MUNEKIYO HIRAGA
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SENIOR ADVISOR

December 7, 2021

Dan Orodenker, Executive Officer
State of Hawaii
State Land Use Commission
P.O. Box 2359
Honolulu, Hawai'i 96804

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

SUBJECT: State Special Use Permit Annual Compliance Report for Hawaiian Cement Pu'unēnē Quarry, TMK: (2)3-8-004:001(por.), and 002(por.), (2)3-8-008:001(por.) and 031(por.), Pulehunui, Maui, 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 SLUC Special Permit (SUP) (SP92-380) for Hawaiian Cement's (Permittee) Pu'unēnē Quarry. The SUP time extension and amendment was granted through July 21, 2032. The approval 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 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. However, we note that Hawaiian Cement has filed an application with the County of Maui, Department of Planning (Department) to amend the SUP to account for a planned expansion area. The application and request is currently being processed by the Department and is awaiting scheduling before the Maui Planning Commission.

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 understands that the SUP for the Puʻunēnē Quarry would expire in July 2032. No time extension is being sought at this time.

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 understands the requirements of 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 being sought 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"**, a current Certificate of Insurance for the Puʻunēnē Quarry, naming the State of Hawaiʻi as an additional insured.

Condition No. 5

That full compliance with all applicable governmental requirements shall be rendered.

Response: The permittee understands and complies with this 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 and has been complied with upon termination of previously quarried areas. 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 permittee.

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 permittee.

Condition N. 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 prepared for the access road and was submitted to the State of Hawai'i, Department of Transportation (SDOT), Highways Division and DPW for review and approval. The SDOT approved said plan. See **Exhibit "D"**. Additionally, the maintenance plan has been submitted to the DPW for review and approval, and their approval is pending.

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 (DOH) for a renewal application are attached as **Exhibit "E"**.

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.

To date, approximately 79 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 roadway maintenance program for the Puʻunēnē 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 accepted by the DOH. 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 Assessment report prepared for the previously approved expansion area at the Puʻunēnē Quarry. Due to the negative findings of the survey, an assessment report was prepared in lieu of an Archaeological Inventory Survey. 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 approved 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 SHPD in October 2014. The SHPD provided comments on the report via letter in May 2015. See **Exhibit "G"**. Revised reports were prepared and re-submitted to SHPD by the Applicant's consultant, with the most recent being dated March 2020. See **Exhibit "H"**. Additionally, based on discussions with SHPD, an Archaeological Monitoring Plan (AMP) dated March 2020 was also prepared and submitted to the SHPD. See **Exhibit "I"**. The SHPD accepted both the Archaeological Assessment and AMP via letter dated April 17, 2020. See **Exhibit "J"**.

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"**.

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)
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List of Exhibits

EXHIBIT A. Decision and Order Approving a Time Extension to a Special Use Permit

EXHIBIT B. Certificate of Insurance

EXHIBIT C. Restoration Plan

EXHIBIT D. State Department of Transportation Approval of Maintenance Plan

EXHIBIT E. Current State Department of Health Permits

EXHIBIT F. State Historic Preservation Division Approval Letter Dated April 8, 2012

EXHIBIT G. Letter from State Historic Preservation Division Dated May 12, 2015

EXHIBIT H. Archaeological Assessment Report Revised March 2020

EXHIBIT I. Archaeological Monitoring Plan Dated March 2020

EXHIBIT J. State Historic Preservation Division Archaeological Assessment and Archaeological Monitoring Plan Acceptance Letter Dated April 17, 2020

EXHIBIT A.

Decision and Order Approving a Time Extension to a Special Use Permit

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

In The Matter Of The Application Of	DOCKET NO. SP92-380
HAWAIIAN CEMENT	DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT; AND 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	

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, HAWAI`I.

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 HAWAI'I

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 HAWAI'I

In The Matter Of The Application Of	DOCKET NO. SP92-380
HAWAIIAN CEMENT	DECISION AND ORDER APPROVING AN AMENDMENT TO SPECIAL USE PERMIT
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	

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.

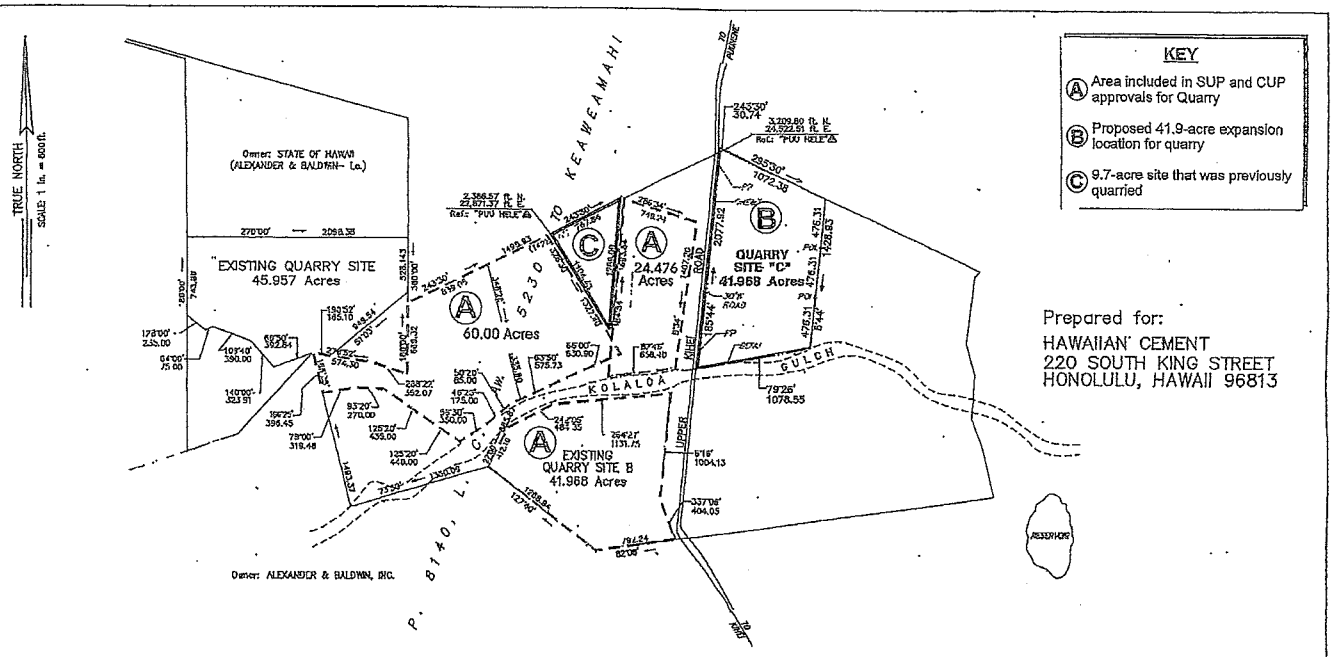
IT IS FURTHER ORDERED that the Applicant's Request be APPROVED, subject to the following additional Condition Numbers 16 and 17:

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.



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

GRAPHIC SCALE IN FEET

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

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

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

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

JOB NO. 05-085

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 HAWAI'I

Deputy Attorney General

By
Chad McDonald
Chairperson and Commissioner

Filed and effective on:

12/3/14

Certified by:

DANIEL ORODENKER
Executive Officer

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI`I

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

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

REGULAR MAIL: WILLIAM SPENCE, Director
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.

Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/21/2020

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-21- 2010 2037 HAWCE AI Y	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Liberty Mutual Fire Ins Co / 23035 **INSURER B :** Associated Electric & Gas Ins Services Ltd / 3190004 **INSURER C :** Liberty Insurance Corporation / 42404 **INSURER D :** **INSURER E :** **INSURER F :**
INSURED HAWAIIAN CEMENT 99-1300 HALAWA VALLEY STREET AIEA, HI 96701	

COVERAGES **CERTIFICATE NUMBER:** CHI-007164668-56 **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	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			TB2-641-005097-041	01/01/2021	01/01/2022	EACH OCCURRENCE	$ 2,000,000
	CLAIMS-MADE [X] OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 4,000,000
	POLICY [X] PRO-JECT [ ] LOC						PRODUCTS - COMP/OP AGG	$ 4,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY			AI2-641-005097-051	01/01/2021	01/01/2022	COMBINED SINGLE LIMIT (Ea accident)	$ 2,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
B	UMBRELLA LIAB OCCUR			XL5063410P	01/01/2021	01/01/2022	EACH OCCURRENCE	$ 5,000,000
	X EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ 5,000,000
	DED RETENTION $							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WA7-64D-005097-021 (Regulated)	01/01/2021	01/01/2022	X PER STATUTE OTH-ER	
C	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [N] (Mandatory in NH)	N/A		WA7-64D-005097-011 (AOS)	01/01/2021	01/01/2022	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below			"INCLUDES "STOP-GAP""			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 Manashi Mukherjee

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@mhinconline.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@mhinconline.com

-----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: Antonie Wurster/HWY/HIDOT@HIDOT

11/15/2006 12:34 PM

cc: Ronald Tsuzuki/HWY/HIDOT@HIDOT, Douglas Meller/HWY/HIDOT@HIDOT, David Shimokawa/ADMIN/HIDOT@HIDOT

Subject

Toni: I u nderstand 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 Comminssion granted the applicant a 3 year extension, thus, we recommend the same. Fifteen years would be too long for uss..... fred

----- Forwarded by Ferdinand Cajigal/HWY/HIDOT on 11/15/2006 12:29 PM -----

	"Karlynn Kawahara" <karlynn@mhinconline.com>	
To		<ferdinand.cajigal@hawaii.gov>
cc		"David Gomes" <Dave.Gomes@hawaiiancement.com>
	11/15/2006 12:01 PM	
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@mhinconline.com

(See attached file: 081506 Transmittal to DOT Regarding Letter from Hawaiian Cement.pdf)

EXHIBIT E.

Current State Department of Health 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

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)

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[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: 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-minutes 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)

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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

Permit term/condition	Equipment	Compliance
All standard conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent

B. Special Conditions - Monitoring, Recordkeeping, Reporting, Testing, and INSIG

Permit term/condition	Equipment	Compliance
All monitoring conditions	All Equipment listed in the permit	☐ Continuous ☐ Intermittent
Permit term/condition All recordkeeping conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All reporting conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All testing conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ Intermittent
Permit term/condition All INSIG conditions	Equipment All Equipment listed in the permit	Compliance ☐ Continuous ☐ 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.

Permit term/condition	Equipment	Method	Compliance
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent
		☐ monitoring ☐ recordkeeping ☐ reporting ☐ testing ☐ none of the above	☐ Continuous ☐ Intermittent

(Make Additional Copies if Needed)

D. Deviations

Permit Term/ Condition	Equipment / Brief Summary of Deviation	Deviation Period time (am/pm) & date (mo/day/yr)	Date of Written Deviation Report to DOH (mo/day/yr)
		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:

1. 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			

MONITORING REPORT FORM
OPACITY EXCEEDANCES
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 following information **semi-annually**:

(Make Copies for Future Use)

For Period:_____ Date:_____

Company/Facility Name:_____

Facility Name:_____

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):_____

Visible Emissions:

Report the following on the lines provided below: all date(s) and six (6) minute average opacity reading(s) which the opacity limit was exceeded during the monthly observations; or if there were no exceedances during the monthly observations, then write "no exceedances" in the comment column.

EQUIPMENT or EMISSION POINT DESCRIPTION	SERIAL/ID NO.	DATE	6 MIN. AVER. (%)	COMMENTS

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:_____

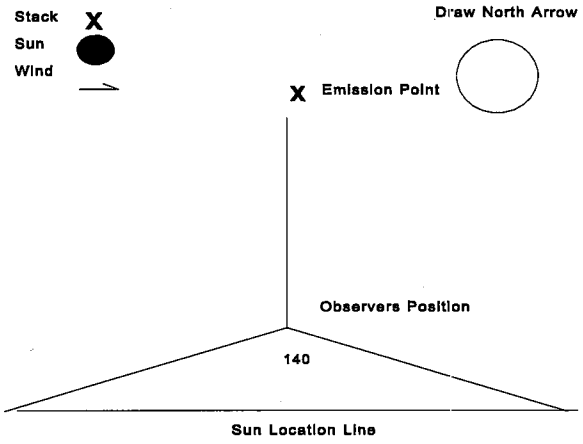
For stacks, describe equipment and fuel:_____

For fugitive emissions from crushers and screens, describe:

Fugitive emission point:_____

Plant Production (tons/hr):_____

(During observation)



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):_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
Six (6) Minute Average Opacity Reading (%):					

Observation Date and Start Time:_____

Method of observation (Method 9):_____

	Seconds				
MINUTES	0	15	30	45	COMMENTS
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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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 pors., 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 and13-276-5; 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

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; 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.

EXHIBIT G.

Letter from State Historic Preservation Division
Dated May 12, 2015

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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 pors., 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

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 March 2020

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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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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).

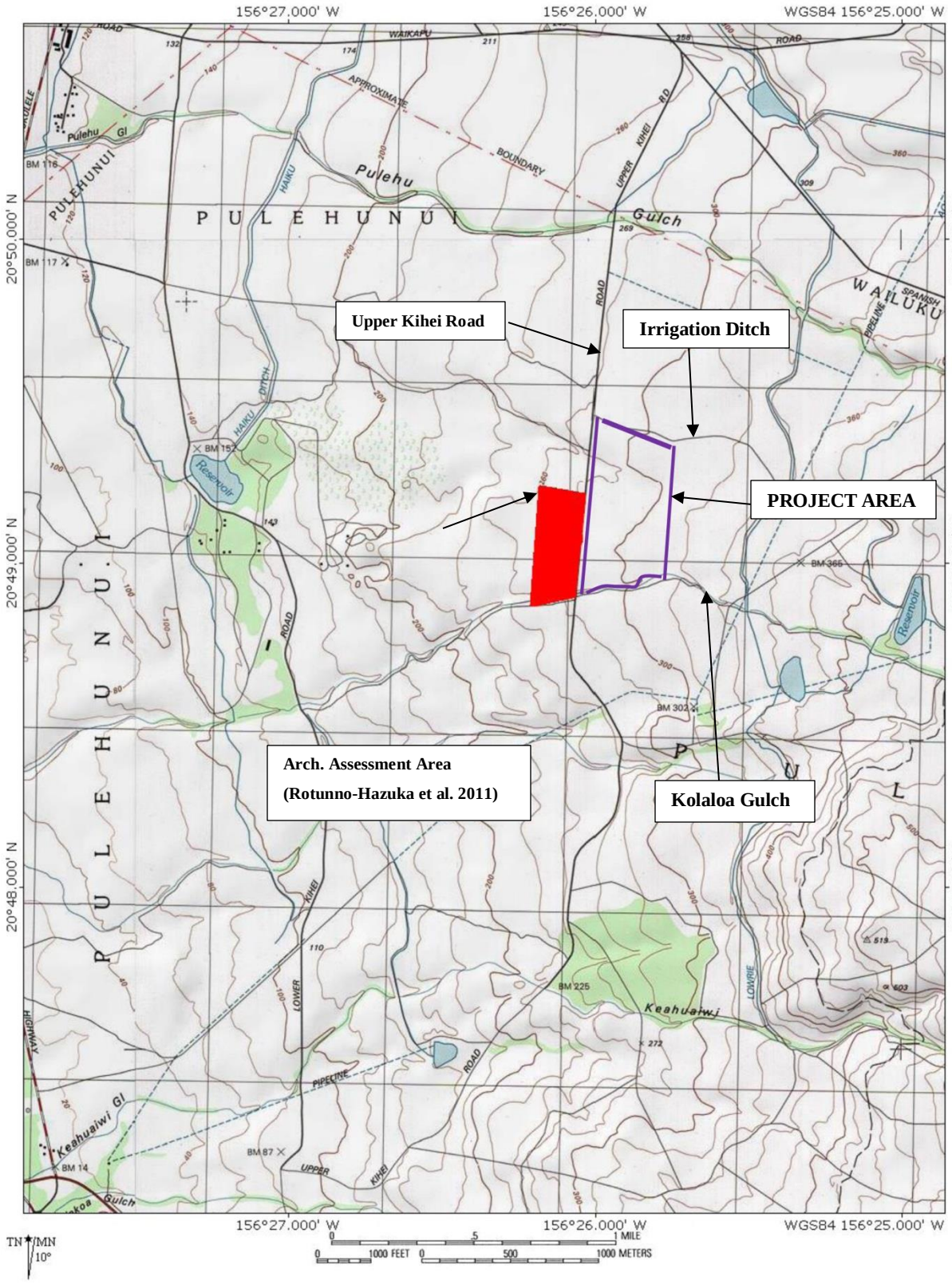

Figure 1. Location of Current Project Area (purple) and Previous Archaeological Assessment (red)

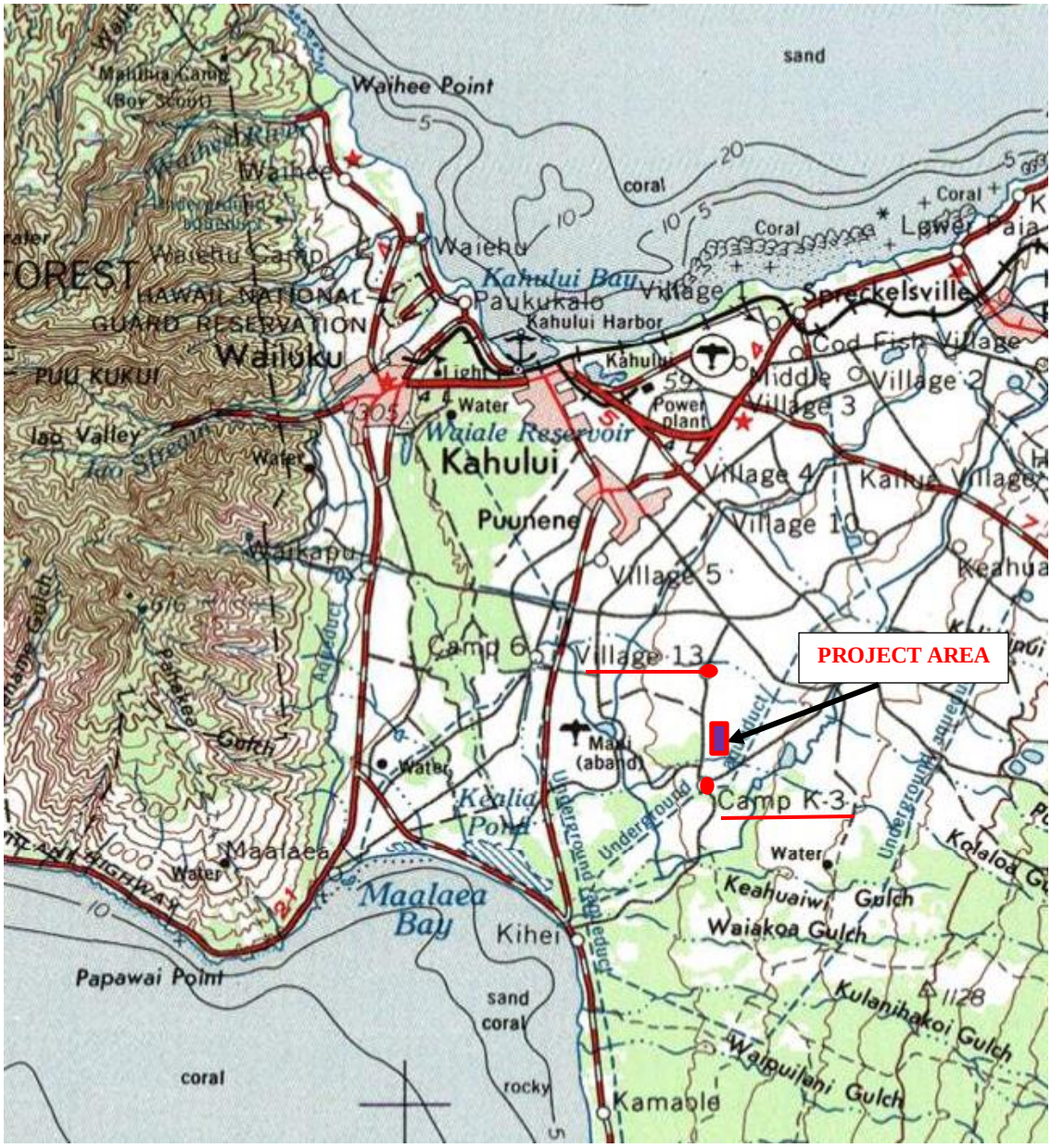

Figure 2. USGS Quadrangle Showing Location of Project Area (purple and red) and Various Plantation Camps Including Kihei Camp 3 and Camp 13

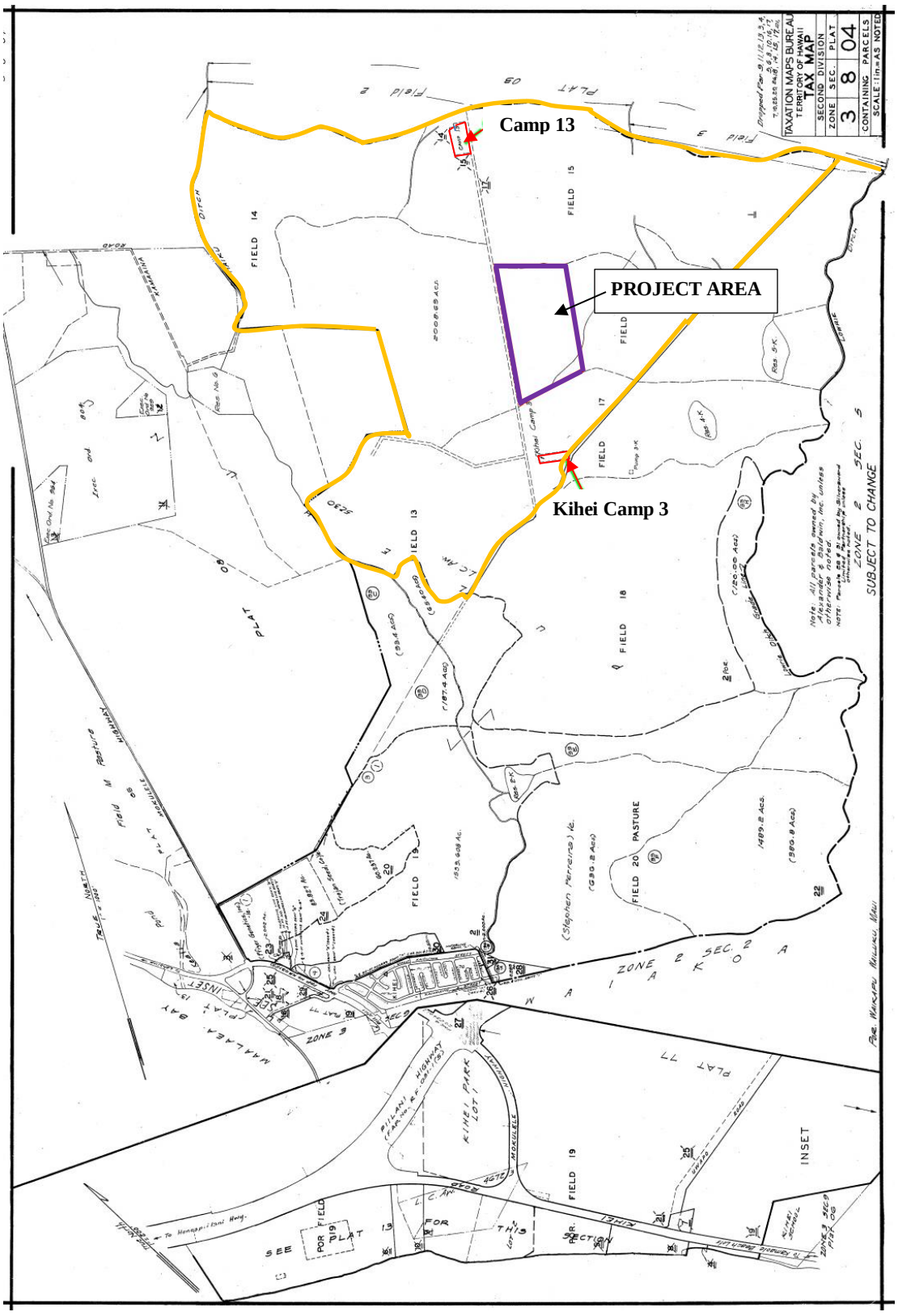

Figure 3. Tax Map Key 3-8-004 Showing Location of Project Area (purple), Plantation Camps 13 and 3 (red), LCA 5230 and extent of Parcel 1 (TMK: (2) 3-8-004:001) (gold)

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)

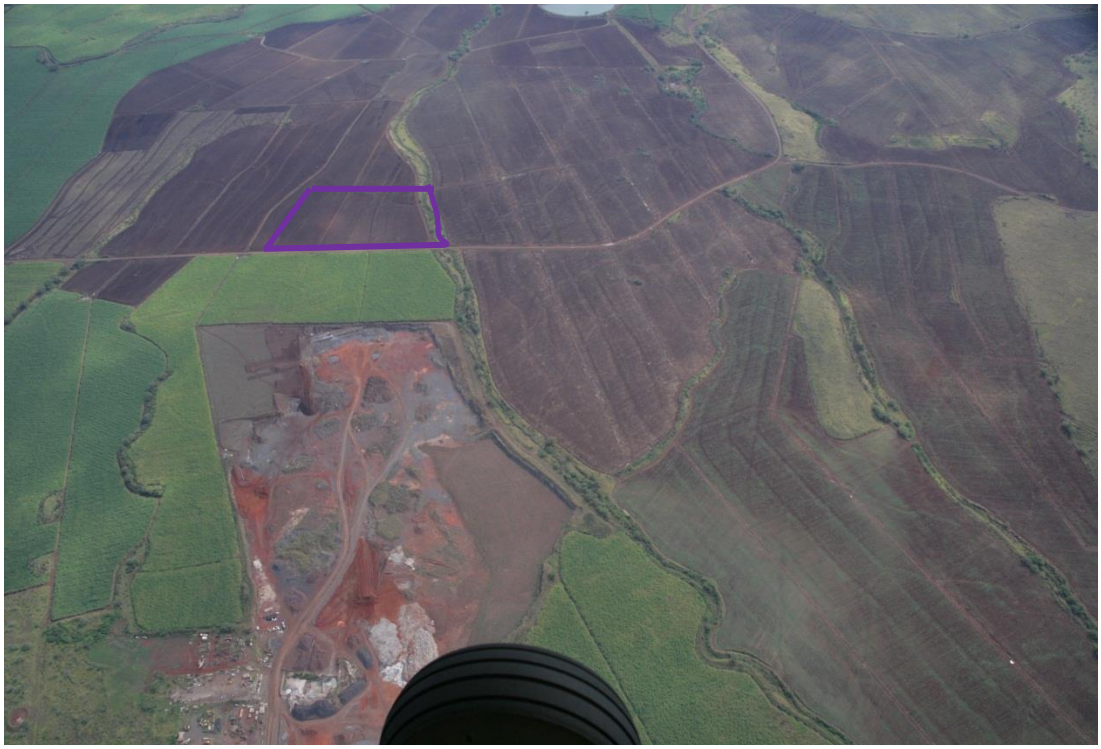

Figure 7. Aerial Photograph of Project Area (purple outline)

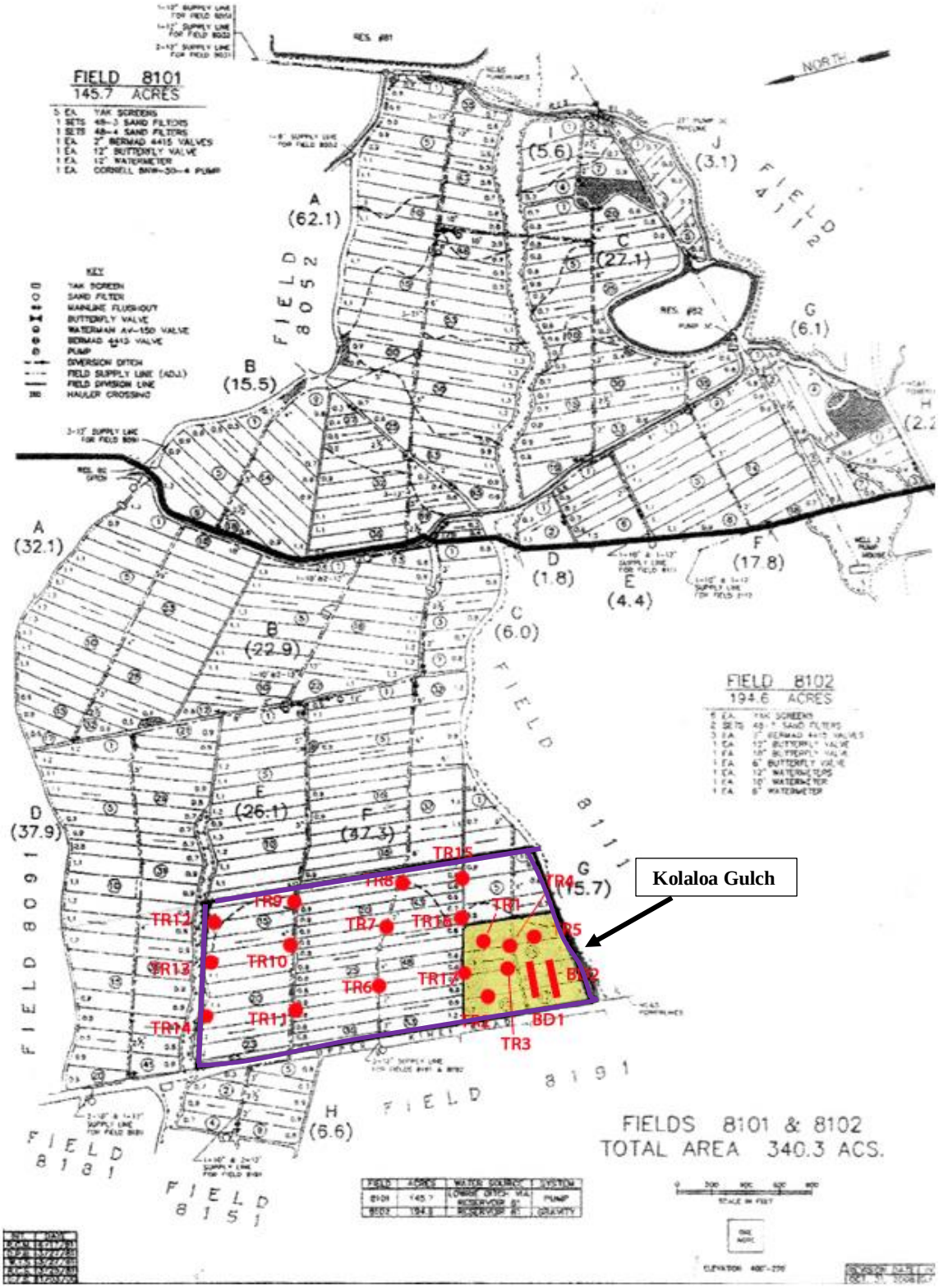

Figure 8. Sugar Cane Field Map Showing Project Area and Test Excavations (TR's 1-17 and BD's 1-2) (note yellow highlighted area is the 8.8 acre section of the project area)

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 Pulehu 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 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 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 and 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.

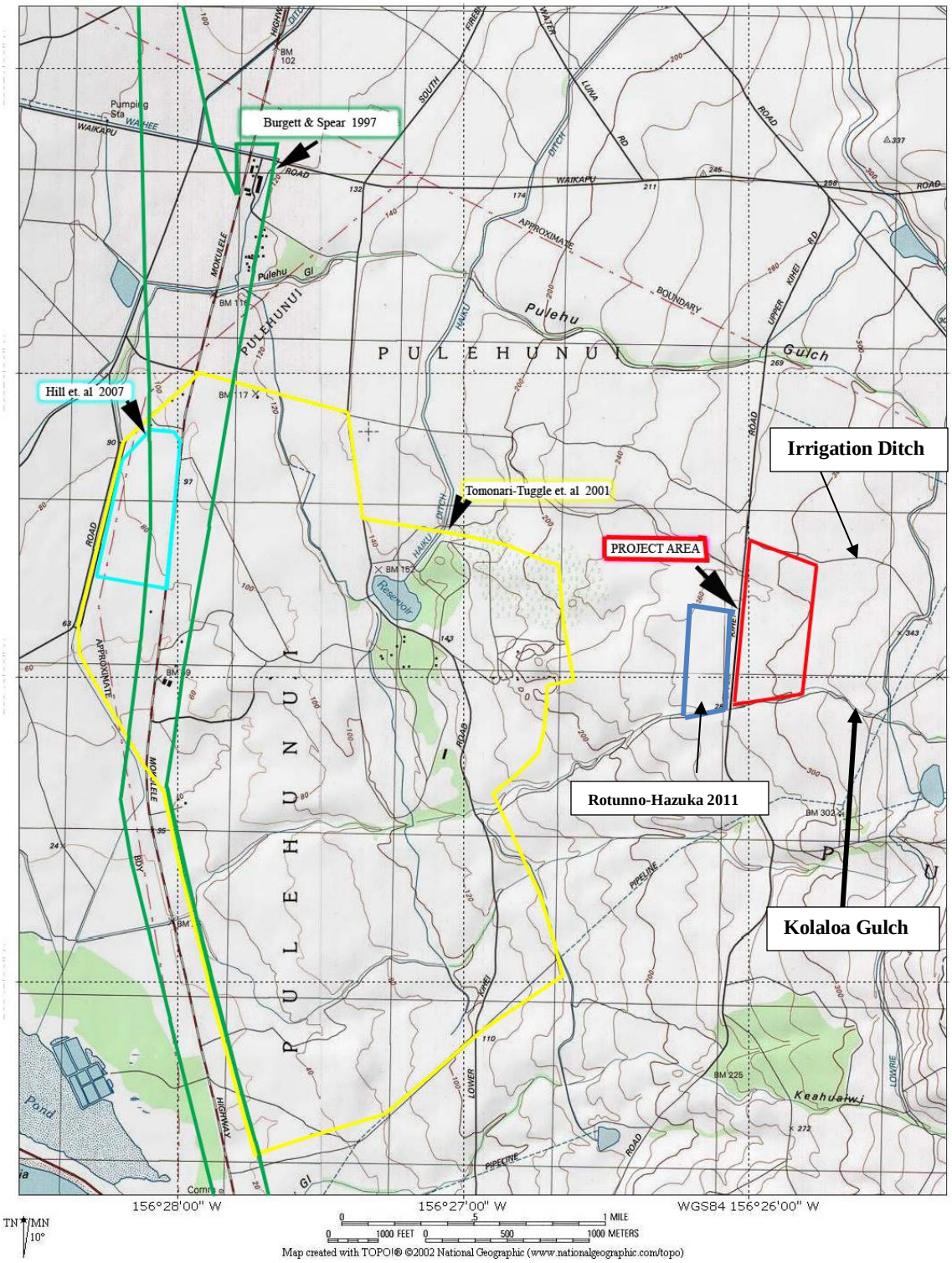

Figure 9. Plan View Map Showing Previous Archaeological Studies near the Project Area

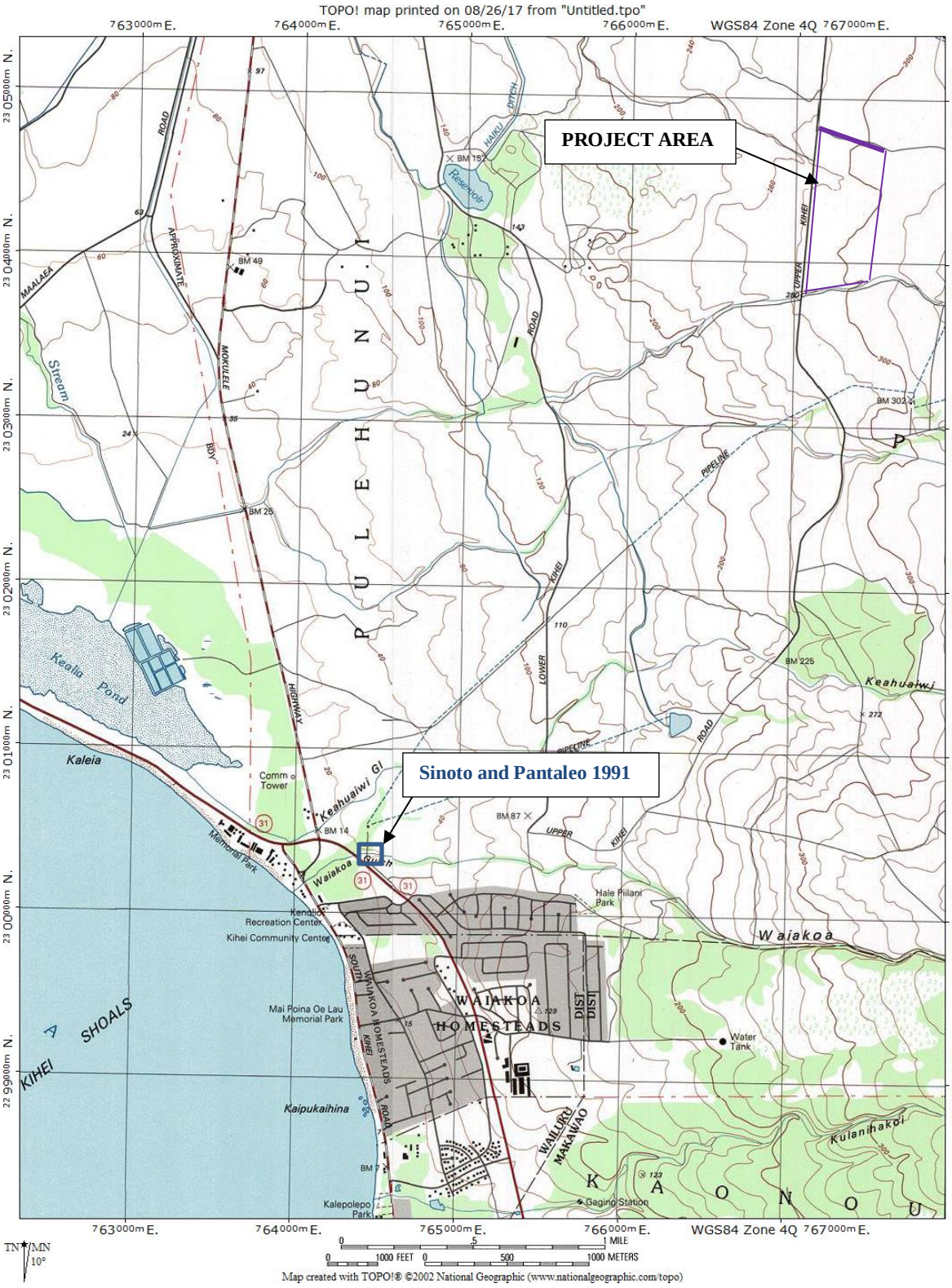

Figure 10. USGS Quadrangle Map Showing Previous Archaeological Studies near Project Area

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 "saprolytic" 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 "saprolytic 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.

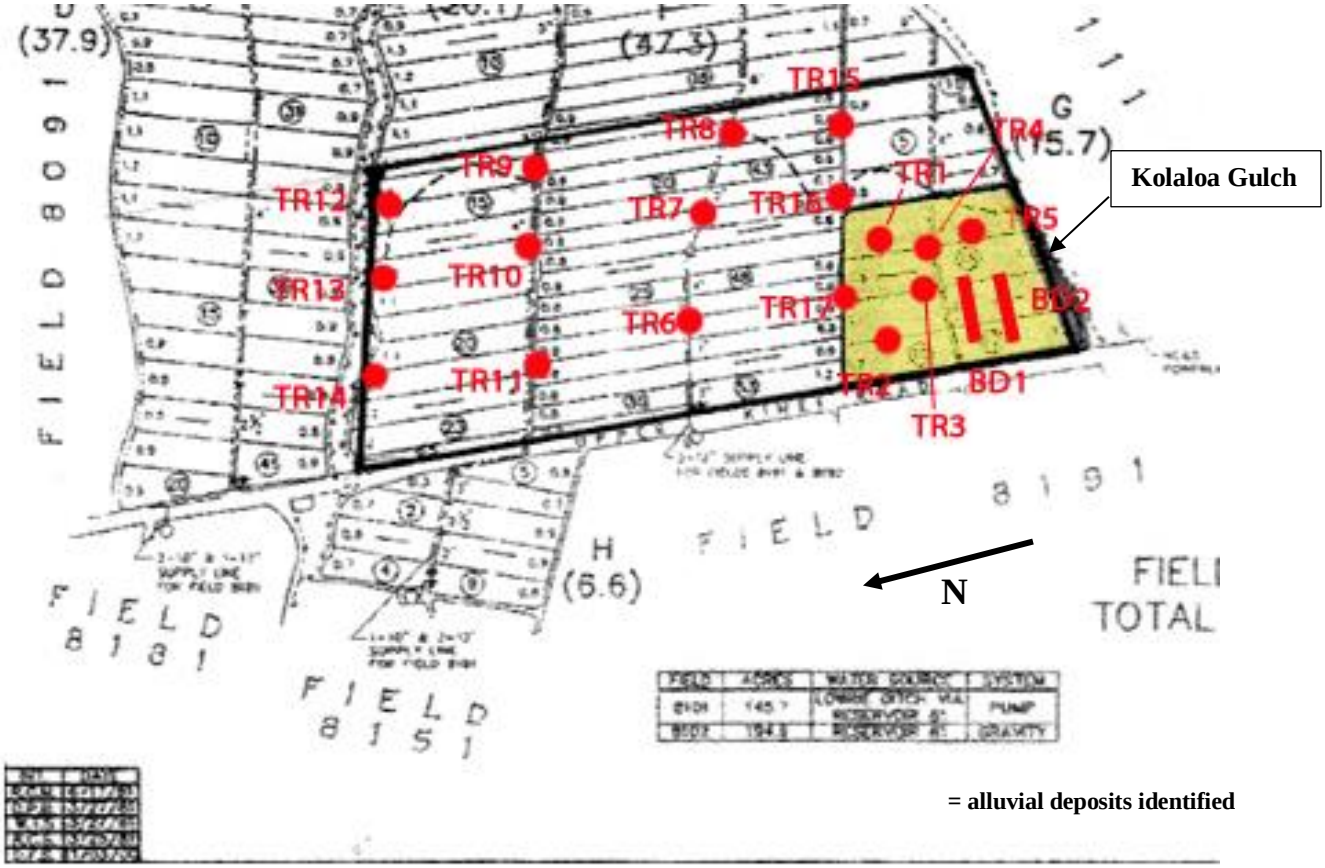

Figure 11. Enlarged Map Showing Location of TRs 1-17 and BD 1-2

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 "saprolytic 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 8.8acre 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 "saprolytic 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 "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 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".

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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 "saprolytic 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** (0-80cmbs) 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 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 "saprolytic 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".

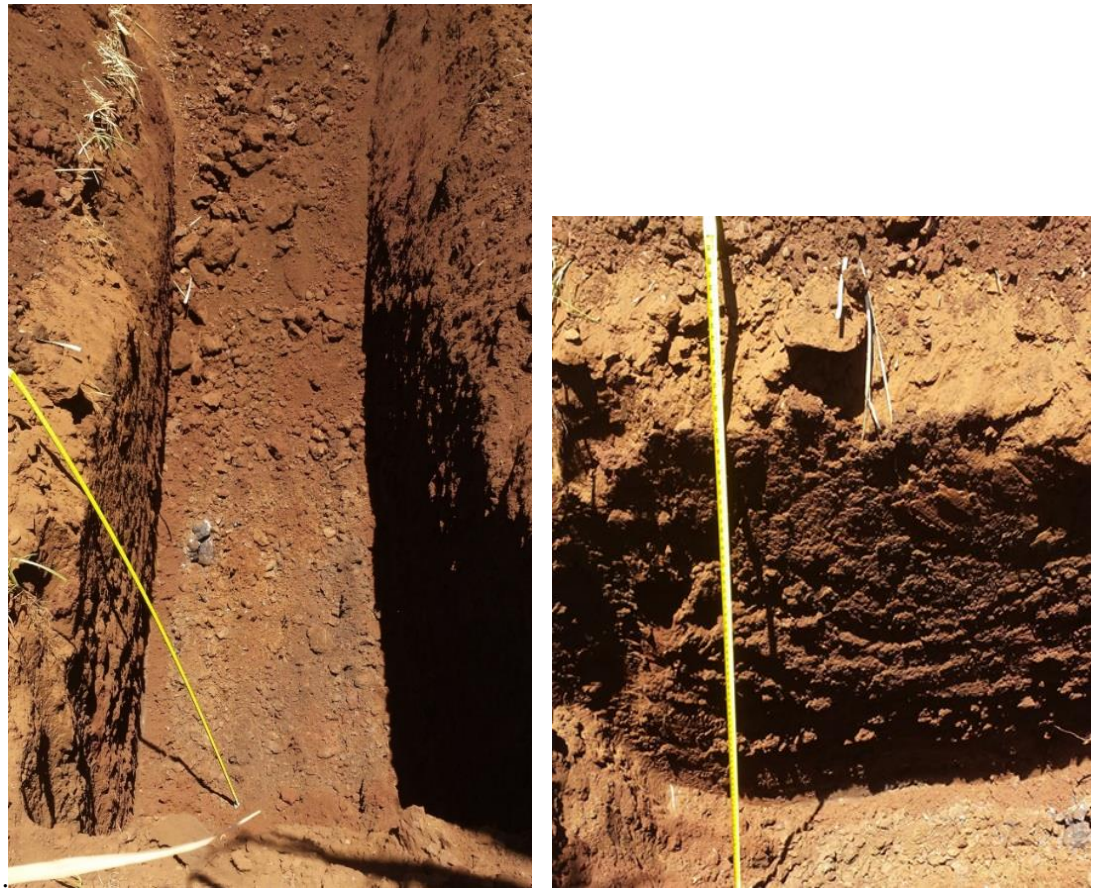

Figure 40. Photographs of TR-15 Overview (View to West) (left); and South Wall (right)

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.

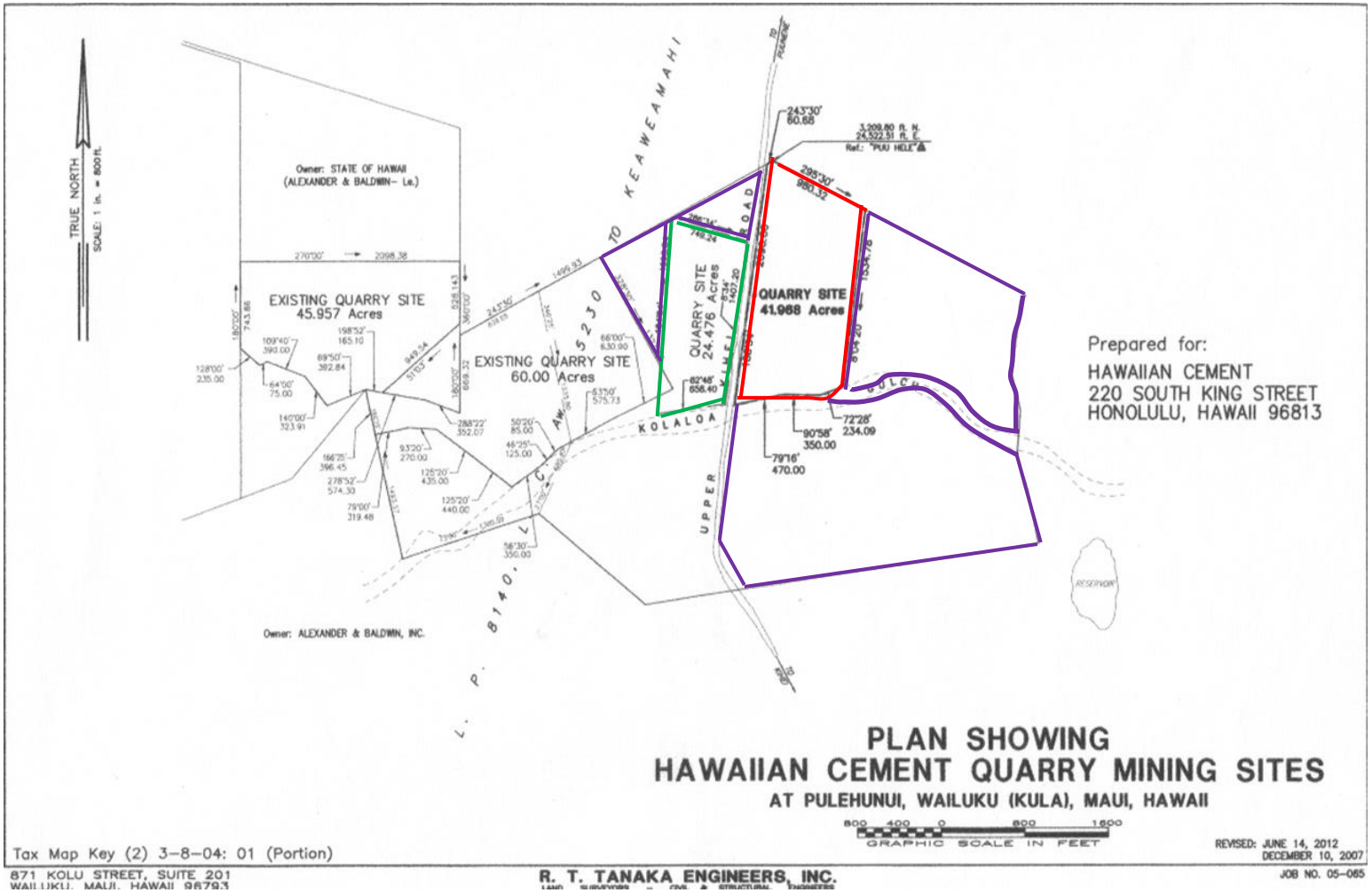
TRUE NORTH
SCALE: 1 in. = 800 ft.
Owner: STATE OF HAWAII
(ALEXANDER & BALDWIN- Le.)
EXISTING QUARRY SITE
45.957 Acres
EXISTING QUARRY SITE
60.00 Acres
QUARRY SITE
24.476 Acres
QUARRY SITE
41.968 Acres
TO KEAWEAMAHI
KOLALOA
UPPER
Owner: ALEXANDER & BALDWIN, INC.
L. P. 8140, L. C. AW. 5230
Prepared for:
HAWAIIAN CEMENT
220 SOUTH KING STREET
HONOLULU, HAWAII 96813
PLAN SHOWING
HAWAIIAN CEMENT QUARRY MINING SITES
AT PULEHUNUI, WAILUKU (KULA), MAUI, HAWAII
800 400 0 800 1600
GRAPHIC SCALE IN FEET
Tax Map Key (2) 3-8-04: 01 (Portion)
REVISED: JUNE 14, 2012
DECEMBER 10, 2007
JOB NO. 05-065
871 KOLU STREET, SUITE 201
WAILUKU, MAUI, HAWAII 96793
R. T. TANAKA ENGINEERS, INC.

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

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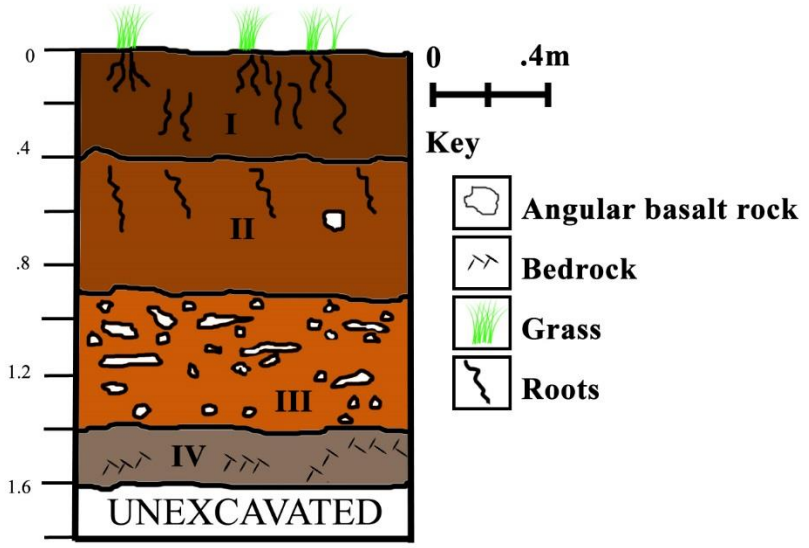
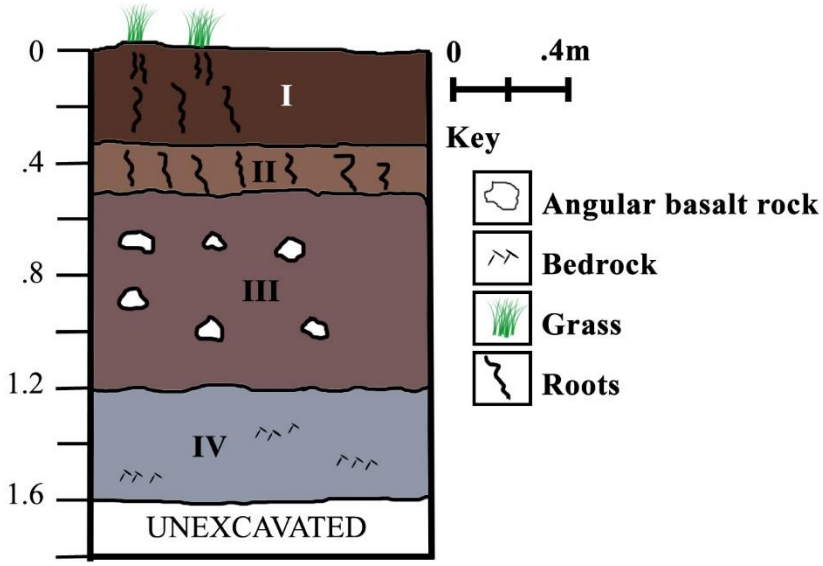
Waihona Aina Corp

2002 The Mahele Database and the Boundary Commission Database (Internet www.waihona.com).

APPENDIX A



Stratigraphic Profile of West Wall at TR1



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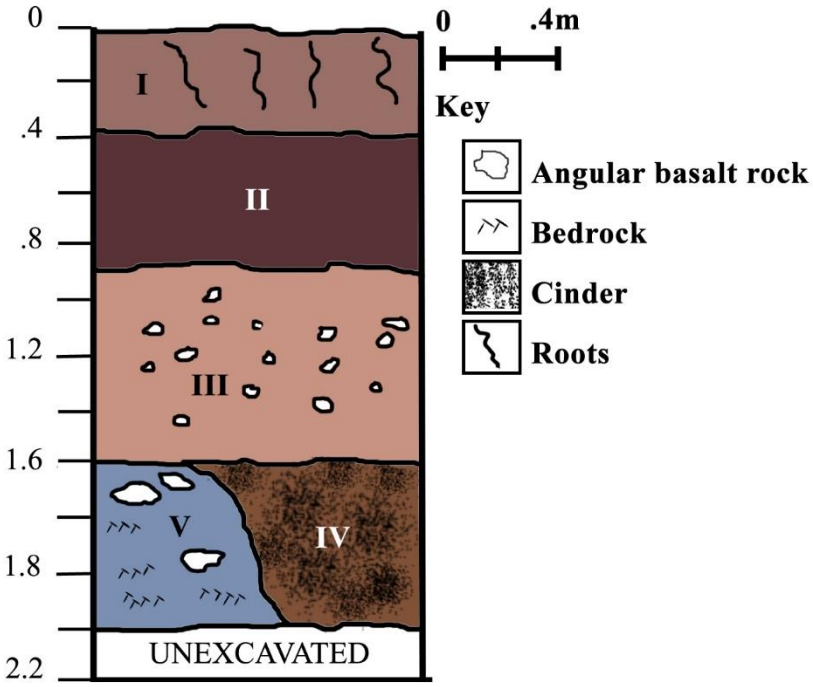

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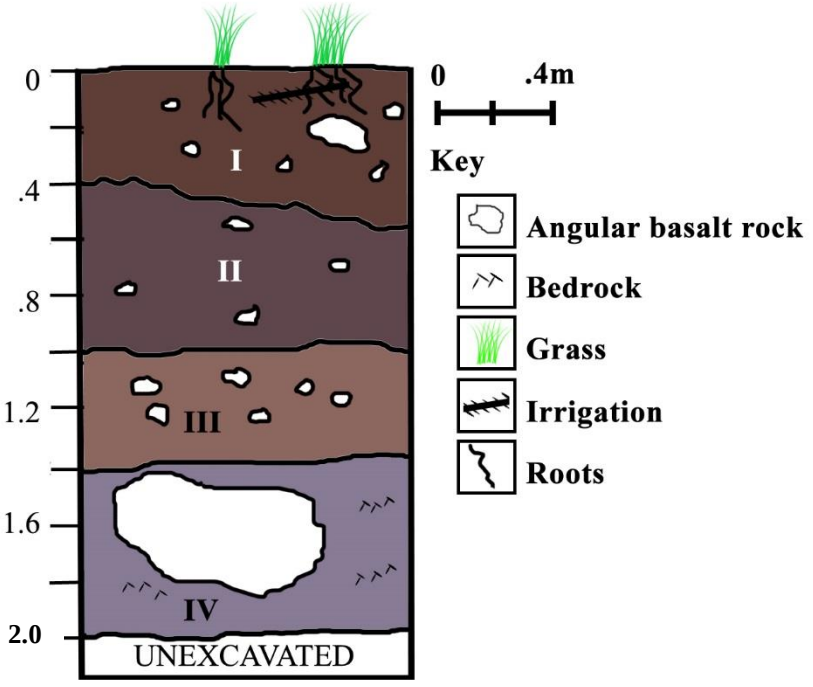

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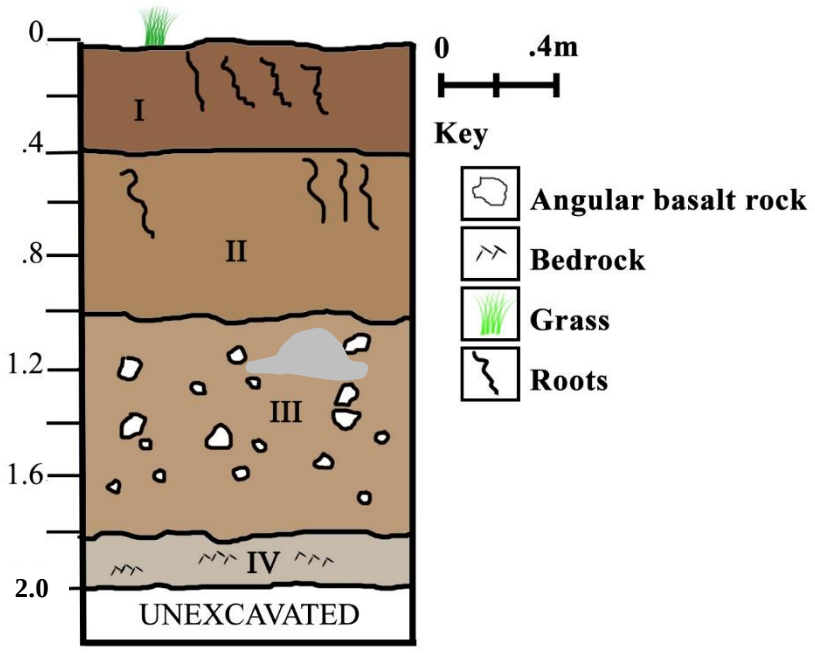

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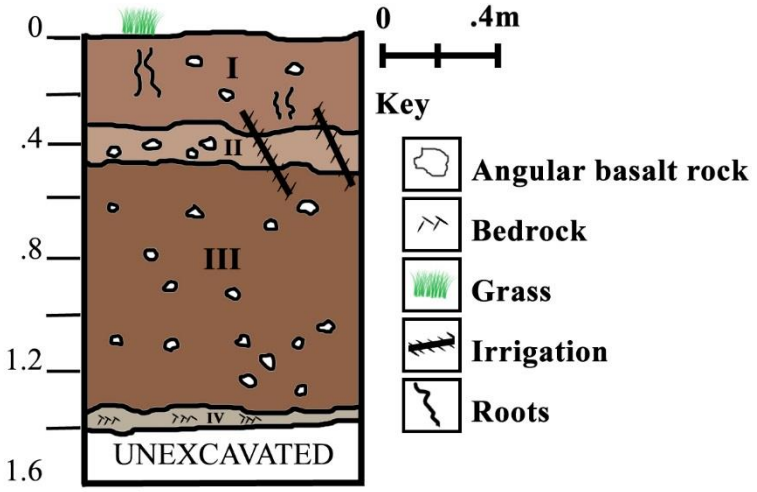

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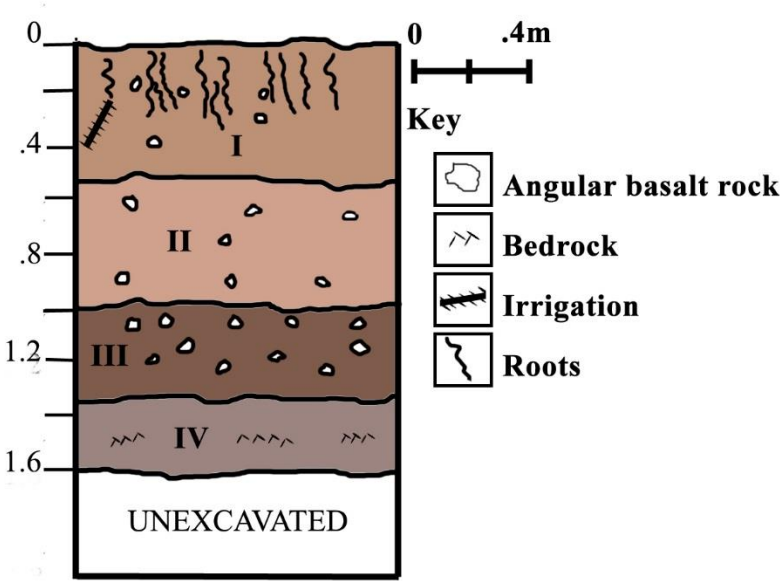
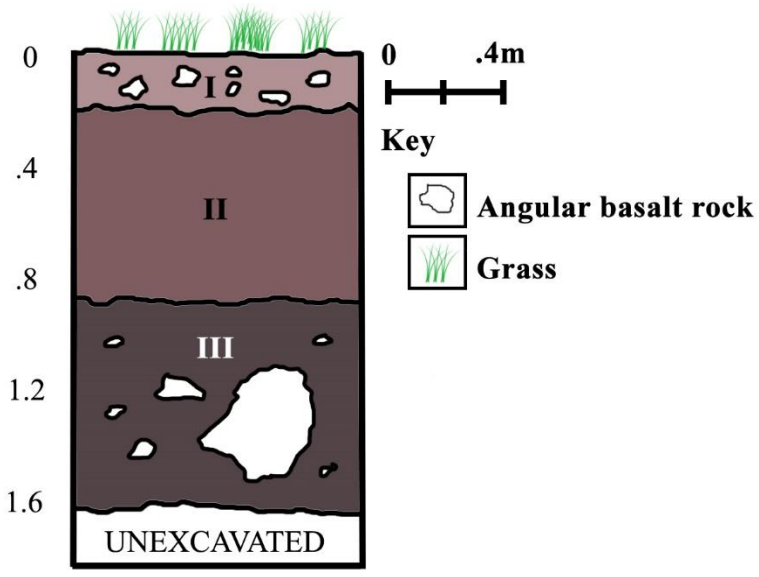


Stratigraphic Profile of North Wall at BD2



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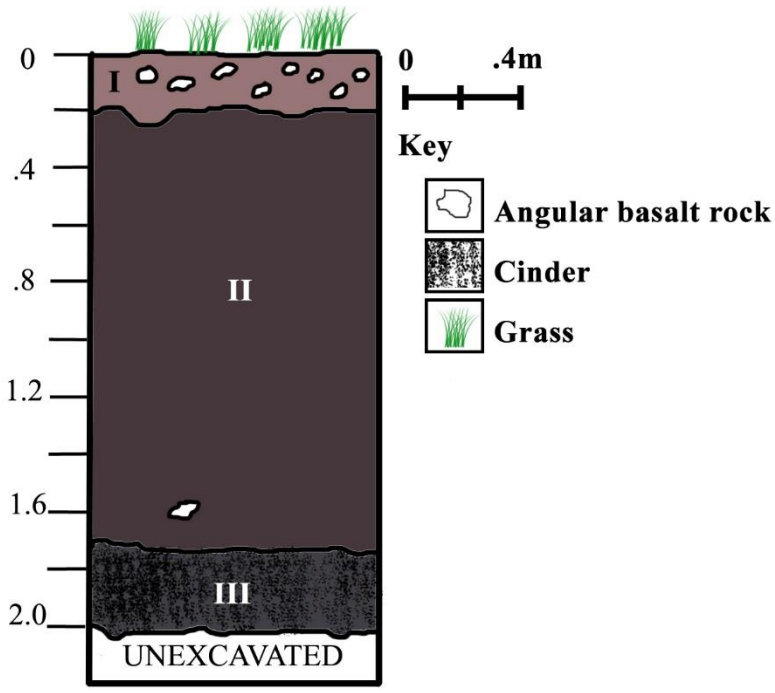

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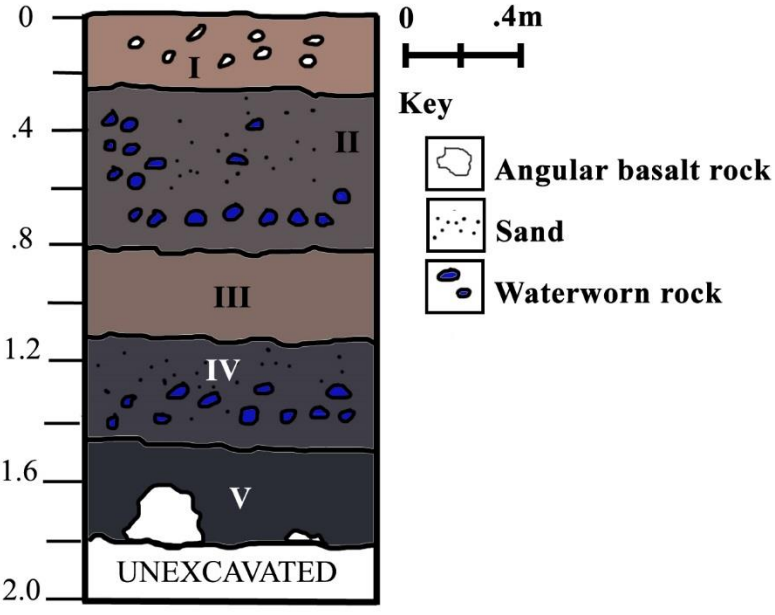

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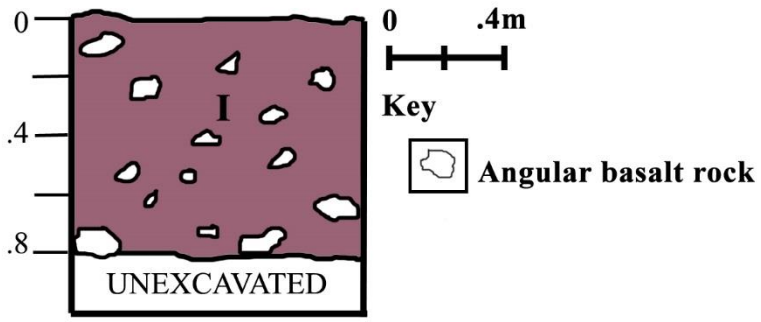

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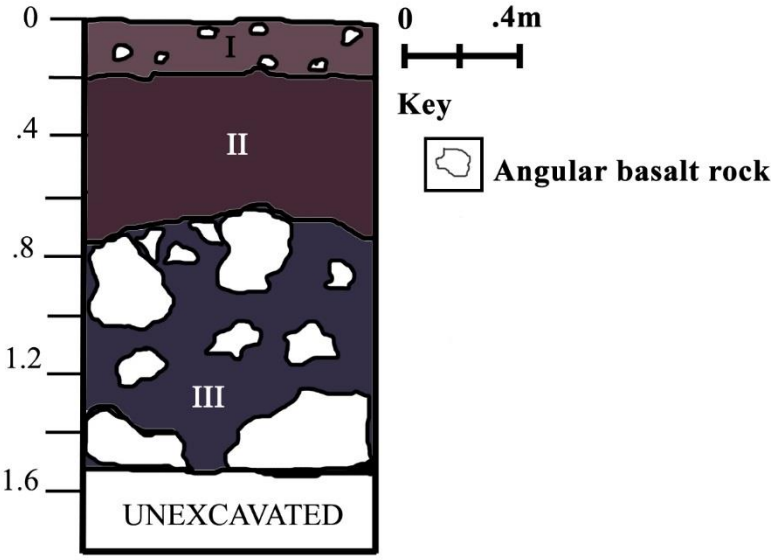

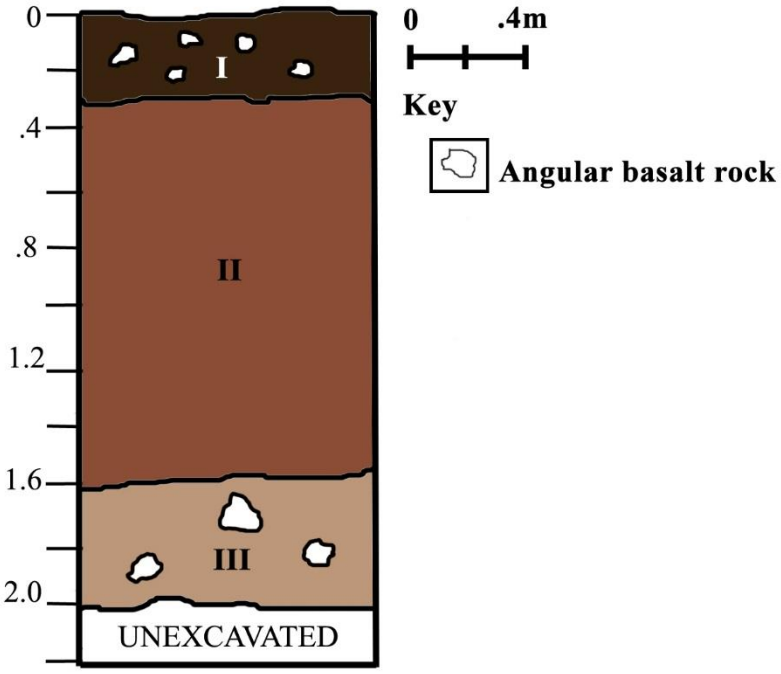

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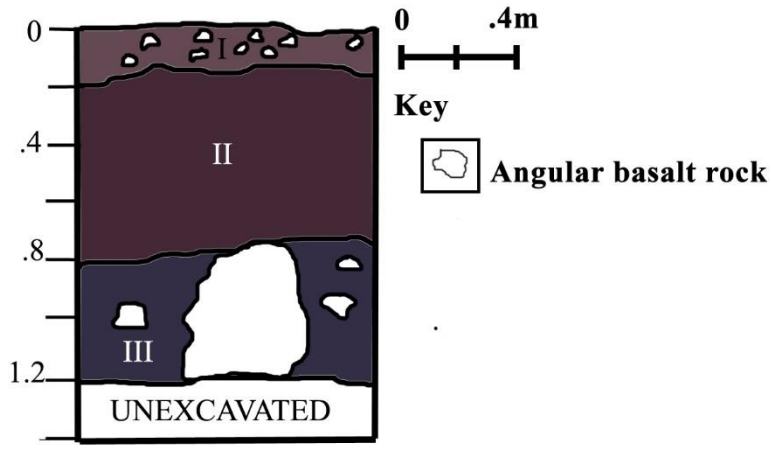

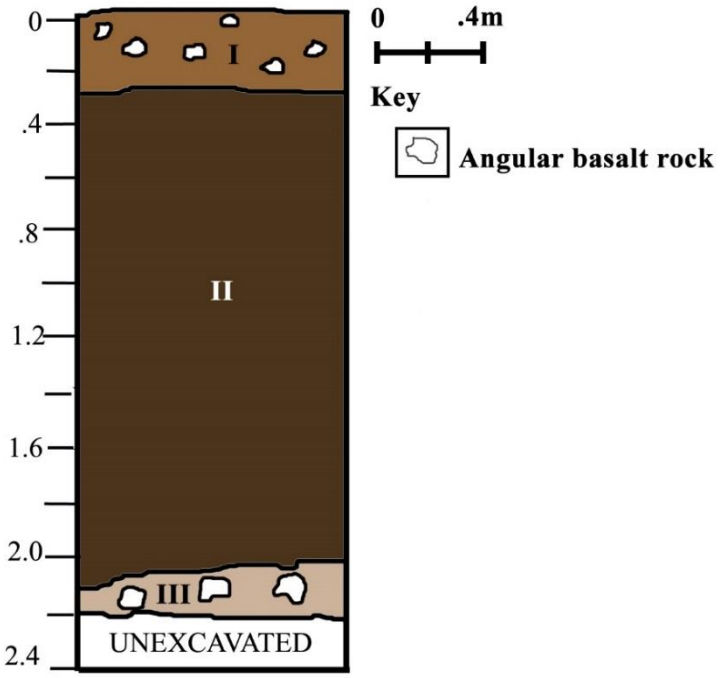

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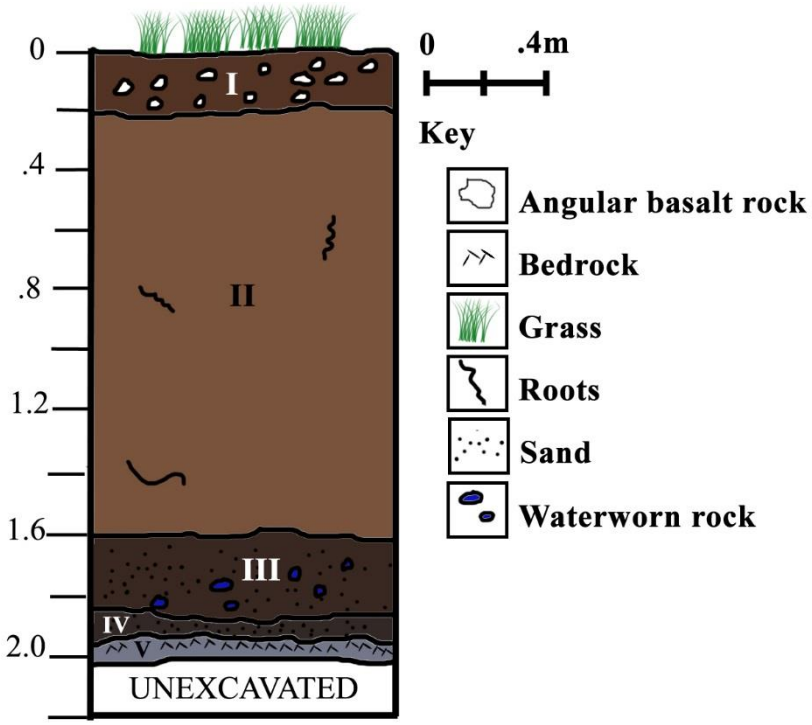

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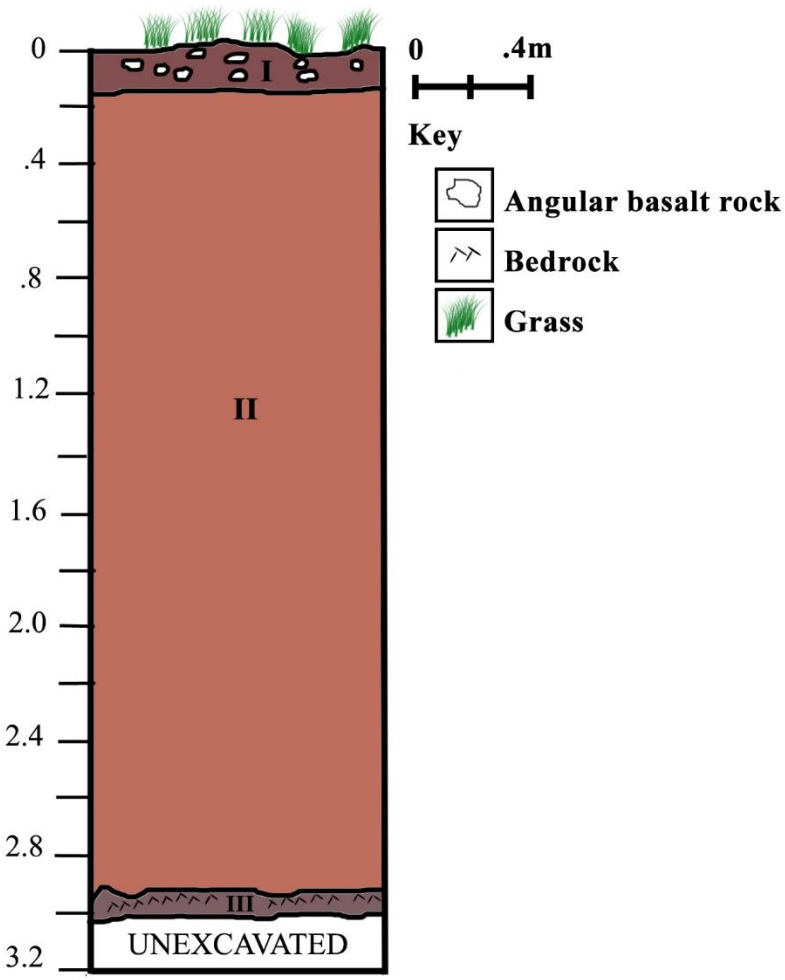

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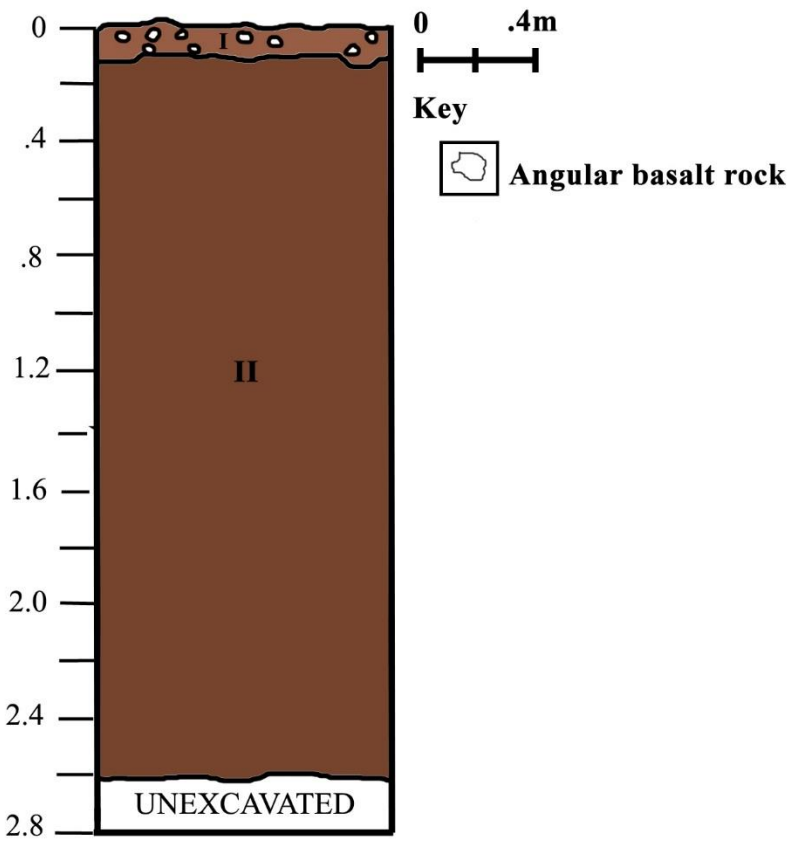

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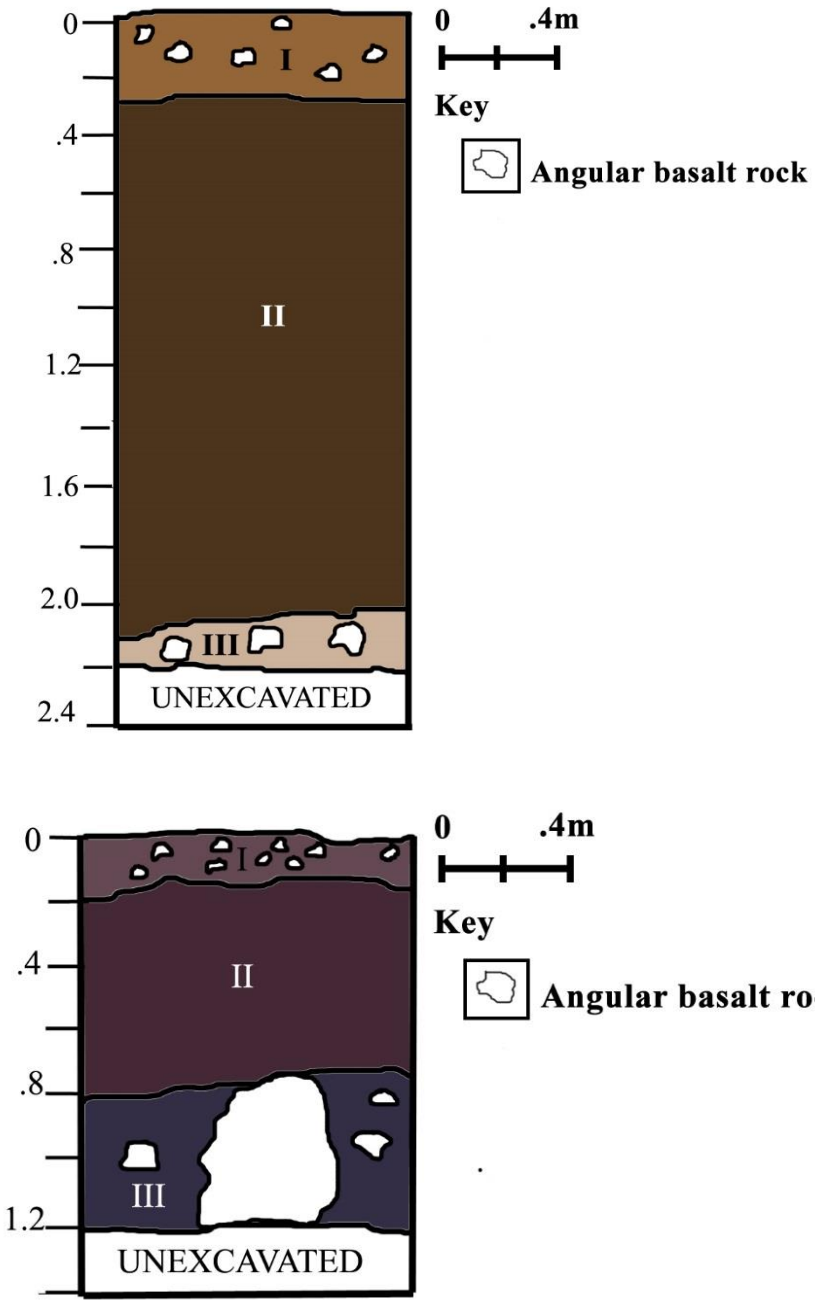

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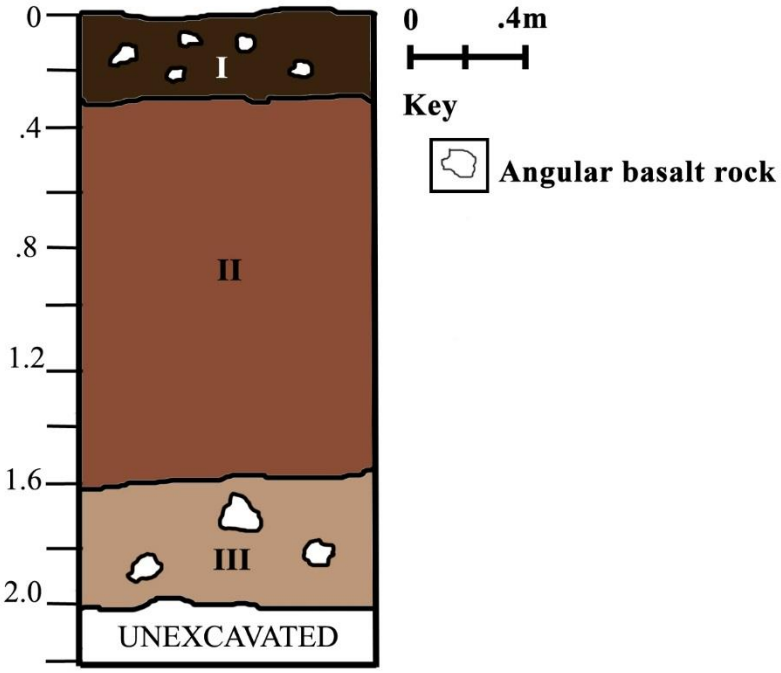

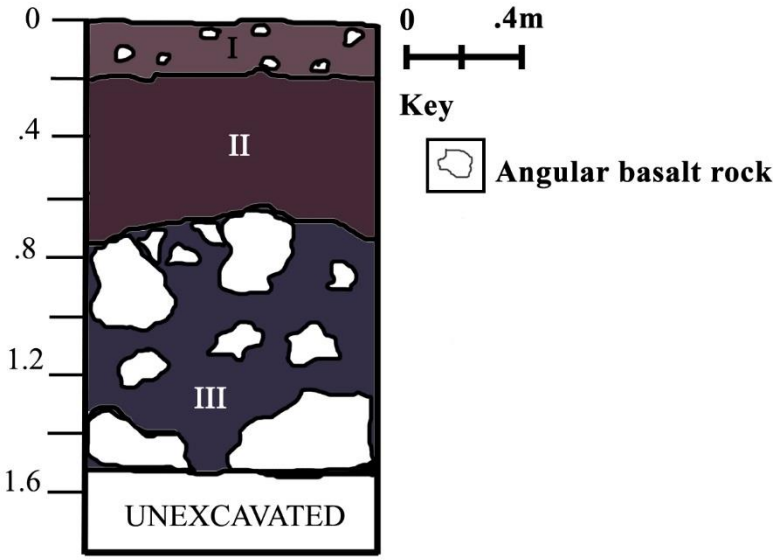

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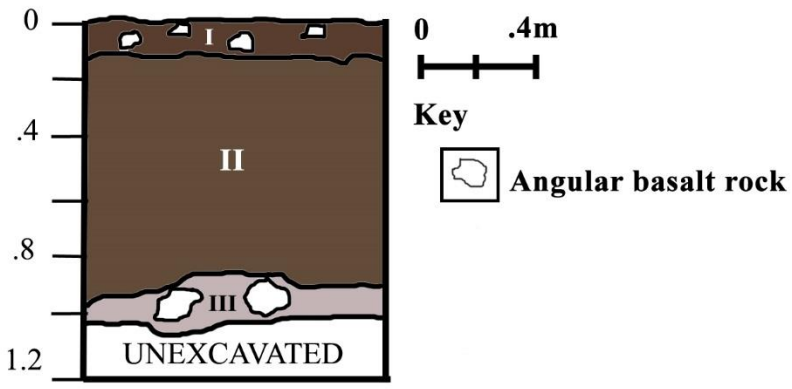

Stratigraphic Profile of South Wall at TR17

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 pors., 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.

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

EXHIBIT I.

Archaeological Monitoring Plan
Dated March 2020

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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Fax: (808) 244-1994

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 (*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 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

	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). 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. 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.
Historic Properties Potentially Affected	No historic properties have been identified within the project area or vicinity.
Monitoring Recommendations	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. 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.

Table of Contents

List of Figures

List of Tables

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).

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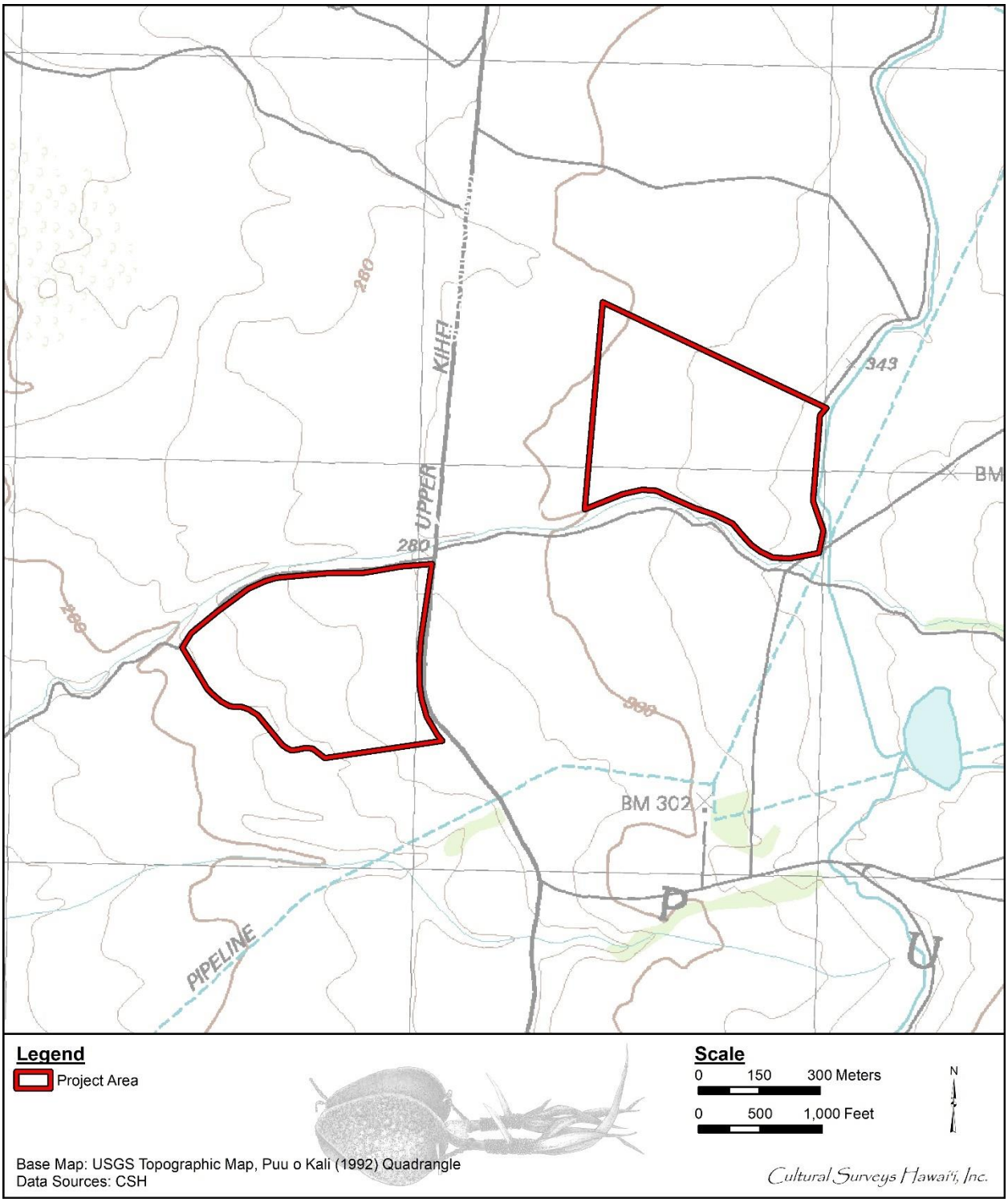


Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992)

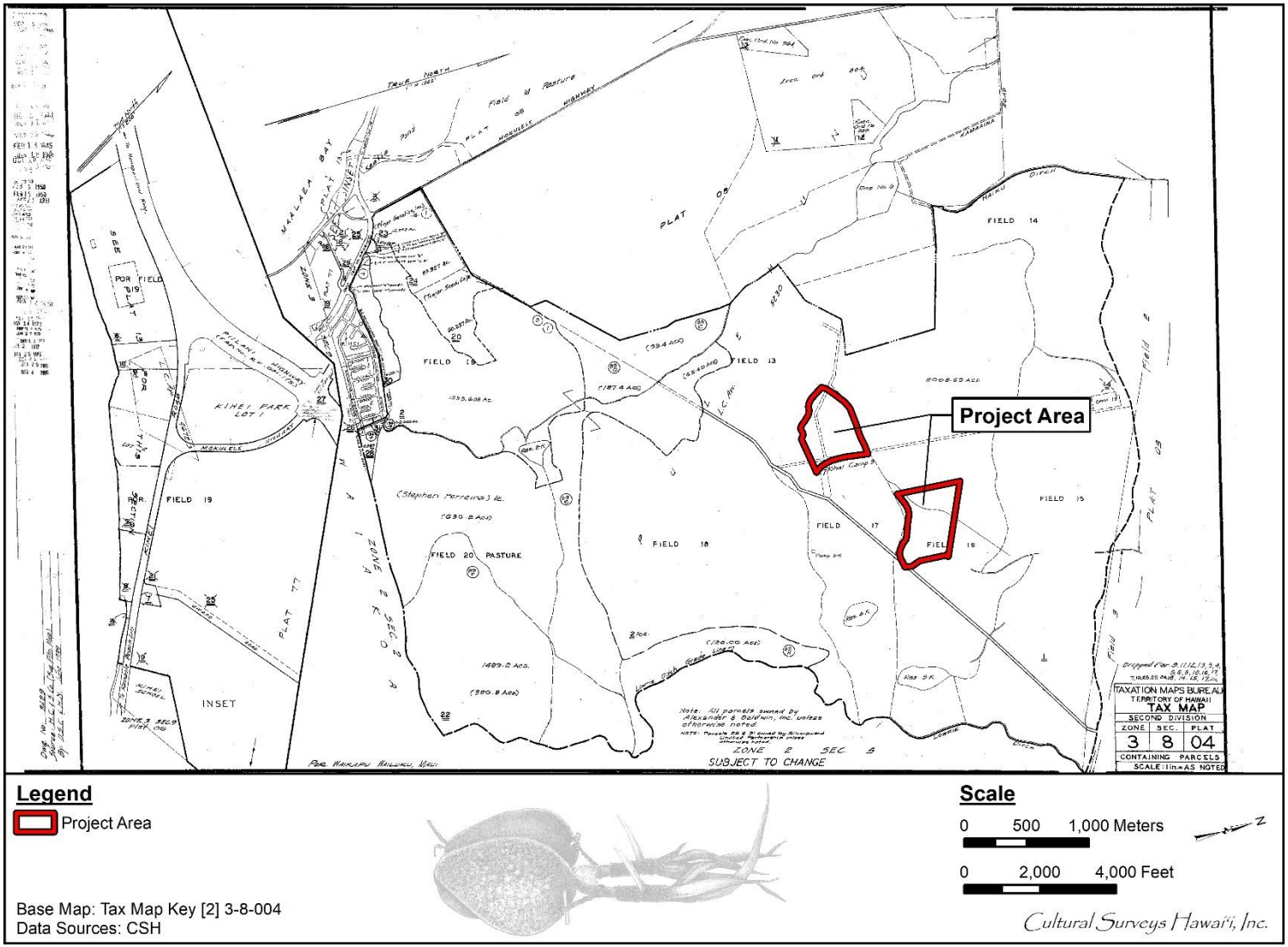


Figure 2. Tax Map Key (TMK) [2] 3-8-004 showing the project area (Hawaii TMK Service 2014)

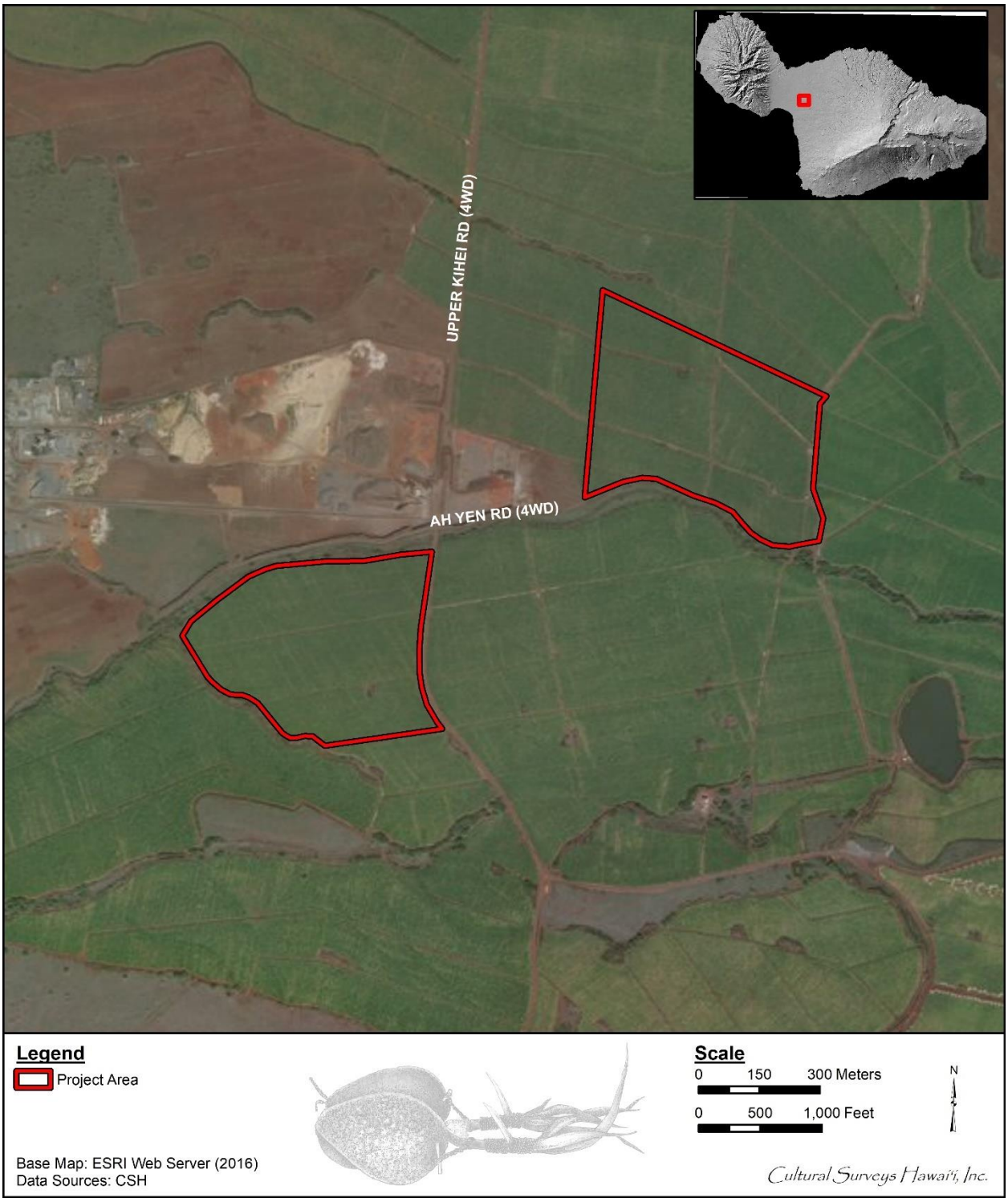


Figure 3. Aerial photograph of the project area (Esri 2016)

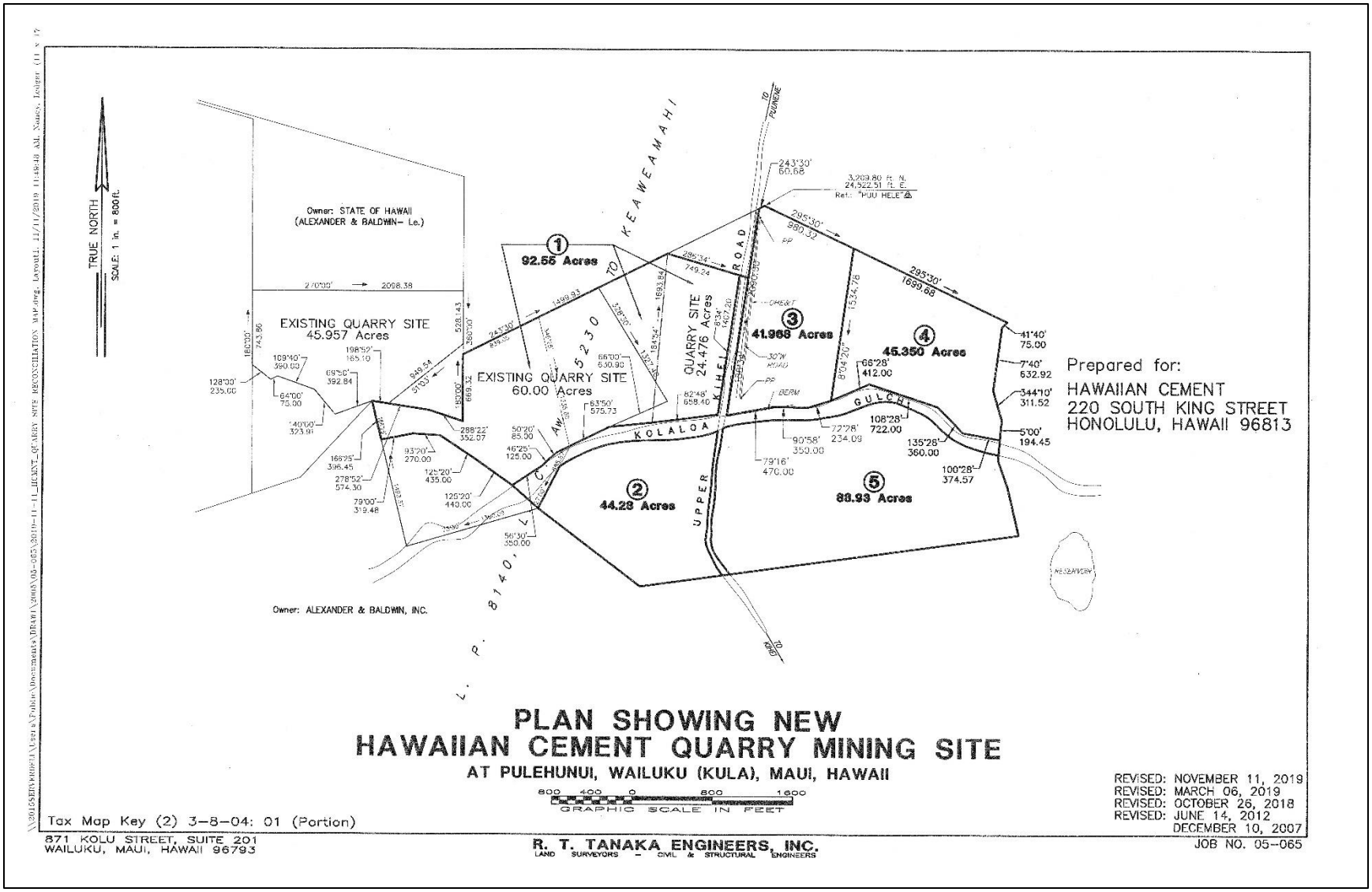


Figure 4. Hawaiian Cement Quarry Mining Site plan showing the location of Increments 2 and 4 (R.T. Tanaka Engineers Inc. 2019)

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.

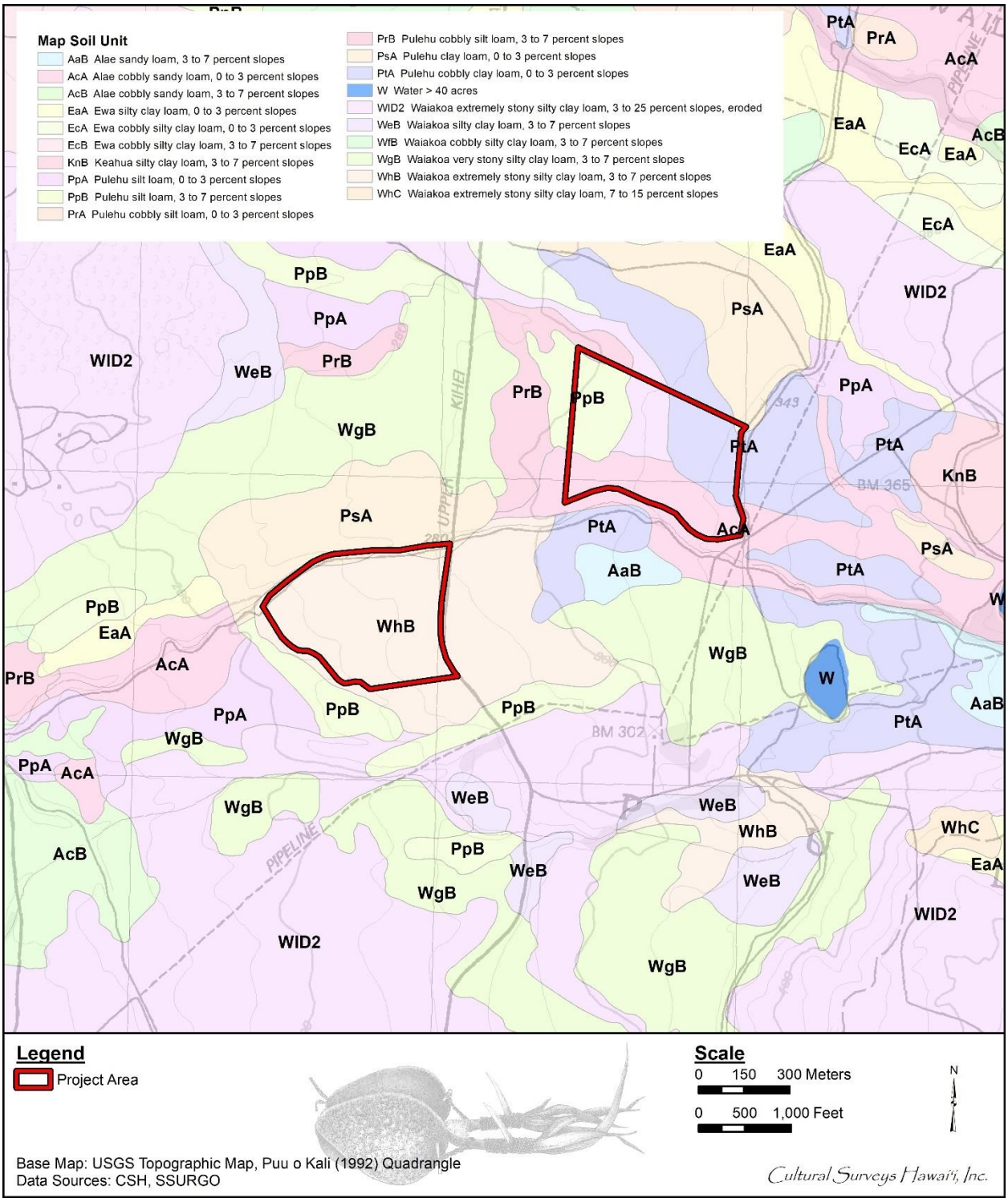


Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

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

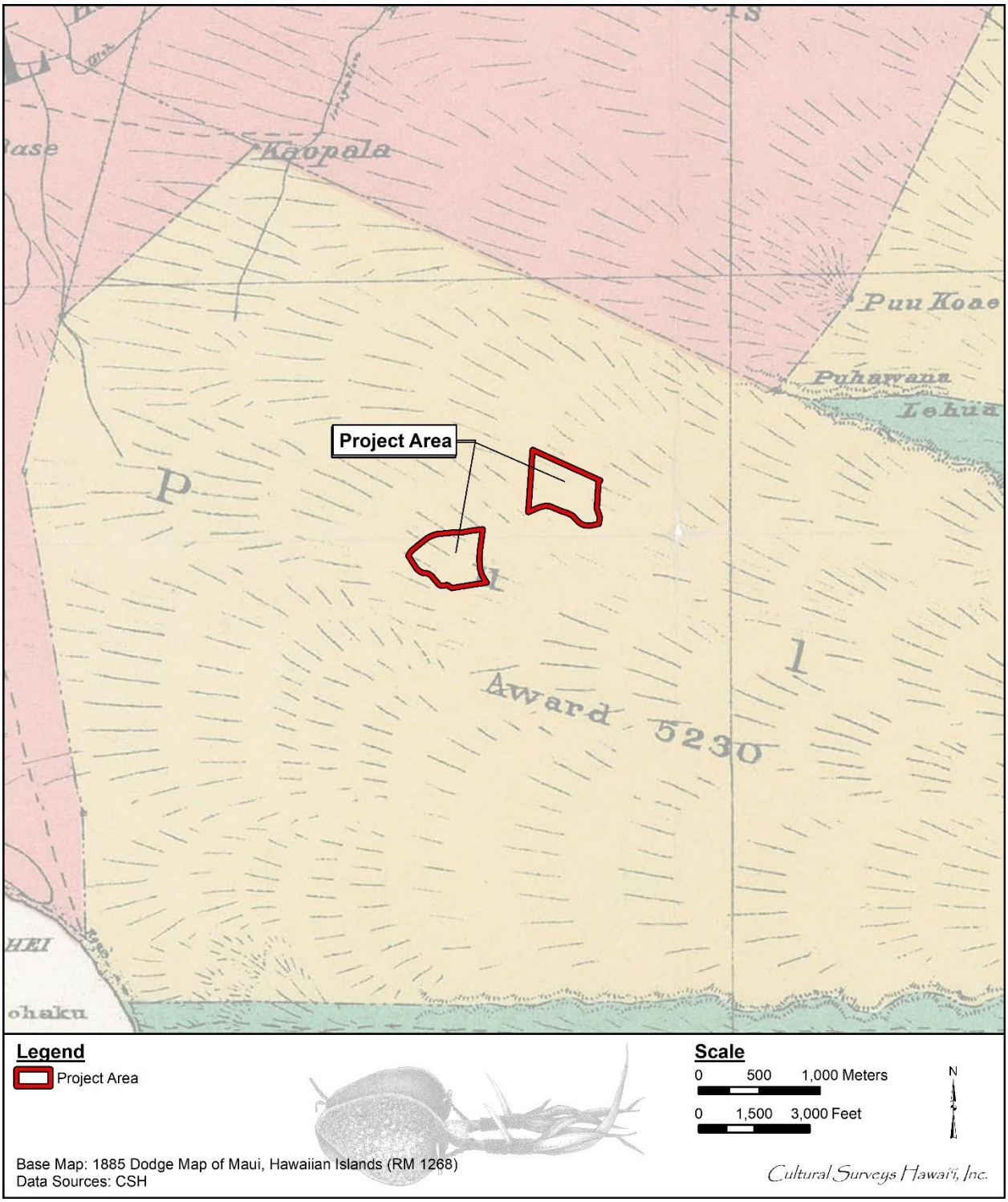


Figure 7. Portion of the 1885 Dodge map of Maui (RM 1268) showing the location of the project area within Award 5230 (Dodge 1885)

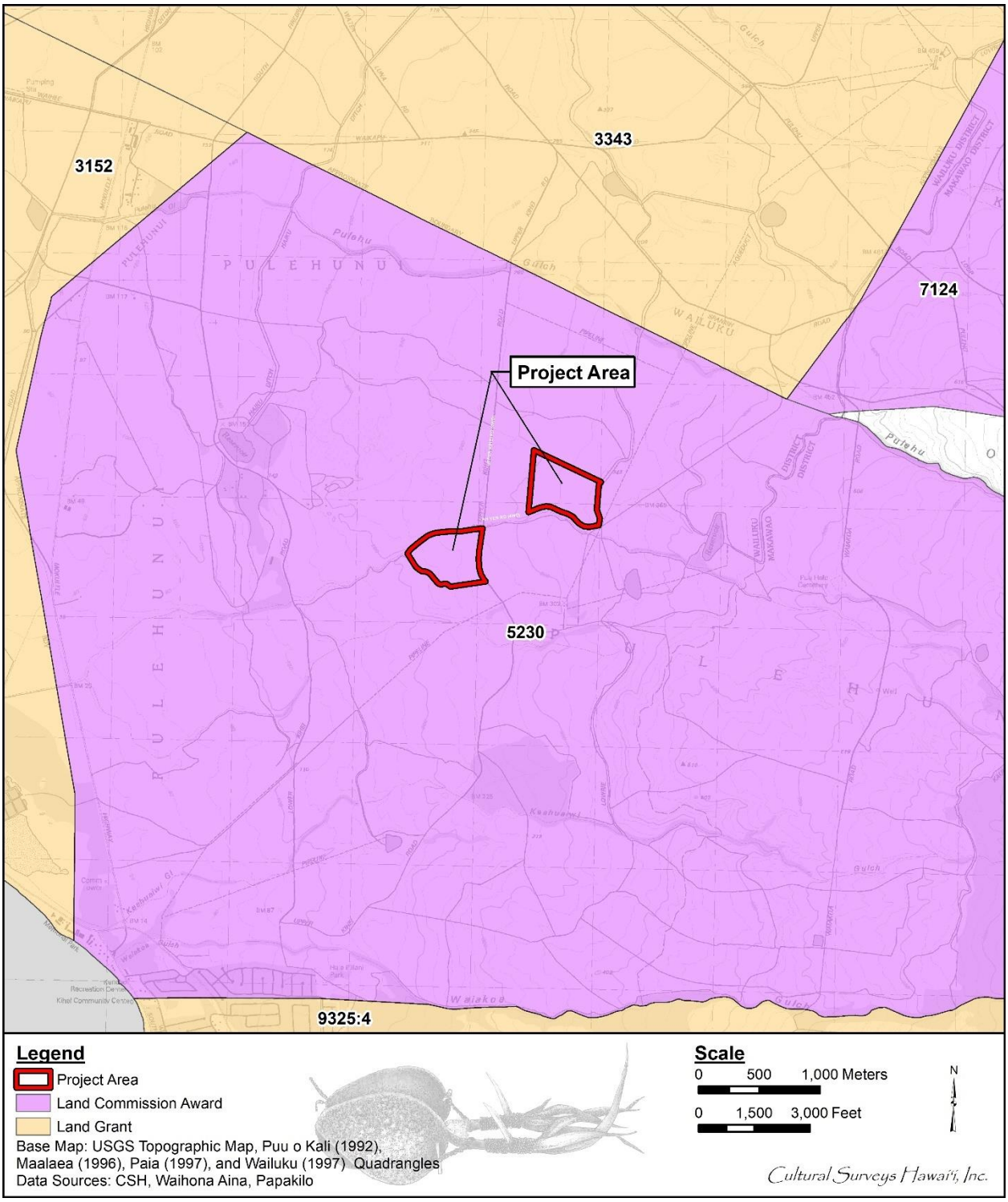


Figure 8. USGS topographic quadrangle map with an overlay of Land Commission Awards and Land Grants recorded in the vicinity of the project area (U.S. Geological Survey 1992, 1996, 1997a, 1997b)

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

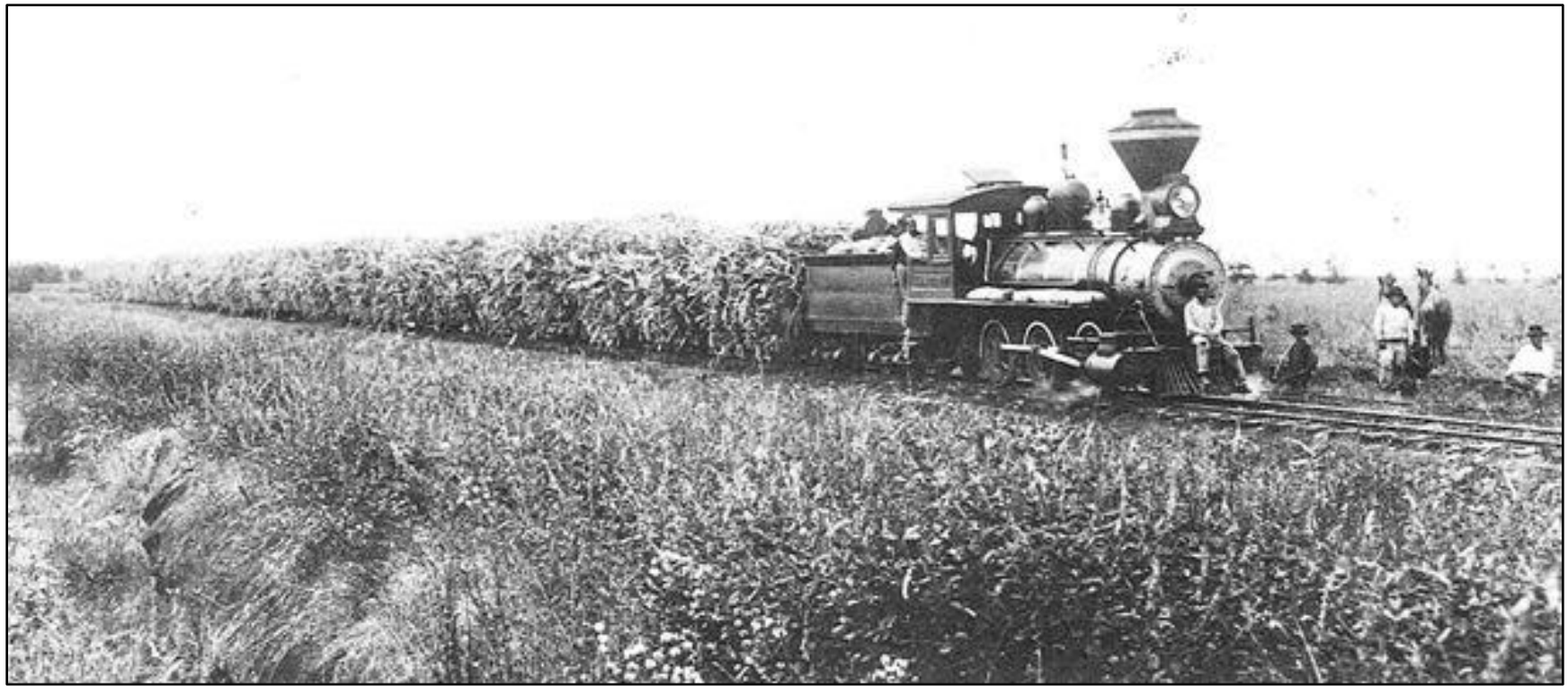


Figure 9. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973)

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 planation 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.

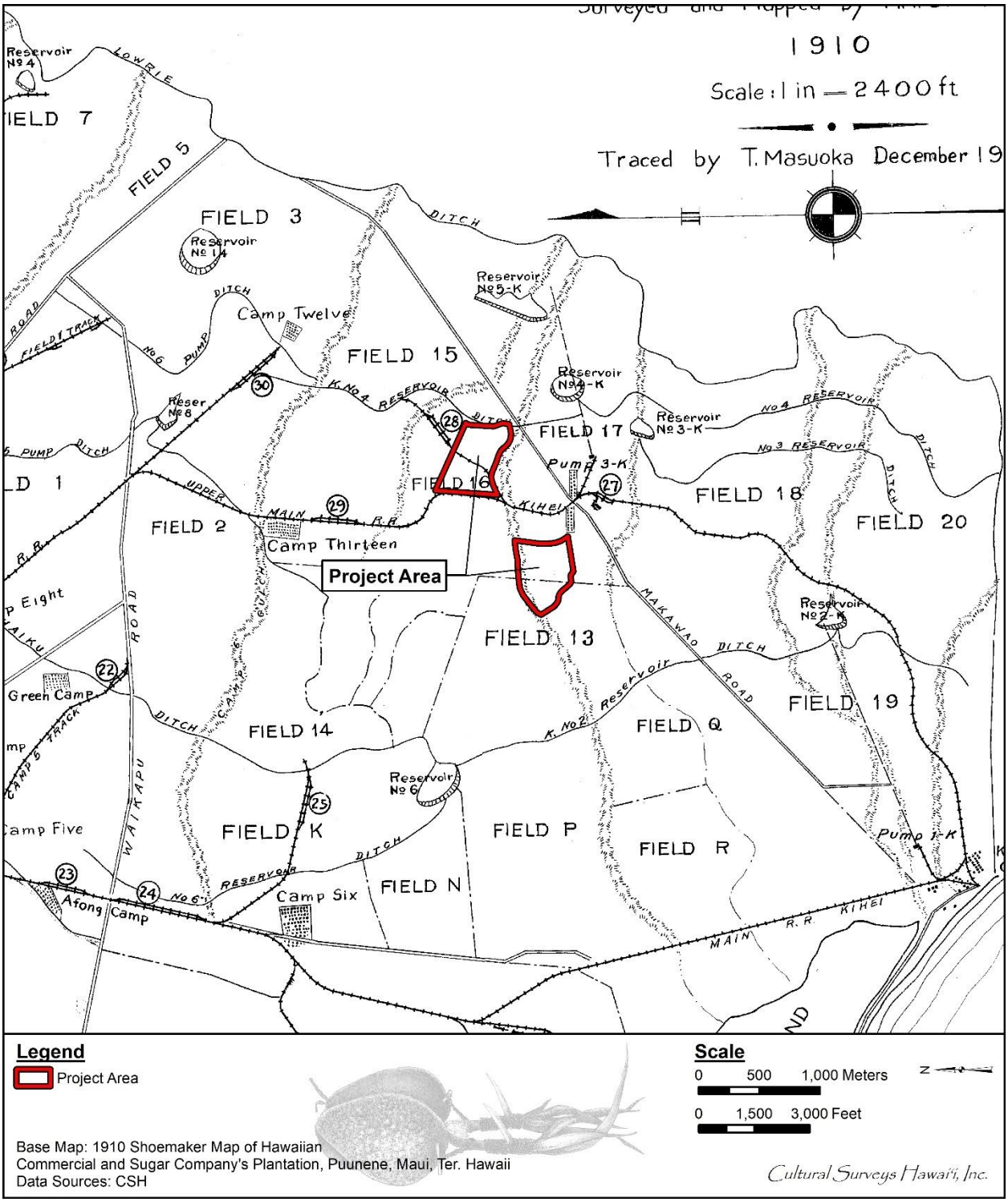
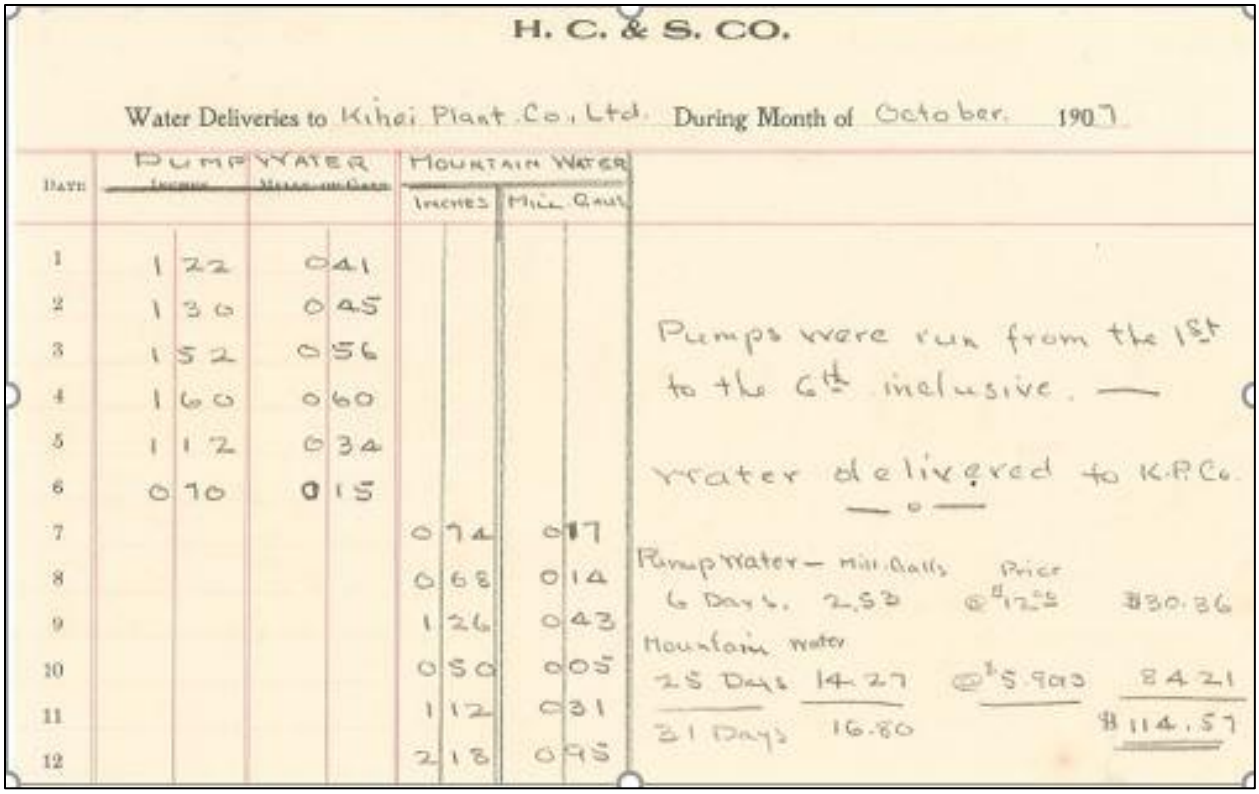


Figure 10. Portion of the 1910 Shoemaker map of the HC&S Plantation in Pu‘unēnē showing the current project area (Shoemaker 1910)

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	Pump Water Inches	Pump Water Mill. Gals.	Mountain Water Inches	Mountain Water Mill. Gals.
1	1 22	041		
2	1 30	045		
3	1 52	056		
4	1 60	060		
5	1 12	034		
6	0 70	015		
7			0 74	017
8			0 68	014
9			1 26	043
10			0 50	005
11			1 12	031
12			2 18	095

Pumps were run from the 1st to the 6th inclusive. —

Water delivered to K.P.Co.

— o —

Pump water — mill. Gallons Price

6 Days. 2.53 @ $12.25 $30.36

Mountain water

25 Days 14.27 @ $5.903 84.21

31 Days 16.80 $114.57

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 Kīhei 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).

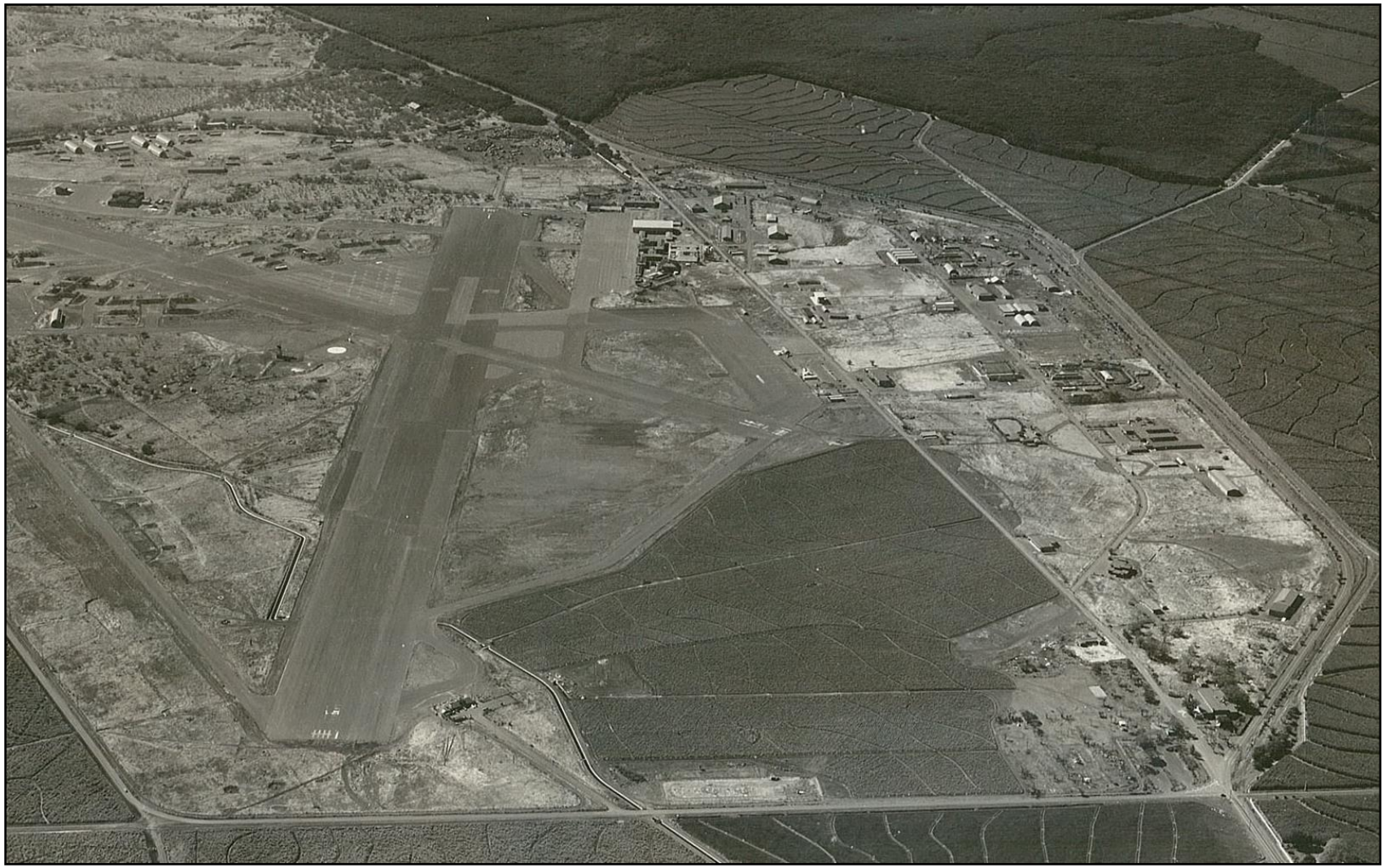


Figure 13. Postwar NAS Puunene showing a return of some land to sugar cane cultivation in foreground, at center, right; photo dated Feb. 12, 1947, and back stamped “U.S. Army Air Forces Photo Lab,” (Command 1947)

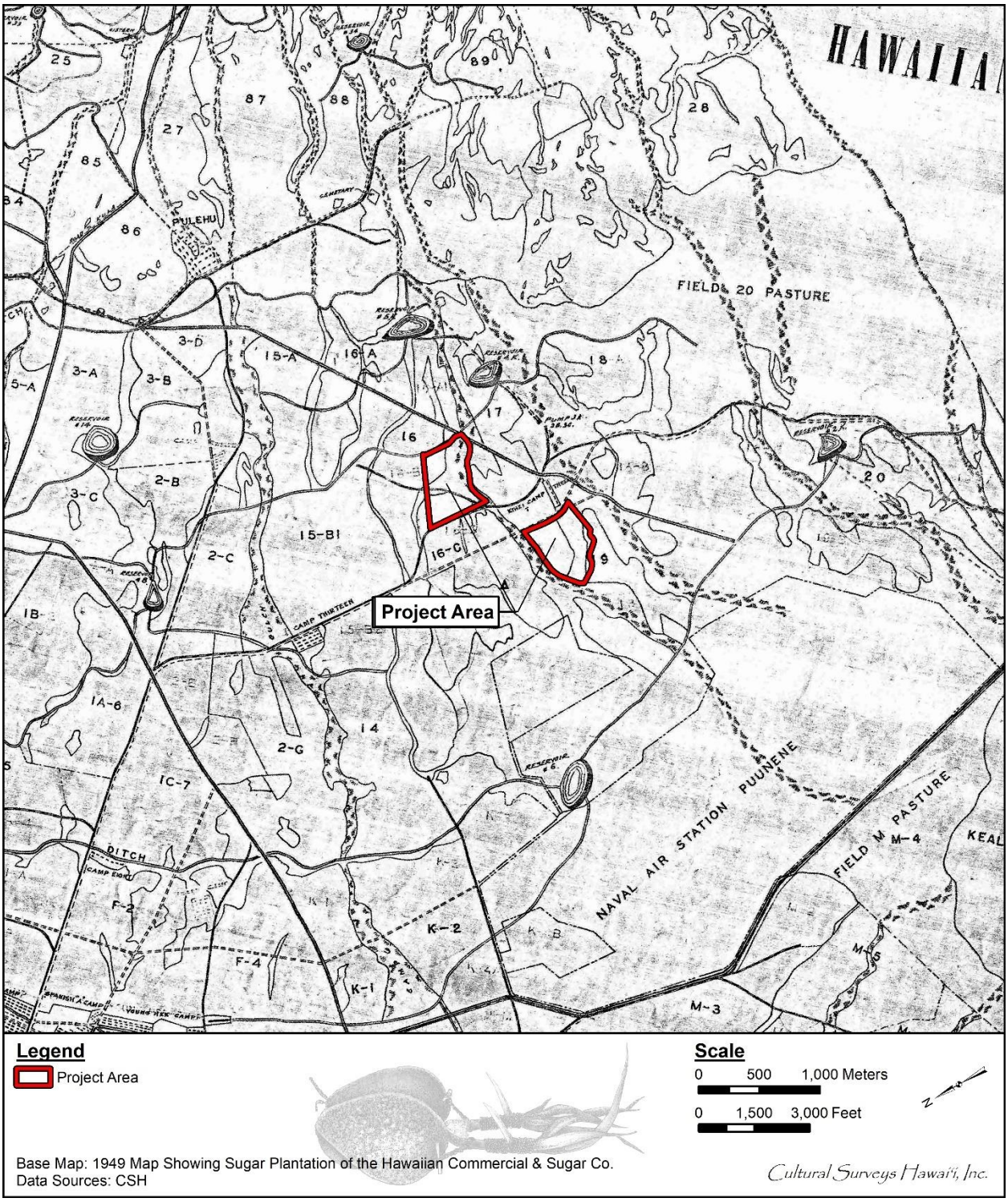


Figure 14. Portion of the 1949 HC&S sugar plantation map showing the boundary of NAS Puunene located west of the current project area (Hawaiian Commercial & Sugar Co. 1949)

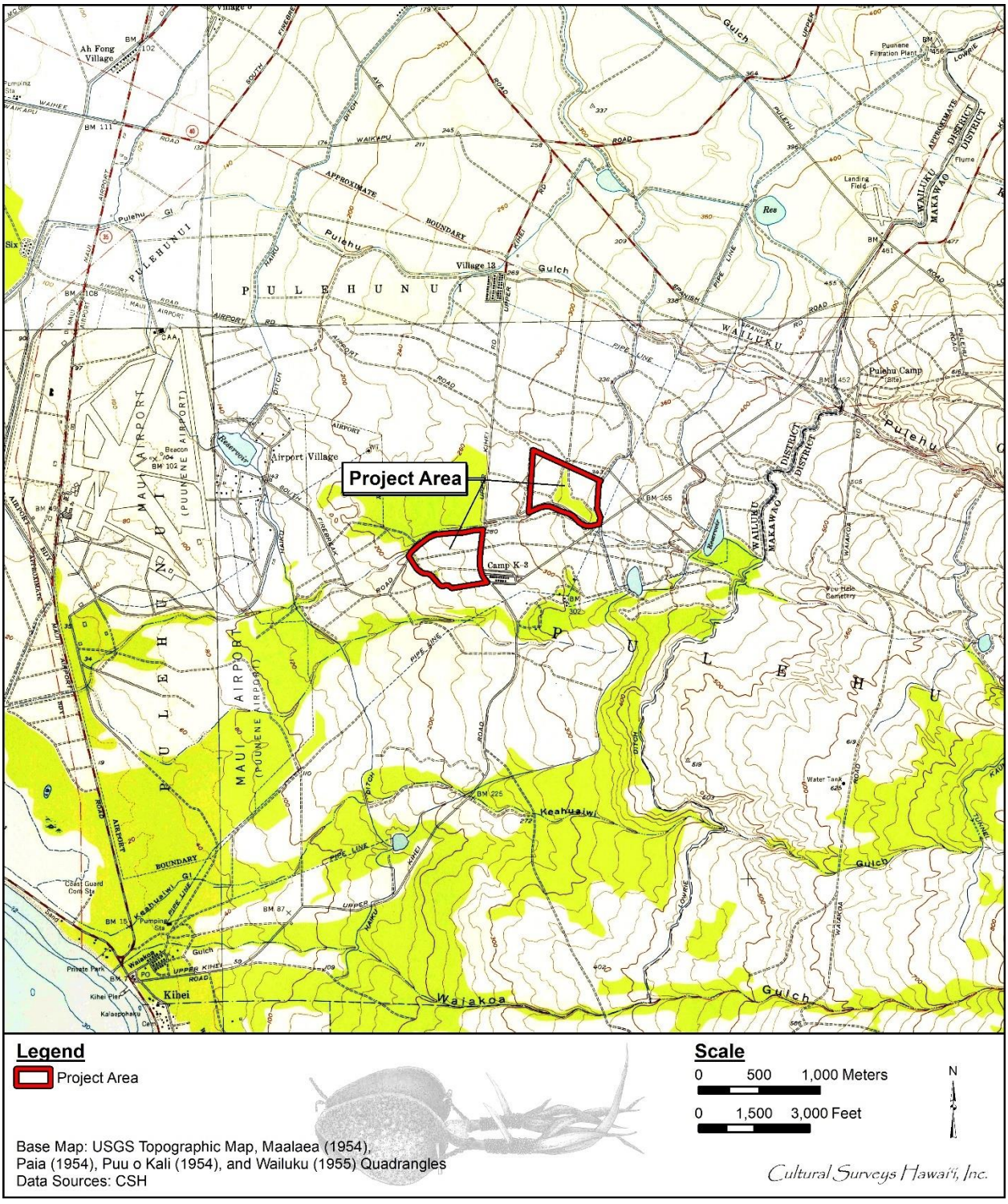


Figure 15. Portion of the 1954 USGS topographic quadrangle depicting the layout of the NAS Puunene (labeled Maui Airport) in the vicinity of the project area

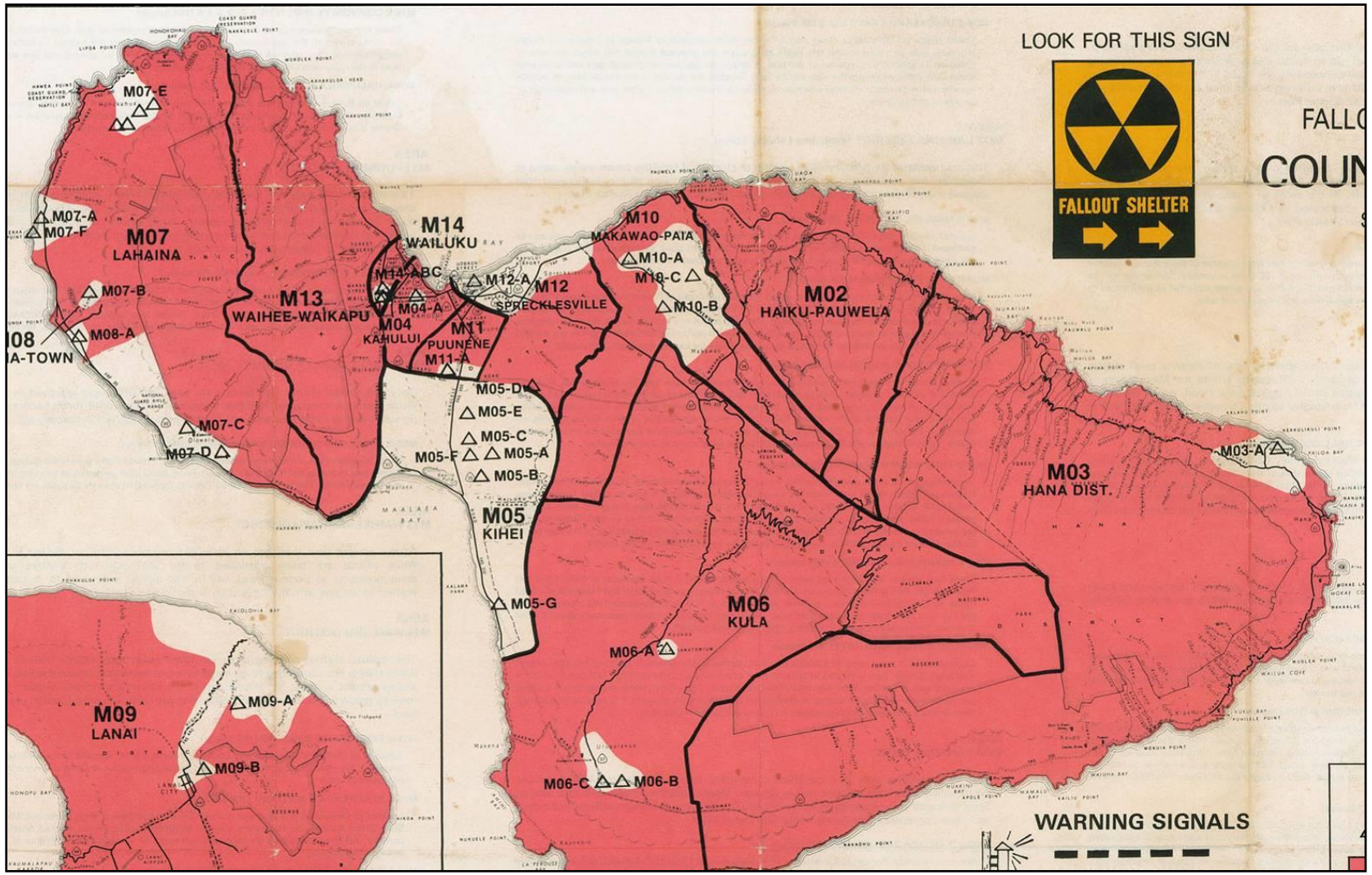


Figure 16. Maui Island map showing MO5 A through F, splinter shelters of the former NAS Puunene that were outfitted as fallout shelters in the 1960’s (County of Maui n.d.)

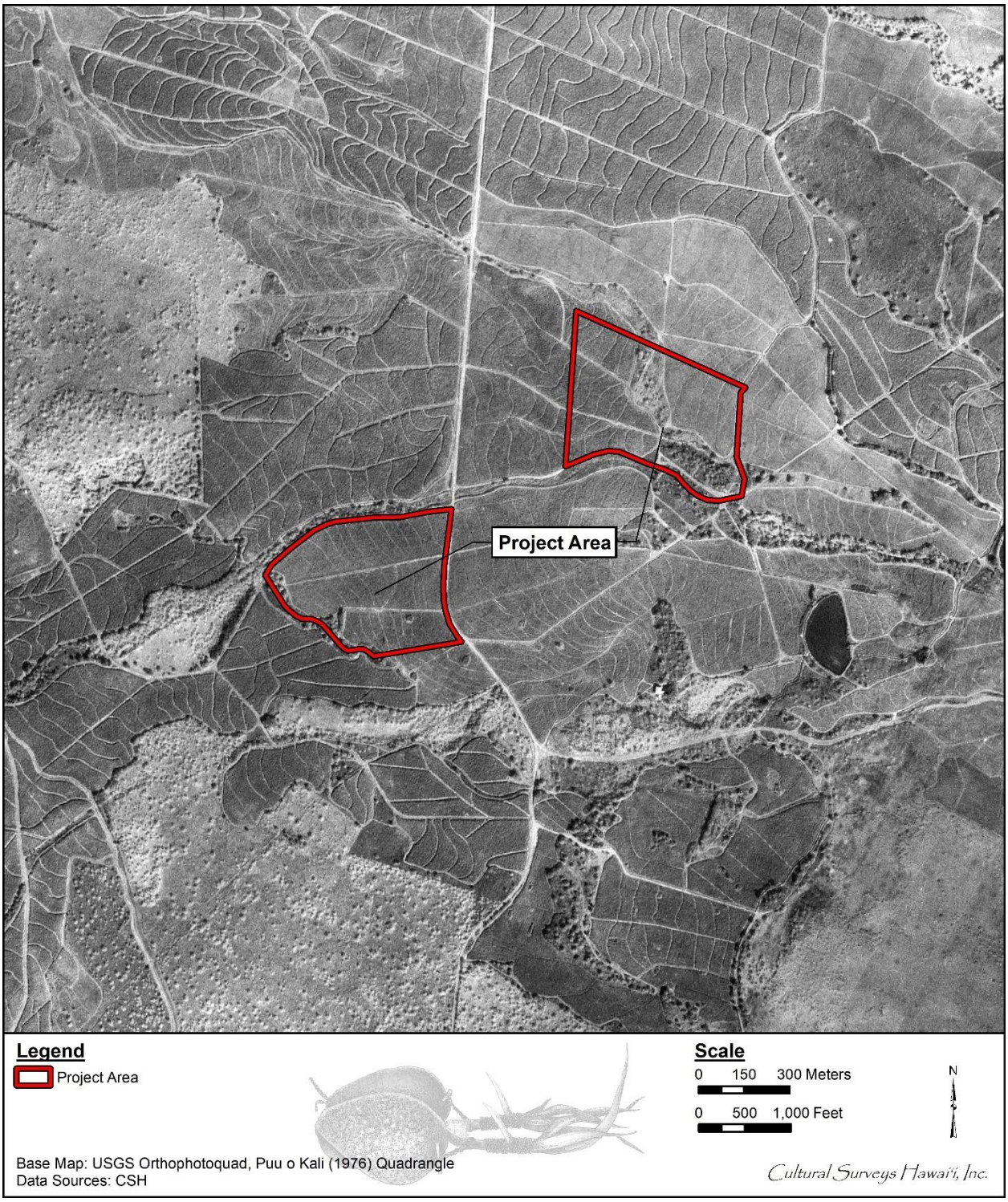


Figure 17. Portion of the 1976 Puu o Kali USGS orthophotoquad showing the expanse of commercial sugar cane fields within and surrounding the current project area (U.S. Geological Survey 1976)

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 descript 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 *mauka* 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

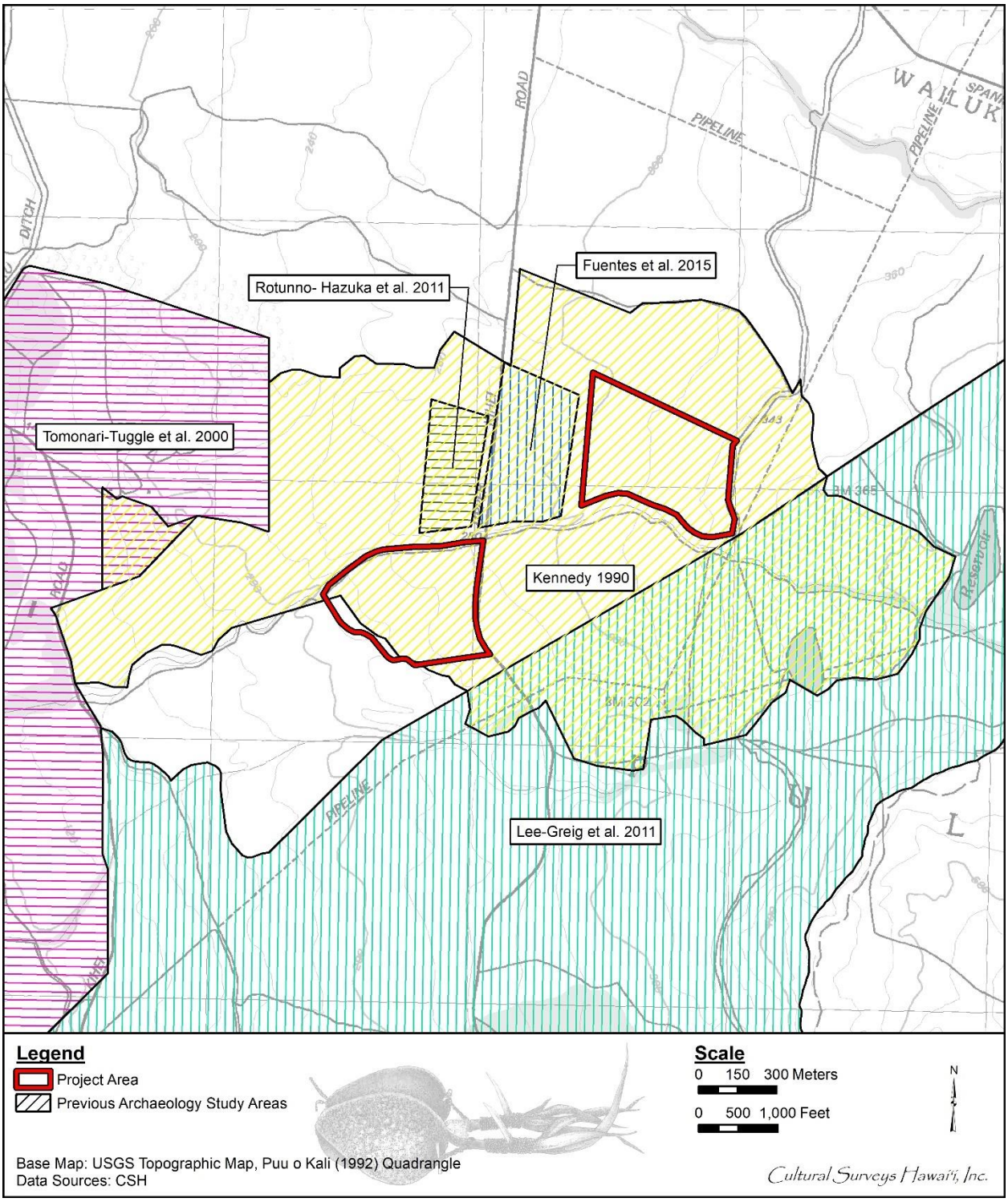


Figure 18. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previous archaeological studies in the vicinity of the current project area

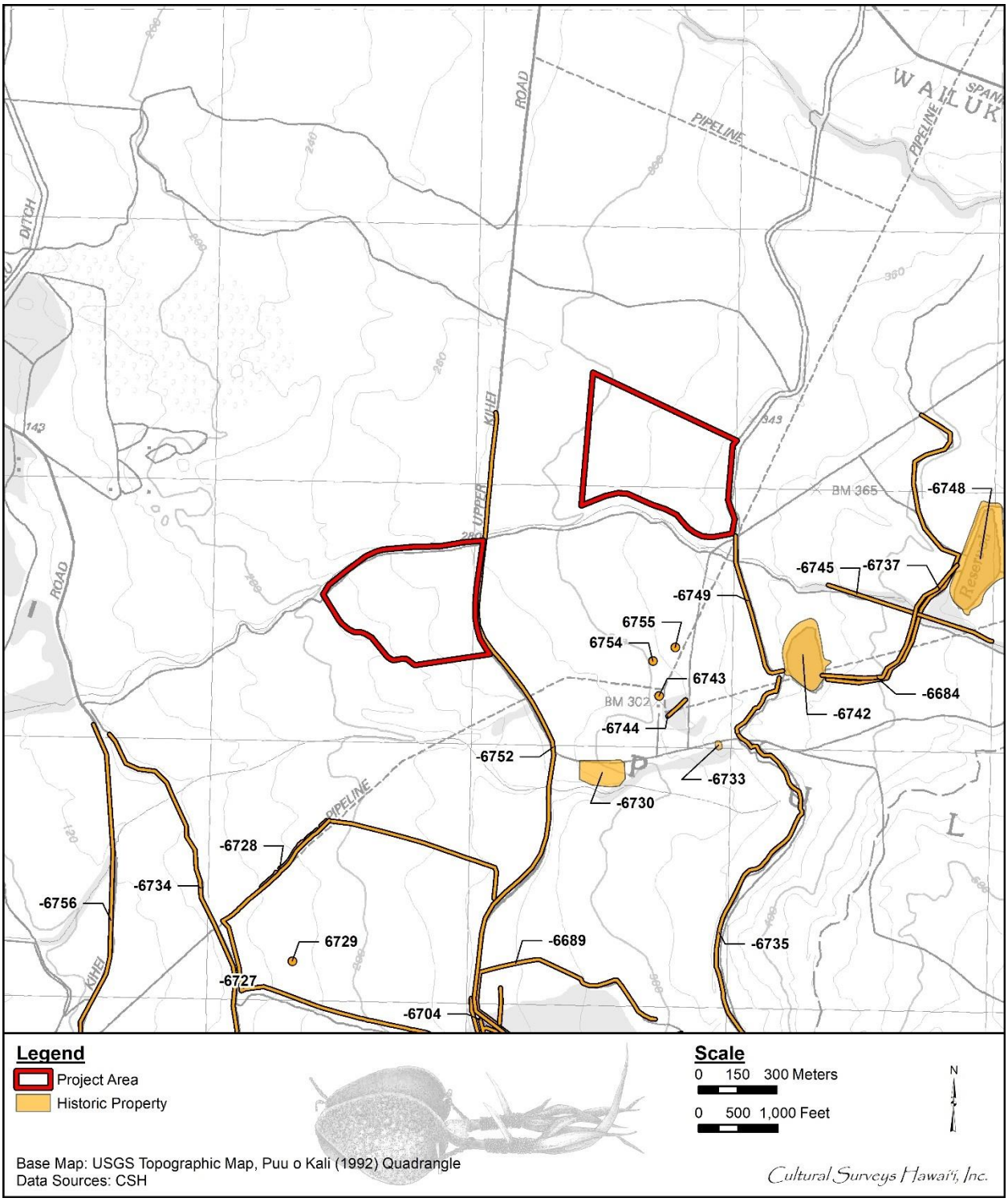


Figure 19. Portion of the 1992 Puu o Kali USGS topographic quadrangle depicting the location of previously documented historic properties in the vicinity of the project area

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-	Feature	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

WILLIAM J. AILA
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

PAUL CONRY
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WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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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
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

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 pors.. 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 and13-276-5; 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 pors., 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

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

KEKOA KALUHIWA
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COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
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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, HAWAII 96707

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 pors., 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 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 J.

State Historic Preservation Division Archaeological Assessment and Archaeological Monitoring Plan Acceptance Letter Dated April 17, 2020

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 Ahupuaʻa, 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 pors., Pūlehu Nui Ahupuaʻa, 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 Ahupuaʻa, 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.

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

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