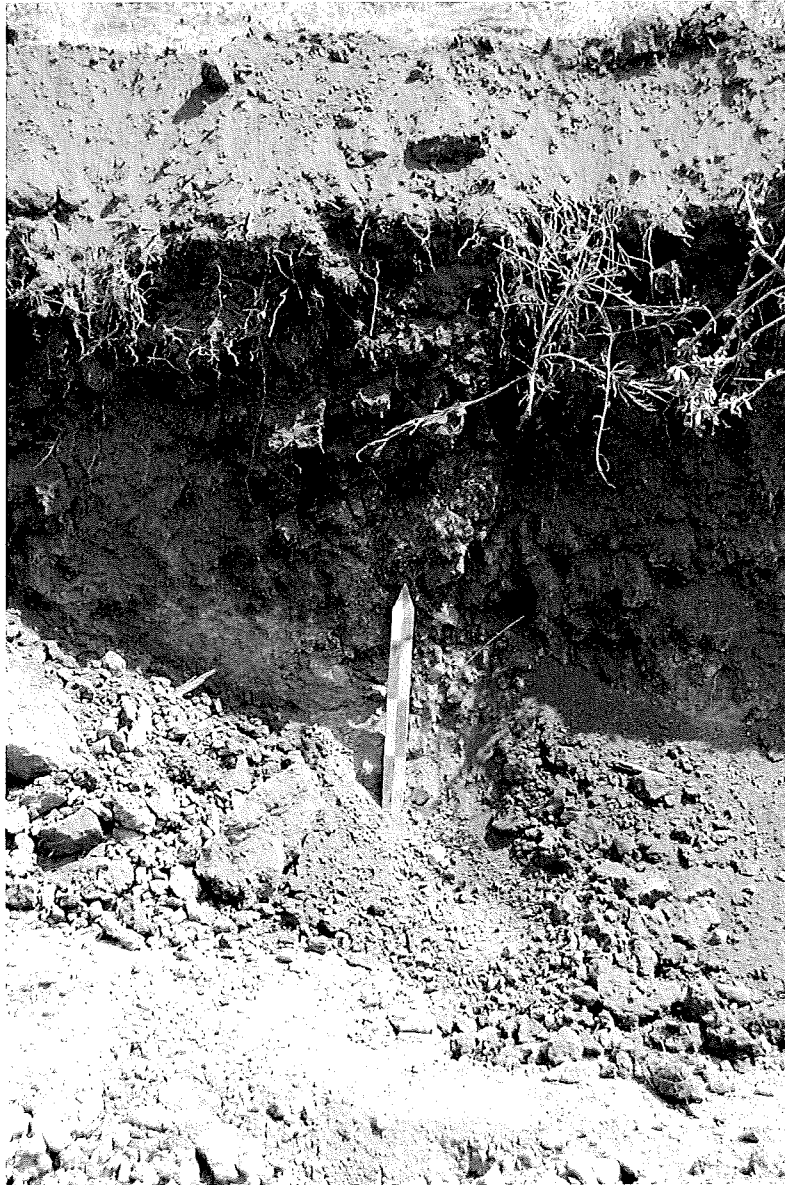


Figure 24. Photograph of Bulldozer Cut 2 North Wall

TRENCH 6

TR-6 was placed within the 33.0 acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.1 m long by 1.5 m wide by 1.6 m deep and was oriented 270° degrees (Figure 25 and Table I). This section was an active cane fields and therefore the location of this trench was along a known haul rd. Testing revealed a three layer stratigraphic sequence (Figure 26). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-90cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (86-160+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".



Figure 25. Overview Photograph of Trench 6 (View to West)

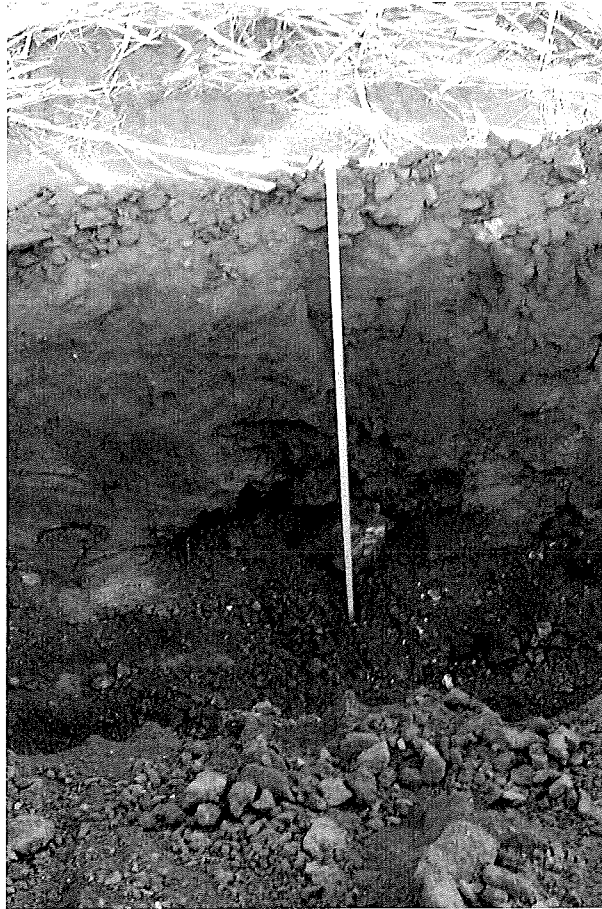


Figure 26. Photograph of Trench 6 South Wall

TRENCH 7

TR-7 was placed within the 33acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 3.9 m long by 1.5 m wide by 2.0 m deep and was oriented 270° degrees (Figure 27 and Table I). This section was an active cane fields and therefore the location of this trench was along a known haul rd. Testing revealed a three layer stratigraphic sequence (Figure 28). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (18-170cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (168-200cmbs+) is a black (7.5yr 2.5/1) cinder and greyish black silty clay, moist, non-plastic, non-sticky, medium grain, firm. This layer/lens was also observed in TR16.



Figure 27. Overview Photograph of Trench 7 (View to North)



Figure 28. Photograph of Trench 7 North Wall

TRENCH 8

TR-8 was placed within the haul road in the central portion of the 33.0 acre area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.8 m deep and oriented 270° degrees. TR-8 contained a five layer stratigraphic sequence indicative of alluvial and or flood plain deposits (Figures 29 and 30). No cultural materials were observed.

Layer I (0-24cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Lens/Layer II (21-80cmbs) is a very dark gray (7.5yr 3/1), gravelly silt, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn igneous basalt pebbles most likely associated with a former stream. Similar to stream deposits.

Lens/Layer III (79-110cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer/Lens IV (110-146cmbs) is a very dark gray (7.5yr 3/1), gravelly silt, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn igneous basalt pebbles most likely associated with a former stream. Similar to stream deposits.

Layer V (142-180cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".



Figure 29. Overview Photograph of Trench 8 (View to East)

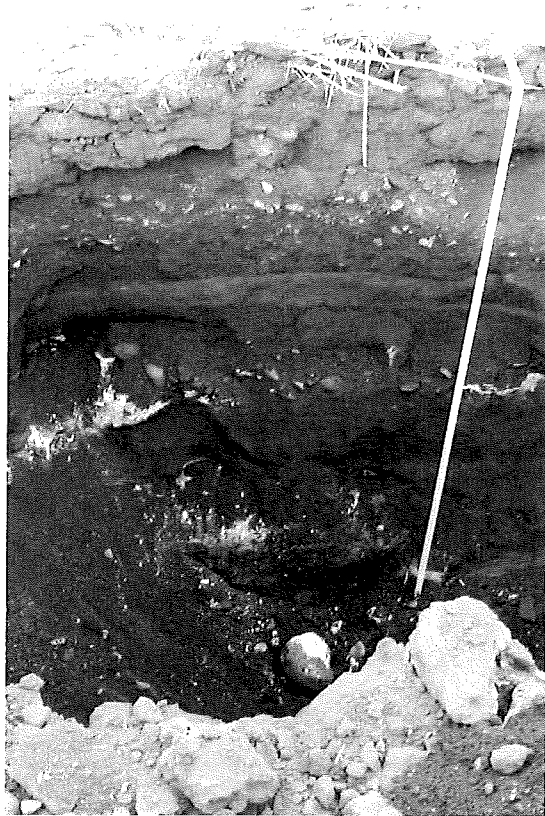


Figure 30. Photograph of Trench 8 North Wall

TRENCH 9

TR-9 was placed within the 33.0 acre area in the eastern portion of the project area (see Figure 11, Table I and Appendix A). It measured 3.9 m long by 1.5 m wide by 0.8 m deep and was oriented 270° degrees (Figures 31 and 32). Testing revealed a single stratum that was negative for cultural materials and terminated on decomposing bedrock, Layer II.

Layer I (0-80cmbs) is a yellowish brown (10yr 5/4), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone". The bedrock was encountered at base.

Layer II (80cmbs+) is yellowish brown (10yr5/4), gravelly, silt loam, slightly plastic, slightly sticky, crumb, friable, with decomposing basalt.



Figure 31. Overview Photograph of Trench 9 (View to East)

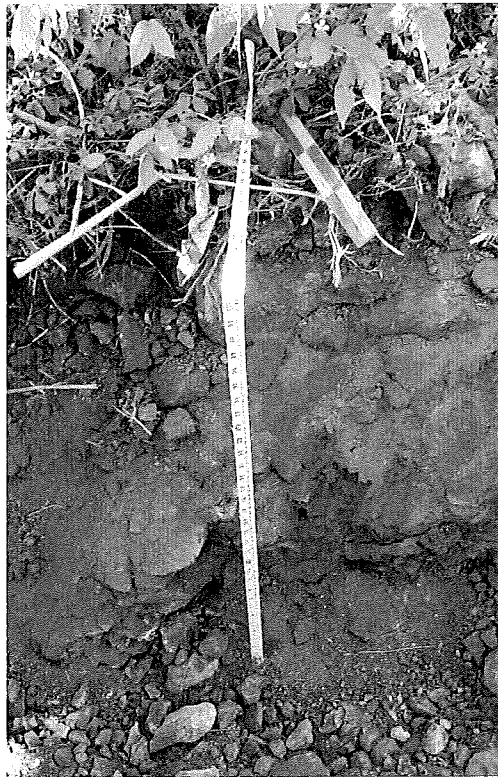


Figure 32. Photograph of Trench 9 North Wall

TRENCH 10

TR-10 was placed within the 33.0 acre area in the central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.5 m deep, oriented 270° degrees and placed in the cane haul road. Testing revealed a three layer stratigraphic sequence (Figures 33 and 34). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone"..

Layer II (18-74cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (60-200+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

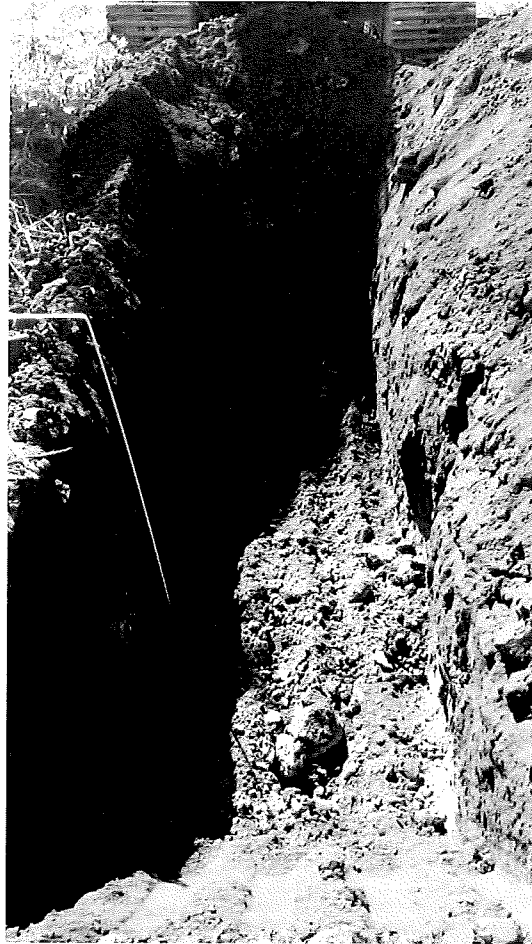


Figure 33. Overview Photograph of Trench 10 (View to East)

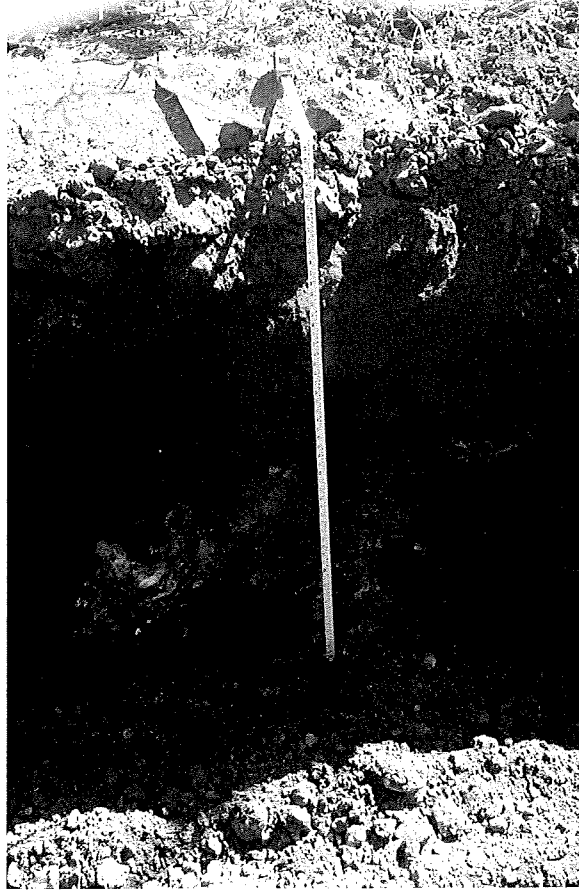


Figure 34. Photograph of Trench 10 North Wall

TRENCH 11

TR-11 was placed within the western portion of the 33.0 acre area within a cane haul road (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.2 m deep and was oriented 270° degrees. Testing revealed the same three layer stratigraphic sequence as observed within TR-10 (see Figure 34). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (16-80cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (72-120+cmbs) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".

TRENCH 12

TR-12 was placed within the 33.0 acre area in the NE portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 2.6 m deep, oriented 270° degrees and situated within a haul road (Figures 35 and 36). TR-12 contained a five layer stratigraphic sequence that was devoid of cultural materials.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-160cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (158-186+cmbs) is a yellowish brown (10yr 5/4), gravelly silt loam, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn basalt pebbles possibly associated with alluvial deposition.

Layer IV (182-190cmbs) is a black cinder (7.5yr 2.5/1), gravelly silt layer, non-plastic, non-sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the region.

Layer V (189-260cmbs) is a gray (10yr 5/1), basalt layer, non-plastic, non-sticky, massive, indurated. This layer bedrock.



Figure 35. Overview Photograph of Trench 12 (View to West)

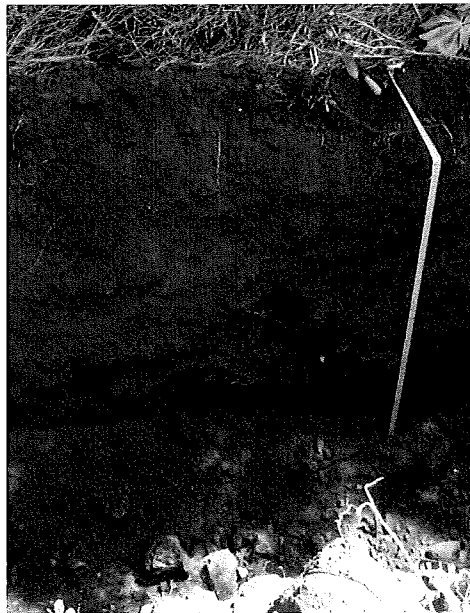


Figure 36. Photograph of Trench 12 North Wall

TRENCH 13

TR-13 was placed within the 33acre area in the north central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 3.0 m deep and was oriented 270° degrees. This section was an active cane fields and therefore the location of this trench was along a known haul rd. Testing revealed a three layer stratigraphic sequence (Figures 37 and 38). No cultural materials were observed.

Layer I (0-18cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (16-295cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (295-300cmbs+) is a gray (10yr 5/1), basalt bedrock layer, non-plastic, non-sticky, massive, indurated.



Figure 37. Overview Photograph of Trench 13 (View to East)



Figure 38. Photograph of Trench 13 North Wall

TRENCH 14

TR-14 was placed along haul road within the 33.0 acre area in the north central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 2.05 m deep and was oriented 270° degrees. TR-14 contained a five layer stratigraphic sequence and no cultural materials were observed (Figure 39).

Layer I (0-9cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (8-160cmbs+) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Lens/Layer III (160-1.85cmbs+) is a reddish brown (5yr4/6), pebbly silt loam, non-plastic, non-sticky, crumb, firm. This layer contained low frequencies of water worn igneous basalt pebbles most likely associated with a former stream.

Layer IV (185-195cmbs+) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer V (195-205cmbs+) is a dark yellowish brown (10yr5/4), gravelly silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.



Figure 39. Overview Photograph of Trench 14 (View to West) (Left); and Photograph of North Wall Trench 14

TRENCH 15

TR-15 was placed within the 33.0 acre area within the cane haul road located in the eastern portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.2 m deep, oriented 270° degrees and contained a three layer stratigraphic sequence that was negative for cultural materials (Figure 40).

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (18-81cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (81-120cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".



Figure 40. Photographs of TR-15 Overview (View to West) (left); and South Wall (right)

TRENCH 16

TR-16 was placed within the 33.0 acre area in the south central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.45 m deep, oriented 270° degrees and situated within a haul road. Trench-16 contained a three layer stratigraphic sequence (Figures 41 and 42). No cultural materials were observed.

Layer I (0-20cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (20-78cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer does not appear to be disturbed.

Layer III (68-150cmts+) is a (7.5yr 2.5/1), greyish black silty clay, non-plastic, non-sticky, medium grain, firm. This layer occurs in pockets and in some cases as lenses throughout the layer (similar to Layer III TR7).



Figure 41. Overview Photograph of Trench 16 (View to West)

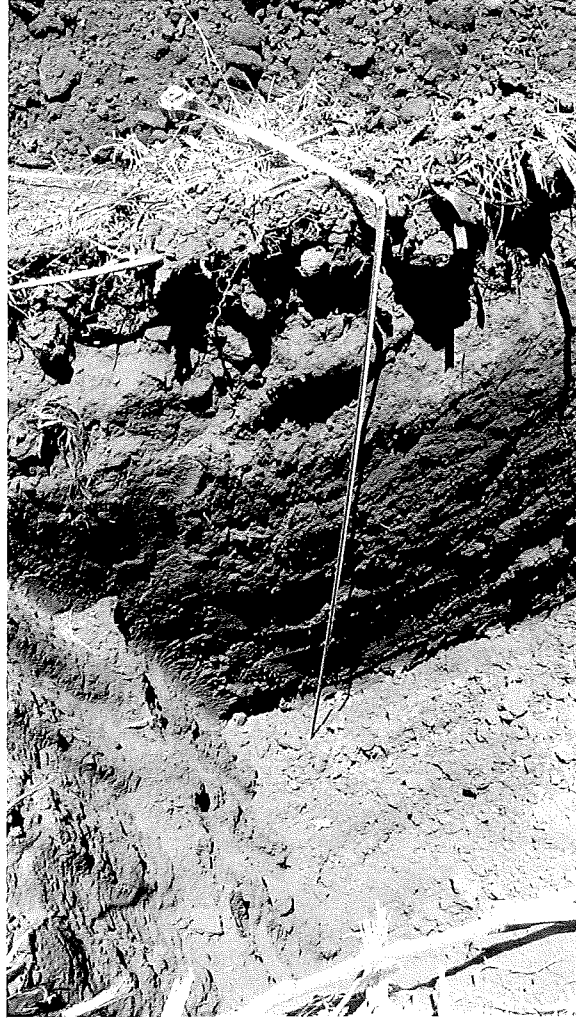


Figure 42. Photograph of Trench 16 North Wall

TRENCH 17

TR-17 was placed along the haul road within the 33.0 acre area in the south central portion of the project area (see Figure 11, Table I and Appendix A). It measured 4.0 m long by 1.5 m wide by 1.0 m deep and was oriented 270° degrees. Testing revealed a three layer stratigraphic sequence (Figures 43 and 44). No cultural materials were observed.

Layer I (0-13cmbs) is a dark brown (7.5yr 3/3), silty loam, slightly plastic, slightly sticky, crumb, friable, with moderate frequency of roots and rootlets. Inclusions consisted of black plastic irrigation. This heavily disturbed layer is commonly referred to as the "till zone".

Layer II (10-90cmbs) is a dark reddish brown (5yr3/4), silt loam, slightly plastic, slightly sticky, crumb, friable. This layer appears to be disturbed

Layer III (85-105cmbs+) is a yellowish brown (10yr5/4), silt loam, slightly plastic, slightly sticky, crumb, friable, with a high frequency of decomposing basalt. This layer is undisturbed and referred to as the "saprolitic layer".



Figure 43. Overview Photograph of Trench 17 (View to West)

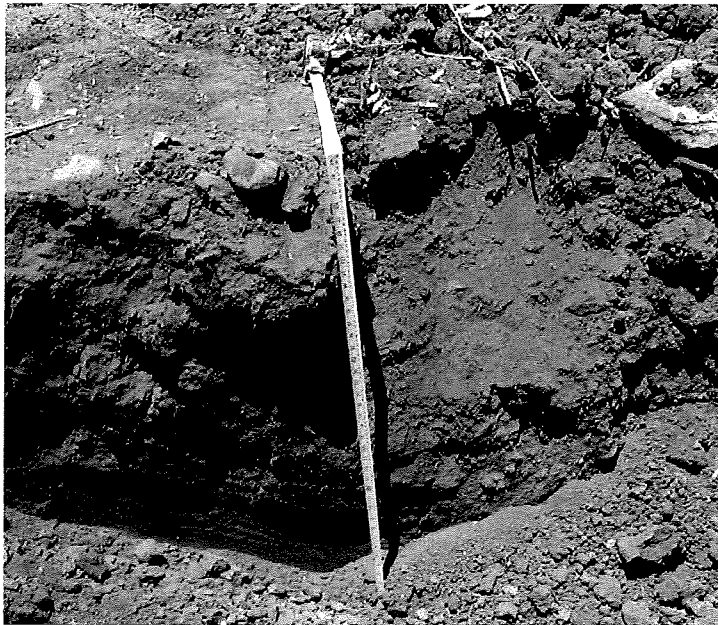


Figure 44. Photograph of Trench 17 South Wall

DISCUSSIONS AND RECOMMENDATIONS

To ascertain the presence absence of historic properties that could be adversely affected by proposed rock mining activities, inventory level procedures comprised of a pedestrian survey and subsurface testing was performed at the subject parcel. During the survey, no surface structural remains were recorded; however irrigation materials consisting of plastic sheeting, black irrigation tubing, PVC pipes and etc. were observed and scattered and due to the compounded disturbances from sugar cane cultivation. Similarly, subsurface testing comprised of 17 backhoe trenches (TR's 1-17) and 2 bulldozer cuts (BD's 1 and 2) was executed across the subject parcel and negative for buried cultural remains. The excavations revealed that the 41.968 acre project area had been disturbed by continuous agricultural activities where the agricultural till zone (Layer I) extended from 0.10 m to 0.80 mbs, and averaged 0.40 m deep and the saprolytic (decomposing) basalt was identified was observed from 0.46 m to 2.90 mbs and averaged 0.80 m deep.

Documentation of the soil profiles exhibited a predominant three to four layer stratigraphic sequence comprised of two soil layers overlying one or two rock layers. Layer I was the disturbed agricultural till zone, Layer II was generally undisturbed and consisted of a dark reddish brown silt loam, Layer III was decomposing bedrock and Layer IV the basalt bedrock. This soil sequence was recorded at eleven of the excavations. The remaining eight trenches contained a similar stratigraphic record; however the overall sequence was interrupted by prior disturbances, alluvial deposits and geologic events. TR9 contained a single disturbed layer comprised of Layer III from the project wide stratigraphic sequence. The presence of Layer III at the surface indicated that Layers I and II were removed by prior grading activities. TR's 8, 12 and 14 contained water worn pebbles indicative of alluvial events; however the deposition within TR's 12 and 14 was marginal and the water worn pebbles were mixed within a gravelly silt loam. TR8 contained a thick gravelly silt layer with few pebble inclusions contained a thick alluvial layer, approximately 90 cm similar to flood plain deposits. Within TR's 7 and 12, cinder lenses comprised of small cobble sized pyroclastic material were noted near the base of excavations. Pockets of imported sand were also observed and is utilized as a soil conditioner providing nutrients (phosphorus) for the sugarcane.

The subject parcel and other localities such as the Central Maui Landfill (off Pūlehu Road by Pu'unene Sugar Mill) have exhibited similar depositional environments with relatively shallow soils overlying dense bedrock. The geology of these areas is one of the main reasons for establishing rock quarries and subsequent landfills (if applicable).

Although the background research, exemplified that Pūlehu Nui was populated during the traditional and historic periods within the *mauka* and *makai* sections of the *ahupua`a*; no evidence of habitation was observed during the subsurface investigations. It is important to note, that two Plantation Camps (Kihei Camp 3 and Camp 13) were formerly located to the south and north of the subject parcel; however they were positioned 2500 to 7500 ft. away. The negative findings documented during this survey and the 2011 investigations (Rotunno-Hazuka et. al) was anticipated within this marginal zone and no further archaeological work including monitoring is warranted. Nonetheless, SHPD is the historic preservation regulatory agency and shall be afforded the opportunity to review all permits for these proposed expansion areas.

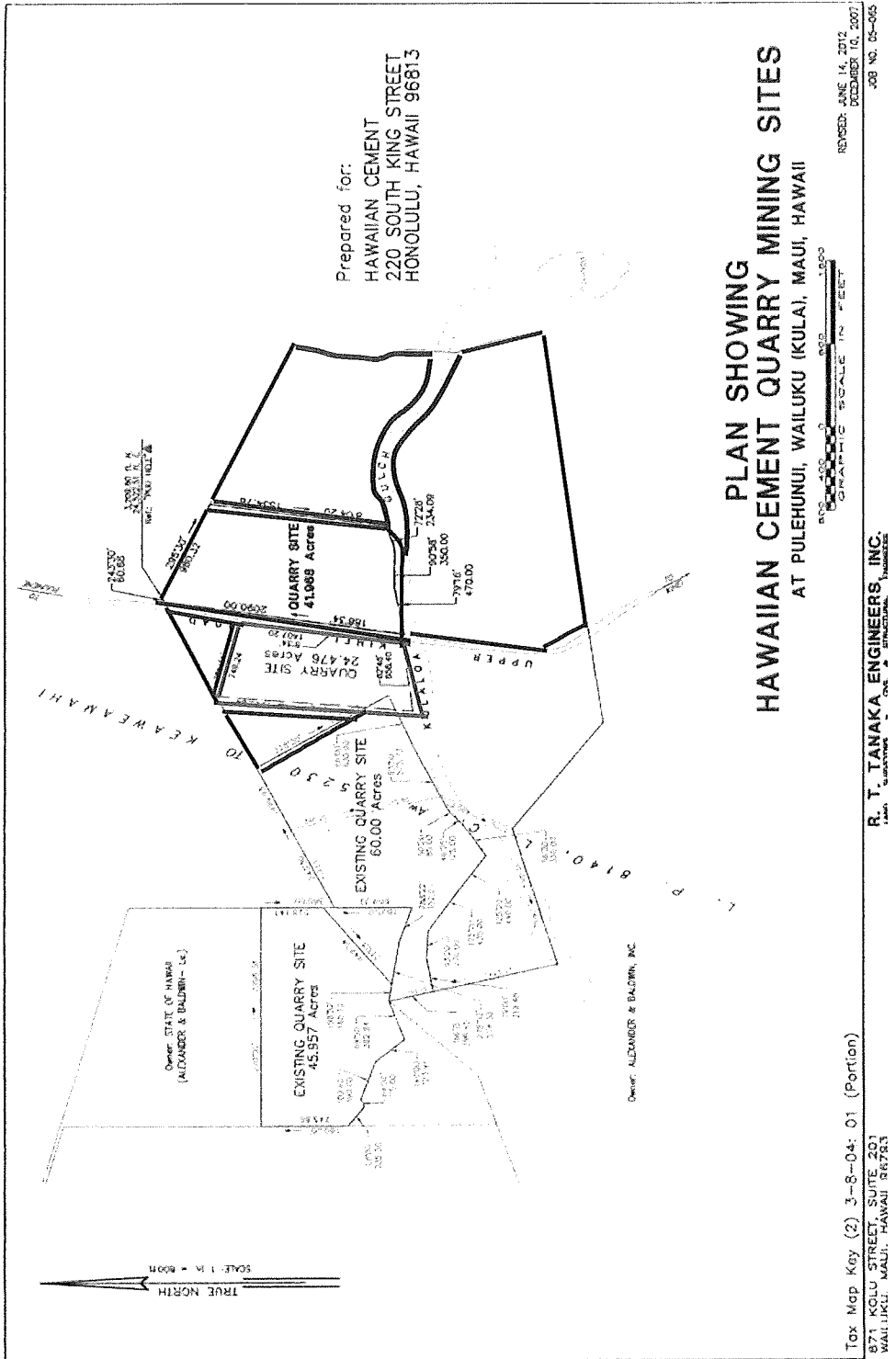


Figure 45. Development Map Showing Project Area (Red), Former A.A. Parcel (Green) and Possible Future Expansion Areas (Purple)

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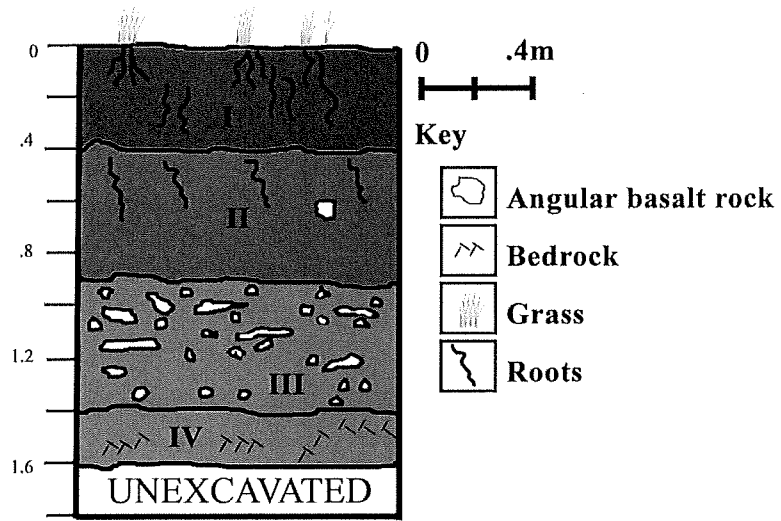
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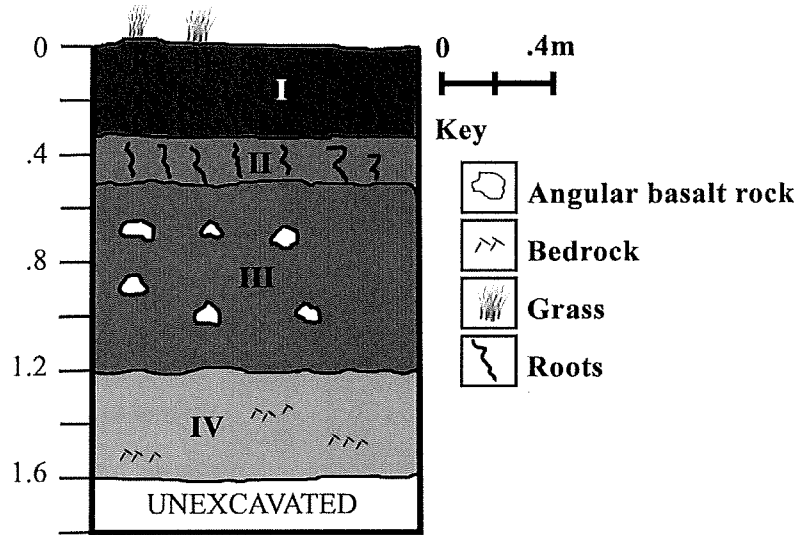
Waihona Aina Corp

2002 The Mahele Database and The Boundary Commission Database (Internet www.waihona.com)

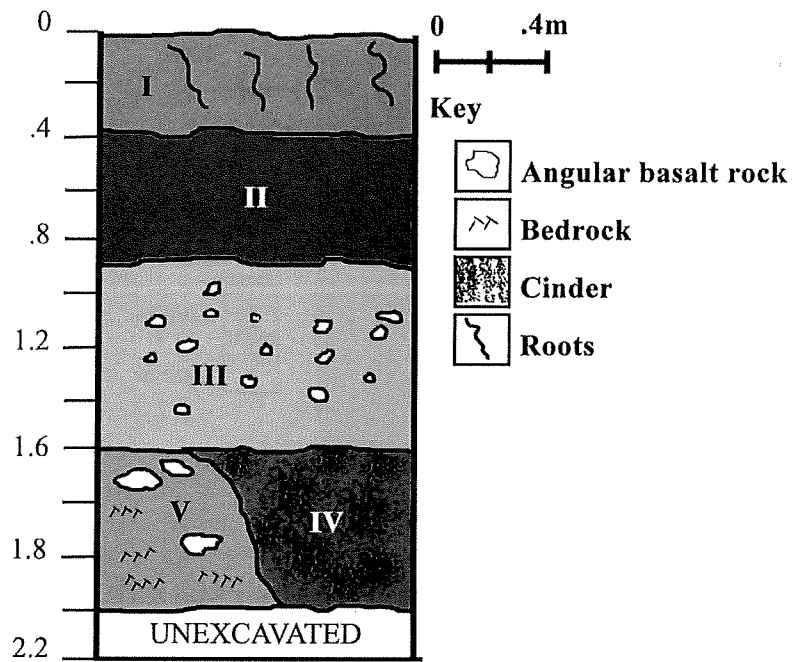
APPENDIX A



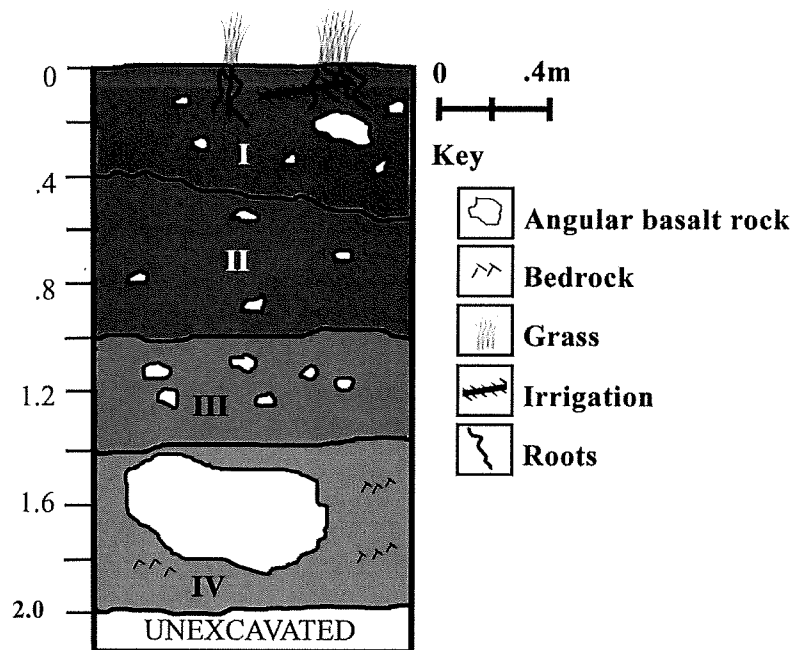
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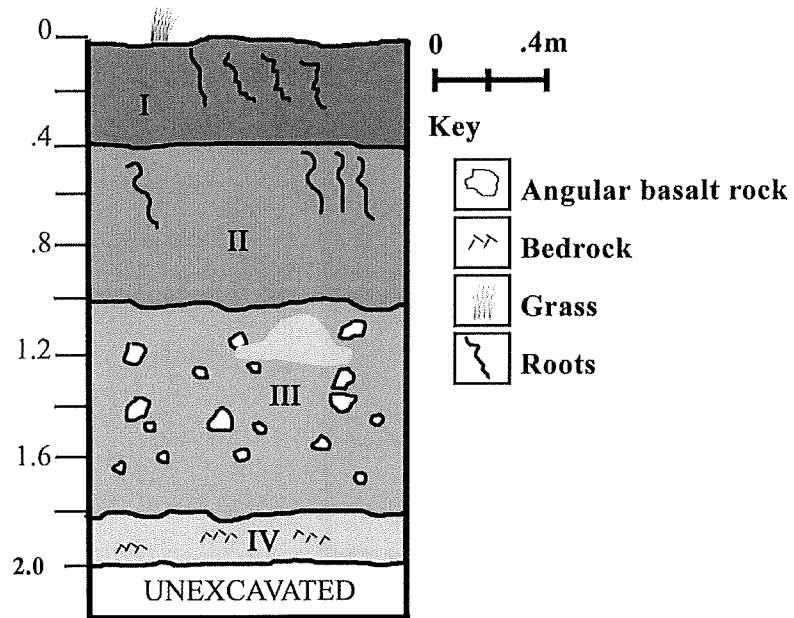
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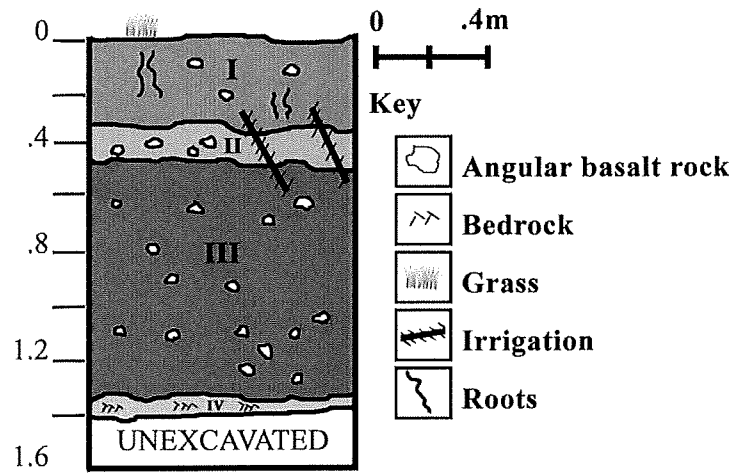
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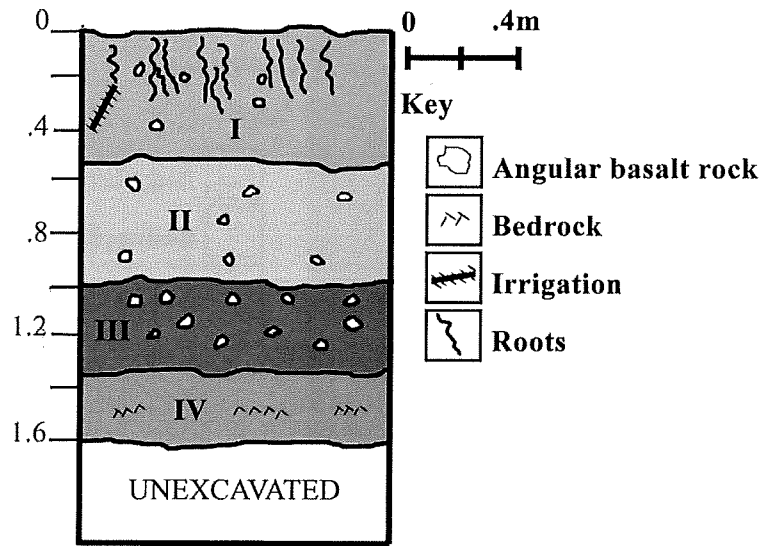
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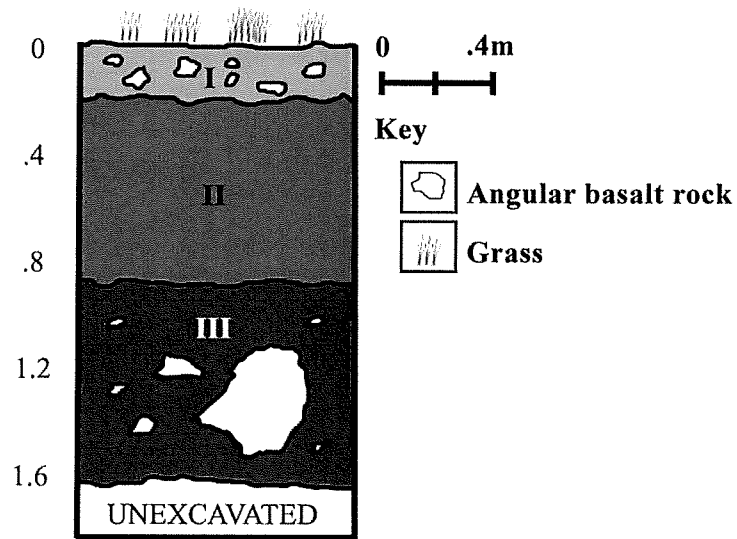
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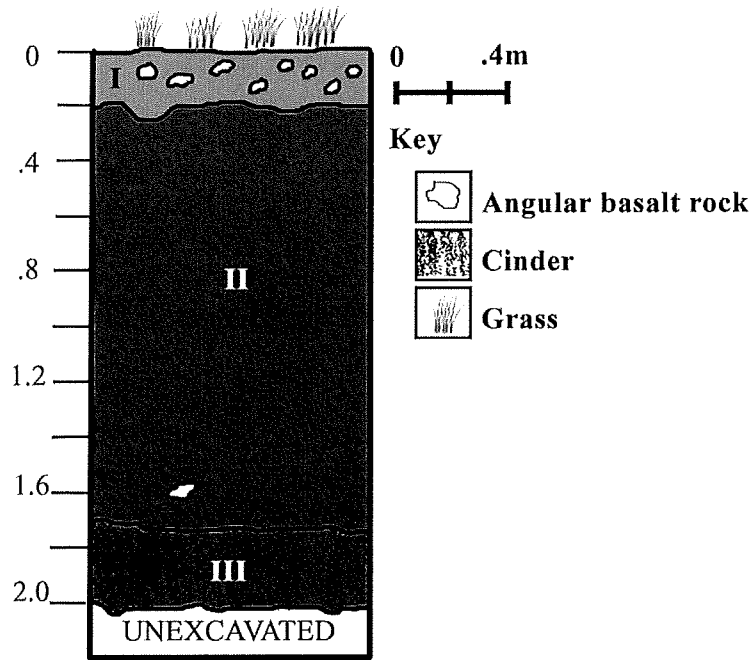
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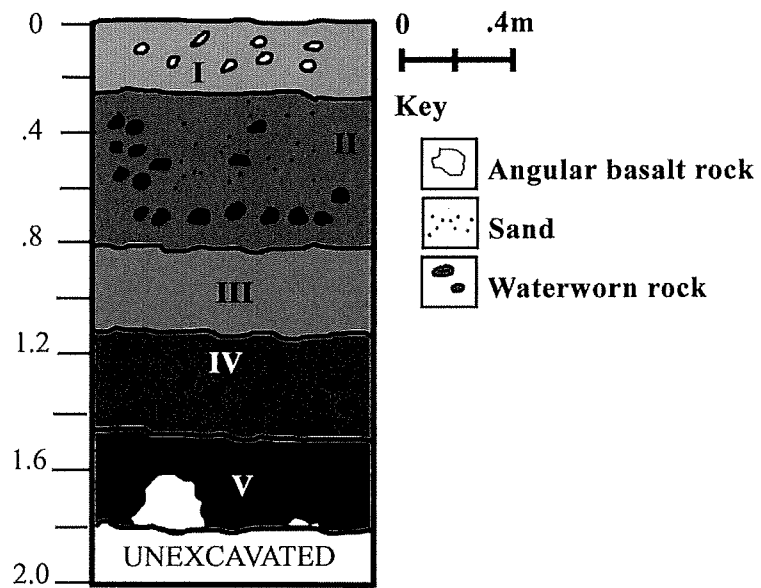
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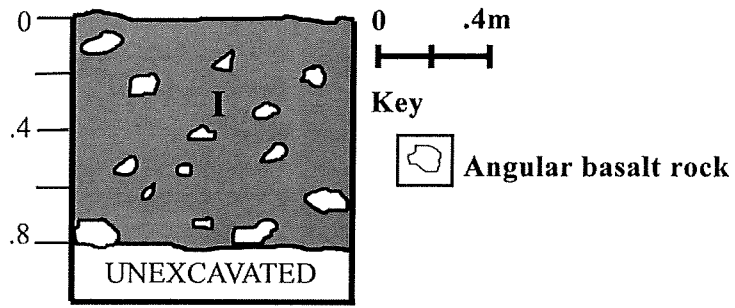
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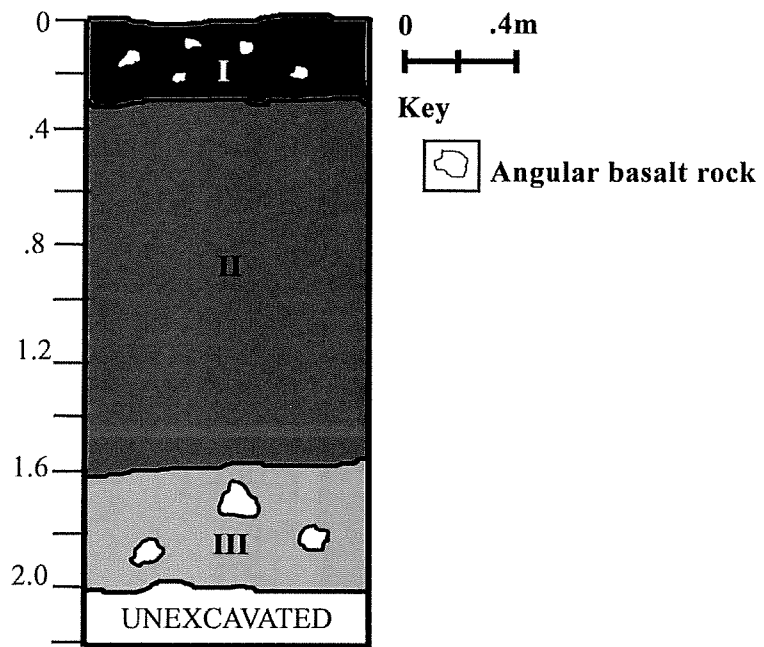
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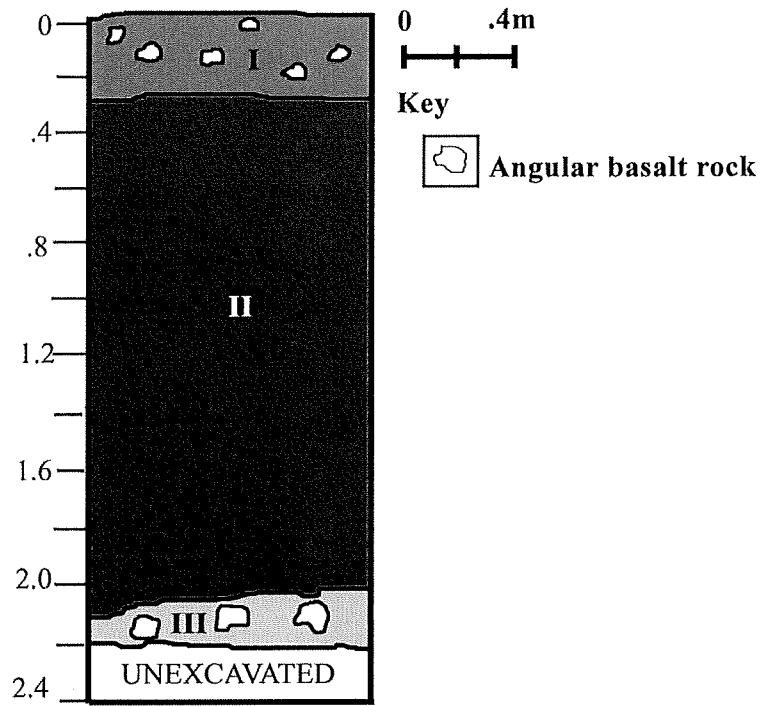
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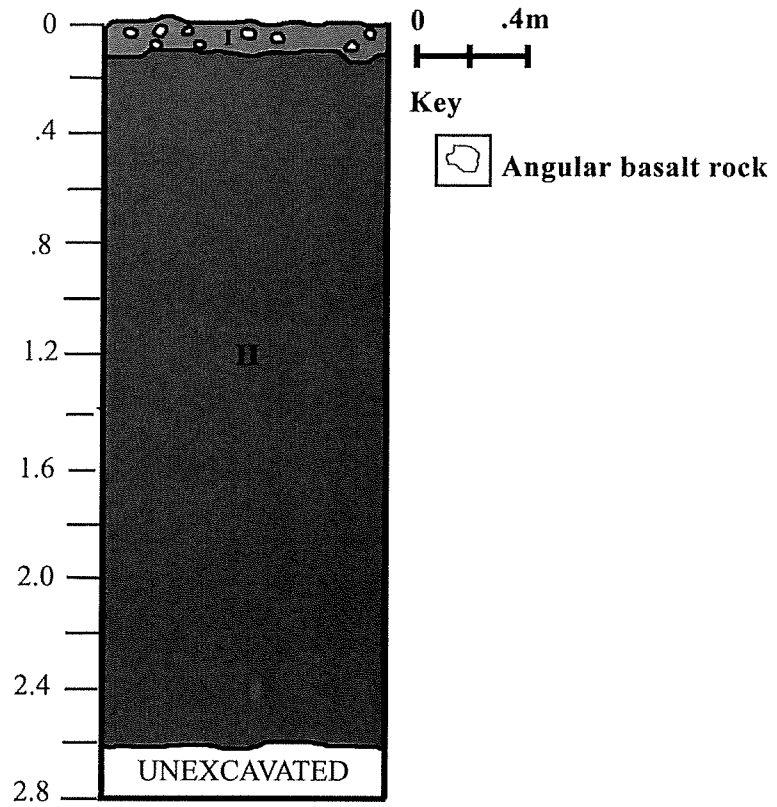
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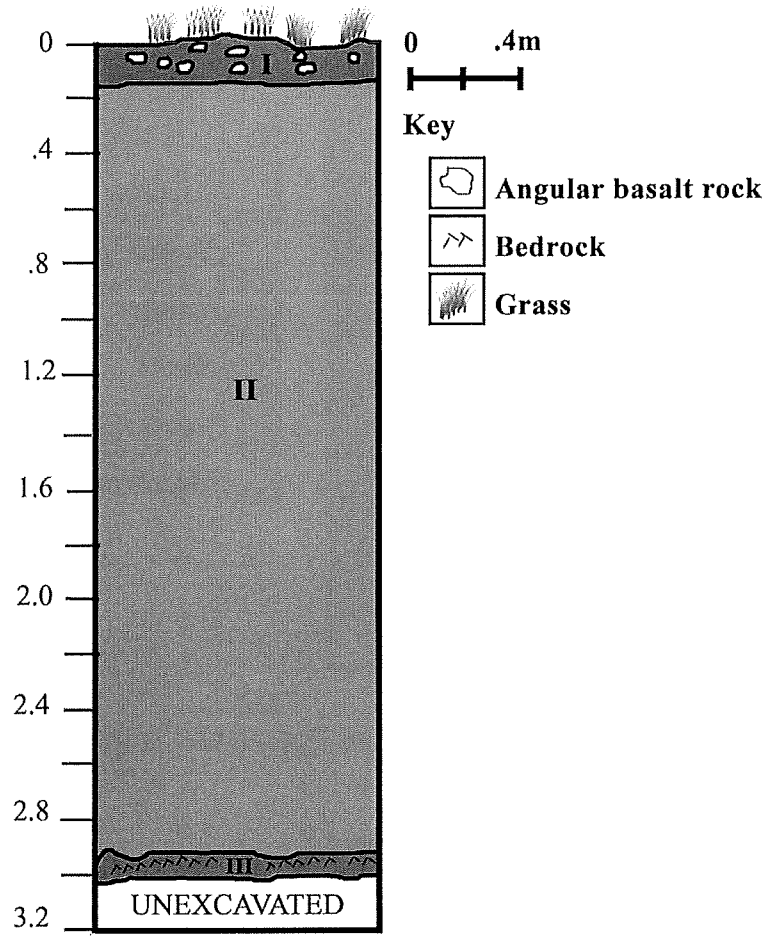
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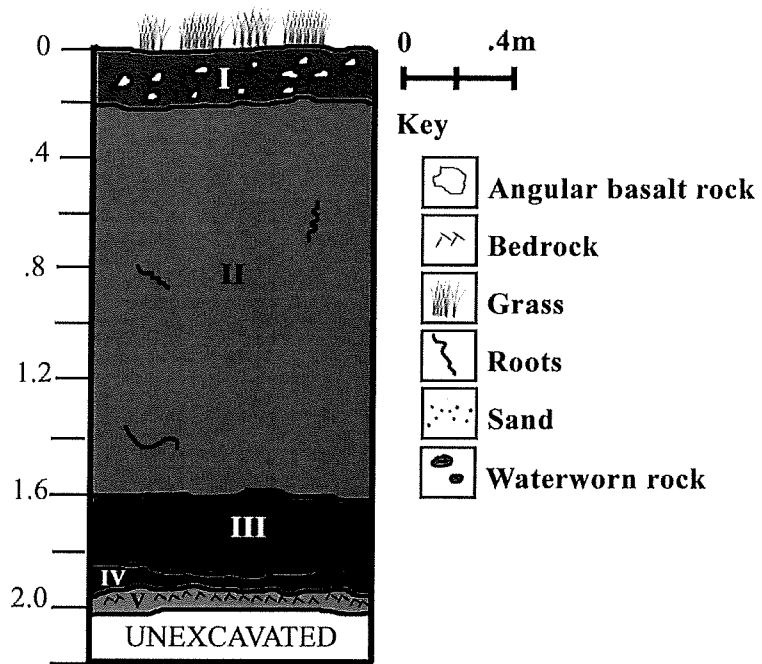
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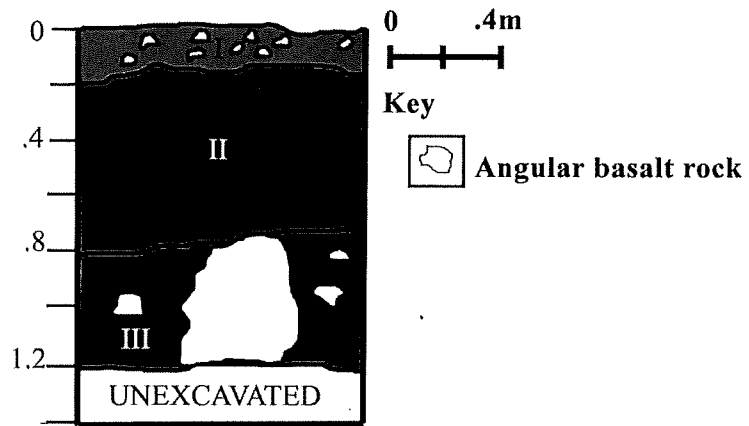
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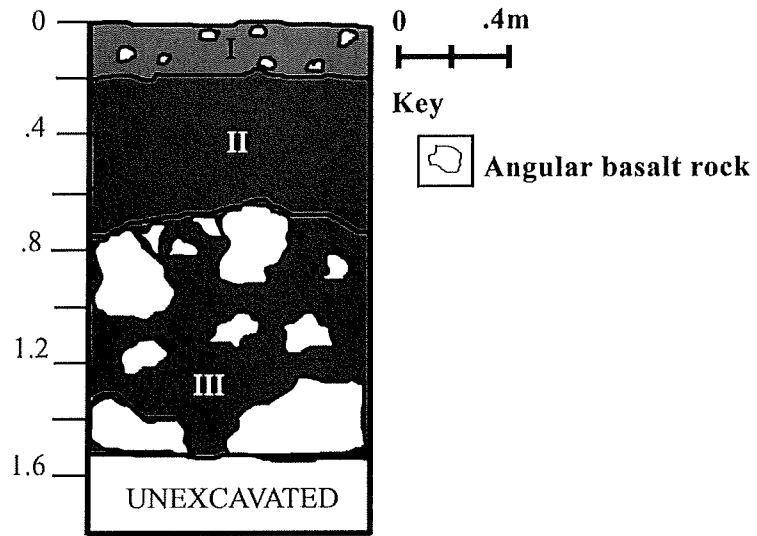
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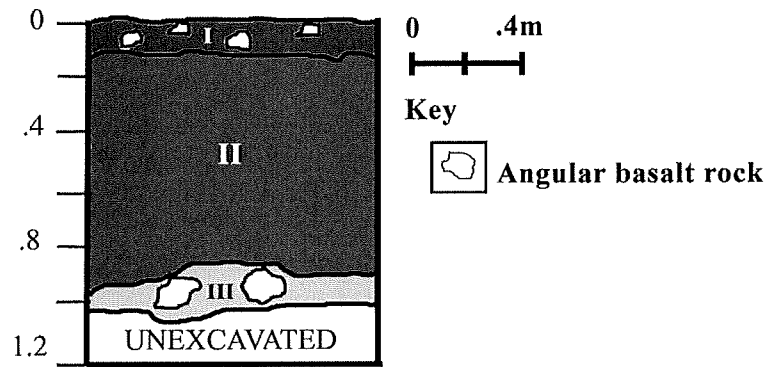
Stratigraphic Profile of North Wall at TR14




Stratigraphic Profile of North Wall at TR15



Stratigraphic Profile of North Wall at TR16



Stratigraphic Profile of South Wall at TR17



2020 COUNTY
SPECIAL USE PERMIT
COMPLIANCE REPORT

APPENDIX

H



MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo
CHAIRMAN

Karlynn K. Fukuda
PRESIDENT

Mark Alexander Roy
VICE PRESIDENT

Tessa Munekiyo Ng
VICE PRESIDENT

November 6, 2020

Michele Chouteau McLean, AICP, Director
County of Maui
Department of Planning
Attention: Paul Fasi, Planner
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: County Special Use Permit for the Hawaiian Cement Pu'unēnē Quarry; Pūlehunui, Kahului, Maui; TMK (2)3-8-004:001(por.); CUP 2006/0002

Dear Ms. McLean:

At its regularly scheduled meeting on May 27, 2014, the Maui Planning Commission (Commission) approved a time extension request for the County Special Use Permit (CUP) (CUP 2006/0002) for the Hawaiian Cement Pu'unēnē Quarry at Pūlehunui, Kahului, Hawai'i. The Commission's approval was subject to six (6) conditions. See **Exhibit "A"**.

Condition Number 5 of the 2014 CUP time extension approval recommended:

That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and the State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.

On behalf of Hawaiian Cement, we are submitting this compliance report in order to fulfill Condition Number 5 of the CUP time extension approval.

Condition Number 1:

That the County Special Use Permit shall be valid until July 21, 2032 or the expiration date for the State Land Use Commission Special Permit, whichever is longer, subject to extension by the Planning Director upon a

timely request for extension filed at least ninety (90) days prior to its expiration. The Commission may require a public hearing on the time extension.

Response: The Applicant acknowledges this condition. Future time extension requests, if needed, will be submitted in a timely manner as noted in this condition.

Condition Number 2:

That the County Special Use Permit shall not be transferred without the prior written approval of the Planning Director.

Response: The Applicant acknowledges this condition and notes that a transfer of permit is not contemplated.

Condition Number 3:

That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject County Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this County Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS (1,000,000.00) naming the County of Maui as an additional named insured, insuring and defending the Applicant and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department of Planning (Department) within ninety (90) calendar days from the date of transmittal of the decision and order.

Response: The Applicant acknowledges this condition. A current Certificate of Insurance is provided herein as **Exhibit "B"**.

Condition Number 4:

That full compliance with all applicable governmental requirements shall be rendered; and

Response: The Applicant acknowledges this condition.

Condition Number 5:

That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.

Response: The Applicant acknowledges this condition and notes that this report addresses compliance with the CUP conditions. A report addressing compliance with the State Land Use Commission Special Permit was submitted on January 31, 2020 to the State Land Use Commission and Department of Planning.

Condition Number 6:


That the quarry area is expanded by approximately 42 acres and includes the 9.697-acre portion of the quarry within the permitted area, known as Area "C".

Response: The Applicant acknowledges this condition relative to a previously approved expansion of the quarry area.

Michele Chouteau McLean, AICP, Director
November 6, 2020
Page 4

Should you have any questions, or require additional information, please feel free to contact me at (808) 983-1233, or via email at planning@munekiyohioraga.com.

Very truly yours,



Bryan K. Esmeralda, AICP
Senior Associate

BE:la

Attachments

cc: Dave Gomes, Hawaiian Cement (w/attachments)

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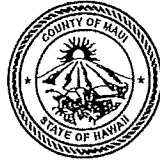
EXHIBIT A.

**County Special Use Permit Amendment
Approval Letter Dated June 18, 2014**

ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director



JUN 19 2014

COUNTY OF MAUI
DEPARTMENT OF PLANNING

June 18, 2014

Ms. Karlynn Fukuda, Executive Vice President
Munekiyo & Hiraga, Inc.
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Fukuda:

SUBJECT: AMENDMENT TO STATE LAND USE COMMISSION SPECIAL PERMIT (SP) AND AMENDMENT TO COUNTY SPECIAL USE PERMIT (CUP) FOR THE HAWAIIAN CEMENT PUUNENE ROCK QUARRY, PULEHUNUI, KAHULUI, ISLAND OF MAUI, HAWAII; TMK: (2) 3-8-004:001 (POR.) (SUP1 91-0013) (SP 92-380) (CUP 2006/0002)

At its regular meeting on May 27, 2014, the Maui Planning Commission (Commission) voted to recommend approval to the State Land Use Commission, the following proposed amendments to **State Land Use Commission Special Permit (SP 92-380)**:

1. To expand the quarry area by approximately 42 acres at TMK: (2) 3-8-004:001 (por.);
2. To include the 9.697-acre portion of the quarry within the permitted area (Area "C");
3. To delete Condition No. 16 of SP 92-380 as the Applicant has submitted said updated map to the Department of Planning; and
4. To approve a 15-year time extension for SP 92-380.

Further, the Commission also approved the proposed amendments to the **County Special Use Permit (CUP 2006/0002)** as follows:

Note: New material underlined; deleted material [bracketed]

1. That the County Special Use Permit shall be valid until July 21, 2032 [July 31, 2018], or the expiration date for the State Land Use Commission Special Permit, whichever is longer, subject to extension by the Planning Director [Maui Planning Commission] upon a timely request for extension filed at least ninety (90) days prior to its expiration. The Commission may require a public hearing on the time extension.

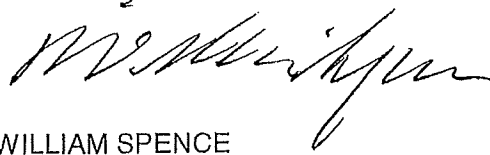
2. That the County Special Use Permit shall not be transferred without the prior written approval of the Planning Director [Maui Planning Commission].
3. That the Applicant, its successors and permitted assigns shall exercise reasonable due care as to third parties with respect to all areas affected by subject County Special Use Permit and shall procure at its own cost and expense, and shall maintain during the entire period of this County Special Use Permit, a policy or policies of comprehensive liability insurance in the minimum amount of ONE MILLION AND NO/100 DOLLARS (1,000,000.00) naming the County of Maui as an additional named insured, insuring and defending the Applicant and County of Maui against any and all claims or demands for property damage, personal injury and/or death arising out of this permit, including but not limited to: (1) claims from any accident in connection with the permitted use, or occasioned by any act or nuisance made or suffered in connection with the permitted use in the exercise by the applicant of said rights; and (2) all actions, suits, damages and claims by whomsoever brought or made by reason of the non-observance or non-performance of any of the terms and conditions of this permit. A copy of a policy naming County of Maui as an additional named insured shall be submitted to the Department of Planning (Department) within ninety (90) calendar days from the date of transmittal of the decision and order.
4. That full compliance with all applicable governmental requirements shall be rendered; and
5. That the Applicant shall submit to the Department two (2) copies of a detailed report addressing its compliance with the conditions established with the County Special Use Permit CUP 2006/0002 and State Land Use Commission Special Permit SP 92-380. The compliance report shall be submitted to the Department for review and approval prior to a time extension request or an amendment to the existing County Special Use Permit.
6. That the quarry area is expanded by approximately 42 acres and includes the 9.697-acre portion of the quarry within the permitted area, known as Area "C".

The Commission adopted the Report and Recommendation prepared by the Department of Planning for the May 27, 2014, meeting as its Findings of Fact, Conclusions of Law, and Decision and Order. Parties to proceedings before the Commission may obtain Judicial Review of Decision and Orders issued by the Commission in the manner set forth in Chapter 91-14, Hawaii Revised Statutes (HRS).

Ms. Karlynn Fukuda, Executive Vice President
June 18, 2014
Page 3

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Paul Fasi at paul.fasi@mauicounty.gov or at (808) 270-7814.

Sincerely,



WILLIAM SPENCE
Planning Director

xc: Clayton I. Yoshida, AICP, Planning Program Administrator (PDF)
Paul F. Fasi, Staff Planner (PDF)
Development Services Administration
William Aila, Jr., Chairperson, Department of Land and Natural Resources
State of Hawaii Land Use Commission
CZM File (SUP)
Project File
General File

WRS:PFF:nst

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EXHIBIT B.

Certificate of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
12/19/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh USA Inc. 333 South 7th Street, Suite 1400 Minneapolis, MN 55402-2400 Attn: MDU.CertRequest@marsh.com		CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:	
CN102299309-HAWAC-GAWX-20- 2010 2037 HAWCE AI Y		INSURER(S) AFFORDING COVERAGE NAIC #	
INSURED HAWAIIAN CEMENT 99-1300 HALAWA VALLEY STREET AIEA, HI 96701		INSURER A: Liberty Mutual Fire Ins Co 23036 INSURER B: Associated Electric & Gas Ins Services Ltd 3190004 INSURER C: Liberty Insurance Corporation 42404 INSURER D: INSURER E: INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** CHI-007184517-58 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDITIONAL INSURED	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:		TB2-841-005097-040	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY		AI2-641-005097-050	01/01/2020	01/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$		XL5083409P	01/01/2020	01/01/2021	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	WA7-64D-005097-020 (Regulated) WA7-64D-005097-010 (AOS) *"INCLUDES *STOP-GAP**	01/01/2020	01/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

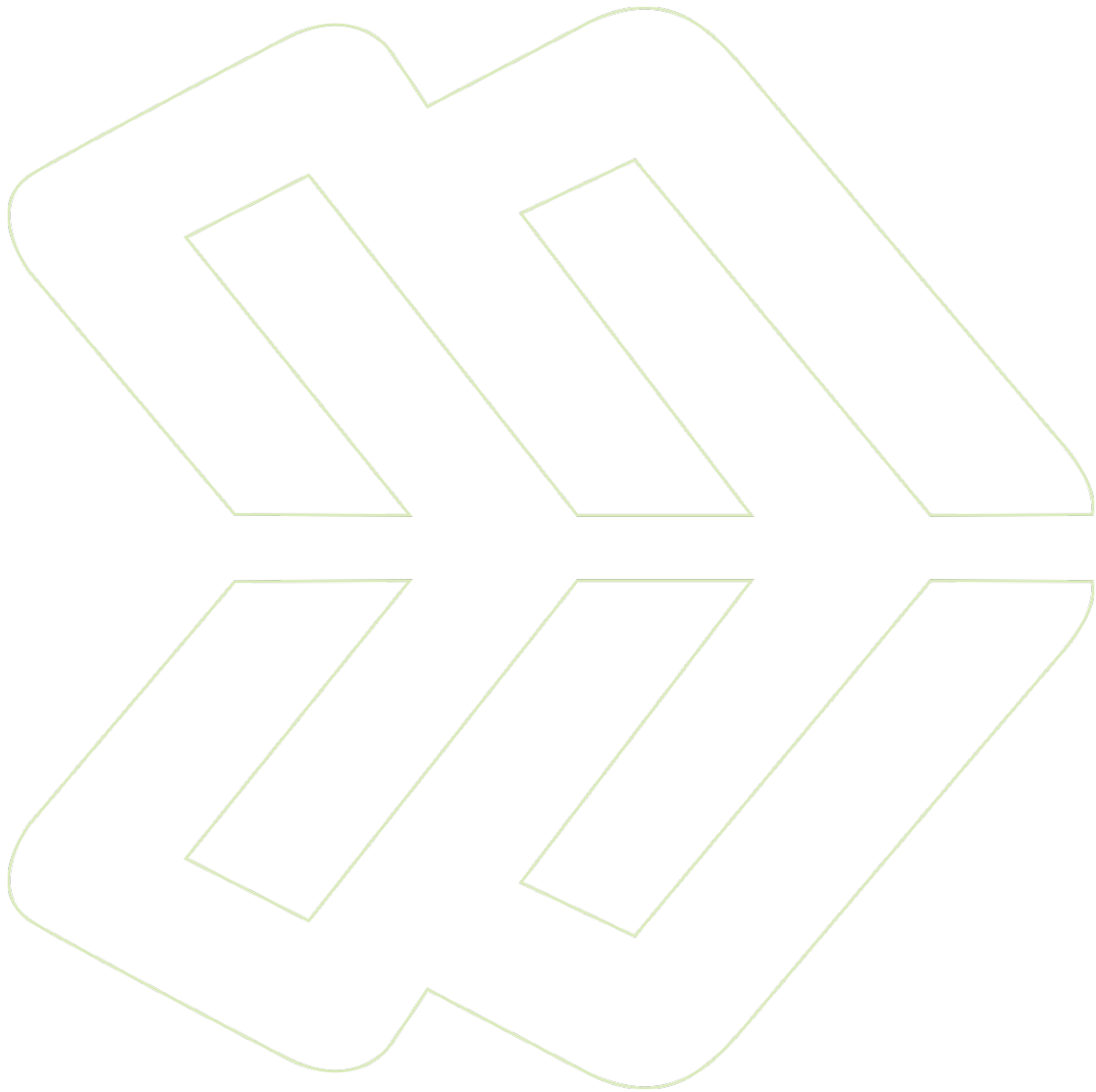
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Puunene Quarry and the TMKs (TMK 3-8-004: 001 and 002; TMKs 3-8-008: 001 and 031)

County of Maui is included as an additional insured as required by permits SP92-380, SUP1 91/0013 and CUP 2008/0002 as respects the General Liability and Auto Liability. Blanket Additional Insured for General Liability is included per attached CG 2010 and CG 2037 Endorsements and does not include professional liability coverage. Blanket Additional Insured for Automobile Liability is included per attached designated Insured Endorsement CA 20 48. Excess liability applies to general liability, products and completed operations, automobile liability, and employers liability.

CERTIFICATE HOLDER County of Maui Department of Planning 200 S. High Street Wailuku, Maui, HI 96793	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
--	--

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MUNEKIYO HIRAGA

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