

ALAN M. ARAKAWA  
Mayor



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**NOV 08 2015**

DAVID TAYLOR, P.E.  
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**DEPARTMENT OF WATER SUPPLY**

**COUNTY OF MAUI**

200 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793-2155  
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October 13, 2015

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

15 OCT 26 P 3:17

RECEIVED

Jessica Wooley, Director  
Office of Environmental Quality Control  
Department of Health  
State of Hawai'i  
235 S. Beretania Street, Room 702  
Honolulu, Hawai'i 96813

Dear Ms. Wooley:

With this letter, the County of Maui, Department of Water Supply hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the Proposed Wailuku Well No. 2 and Related Improvements situated at TMK (2) 3-5-001:067 (por.) and 106 (por.), in the Wailuku District on the island of Maui for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Tammy Yeh at (808) 270-7835.

Sincerely,

David Taylor, P.E.  
DIRECTOR

Enclosures

C: Brian Ige, RCFC Kehalani, LLC  
Charlene S. Shibuya, Munekiyo Hiraga  
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*"By Water All Things Find Life"*

**APPLICANT ACTION  
SECTION 343-5(e), HRS  
PUBLICATION FORM**

**Project Name** Proposed Wailuku Well No. 2 and Related Improvements  
**HRS §343-5 Trigger(s):** Preparation of this environmental document has been determined appropriate by the County of Maui, Department of Water Supply

**Island:** Maui  
**District:** Wailuku  
**TMK:** (2)3-5-001:067 (por.) and 106 (por.)  
**Permits:** Commission on Water Resource Management approvals, Building Permit, Grading Permit

**Approving Agency:** County of Maui, Department of Water Supply, 200 South High Street, Wailuku, Hawai'i 96793, David Taylor, Director  
*(Address, Contact Person, Telephone)*

**Applicant:** RCFC Kehalani, LLC, c/o Dowling Company, 2005 Main Street, Wailuku, Hawai'i, Brian Ige, Phone (808) 244-1500  
*(Address, Contact Person, Telephone)*

**Consultant:** Munekiyo Hiraga, 305 High Street, Suite 104, Wailuku, Hawai'i, Charlene S. Shibuya, Senior Associate, Phone (808) 244-2015  
*(Address, Contact Person, Telephone)*

**Status (check one only):**

**DEA-AFNSI** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.

**FEA-FONSI** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

**FEA-EISPN** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.

**Act 172-12 EISPN** Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

**DEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); a 45-day comment period ensues upon publication in the periodic bulletin.

**FEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

**Section 11-200-23 Determination** The approving agency simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

**Statutory hammer Acceptance** The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

**Section 11-200-27 Determination** The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

**Withdrawal (explain)**

**Summary** (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

RCFC Kehalani, LLC (RCFC) proposes to improve an existing exploratory well into a production well (herein after referred to as Well No. 2) and appurtenant improvements. Well No. 2, also identified by the Commission on Water Resource Management (CWRM) as Well No. 5230-05, is located in the Kehalani Project District in Wailuku on a portion of an undeveloped parcel identified as Tax Map Key (TMK) (2)3-5-001:067 (Parcel 67) and owned by RCFC.

Related improvements involve a new control valve station that will be installed at the existing Wailuku Well No. 1 site located approximately 1,300 feet to the east on TMK (2)3-5-001:106 (por.) (Parcel 106). The control valve station will allow water from Well No. 2 to be combined with water from Well No. 1 and conveyed to the Department of Water Supply's (DWS) existing 'Īao 3.0 million gallon (MG) tank via an existing 16-inch waterline.

The Well No. 2 and related improvements will be dedicated to the County of Maui, DWS upon completion of construction.

# **Draft Environmental Assessment**

## **PROPOSED WAILUKU WELL NO. 2 AND RELATED IMPROVEMENTS (TMK (2)3-5-001:067 (por.) and 106 (por.))**

**Prepared for:**

**RCFC Kehalani, LLC**

**Approving Agency:**

**County of Maui,  
Department of Water Supply**

**October 2015**

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by Munekiyo Hiraga**



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## LIST OF ACRONYMS

AFONSI	Anticipated Finding of No Significant Impact
ALISH	Agricultural Lands of Importance to the State of Hawai‘i
BMP	Best Management Practice
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DLIR	Department of Labor and Industrial Relations
DOE	Department of Education
DOH	Department of Health
DWS	Department of Water Supply
DWSRF	Drinking Water State Revolving Fund
EA	Environmental Assessment
FEMA	Federal Emergency Management Agency
gpd	Gallons Per Day
gpm	Gallons Per Minute
HAR	Hawai‘i Administrative Rules
HC&S	Hawaiian Commercial & Sugar Company
HRS	Hawai‘i Revised Statutes
Ibc	Iao Cobbly Silty Clay, 7 to 15 percent slopes (soil type)
kVA	kilo Volt Amps
LCA	Land Commission Award
LSB	Land Study Bureau
MG	Million Gallons
mgd	Million Gallons per Day
MIP	Maui Island Plan
MSL	Mean Sea Level
PDR	Preliminary Drainage Report
PER	Preliminary Engineering Report
RGB	Rural Growth Boundary
SHPD	State Historic Preservation Division
SMA	Special Management Area
sq. ft.	square feet
SRB	Small Town Boundary
TMK	Tax Map Key
UGB	Urban Growth Boundary
USDA	U. S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WUDP	Water Use and Development Plan
WUP	Water Use Permit
WvB	Wailuku Silty Clay, 3 to 7 percent slopes (soil type)
WvC	Wailuku Silty Clay, 7 to 15 percent slopes (soil type)
WWC	Wailuku Water Company

## Executive Summary

**Project Name:** Proposed Wailuku Well No. 2 Well and Related Improvements

**Type of Document:** Draft Environmental Assessment

**Legal Authority:** Chapter 343, Hawai‘i Revised Statutes

**Agency Determination:** Anticipated Finding of No Significant Impact (AFONSI)

**Location:** Island of Maui  
Wailuku  
TMK No.: (2)3-5-001:067 (por.) and 106 (por.)

**Applicant:** RCFC Kehalani, LLC  
c/o Dowling Company, Inc.  
2005 Main Street  
Wailuku, Hawai‘i 96793  
Contact: Brian Ige  
Phone: (808) 244-1500

**Approving Agency:** County of Maui  
Department of Water Supply  
200 South High Street, 5<sup>th</sup> Floor  
Wailuku, Hawai‘i 96793  
Contact: David Taylor, Director  
Phone: (808) 270-7816

**Consultant:** Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawai‘i 96793  
Contact: Charlene Shibuya, Senior Associate  
Phone: (808) 244-2015

**Project Summary:** This project will involve developing the existing Wailuku Well No. 2 from an exploratory well to a production well. The Wailuku Well No. 2 is located on Lot P-3, an approximately 1.709-acre portion of Tax Map Key (TMK) (2) 3-5-001:067 (Parcel 67) in Wailuku, Maui. The existing Wailuku Exploratory Well No. 2 is located at an approximate elevation of 613 feet mean sea level (MSL). The well has been drilled

and tested. Further improvements to convert the existing well to a production well involve the following:

- Installation of the well pump and construction of the well piping.
- An approximate 826 sq. ft. single-story control building to house electrical and mechanical equipment.
- A 100,000 gallon pump control tank.
- A 12-inch waterline from Well No. 2's control tank to a previously installed 12-inch transmission line aligned along the Kehalani Mauka Parkway. (The section of Kehalani Mauka Parkway fronting the Well No. 2 site is currently under construction). When Well No. 2 is fully operational, this 12-inch transmission line will carry water from Well No. 2 to Well No. 1 to enable the combination of the water sources (Well No. 1 and Well No. 2) to be conveyed to the existing Iao Water Tank.
- A 6-ft. high chainlink fence (topped with barbed wire) to secure the Well No. 2 site.
- A control valve station at the existing Wailuku Well No. 1 site to allow water from the two (2) wells to be combined and conveyed to the existing Iao tank via an existing 16-inch waterline.

Upon completion of the Wailuku Well No. 2 and related improvements, the facilities will be dedicated to the County of Maui, Department of Water Supply.

# **I. PROJECT OVERVIEW**

# I. PROJECT OVERVIEW

## A. PROPERTY LOCATION, EXISTING USE, AND LAND OWNERSHIP

RCFC Kehalani, LLC (RCFC) proposes to improve an existing exploratory well into a production well (herein after referred to as Wailuku Well No. 2 or Well No. 2) and appurtenant improvements. The Wailuku Well No. 2, also identified by the Commission on Water Resource Management (CWRM) as Well No. 5230-05, is located in the Kehalani Project District in Wailuku on a portion of an undeveloped parcel identified as Tax Map Key (TMK) (2)3-5-001:067 (Parcel 67). See **Figure 1** and **Figure 2**. Access to the site will be provided via an extension of the Kehalani Mauka Parkway currently under construction by RCFC Kehalani, LLC, the developers of the Kehalani Project District.

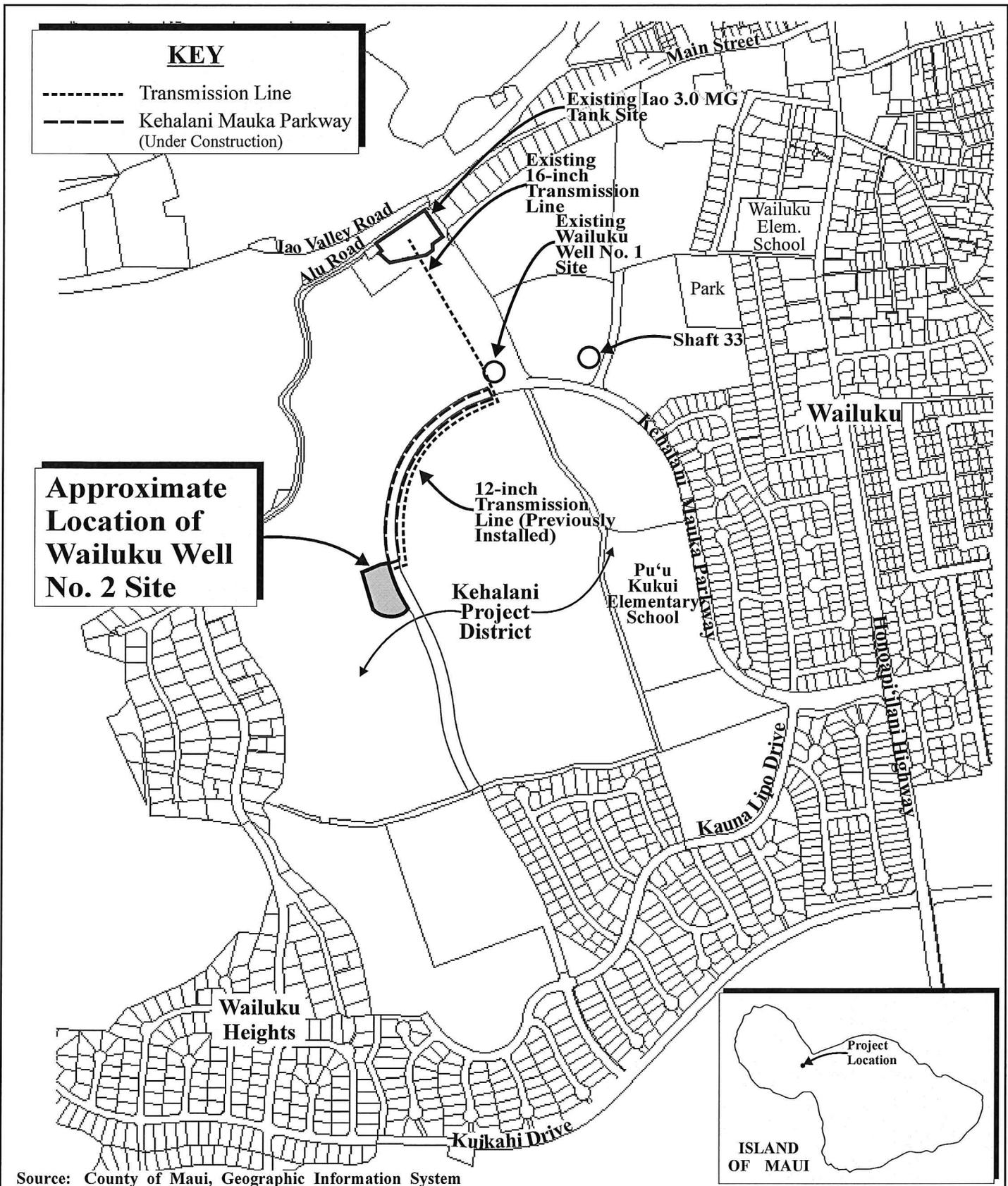
The project site is part of a large parcel (Parcel 67) owned by RCFC. Approximately 0.81 acre will be utilized from Parcel 67 for the proposed project. See **Figure 3**.

Appurtenant improvements involve a new control valve station that will be installed at the existing Wailuku Well No. 1 site located approximately 1,300 feet to the east on TMK (2)3-5-001:106 (por.) (Parcel 106). The Wailuku Well No. 1 parcel is also owned by RCFC. The control valve station will allow water from Well No. 2 to be combined with water from Well No. 1 and conveyed to the Department of Water Supply's (DWS) existing Iao 3.0 million gallon (MG) tank via an existing 16-inch waterline. See **Figure 4**.

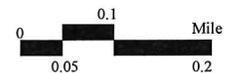
The Well No. 2 and related improvements will be dedicated to the County of Maui, DWS upon completion of construction.

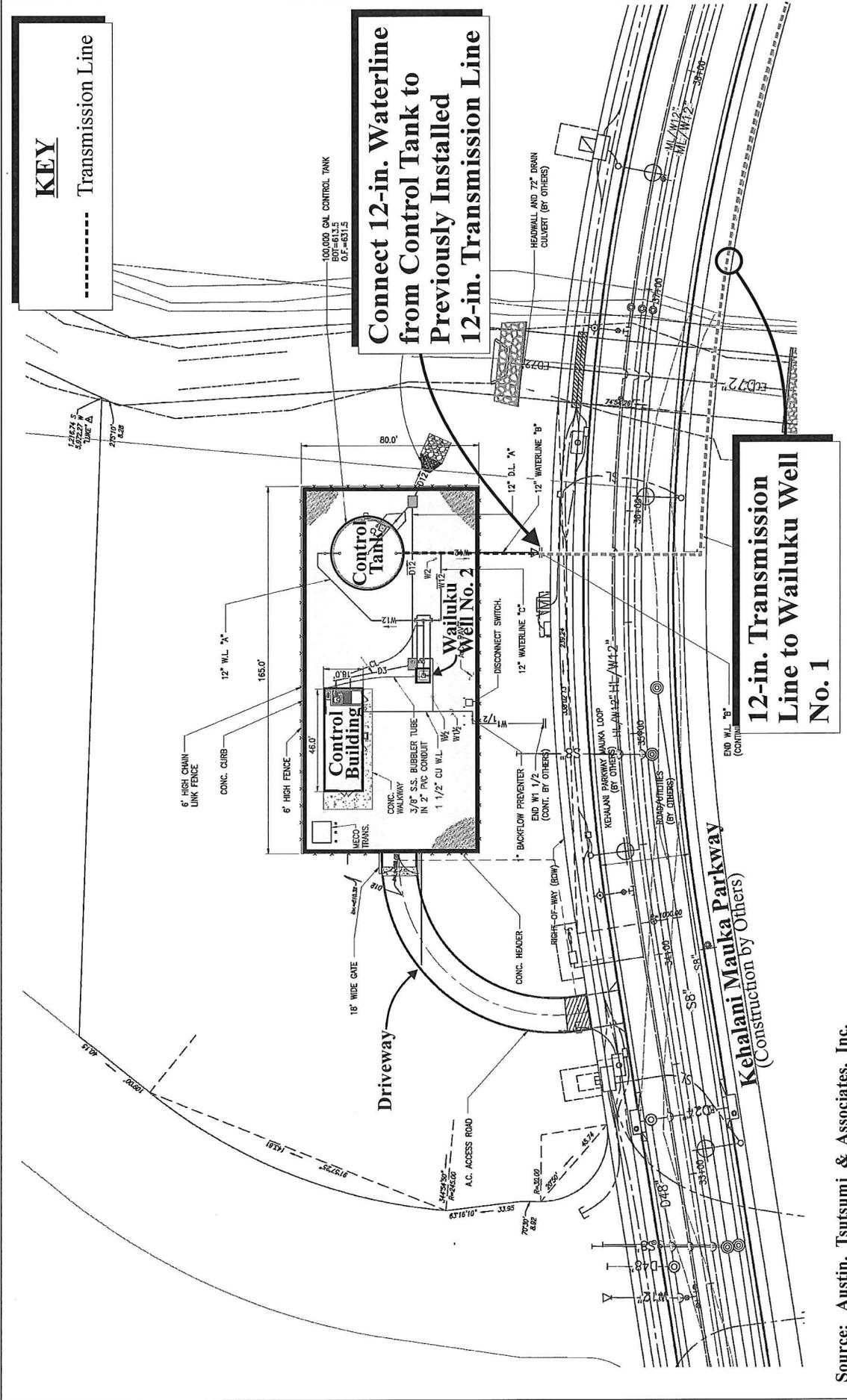
## B. PROJECT NEED

RCFC owns Parcel 67 and other lands in the area and intends to develop additional residential units in the Kehalani Project District. The County DWS has insufficient source capacity available in the Central-South Maui area to provide water to support the buildout of the Kehalani Project District, as well as other future projects within the water source area. As such, RCFC entered into a development agreement with the County of



**Figure 1 Proposed Wailuku Well No. 2 and Related Improvements**  
**Regional Location Map**





Source: Austin, Tsutsumi & Associates, Inc.

# Figure 2 Proposed Wailuku Well No. 2 and Related Improvements Site Plan



NOT TO SCALE

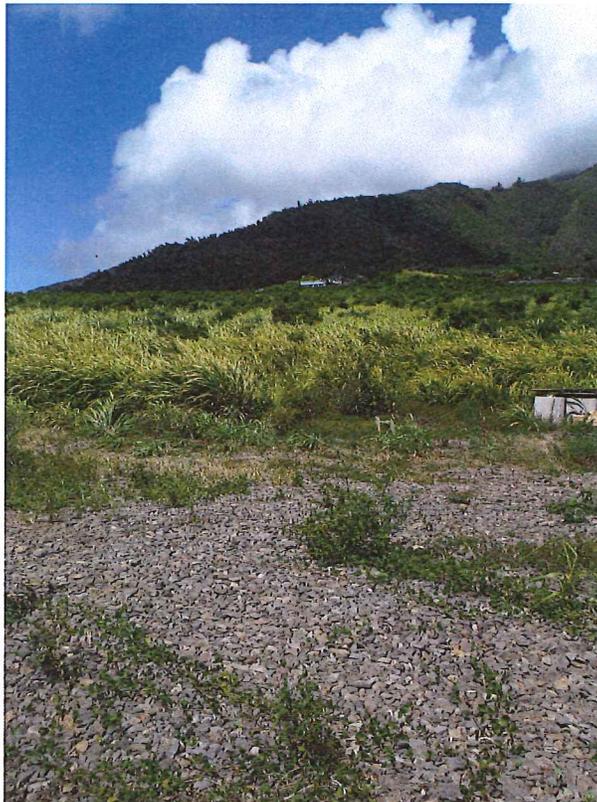
Prepared for: RCFC Kehalani, LLC



RCFC Kehalani/Wailuku Well No. 2/Draft EA/site plan



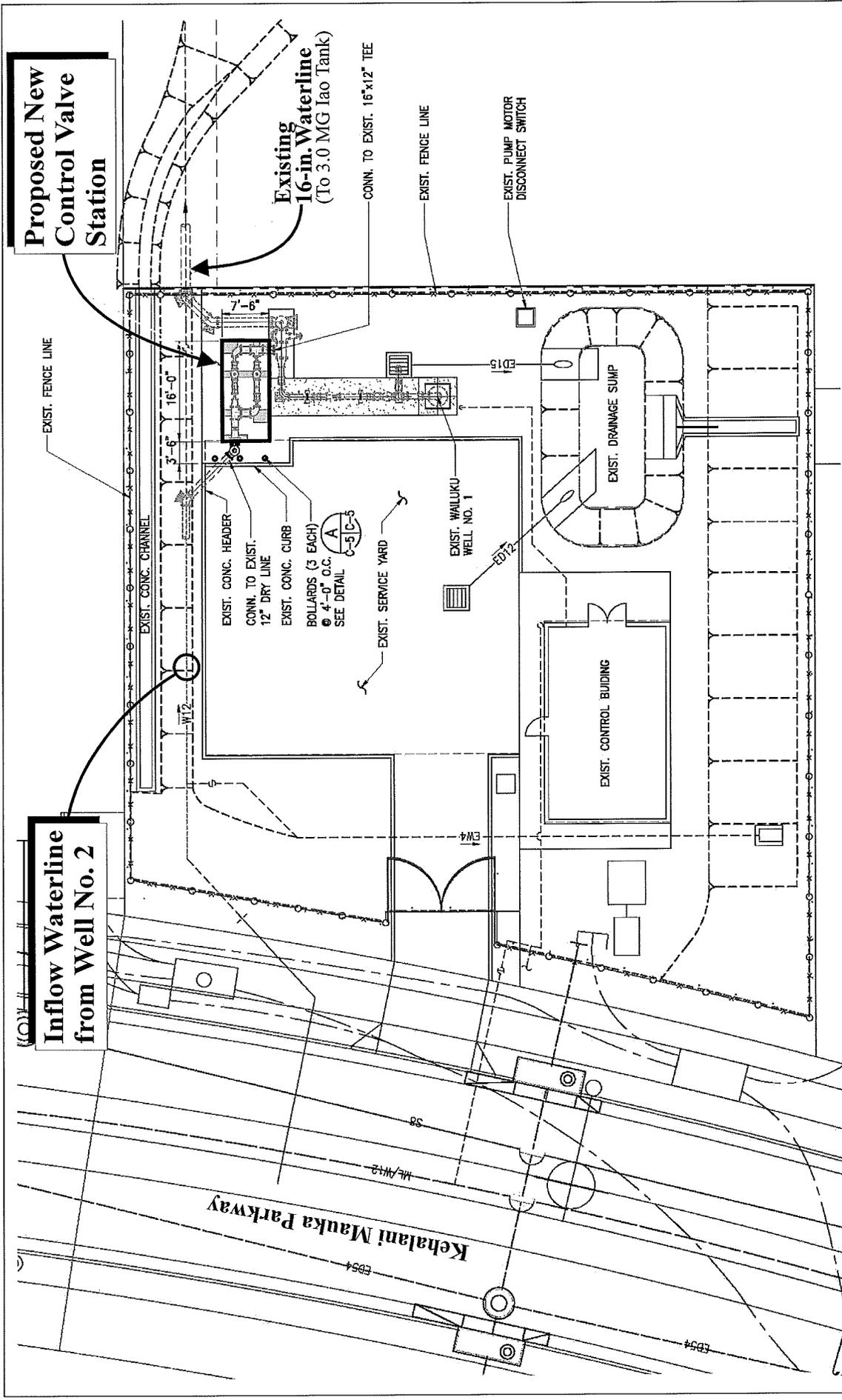
**Well No. 2 Site Looking Southeast**



**Well No. 2 Site Looking West**

Source: Munekiyo Hiraga

**Figure 3 Proposed Wailuku Well No. 2  
and Related Improvements  
Site Photographs**



**Figure 4** Proposed Wailuku Well No. 2 and Related Improvements

Site Plan - Control Valve Station at Wailuku Well No. 1

NOT TO SCALE



Maui to fund all costs to develop the Wailuku Well No. 2, a pump control tank, including all pumps, pipes, power, utility extensions, and other appurtenances to make the Wailuku Well No. 2 operational and connect to the DWS's existing water system. In exchange for developing Well No. 2 to a pumping capacity of up to 2.0 million gallons per day (MGD) (based on a 24-hour pump run time) and the subsequent conveyance of the improvements and land to the County DWS, RCFC will receive a water source credit on a priority basis of Kehalani's CWRM allocation of 476,000 gallons per day (or equal amount of CWRM allocation RCFC transfers to the County DWS).

**C. WELL DEVELOPMENT CONTEXT**

The development of Well No. 2 as a production facility is part of the DWS's plan to retire Shaft 33 (State Well No. 5330-05). The retirement of Shaft 33 is considered an appropriate source management strategy as the useful life of Shaft 33 is nearing its end point. The opportunity created with the retirement of Shaft 33, from an aquifer management perspective, is that the replacement of Shaft 33 with four (4) new wells improves the integrity and long-term capacity of the Iao Aquifer through the distance spreading of pumpage locations. The redistribution of pumpage over a larger area will have less of an effect on the aquifer than concentrating it in one place (Mink and Yuen, 2009). With the retirement of Shaft 33, replacement capacity will be provided as summarized in **Table 1**.

**Table 1. Well System Located North of Iao Stream**

<b>Well Name</b>	<b>State Well No.</b>	<b>Comments</b>
Shaft 33	5330-05	To be retired
Iao Tank Well	5230-03	Active production well
Waikapu Tank Site Well	5130-01	Active production well
Wailuku Well No. 1	5230-04	Existing exploratory well to be developed as a production well
Wailuku Well No. 2 (Proposed Project)	5230-05	Existing exploratory well to be developed as a production well

It is noted that the current pumpage from Shaft 33 is approximately 5.015 MGD, while the pumpage yielded from the four (4) replacement wells is estimated to be 5.4 MGD.

## **D. PROPOSED ACTION**

This project will involve converting the existing Wailuku Well No. 2 from an exploratory well to a production well. The existing exploratory well is located at an approximate elevation of 613 feet mean sea level (MSL). The well has been drilled and tested. Further improvements to convert the existing well to a production well involve the following:

- Installation of the well pump and construction of the well piping.
- An approximate 826 square foot (sq. ft.) single-story control building to house electrical and mechanical equipment.
- A 100,000 gallon pump control tank.
- A 12-inch waterline from Well No. 2's control tank which will connect to a previously installed 12-inch transmission line aligned along Kehalani Mauka Parkway. When Well No. 2 is fully operational, this 12-inch transmission line along Kehalani Mauka Parkway will carry water from Well No. 2 to Well No. 1 to enable the combination of the water sources (Well No. 1 and Well No. 2) to be conveyed to the existing Iao Water Tank.
- A 6-ft. high chainlink fence (topped with barbed wire) to secure the perimeter of the Well No. 2 site.
- A control valve station at the existing Wailuku Well No. 1 site to allow water from the two (2) wells to be combined and conveyed to the existing Iao tank via an existing 16-inch waterline.

Refer to **Figure 2** and see **Appendix "A"**, Project Plans.

It is noted that Kehalani Mauka Parkway, fronting the Well No. 2 site, is currently in its final construction stages, with construction anticipated to be completed by early 2016. Kehalani Mauka Parkway is owned and maintained by RCFC Kehalani, LLC. Upon completion of the entirety of Kehalani Mauka Parkway (estimated in 2016), it will be then dedicated to the County of Maui.

Upon completion of the Wailuku Well No. 2 and related improvements, the facilities will be conveyed to the County of Maui, DWS.

**E. PROJECT COSTS AND IMPLEMENTATION**

The cost of the proposed project is estimated to be \$3.0 million. Construction of the project is anticipated to begin in the late 2015 and take approximately nine (9) months to complete.

**F. CHAPTER 343, HAWAI'I REVISED STATUTES (HRS) REQUIREMENTS**

The proposed improvements related to the Wailuku Well No. 2 and Wailuku Well No. 1 will be conveyed to the County of Maui, DWS. The DWS has determined that environmental disclosure pursuant to Chapter 343, Hawai'i Revised Statutes is appropriate to facilitate public and agency input to the project proposal. Therefore, this Environmental Assessment (EA) is being prepared pursuant to Title 11, Chapter 200, Hawai'i Administrative Rules (HAR), Environmental Impact Statement Rules to evaluate the proposed project's technical characteristics, environmental and socio-economic impacts, and alternatives, as well as to advance findings relative to the significance of the project's potential impacts and proposed mitigation measures. The Approving Agency for the EA is the DWS.

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

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

### **A. PHYSICAL SETTING**

#### **1. Surrounding Land Uses**

##### **a. Existing Conditions**

The existing Wailuku Well No. 2 site is located west of Old Wailuku Town and to the east of Alu Road. The exploratory well is currently located on the project site. The area around the well site has been cleared, grubbed, and graded in preparation for the construction of the exploratory well. The area immediately surrounding the Wailuku Well No. 2 site is planned for future park use. Similarly, the lands surrounding Wailuku Well No. 1 are planned for future park use. The immediate surrounding area of the project site is currently vacant and undeveloped and is proposed to be developed as part of the Kehalani Project District.

Wailuku Town is located further north and east of the project site, beyond the Kehalani Mauka development. Wailuku serves as the County seat and the primary location of many State and Federal offices. Wailuku Town is also characterized by a mix of commercial uses, including offices, shops, and restaurants. The existing residential developments of Wailuku Heights and Kehalani are located further west and south, respectively, to the project site. Additionally, there are existing single-family residences located to the east of the project site, along West Main Street.

##### **b. Potential Impacts and Mitigation Measures**

The proposed project involves converting an existing exploratory well into a production well and construction of a 826 sq. ft. single-story control building and control tank, on a portion on Parcel 67. In addition, the project includes the installation of a control valve station at the Well No. 1 site (on Parcel 106) to combine flows from Well No. 1 and Well No. 2, for conveyance to the County's 3.0 MG IaoTank. The construction of the proposed improvements will augment the existing County DWS Central

Maui water system to increase reliability, as part of the Shaft 33 retirement plan.

The Well No. 2 site was previously determined appropriate for exploratory testing purposes. Its conversion to production status and the installation of a control valve station at the existing Well No. 1 are not anticipated to have an adverse impact to existing land uses in the vicinity.

## 2. **Climate**

### a. **Existing Conditions**

Like most areas of Hawai'i, the climate in Wailuku is relatively uniform year-round. Characteristic of Maui's climate, the project site experiences mild and uniform temperatures, moderate humidity and relatively consistent northeasterly tradewinds. This stability is attributed to Maui's tropical latitude, relative to the Pacific anticyclone and storm tracts, and the surrounding ocean currents. Variations in climate among the different regions in Maui are largely due to local terrain.

Historically, in the region, daily temperatures range from an average low of 67 degrees Fahrenheit (measured at Kahului Airport) to an average high of 84 degrees Fahrenheit. The warmest month is August while the coolest month is February (County of Maui, Office of Economic Development, 2013).

Rainfall in the region is seasonal, with most precipitation occurring between October and March. Annual rainfall data for Central Maui shows an average of 18.49 inches (County of Maui, Office of Economic Development, 2013).

### b. **Potential Impacts and Mitigation Measures**

The proposed project is limited to construction of an approximate 826 sq. ft. single-story building, 100,000 gallon control tank, underground utilities, and appurtenant equipment at the Well No. 2 site, as well as the construction of a control valve station at the existing Well No. 1 site. Significant adverse impacts to climatic conditions are not anticipated as a result of the proposed project.

### 3. Agricultural Lands

#### a. Existing Conditions

In 1977, the State of Hawai‘i, Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawai‘i (ALISH), based primarily, though not exclusively, on soil characteristics of the underlying land. The three (3) classes of ALISH lands are “Prime”, “Unique”, and “Other Important” agricultural land, with the remaining non-classified lands termed “Unclassified”. When utilized with modern farming methods, “Prime” agricultural lands have soil quality, growing season, and moisture supply needed to produce sustained crop yields economically; while “Unique” agricultural lands contain a combination of soil quality, growing season, and moisture supply to produce sustained yields of a specific crop. “Other Important” agricultural lands include those important agricultural lands that have not been rated as “Prime” or “Unique”.

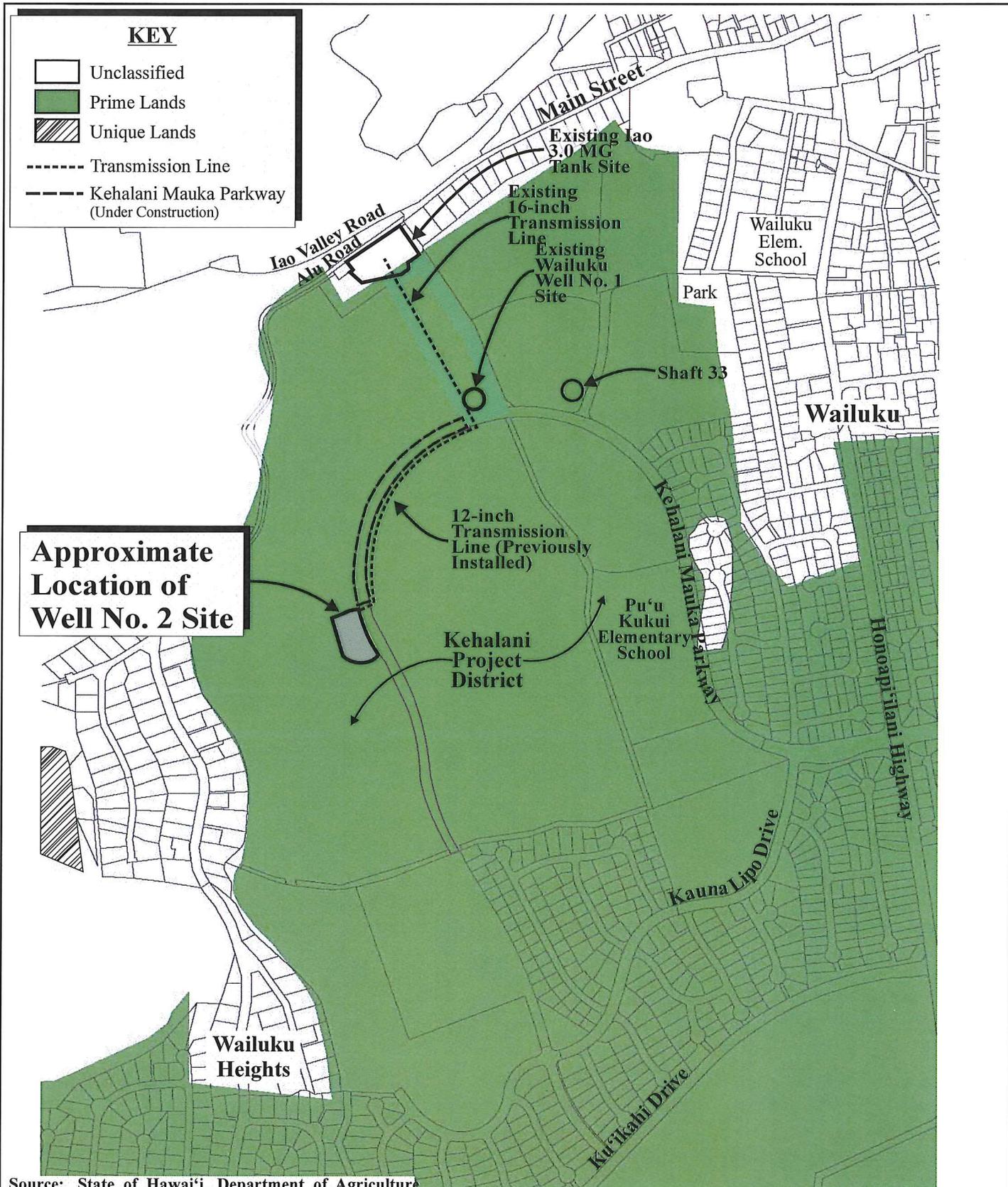
The project site is located on lands that are designated as “Prime” by the ALISH map. See **Figure 5**.

Additionally, the University of Hawai‘i, Land Study Bureau (LSB) developed the Overall Productivity Rating, which classified soils according to five (5) levels, with “A” representing the class of highest productivity soils and “E” representing the lowest. The LSB does not classify the lands underlying the proposed project site. See **Figure 6**.

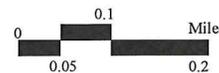
The project site and surrounding areas were cultivated with sugar cane from the mid-1800s through the 1990s. When sugar production ended in the 1990s, the area was converted to cattle grazing. Grazing activity ended approximately nine (9) years ago. The site is currently urbanized and County-zoned “Project District 3, Wailuku”. Currently, the project site and immediate surrounding areas are vacant with no active agricultural activities.

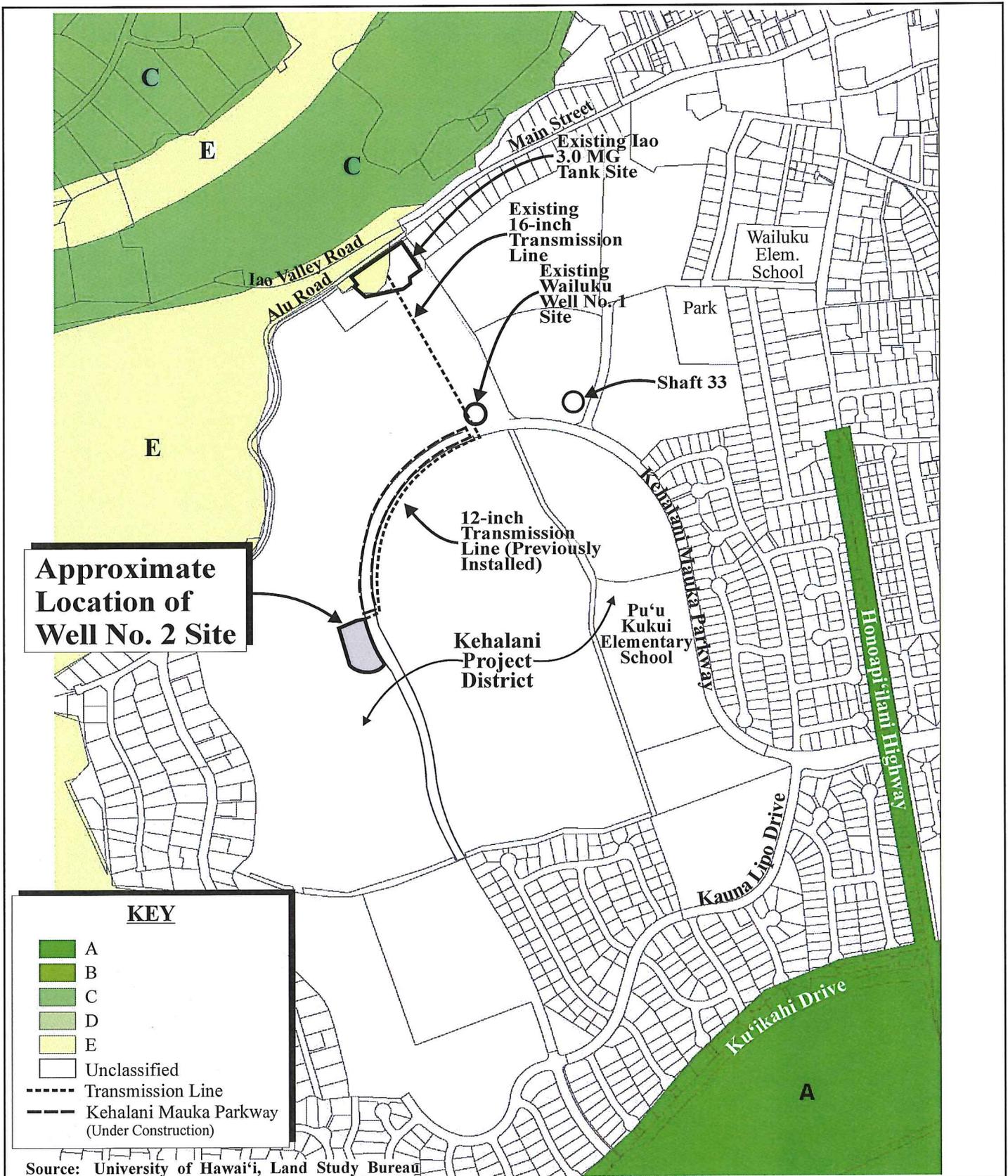
#### b. Potential Impacts and Mitigation Measures

The Well No. 1 and Well No. 2 sites fall within the State Land Use “Urban” district and within the “Project District 3, Wailuku” by County zoning and community plan designations. The project areas have not been in active agricultural production for a long period of time. Given the

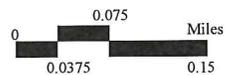


**Figure 5** Proposed Wailuku Well No. 2 and Related Improvements Agricultural Lands of Importance to the State of Hawai'i





**Figure 6 Proposed Wailuku Well No. 2 and Related Improvements**  
 Land Study Bureau Productivity Rating



discontinued agricultural use at the project areas and the land's designation for urban use, adverse impacts to agricultural productivity are not anticipated as a result of the proposed project.

#### 4. **Topography and Soils Characteristics**

##### a. **Existing Conditions**

The project site slopes in the west to east (mauka to makai) direction, with approximate ground mean sea level (MSL) elevations being 624 feet at the upper end to 604 feet at the lower end. The Well No. 2 site has been previously graded to create a level area at elevation 612 feet MSL. The control building and control tank will be developed at an existing graded area. See **Appendix "A"**, Sheet C-3, Grading Plan.

The project site consists of soils within the Waiakoa-Keahua-Molokai association, which is found on low uplands and is characterized by moderately deep and deep, nearly level to moderately steep, well-drained soils that have a moderately fine textured subsoil (USDA, 1972). See **Figure 7**. Underlying the project site is Iao Cobbly Silty Clay, 7 to 15 percent slopes (Ibc), and Wailuku Silty Clay, 3 to 7 percent slopes (WvB). See **Figure 8**.

Iao cobbly silty clay, 7 to 15 percent slopes (IbC) the runoff is medium and the erosion hazard is moderate. The soils surface contains cobblestones.

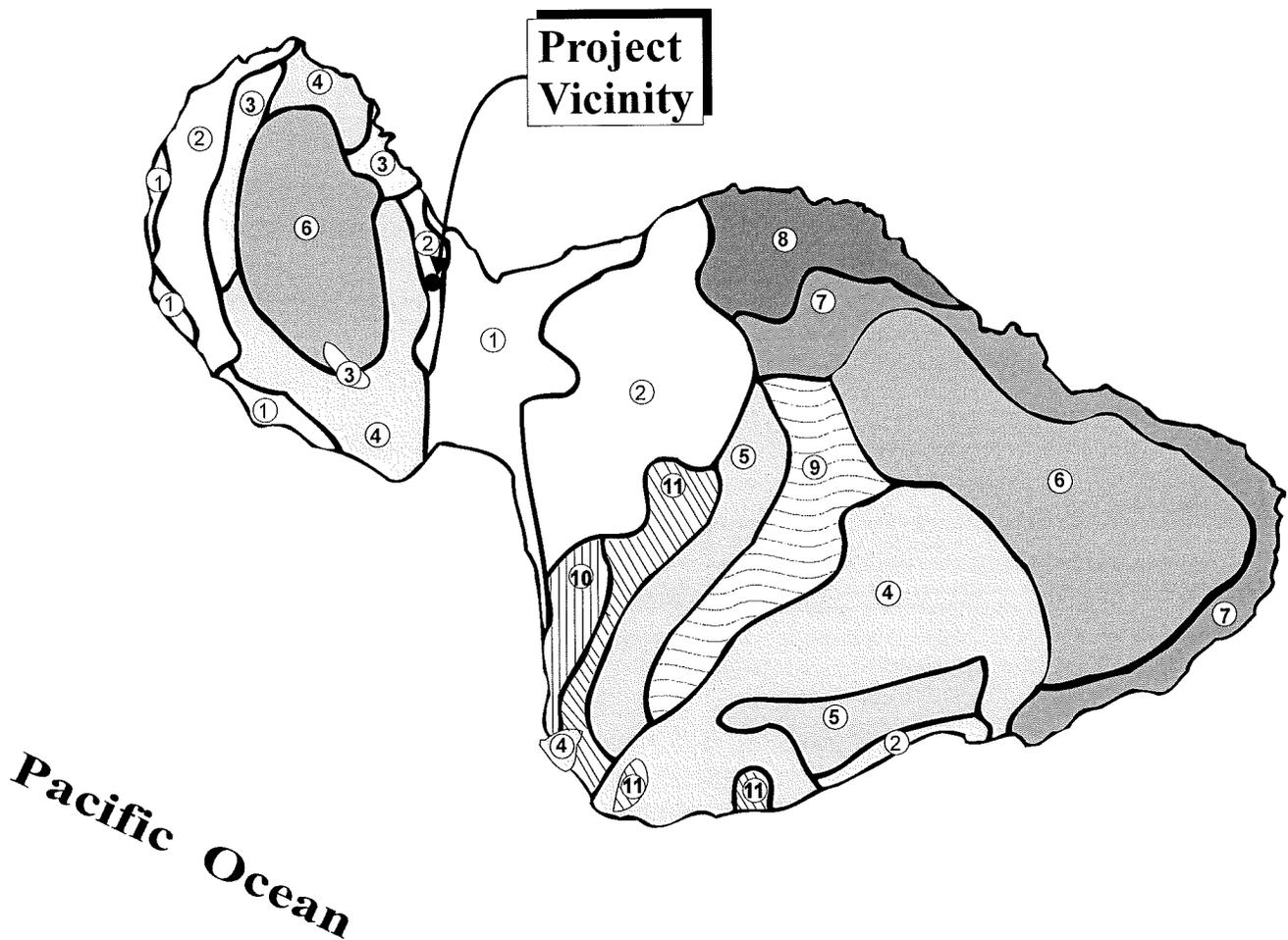
Wailuku Silty Clay, 3 to 7 percent slopes (WvB) is a dark reddish-brown silty clay that is about 12 inches thick. Permeability is moderate, runoff is slow and the erosion hazard is slight (USDA, 1972).

##### b. **Potential Impacts and Mitigation Measures**

Based on a foundation investigation of the proposed project site, it was determined that conventional shallow foundations may be used to support proposed structures for the control building and water tank. The project site was previously graded for the exploratory well and will allow for construction of and access to the new structures. Adverse impacts to underlying soil conditions and topography are not anticipated to result from the proposed construction activities at both Well No. 2 and Well No. 1.

# LEGEND

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



Map Source: USDA Soil Conservation Service

Figure 7 Proposed Wailuku Well No. 2  
and Related Improvements  
Soil Association Map

NOT TO SCALE

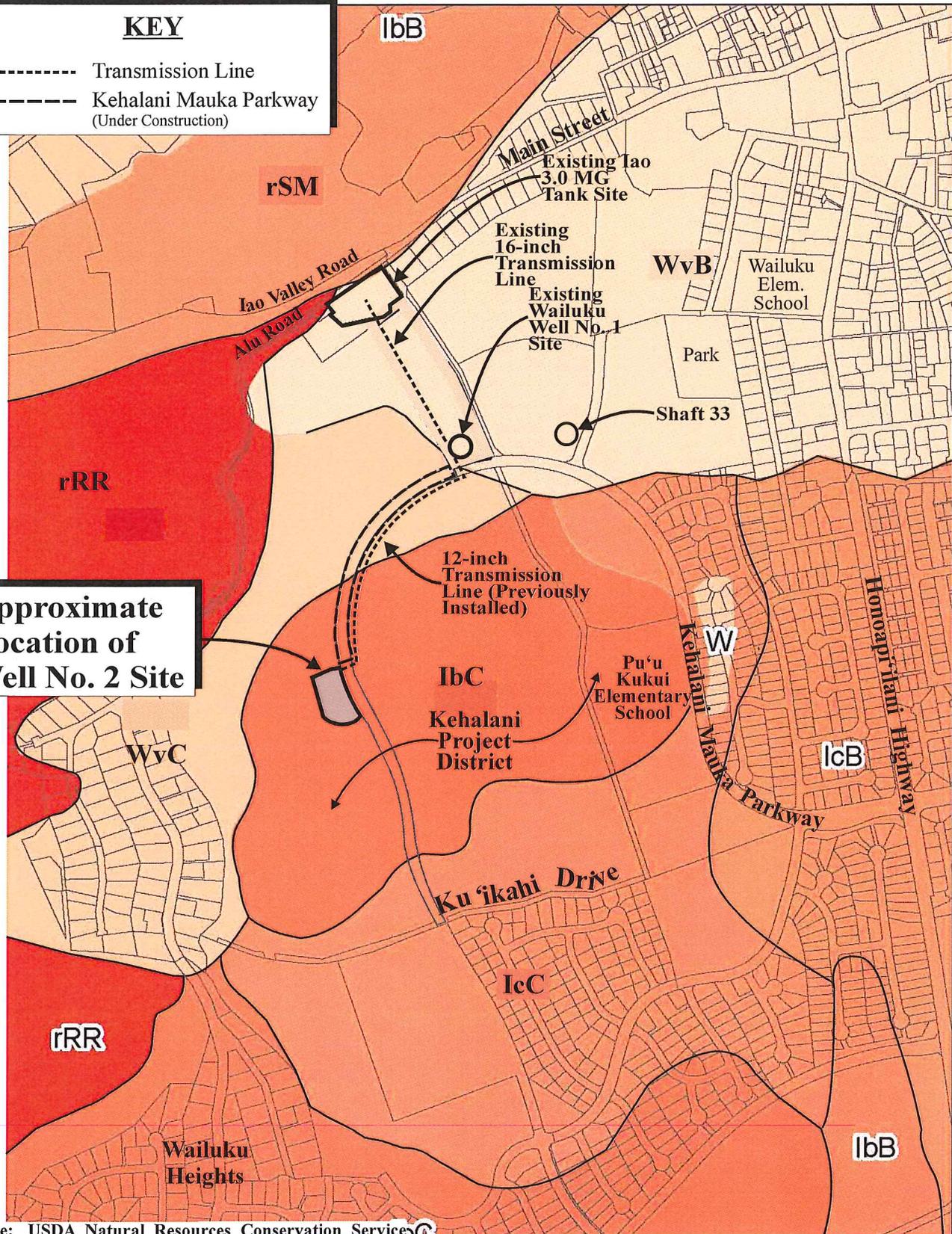


Prepared for: RCFC Kehalani, LLC

 MUNEKIYO HIRAGA

**KEY**

- Transmission Line
- - - - - Kehalani Mauka Parkway (Under Construction)



Source: USDA Natural Resources Conservation Service

**Figure 8 Proposed Wailuku Well No. 2 and Related Improvements Soil Classification Map**



Prepared for: RCFC Kehalani, LLC



5. **Flood and Tsunami Hazards**

a. **Existing Conditions**

The project site is located near the eastern base of the West Maui Mountains. As indicated by the Flood Insurance Rate Map for the County of Maui, the project site is located within Zone X. Zone X is the flood insurance rate zone that corresponds to areas of minimal flooding or areas determined to be outside the 0.2 percent annual chance flood plain. See **Figure 9**.

The project site is located inland and outside the tsunami inundation zone.

b. **Potential Impacts and Mitigation Measures**

Given the location of the project site within Flood Zone X and outside of the tsunami inundation zone, there are no anticipated adverse effects to the proposed project from flooding or tsunami related events.

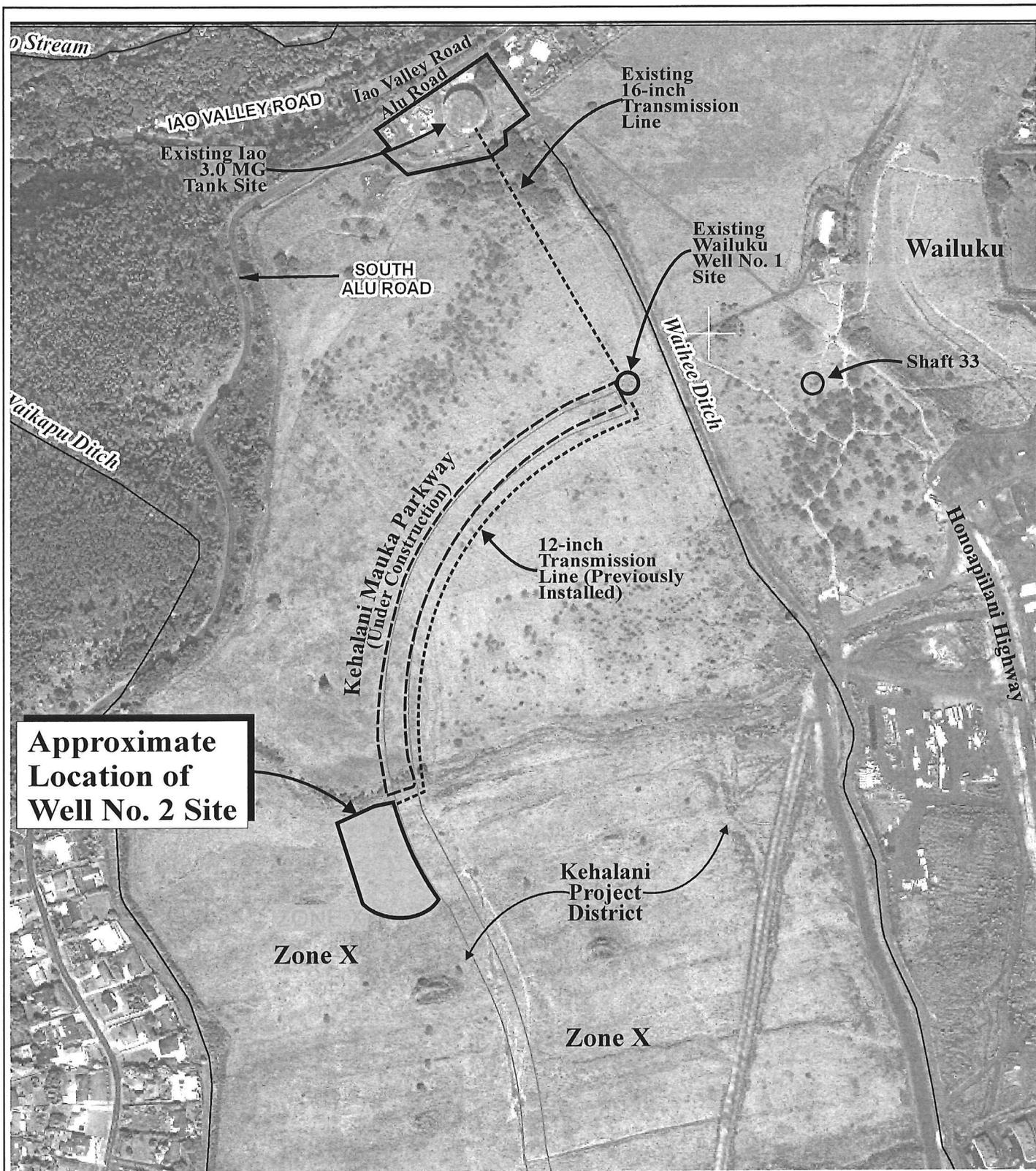
6. **Streams and Wetlands**

a. **Existing Conditions**

Iao Stream is located approximately 700 feet north of the project site. The stream is north of Iao Valley Road and generally runs west to east. This stream is listed by the State of Hawai‘i, Department of Health as an impaired water, indicating that the water quality within the stream may not meet State of Hawai‘i water quality criteria for streams. Iao Stream is one (1) of the four (4) streams in the Wailuku District that comprises Nā Wai ‘Ehā. The three (3) other streams are Waihe‘e River, Waiehu Stream, and Waikapū Stream.

The closest wetland is the Kanahā Pond Wildlife Sanctuary located approximately 3.5 miles northeast of the project site.

Waihe‘e Ditch, an irrigation ditch built in the early 1900s, is located approximately 400 feet east of the project site. The irrigation ditch flows in a southeast direction to reservoirs serving sugar cane fields in Central Maui.



Source: Flood Insurance Rate Map, Map Number 1500030391E

**Figure 9** Proposed Wailuku Well No. 2  
and Related Improvements  
Flood Insurance Rate Map

NOT TO SCALE



It is noted that an unnamed gulch is located near the Well No. 2 site. This gulch serves as a drainageway for stormwater during rainfall events. The Well No. 2 improvements are setback approximately 25 feet from the top of bank of the unnamed gulch and does not encroach into the gulch's drainage cross-section.

**b. Potential Impacts and Mitigation Measures**

The proposed project is not anticipated to adversely impact streams and wetlands, including the unnamed drainage gulch located near the Well No. 2 site. The 'Īao Stream is located over 700 feet north of the project site.

Under existing conditions, stormwater runoff sheetflows from west to east from the project site. Runoff normally infiltrates into the open field lands. Runoff from the undeveloped lands eventually enter the Kehalani Project District drainage system which flows to a large retention basin located approximately 1.5 miles to the southeast in the vicinity of Waiale Road and Waiko Road.

**7. Flora and Fauna**

**a. Existing Conditions**

The project site lies on former agricultural lands that slope gently down to the east from the West Maui Mountains. Original vegetation in the area consisted of a dense low saturated native forest and shrub land. However, the area was cleared for sugar cane cultivation in the mid-1800s and the land was plowed, planted, burned, and harvested in continuous cycles for over 100 years. When sugar production ended in the 1990s, the area lay fallow and has been converted to urban uses. These past agricultural practices have resulted in an environment that is now represented by scrub vegetation and grasses.

**b. Potential Impacts and Mitigation Measures**

The Well No. 2 project site was previously cleared and graded for the installation of the exploratory test well. The Well No. 1 improvements have been substantially completed by the DWS. The proposed project is not anticipated to adversely impact endangered or threatened species of flora or fauna.

To mitigate the attraction of wildlife to lighting, any outdoor lighting such as security lights that are incorporated into the project design will be shielded to direct the light downward so that it is not visible from above.

**8. Archaeological Resources**

**a. Existing Conditions**

The project site is part of a larger parcel that was previously used for sugar cane cultivation and pasture use. The parcel has experienced land alteration by earthmoving activities associated with the previous agricultural activities. The ground surface and subterranean reaches of the parcel have been heavily modified through time by intensive sugar cane plantation cultivation.

**b. Potential Impacts and Mitigation Measures**

Early consultation comments were requested from various agencies during the preparation of the Draft EA. The State Historic Preservation Division (SHPD) commented that in their review of the proposed project and prior archaeological information for the project area, that “no historic properties will be affected” by the proposed project. See Section VIII of this EA document.

In the event that any cultural resources, human skeletal remains or other cultural deposits are discovered during ground alteration work for the site, the SHPD will be contacted and work will cease in the immediate area of the find.

**9. Cultural Resources**

**a. Existing Conditions**

Within the Hawaiian cultural context, the project site is located within Wailuku ahupua‘a, which translated means “water [of] destruction,” referring to the battle of Ke Pani Wai, between Kamehameha I and Kalanikupule.

The Wailuku area is known for the occupancy of chiefly individuals, with many chiefs and much of the area’s population residing near or within portions of ‘Īao Valley and lower Wailuku. The Wailuku District and Wailuku ahupua‘a are frequently mentioned in historical texts and oral-

tradition accounts as being politically, ceremonially, and geographically important areas during traditional times. The area was likely settled between c. A.D. 1100 and A.D. 1200. Scattered amongst the agricultural and habitation sites were other places of cultural significance. The Wailuku District was a center of political power often at war with its rival in Hana.

During the Great Mahele of 1848, the Wailuku District was declared Crown Land. Approximately 180 Land Commission Awards (LCA) were granted in Wailuku ahupua'a and 100 were granted in the neighboring Waikapu ahupua'a. While a handful of foreigners gained control of large parcels of land that would later be used for commercial sugar cane production, the majority of LCAs were awarded to Native Hawaiians, suggesting that the area was densely populated in the mid-19<sup>th</sup> century.

Land use in and around the project area in the mid-19<sup>th</sup> and early 20<sup>th</sup> centuries was largely devoted to commercial sugar cane and pineapple production. Sugar plantations and mills have been located in the Wailuku and Waikapu area since the 1860s. The Hopoi Sugar Camp, which shows up on maps dated to 1922, was located just south of the project area near the Hopoi Reservoir.

A Cultural Impact Assessment (CIA) for the Well No. 1 project, dated June 2013, prepared by Scientific Consultant Services, Inc. has been reviewed and cited for relevance to the Wailuku Well No. 2 projects due to proximity and similar action. The CIA concluded that the exercise of native Hawaiian rights, or any other ethnic group, related to gathering, access or other customary activities will not be adversely affected by the Well No. 1 project. (Munekiyo & Hiraga, Inc. 2013) The purpose of the CIA was to identify any traditional or contemporary native Hawaiian or other cultural practices, resources, sites, and beliefs associated with the project site (Well No. 1) and surrounding lands.

In addition to the related research, a CIA interview was carried out with an individual familiar with the Wailuku Well No. 2 site and cultural practices.

A Cultural Impact Assessment interview was conducted on July 16, 2015 with Clayton Suzuki, Operations Manager of Wailuku Water Company, at his office of employment at 255 East Waiko Road, Waikapu. Mr. Suzuki

was born in 1950 and originally from Laupāhoehoe, Hawai‘i Island. He obtained a Bachelor of Science degree in Civil Engineering in 1974 and worked for Austin, Smith and Associates as an engineer in Honolulu. Then in 1975, he moved to the island of Maui to work for Hawaiian Commercial and Sugar Company (HC&S) until 1978 when he moved to Wailuku Sugar Company. While on the island of Maui, he initially resided in Hāli‘imaile then moved to Waikapu in 1978, and has remained at the same location until today.

Wailuku Sugar Company’s name changed to Wailuku Agribusiness in 1989, later becoming Wailuku Water Company (WWC) in 2005. WWC continues to maintain the extensive ditch systems that lies within the Kehalani Mauka lands that the Wailuku Well No. 2 site lies within. The major irrigation ditches in the area are the Iao-Waipapū Ditch, mauka of the project site, and the Waihe‘e Ditch, makai of the project site, with both oriented in a north to south direction. The ditch systems still actively function to convey irrigation water to various agricultural fields in Waikapū, Waihe‘e, Wailuku, and Mā‘alaea.

Lands in the Kehalani Mauka area were in sugar cultivation up until 1984 after which the fields turned into pasture land for cattle grazing. C. Brewer Homes acquired the lands after 1984, and later transferred it to Hawai‘i Land & Farm who started developing the agricultural lands into a master planned residential community.

Mr. Suzuki’s connection with the project site and its surrounding area is tied in with his past 27 years of employment with WWC and predecessor companies associated with the same lands. Given the historic agricultural use of the property, Mr. Suzuki indicated that he is not familiar with, nor has he observed, cultural practices at the project site and immediate surrounding area. Additionally, he is not familiar with, nor has he observed the project area to be used for traditional mauka-makai access. To the best of his knowledge, he knows of no issues which would preclude the implementation of the proposed action. See **Appendix “D”**.

**b. Potential Impacts and Mitigation Measures**

Although the slopes of the West Maui Mountains and the nearby Iao Valley are both culturally significant areas to Native Hawaiians, the land

underlying and in the immediate vicinity of the proposed Wailuku Well No. 2 site does not appear to host any cultural practices.

From a recent historical perspective, land underlying the proposed project site was primarily used for commercial sugar cane cultivation and pastureland. Also, the Cultural Impact Assessment interview revealed no indications of cultural practices, such as gathering, access, or religious traditions.

With reference to the proposed action, no adverse impact to cultural resources, practices, and traditions are anticipated.

## 10. Air Quality

### a. Existing Conditions

The project site, in general, does not experience adverse air quality conditions. There are no point sources of airborne emissions within close proximity to the project site. Point sources in the surrounding Central Maui region include the Maalaea Power Plant, Puunene Sugar Mill, and rock quarry at Pu'unēnē, all of which are well over two (2) miles from the project site. Non-point sources of pollution in the vicinity of the project site include: vehicular exhaust from High Street, Honoapi'ilani Highway and other nearby roadways; dust generated by construction activities in the Kehalani Mauka development; and/or burning activities from sugar cane harvesting and cultivation operations conducted in the central valley area. Emissions from these sources, however, are quickly dispersed by prevailing tradewinds.

### b. Potential Impacts and Mitigation Measures

During construction, airborne particulates as a result of construction-related activities may temporarily affect the ambient air quality within the immediate vicinity of the project site. The project will, as applicable, comply with regulations established in Hawai'i Administrative Rules (HAR), Chapter 11.60.1, "Air Pollution Control" and Section 11-60.1-33, "Fugitive Dust". Mitigative measures will include utilization of water wagons and sprinklers to control dust, as well as other appropriate Best Management Practices to ensure that fugitive dust from the project area is minimized. By effectively employing these mitigative measures,

construction-related activities are not anticipated to pose a significant impact to the air quality in the surrounding area.

From a long-term perspective, adverse impacts to air quality are not anticipated.

**11. Noise**

**a. Existing Conditions**

The predominant source of noise in the vicinity of the project site stems from traffic traveling along ‘Āao Valley Road, Alu Road, and other roadways in the area. The lands abutting the site are former agricultural lands that are currently vacant and undeveloped. Single-family homes located to the south, west, and east of the project site are not major noise-generators.

**b. Potential Impacts and Mitigation Measures**

Ambient noise conditions may be temporarily affected by construction-related activities. Heavy construction machinery and equipment are anticipated to be the dominant noise-generating sources during the construction period. Mitigation measures for construction-related activities will include using proper equipment and conducting regular vehicle maintenance, both of which are anticipated to reduce noise levels. Equipment mufflers or other noise attenuating equipment may also be employed as required. Noisy construction activities will be restricted to hours between 7:00 a.m. and 3:30 p.m., Monday through Friday, excluding holidays. The project will comply with HAR, Chapter 11-46, “Community Noise Control” and obtain a noise permit, as applicable. By effectively employing these measures, potential noise-related impacts from construction-related activities will be mitigated to an acceptable level.

From a long-term perspective, the proposed project is not anticipated to result in adverse noise impacts.

12. **Scenic and Open Space Resources**

a. **Existing Conditions**

Scenic resources in the vicinity of the project site include the West Maui Mountains to the West and the Central Maui's isthmus and Haleakalā to the east. Open space resources in the region include the slopes of the West Maui Mountains. Background views beyond the existing site from ground level are limited due to the terrain and natural vegetation and trees that surround the area. Scenic and open space views looking makai are best seen when travelling downhill along Alu Road from the Old Wailuku Heights area. Ground views looking mauka up towards the West Maui Mountains are unobscured by the low shrubs and grasses.

b. **Potential Impacts and Mitigation Measures**

The proposed project involves converting an existing exploratory well to the Well No. 2 production well. The scope of the project includes constructing a control building, control tank, underground piping at the Well No. 2 sites, and control valve station at the Well No. 1 site. Contour elevations of the site range from 604 feet to 624 feet MSL. The higher side of the site was excavated to create a level pad with the elevation of the well and related structures at 612 feet MSL. The maximum heights from the finished grade to the top of the control building and control tank are about 15-feet by 15-feet, respectively. Views down to the slopes of Haleakalā and Central Maui's isthmus will still be visible from public roadways. The proposed project will not negatively affect scenic resources. Furthermore, the control building and control tank footprints collectively will occupy 2,082-sq. ft. The project is not anticipated to adversely affect open space resources.

13. **Beach and Mountain Access**

a. **Existing Conditions**

The project site is located approximately 2.5 miles from the nearest beach and approximately a quarter of a mile from the foot of the West Maui Mountains. Cultural impact assessments conducted for the proposed project concluded that there are no activities related to gathering, access, or other customary activities occurring in the project vicinity.

b. **Potential Impacts and Mitigation Measures**

There are no traditional access corridors identified in close proximity to the Well No. 1 and Well No. 2 sites. Accordingly, there are no anticipated adverse impacts to culturally related beach and mountain access from the proposed project.

**B. SOCIO-ECONOMIC ENVIRONMENT**

1. **Population**

a. **Existing Conditions**

The population of the County of Maui has exhibited relatively strong growth over the past decade. In 2010, there were 154,834 residents in the County, a 21 percent increase in the resident population since 2000. The Wailuku-Kahului region is the most populous region in the County and has grown at a faster rate than the County as a whole. In 2010, there were approximately 54,400 residents living in the Wailuku-Kahului region, a 31 percent increase over the last decade (U.S. Census Bureau, 2000 and 2010). Population in the County of Maui is projected to grow to 199,550 residents by 2030 while the Wailuku-Kahului region is anticipated to have approximately 71,200 residents (County of Maui, Department of Planning, 2006).

b. **Potential Impacts and Mitigation Measures**

The proposed project involves replacement of the Shaft 33 source with new source infrastructure improvements. The proposed action is not considered a direct population generator. As such, significant impacts to population are not anticipated to result from project implementation.

2. **Economy**

a. **Existing Conditions**

The Wailuku region is Maui County's center of governmental activity. Along with neighboring Kahului, the region encompasses a broad range of commercial, service, and public sector activities. In addition, the region is surrounded by approximately 32,000 acres of sugar cane. This vast

expanse of agricultural land, managed by Hawaiian Commercial & Sugar Company (HC&S), is a key contributor to the local economy.

Not-seasonally-adjusted unemployment rates for both Maui County and the Island of Maui in July 2015, were 3.3 percent and 3.1 percent, respectively. These rates both decreased from July 2014 when unemployment rates stood at 4.5 percent and 4.4 percent, respectively (DLIR, August 2015).

**b. Potential Impacts and Mitigation Measures**

In the short term, the proposed project will provide construction-related revenue and employment. Accordingly, the project will have a beneficial impact on the local economy during the construction phase.

In the long term, the facility is not anticipated to significantly impact Maui County's economy. No new positions are expected to be required by DWS to staff the facility improvements when completed.

**C. PUBLIC SERVICES**

**1. Police and Fire Protection**

**a. Existing Conditions**

Police protection for the Wailuku and Waikapu region is provided by the Maui County Police Department headquartered on Mahalani Street, approximately 1.5 miles east of the project site. The region is served by the Department's Central Maui station, which is divided in three (3) sectors. Each sector is divided into three (3) beats, each patrolled by a single officer.

Fire prevention, suppression, and protection services for the Waiehu, Waihee, and Wailuku regions are provided by the County Department of Fire and Public Safety's Wailuku station, located on Kinipopo Street in Wailuku Town, approximately 0.9 mile northeast of the project site. The region is also served by the Department's Kahului Station, located on Dairy Road, approximately 3.7 miles east of the project site.

b. **Potential Impacts and Mitigation Measures**

The proposed project will not affect the service area limits or personnel for police and fire protection. The proposed facility is not anticipated to impact calls for service for police and fire personnel.

2. **Medical Services**

a. **Existing Conditions**

The island's major medical facility is Maui Memorial Medical Center, located approximately 1.5 miles east of the project site, midway between Wailuku and Kahului. Acute, general, and emergency care services are provided at the 231-bed facility. Other private medical service providers in the Central Maui region, which have regular hours, include Maui Medical Group and Kaiser Permanente.

b. **Potential Impacts and Mitigation Measures**

The proposed action will not affect requirements for medical services. As with police and fire protection services, service area limits for medical emergency responders will not be affected by the proposed project.

3. **Solid Waste**

a. **Existing Conditions**

Single-family residential solid waste collection service is provided by the County of Maui. Residential solid waste collected by County crews is disposed at the County's Central Maui Landfill, located four (4) miles southeast of the Kahului Airport. Commercial waste from private collection companies is also disposed at the Central Maui Landfill. A County-operated green waste recycling facility is located at the Central Maui Landfill.

Maui Demolition and Construction Landfill, a privately owned facility, accepts solid waste and concrete from demolition and construction activities. This facility is located at Mā'alaea, south of the project site, near Honoapi'ilani Highway's junction with North Kīhei Road and Kūihelani Highway.

**b. Potential Impacts and Mitigation Measures**

Construction waste which may be generated from implementation of the project will be recycled or disposed of at the appropriate construction waste disposal location. With these solid waste management measures, the contribution of construction waste to the landfills will be minimized. The proposed action is not anticipated to adversely affect capacity parameters of the County's solid waste system.

**4. Recreational Resources**

**a. Existing Conditions**

The County's Wailuku Elementary School Park is located less than a quarter of a mile from the site, providing baseball/softball fields, basketball courts, a volleyball court, and a playground. The Kehalani Project District also provides for 20 acres of land for park purposes. As such, park lands will be designated as the buildout of the project district occurs.

**b. Potential Impacts and Mitigation Measures**

As the proposed project is not considered to be a population generator, it will not create a need for additional recreational facilities. As previously noted, the lands immediately surrounding the Wailuku Well No. 2 and Wailuku Well No. 1 are planned for future park use. The proposed project is not anticipated to adversely impact existing public recreational facilities.

**5. Schools**

**a. Existing Conditions**

The Wailuku-Kahului region is served by the State Department of Education's (DOE) public school system and by several privately operated schools. Public schools operated by DOE in the Kahului area include Lihikai, Kahului, and Pōmaika'i Elementary Schools (Grades K-5); Maui Waena Intermediate School (Grades 6-8); and Maui High School (Grades 9-12). A new elementary school, Pu'u Kukui Elementary, recently (2014/2015) opened in the Kehalani Project District to the east of the project site. Existing DOE public schools in the Wailuku area also include Wailuku Elementary School (Grades K-5); Iao Intermediate School

(Grades 6-8); and Baldwin High School (Grades 9-12). The University of Hawai'i-Maui College, located east of the project site in Kahului, serves as the island's primary higher education institution.

b. **Potential Impacts and Mitigation Measures**

The proposed facility is a non-residential project and is not anticipated to impact school enrollments or facility requirements.

**D. INFRASTRUCTURE**

1. **Roadways**

a. **Existing Conditions**

The Wailuku Well No. 2 site is located on a parcel to the east of Alu Road. The project site will be accessed by a driveway off of Kehalani Mauka Parkway which is currently under construction by RCFC.

Kehalani Mauka Parkway provides primary access to the Kehalani Project District residential area. It intersects with Honoapi'ilani Highway at a signalized intersection. See **Figure 10**.

b. **Potential Impacts and Mitigation Measures**

Access to the project site will be by a new driveway off of the extension of Kehalani Parkway. No roadway improvements are proposed other than the proposed driveway entrance. There will be a short-term increase in traffic during construction of the project with construction workers and equipment entering and leaving the project site. A maximum of ten (10) construction employees are expected to work at the project site. Parking for construction employees will be located on the project site. Limited construction access use will be confined to the nine (9) month construction period. Construction of the proposed project is not anticipated to significantly impact pedestrian or vehicular movement and minimal road or lane closures are expected during the course of the project.

Maintenance inspections will be carried out to maintain and repair equipment. Based on this anticipated level of maintenance and



**KEY**

- Transmission Line
- Kehalani Mauka Parkway (Under Construction)

**Approximate Location of Well No. 2 Site**

Source: Google Earth Pro

**Figure 10 Proposed Wailuku Well No. 2 Well Development and Related Improvements Regional Roadway Map**

NOT TO SCALE



Prepared for: RCFC Kehalani, LLC



RCFC\Kehalani\Well\No2\RegionalRoadway\Map

monitoring, significant long-term impacts to traffic conditions in the vicinity of the Well No. 2 site and Well No. 1 site are not anticipated.

## 2. Water

### a. Existing Conditions

Wailuku Well No. 2 will pump water from the underlying Iao Aquifer. The well is at an elevation of 612 feet MSL and the water level is at approximately 9.57 feet MSL. The Commission on Water Resource Management has set a sustainable yield for the Iao aquifer at 20 MGD (million gallons per day). The Iao aquifer is the principle source of drinking water for Central and South Maui and Pā‘ia. It was designated as a State Ground Water Management Area in 2003. The designation means that the State Commission on Water Resource Management (CWRM) has control to manage the aquifer. The CWRM has granted under Water Use Permit Number 925, 476,000 gallons per day (gpd) of potable ground water to RCFC Kehalani, LLC from the Iao Ground-Water Management Area for Well Number 5330-05 (the Wailuku Shaft 33). RCFC will transfer its CWRM allocation of 476,000 gallons per day to the DWS, as well as the proposed Well No. 2 improvements to supplement DWS’s source supply for the Central-South Maui Water System.

The State CWRM under Water Use Permit Number 926 allocated to the County of Maui DWS 5,015,000 gpd of potable ground water from the Iao Ground-Water Management Area for Well Number 5330-05, Wailuku Shaft 33. The DWS’s allocation is presently being pumped from the Iao groundwater aquifer at an average rate of 5,015,000 gpd. However, the DWS intends to abandon the use of Wailuku Shaft No. 33 due to unique circumstances and will need four (4) replacement wells. The DWS has initiated implementation of the replacement wells. The Wailuku No. 2 well will be the fourth well to replace the Wailuku Shaft 33 allocation.

RCFC and the DWS have entered into an agreement to convey RCFC’s water allocation and the Well No. 2 infrastructure improvements to the County DWS in consideration for source credits and appurtenant source availability on a first priority basis, equal to the amount of CWRM allocation RCFC transferred to the DWS. The remaining capacity of the well will be for the use of the DWS.

Well No. 2 is expected to produce 1,400 gallons of water per minute (gpm). Another well being developed by DWS in the Kehalani Project District is Well No. 1, (State Well No. 5230-04). Both of these wells are being developed as a replacement water source in anticipation of the closure of Wailuku Shaft 33 (Well No. 5330-05) as part of DWS's continuing effort to create distance between the pumping operations within the Iao Aquifer System. Water from Well No. 2 will be conveyed via a previously installed 12-inch waterline under the extended Kehalani Mauka Parkway to connect with water from the Well No. 1. A control valve station, constructed as part of the proposed improvements at the Well No. 1 site, will allow the water from the two (2) wells to be combined and transmitted via an existing 16-inch waterline to the 3.0 MG Iao water tank. This water system will be tied into the DWS's Central-South Maui water system.

Analysis of source water by the Department of Health (DOH) certified laboratory verifies the water from Well No. 2 meets all safe drinking water standards. Refer to **Appendix "B"**. As a result, treatment of the groundwater other than disinfection of the groundwater, is not required.

**b. Potential Impacts and Mitigation Measures**

Three (3) pump tests (February, June and July 2014) were performed for Well No. 2 to establish that the 1,400 gpm could be achieved by the completed well. During the pump test in July over a 96-hour constant rate test (July 14-18, 2014), the drawdown was less than three (3) feet and the pumped water salinity chlorides were in the low 60s. Refer to **Appendix "B"**. Results of the constant rate pump test for the well indicate that the quality and quantity of the well water is excellent and that the well can produce at a pump rate of 1,400 gpm.

Water pumping and use from Wailuku Well No. 2 is within the allocation established by the CWRM and adverse impacts to the Iao Aquifer sustainable yield and ground water management parameters are not anticipated by the proposed project.

### 3. Wastewater

#### a. Existing Conditions

The Well No. 2 site is presently graded and occupied by the exploratory well shaft with no wastewater being generated. No fixtures are proposed with the project improvements that will require connection to sewerlines and treatment. Similarly, there is no wastewater infrastructure at Well No. 1.

#### b. Potential Impacts and Mitigation Measures

The proposed improvements will not generate any wastewater flows. Therefore, the proposed improvements will not negatively impact the existing sewer collection and treatment plant facilities in the Central Maui region.

### 4. Drainage

#### a. Existing Conditions

The Well No. 2 site is currently graded, relatively level at an elevation of 612 feet MSL.

Site runoff drains over land as sheet flow to the east through vacant open land. There are no drainageways or areas of concentrated flow. Runoff normally infiltrates into the open field lands at lower elevations. Stormwater runoff eventually enters the master drainage system designed for the existing and future build-out of the Kehalani Project District.

The runoff from the proposed Well No. 2 site will be collected via onsite drain inlets with a 12-inch onsite drainline conveying flows to a drain outlet located just outside the fence line on the north side of the Well No. 2 site. Flows are then conveyed to Kehalani's master planned drainage collection system. Management of peak runoff is provided by the Kehalani Retention Basin, which is designed to fully retain the 100-year, 24-hour runoff from full build out of all phases of the Kehalani Mauka Development plus its mauka offsite contributing areas.

The project site is not within any Federal Emergency Management Agency (FEMA) flood zone area. The area lies within Zone X, which are

areas determined to be outside the 0.2 percent annual chance (500-year) floodplain. Refer to **Figure 9**.

**b. Potential Impacts and Mitigation Measures**

The Well No. 2 was graded with excavation on the mauka end and embankment of the makai end to create a relatively level development pad at 612 feet MSL for the exploratory well.

The proposed project is within the Kehalani Mauka Development which has an approved drainage master plan by Warren S. Unemori Engineering titled “Drainage Report, Kehalani Offsite Drainage System – Phase 1, Wailuku, Maui, Hawai‘i, Revised January 2004”. The report describes the current back-bone drainage system that collects and conveys runoff to a downstream stormwater management system which includes the 490 acre-foot retention basin located adjacent to Wai‘ale Road. The proposed project is not anticipated to adversely impact adjacent and downstream properties.

During the construction phase of both the Well No. 1 and Well No. 2 improvements, temporary Best Management Practices (BMP) will be implemented to prevent pollution of downstream resources. In the long term, the Kehalani Retention basin will capture all suspended solids and potential pollutants, and will not contribute these sediments to any downstream drainageways.

**5. Electricity and Telephone Systems**

**a. Existing Conditions**

There are no electricity and/or telephone service in the project vicinity. Utilities to the project site will be provided underground with the completion of Kehalani Parkway, which is located adjacent to the Well No. 2 site. Power is currently provided to the Well No. 1 site.

**b. Potential Impacts and Mitigation Measures**

The Well No. 2 site will be serviced by Maui Electric Company, Ltd. by an underground utility service. An underground service will connect to a 1,000 to 1,500 kilo Volt Amps (kVA) pad mounted transformer next to the control building.

The telephone service for the Well No. 2 improvements will not be required.

Addition of these utility services is not anticipated to have adverse impacts on the electrical and telephone services in the area.

## **E. CUMULATIVE AND SECONDARY IMPACTS**

Cumulative impacts are defined by Title 11, Chapter 200, HAR, Environmental Impact Statement Rules as:

*...the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

A “secondary impact” or “indirect effect” from the proposed action are defined by Title 11, Chapter 200, HAR as

*...effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.*

In this case, the context for analyzing secondary and cumulative impacts is defined by the time horizon within which “reasonably foreseeable” conditions may occur. From a local planning standpoint, the future context for water use and development is established by the Water Use and Development Plan (WUDP) and the Maui County General Plan. Both documents are inseparable, as the General Plan defines parameters for growth, while the WUDP provides a means for meeting the needs of this planned growth. The updated WUDP for Central Maui was adopted by the County Council in December 2010 while the General Plan, though the Countywide Policy Plan was updated in 2012. Both documents plan for the horizon year 2030. Both planning documents utilize the same technical data base for planning consistency purposes. Thus, “reasonably foreseeable” conditions may be considered within this future context.

The Maui County General Plan, as set forth in Chapter 2.80.B of the Maui County Code, provides for the update of the County General Plan. The General Plan is a long-term, comprehensive blueprint for the physical, economic, environmental development and cultural identity of the County through 2030. The components of the General Plan include the following:

- The Countywide Policy Plan provides broad policies and objectives which portrays the desired direction of the County’s future. It includes a countywide

vision, statement of core principles, and objectives and policies for population, land use, the environment, the economy, and housing.

- The Maui Island Plan (MIP) provides a land use strategy, water assessment, nearshore ecosystem assessment, an implementation strategy, and milestone measurements. An essential element of the MIP is a Managed and Directed Growth Plan which identifies existing and future land use patterns and determines planned growth.
- The nine (9) Community Plans provide implementing actions based on consistency with the Countywide Policy Plan and MIP's vision, goals, objectives, and policies.

A discussion of how the proposed project is consistent with specific goals, objectives, and policies of the Countywide Policy Plan, Maui Island Plan, and Wailuku-Kahului Community Plan are presented in Chapter III of this EA document.

Whereas the Countywide Policy Plan covers planning goals and objectives at the broadest levels, and the regional Community Plans consider specific regional needs and opportunities, the MIP and the WUDP may be viewed as parallel plans, in that both address functional elements of the General Plan, and both address islandwide growth parameters which will ultimately dictate water consumption patterns on the island.

The MIP is used by the County Council, Maui Planning Commission, County administration and the community as a policy foundation for day-to-day decision making by doing the following:

- Providing direction for the development of future policies and regulations (for example, zoning and other ordinances, guidelines and area-specific plans that describe what kind of development can occur where);
- Providing policies to help determine the appropriateness of development proposals; and
- Assigning resource for capital investments and programmatic initiatives.

The Directed Growth Plan, which is a key element of the MIP, provides a framework for managing outcomes of growth based on analysis of natural hazards, sensitive lands, cultural resources, scenic corridors, and related environmental and human community parameters. An important component of the Directed Growth Plan are maps that delineate urban and rural growth areas. Referred to as Urban and Rural Growth Boundaries, these maps set the boundaries for the physical limits of development. In so

doing, the Directed Growth Plan seeks to manage the use of non-urban and non-rural resources important in sustaining the island to the year 2030.

In light of the foregoing, the assessment of cumulative and secondary impacts is undertaken in the context of planned growth recommended by the General Plan update process, particularly the MIP and its Urban and Rural Growth boundary maps. The proposed urban and rural growth boundaries provide the basis for acknowledging that the proposed project will facilitate implementation of the General Plan, as mandated by County Charter. Future housing and commercial development currently envisioned by the General Plan within the Central Maui Water Service Area represents the “reasonably foreseeable” future for considering potential impacts of the proposed project. The spatial order of development of these units is not defined, however, as development timelines are governed by market conditions, discretionary approval processes, and landowners’ financial capacity and preference to build. Notwithstanding, proposed water source capacity provided by the proposed project will, over time, support the County-planned growth in the region. It is noted that the development of Well No. 2 is but one infrastructural component which is required to ensure that the MIP is implemented as required by the County Charter. Other infrastructure components include the need for sufficient wastewater collection, treatment and disposal capacity, and sufficient regional and local transportation system networks that will provide for community connectivity and mobility.

Within the Wailuku-Kahului Community Plan region the project site is located within the Project District 3 (Wailuku) (Kehalani Project District). This is a comprehensive master planned area that envisions approximately 2,400 residential units (including single-family, multi-family, and affordable units), a neighborhood commercial center, and a system of parks, and open space areas connected by pedestrian ways and green belts.

In summary, the proposed project is being planned in consideration of the long-term infrastructural requirements necessary to support planned future growth in the Kehalani Project District, and the Central Maui region. The proposed project is not anticipated to have a significant adverse impact on the physical environment. Assessing the project in the context of the future planned growth in the Central Maui region in the foreseeable future, the proposed action is not anticipated to result in significant adverse secondary or cumulative impacts.

### **III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS**

### III. RELATIONSHIP TO LAND USE PLANS, POLICIES, AND CONTROLS

#### A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205, Hawai‘i Revised Statutes (HRS), all lands in the State have been placed into one (1) of four (4) land use districts by the State Land Use Commission. These land use districts have been designated “Urban”, “Rural”, “Agricultural”, and “Conservation”. The project site is classified as “Urban” and is a permitted use within the “Urban” district. See **Figure 11**.

#### B. CHAPTER 226, HRS, HAWAI‘I STATE PLAN

Chapter 226, HRS, also known as the Hawai‘i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The proposed action is consistent with the following goal, objectives, policies and priority guidelines of the Hawai‘i State Plan:

##### Goal

*A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii’s present and future generations.*

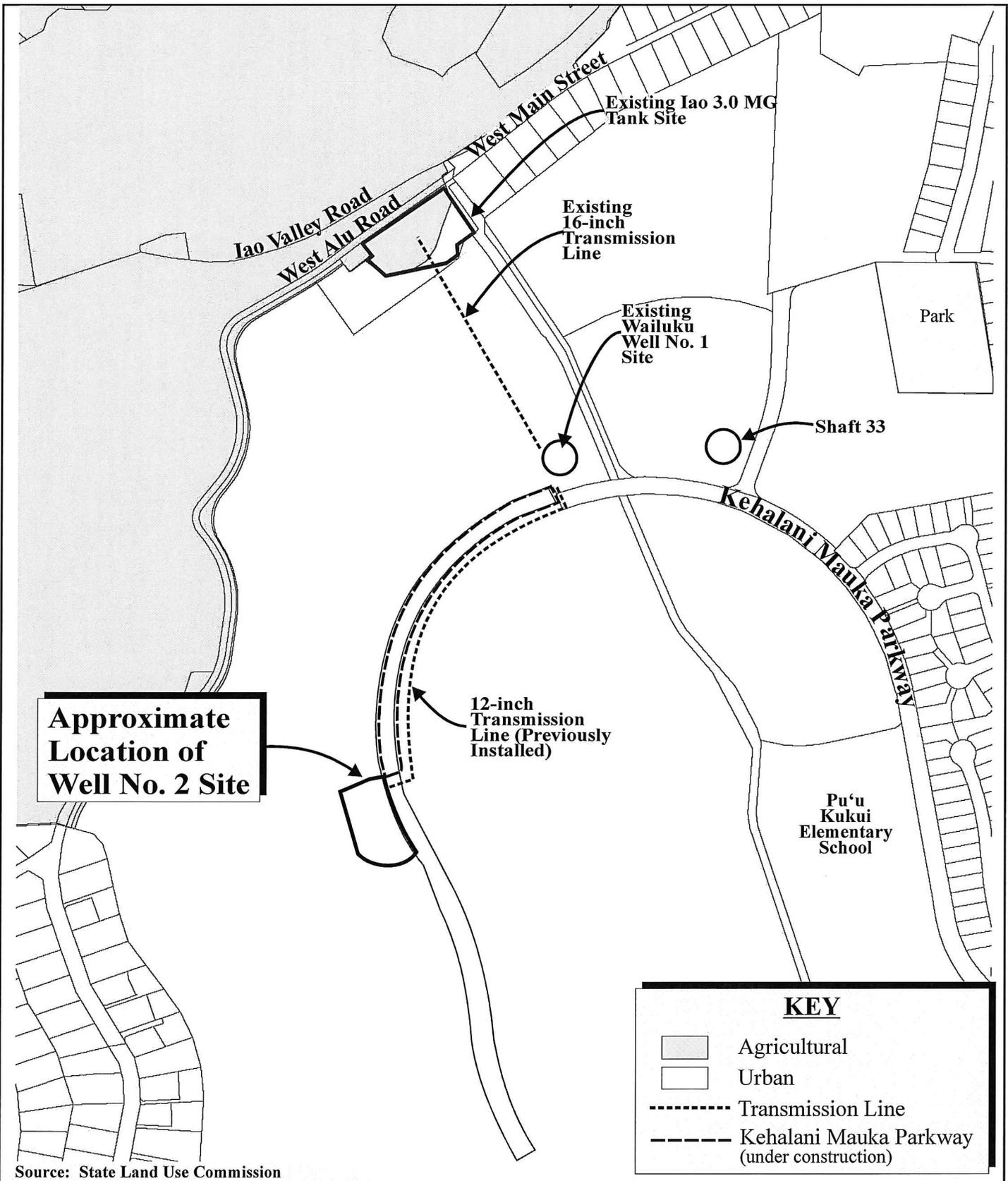
##### 1. Objectives and Policies of the Hawai‘i State Plan

The proposed action is consistent with the following objectives and policies of the Hawai‘i State Plan:

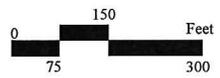
##### Chapter 226-11, HRS, Objectives and Policies for the Physical Environment - Land-Based, Shoreline, and Marine Resources

**226-11(b)(3), HRS:** *Take into account the physical attributes of areas when planning and designing activities and facilities.*

**226-11(b)(4), HRS:** *Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*



**Figure 11 Proposed Wailuku Well No. 2 and Related Improvements State Land Use District Map**



226-11(b)(8), HRS: *Pursue compatible relationships among activities, facilities, and natural resources.*

**Chapter 226-13, HRS, Objectives and Policies for the Physical Environment - Land, Air, and Water Quality**

226-13(b)(2), HRS: *Promote the proper management of Hawaii's land and water resources.*

226-13(b)(3), HRS: *Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.*

**Chapter 226-14, HRS, Objectives and Policies for the Facility Systems - In General**

226-14(b)(1), HRS: *Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.*

**Chapter 226-16, HRS, Objectives and Policies for the Facility Systems - Water**

226-16(b)(1), HRS: *Coordinate development of land use activities with existing and potential water supply.*

226-16(b)(4), HRS: *Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.*

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

The proposed action coincides with the following priority guidelines of the Hawai'i State Plan.

**Chapter 226-103, HRS, Economic Priority Guidelines:**

226-103(e)(4), HRS: *Explore alternative funding sources and approaches to support future water development programs and water system improvements.*

**Chapter 226-108, HRS, Sustainability, Priority Guidelines and principles to promote sustainability shall include:**

**226-108(2), HRS:** *Encouraging planning that respects and promotes living within the natural resources and limits of the State.*

**C. GENERAL PLAN OF THE COUNTY OF MAUI**

As indicated by the Maui County Charter, the purpose of the general plan shall be to:

*... indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density; land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the foregoing Charter provision through enabling legislation which calls for a Countywide Policy Plan. The Countywide Policy Plan was adopted as Ordinance No. 3732 on March 24, 2010.

With regard to the Countywide Policy Plan, Section 2.80B.030 of the Maui County Code states the following.

*The countywide policy plan shall provide broad policies and objectives which portray the desired direction of the County's future. The countywide policy plan shall include:*

- 1. A vision for the County;*
- 2. A statement of core themes or principles for the County; and*
- 3. A list of countywide objectives and policies for population, land use, the environment, the economy, and housing.*

Core principles set forth in the Countywide Policy Plan are listed as follows:

- 1. Excellence in the stewardship of the natural environment and cultural resources;*
- 2. Compassion for and understanding of others;*

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

Congruent with these core principles, the Countywide Policy Plan identifies goals objectives, policies and implementing actions for pertinent functional planning categories, which are identified as follows:

1. *Natural environment*
2. *Local cultures and traditions*
3. *Education*
4. *Social and healthcare services*
5. *Housing opportunities for residents*
6. *Local economy*
7. *Parks and public facilities*
8. *Transportation options*
9. *Physical infrastructure*
10. *Sustainable land use and growth management*
11. *Good governance*

With respect to the proposed Wailuku Well No. 2 and related improvements, the following goals, objectives, policies and implementing actions are illustrative of the project's compliance with the Countywide Policy Plan.

## **IMPROVE PHYSICAL INFRASTRUCTURE**

### **Goal:**

*Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.*

### **Objective:**

*Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.*

### **Policies:**

- *Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.*
- *Develop and fund improved water-delivery systems.*
- *Retain and expand public control and ownership of water resources and delivery systems.*
- *Improve the management of water systems so that surface-water and groundwater resources are not degraded by overuse or pollution.*
- *Seek reliable long-term sources of water to serve developments that achieve consistency with the appropriate Community Plans.*

### **Objective:**

*Improve the planning and management of infrastructure systems.*

### **Policies:**

- *Provide a reliable and sufficient level of funding to enhance and maintain infrastructure system.*
- *Maintain inventories of infrastructure capacity, and project future infrastructure needs.*

- *Ensure that infrastructure is built concurrent with or prior to development.*

In summary, the proposed project is consistent with the above-noted themes and principles of the Countywide Policy Plan.

#### **D. MAUI ISLAND PLAN**

The Maui Island Plan (MIP), is applicable to the island of Maui only, providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and sewage systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

1. *An island-wide land use strategy, including a managed and directed growth plan*
2. *A water element addressing supply, demand and quality parameters*
3. *A nearshore ecosystem element addressing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted that Ordinance No. 4004 does not address the component relating to the implementation program. The implementation program component of the MIP was adopted by Ordinance No. 4126 on May 29, 2014.

The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies, and implementing actions. These planning categories address the following areas:

1. *Population*
2. *Heritage Resources*
3. *Natural Hazards*
4. *Economic Development*
5. *Housing*
6. *Infrastructure and Public Facilities*
7. *Land Use*

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally,

and culturally prudent. Among the directed growth management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries (SRB) and rural growth boundaries (RGB). The respective boundaries identify areas appropriate for growth and their corresponding intent with respect to development character.

The proposed Wailuku Well No. 2 and related improvements project is located within the UGB. In this regard, it is consistent with the directed growth strategy defined via growth maps adopted in the MIP.

In addition, the proposed project has been reviewed with respect to pertinent goals, objectives, policies and implementing actions of the MIP. A summary of these policy statements are provided below:

## **INFRASTRUCTURE AND PUBLIC FACILITIES – WATER**

### **Goal:**

*6.3 Maui will have an environmentally sustainable, reliable, safe, and efficient water system.*

### **Objective:**

*6.3.2 Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs.*

### **Policies:**

*6.3.2.a Ensure the efficiency of all water system elements including well and stream intakes, water catchment, transmission lines, reservoirs, and all other system infrastructure.*

*6.3.2.d Work with appropriate State and County agencies to achieve a balance in resolving the needs of water users in keeping with the water allocation priorities of the MIP.*

### **Objective:**

*6.3.3 Improve water quality and the monitoring of public and private water systems.*

### **Policy:**

*6.3.3.a Protect and maintain water delivery systems.*

**E. WAILUKU-KAHULUI COMMUNITY PLAN**

The project site is located within the Wailuku-Kahului Community Plan region, one (1) of nine (9) community plan regions established in the County of Maui. Planning for each region is guided by the respective community plan, which is designed to implement the Maui County General Plan. Each community plan contains recommendations and standards which guide the sequencing, patterns and characteristics of future development in the region.

The Wailuku-Kahului Community Plan was adopted by the County of Maui and took effect in 2002. Land use guidelines are set forth by the Wailuku-Kahului Community Plan Land Use Map. The Well No. 1 and Well No. 2 project sites are designated “Project District 3” by the Wailuku-Kahului Community Plan Map. See **Figure 12**. The guidelines for Project District 3 calls for:

*...units of all types, including single family detached, attached and various forms of multi-family units including townhouses and garden apartments. Alternatives to promote affordable housing such as experimental and demonstration housing shall be considered in the residential development.*

*A neighborhood commercial center of at least 20 acres should be provided with convenient access for residences of the project district and adjacent residential areas. Public amenities should include a continuous system of parks and open space areas which would include pedestrian ways and green-belts with buffer zones along the highway.*

*Public use areas should be reserved within the Project District to accommodate a school, park use and any other public facilities that may be required should the need arise in the future.*

*The immediate construction of the Waiale Road extension, from Honoapiilani Highway to its intersection with the Mahalani Road extension, will facilitate access between Kahului and Wailuku.*

*Recommended guidelines for spatial allocations within the project district are:*

<i>School (elementary)</i>	<i>10 acres</i>
<i>Park</i>	<i>20 acres</i>
<i>Community center</i>	<i>5 acres</i>
<i>Open Space, and drainage</i>	<i>94 Acres</i>

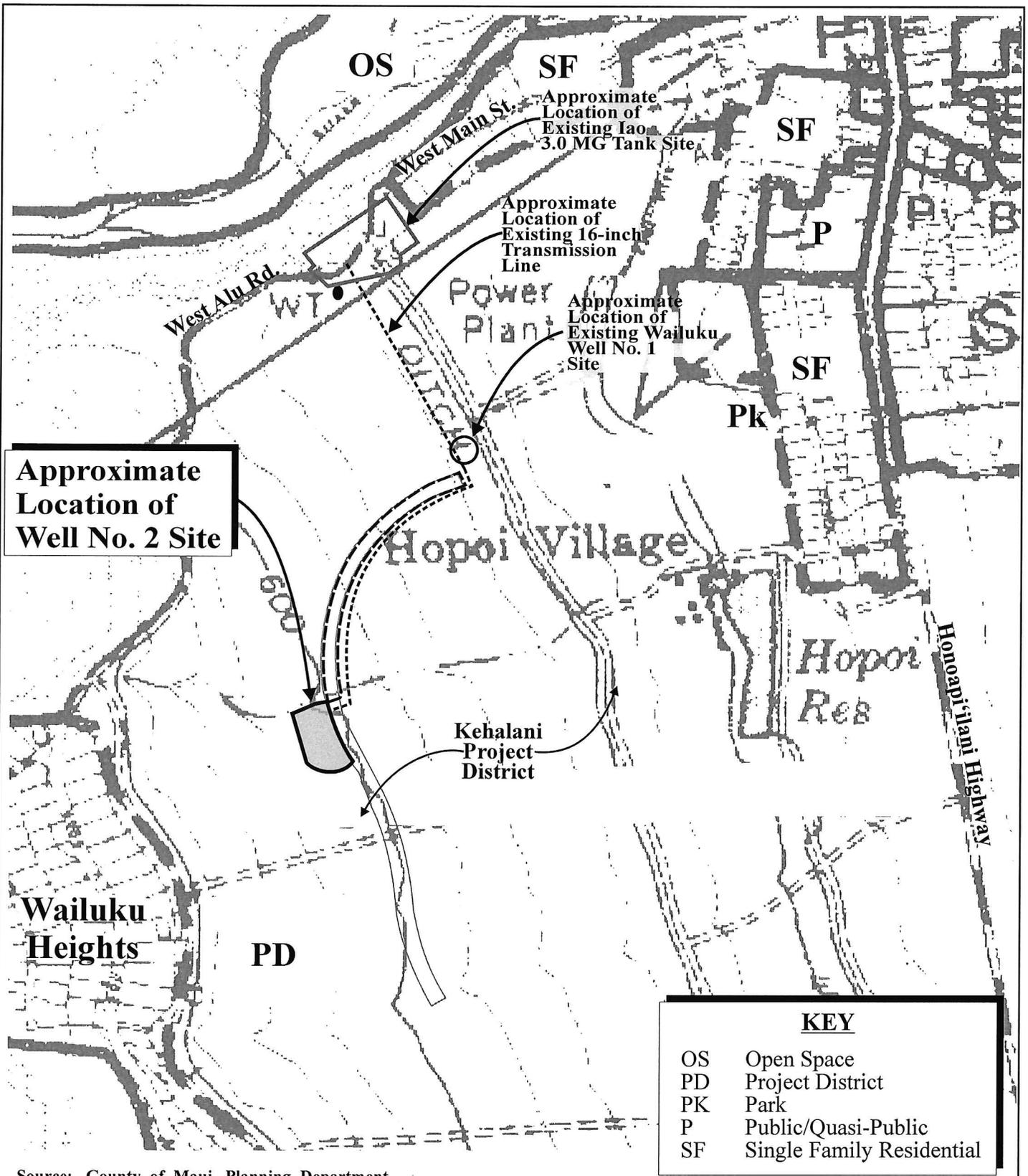


Figure 12 Proposed Wailuku Well No. 2 and Related Improvements  
Wailuku-Kahului Community Plan Map

NOT TO SCALE



<i>Neighborhood commercial center</i>	<i>20 acres</i>
<i>Residential use</i>	<i>396 acres</i>
<i>Residential units</i>	<i>2,400 units</i>

The proposed action is consistent with the following goals, objectives, and policies of the Wailuku-Kahului Community Plan.

**GOVERNMENT**

**Goal:**

*Government that demonstrates the highest standards of fairness; responsiveness to the needs of the community; fiscal integrity; effectiveness in planning and implementation of programs and projects; a fair and equitable approach to taxation and regulation; and efficient, results-oriented management.*

**Objectives and Policy:**

- *Ensure that adequate infrastructure is or will be available to accommodate planned development.*

**INFRASTRUCTURE**

**Goal:**

*Timely and environmentally sound planning, development and maintenance of infrastructure systems which serve to protect and preserve the safety and health of the region's residents, commuters and visitors through the provision of clean water, effective waste disposal and drainage systems, and efficient transportation systems which meet the needs of the community.*

**Objectives and Policies:**

- *Coordinate water system improvement plans with growth areas to ensure adequate supply and a program to replace deteriorating portions of the distribution system. Future growth should be phased to be in concert with the service capacity of the water system.*
- *Improve the quality of domestic water.*

- *Protect water resources in the region from contamination, including protecting ground water recharge areas, and wellhead protection areas within a 1.25-mile radius from the wells.*
- *Coordinate the construction of all water and public roadway and utility improvements to minimize construction impacts and inconveniences to the public.*

**F. COUNTY ZONING**

The Well No. 1 and Well No. 2 sites are located within the “Wailuku Project District 3 (Kehalani)”. The purpose of this project district is to “*provide for a flexible and creative approach to development which considers physical, environmental, social, and economic factors in a comprehensive manner*”. And, “*The intent of this project district is to establish a residential community along with an integrated open space and recreation system, future school sites, and community shopping facilities to serve the expanding Wailuku-Kahului population*”. Well No. 2 is designated for “Open Space” use within the Wailuku Project District 3 (Kehalani) for TMK (2) 3-5-001:067(por.). Parcel 106 (Wailuku Well No. 1) is zoned Project District 3, Wailuku (Open Space).

A Project District Phase III application was submitted and approved by the Department of Planning for the proposed project. The Planning Department determined in its review of the Project District Phase III approval that the proposed production well is permitted within Parcel 67. See **Appendix “E”**.

**G. COASTAL ZONE MANAGEMENT OBJECTIVES AND POLICIES**

Pursuant to Chapter 205-A, Hawai‘i Revised Statutes, projects should be evaluated with respect to Coastal Zone Management (CZM) objectives, policies and guidelines. The project site is approximately 2.5 miles away from the coastline and will not involve work within the County of Maui’s Special Management Area (SMA). However, the applicability of coastal zone management considerations has been reviewed and assessed.

**1. Recreational Resources**

**Objective:**

*Provide coastal recreational opportunities accessible to the public.*

**Policies:**

- (a) *Improve coordination and funding of coastal recreational planning and management; and*
- (b) *Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
  - (i) *Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
  - (ii) *Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the state for recreation when replacement is not feasible or desirable;*
  - (iii) *Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
  - (iv) *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
  - (v) *Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
  - (vi) *Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*
  - (vii) *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
  - (viii) *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, county planning commissions; and crediting such dedication against the requirements of Section 46-6, HRS.*

**Response:** The project site is located inland, approximately 2.5 miles from the coastline. Based on the location of the project, there are no anticipated impacts on coastal recreational opportunities or existing public access to the shoreline.

## 2. **Historic Resources**

### **Objective:**

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

### **Policies:**

- (a) *Identify and analyze significant archeological resources;*
- (b) *Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (c) *Support state goals for protection, restoration, interpretation, and display of historic resources.*

**Response:** A cultural impact assessment was conducted for the project site including a cultural impact interview. As discussed previously, the interviewee did not identify any cultural activities within the project area and concluded that the exercise of native Hawaiian rights, or any ethnic group, related to gathering, access or other customary activities will not be affected by the proposed project.

Further, in a review of other cultural impact assessments for projects in close proximity to the project site, no cultural activities past or present were identified in the area.

As previously noted, the SHPD commented that they anticipate that “*no historic properties will be affected*” by the proposed project. Should there be any inadvertent discoveries during ground altering, work will stop in the immediate area of the find and the SHPD contacted for review and follow up.

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

### **Objective:**

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

**Policies:**

- (a) *Identify valued scenic resources in the coastal zone management area;*
- (b) *Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- (c) *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (d) *Encourage those developments which are not coastal dependent to locate in inland areas.*

**Response:** The project site does not lie within a coastal scenic view corridor nor along the shoreline. The proposed project improvements will primarily entail a low-profile single-story control building and control tank. For these reasons, no adverse impacts on scenic or open space resources are anticipated.

**4. Coastal Ecosystems**

**Objective:**

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

**Policies:**

- (a) *Improve the technical basis for natural resource management;*
- (b) *Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
- (c) *Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
- (d) *Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.*

**Response:** As previously noted, due to the project site's location at an elevation of 612 feet MSL and approximately 2.5 miles away from the shoreline, there are no anticipated impacts to coastal ecosystems from the proposed project.

5. **Economic Uses**

**Objective:**

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

**Policies:**

- (a) *Concentrate coastal dependent development in appropriate areas;*
- (b) *Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and*
- (c) *Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:*
  - (i) *Use of presently designated locations is not feasible;*
  - (ii) *Adverse environmental effects are minimized; and*
  - (iii) *The development is important to the State's economy.*

**Response:** The proposed project will generate short-term construction-related employment and spending which will benefit the local economy. The proposed action does not contradict the objectives and policies for economic uses.

6. **Coastal Hazards**

**Objective:**

*Reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence and pollution.*

**Policies:**

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

**Response:** The project site falls within Zone X, an area of minimal flooding, as indicated by the Flood Insurance Rate Map for the County of Maui. Refer to **Figure 9**. Best Management Practices (BMPs) will be implemented during the construction phase to mitigate potential erosion and stormwater impacts. BMPs include the installation of silt fences down-slope of the project site to contain stormwater runoff. Upon completion of construction, all open areas will be covered with gravel or vegetation to provide adequate slope maintenance on the project site.

7. **Managing Development**

**Objective:**

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

**Policies:**

- (a) *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*
- (b) *Facilitate timely processing of applications for development permits and resolve overlapping of conflicting permit requirements; and*
- (c) *Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life-cycle*

*and in terms understandable to the public to facilitate public participation in the planning and review process.*

**Response:** The HRS Chapter 343 EA involves review by governmental agencies and provide for public involvement opportunities to comment on the project. Applicable State and County requirements will be adhered to in the design and construction of the project.

**8. Public Participation**

**Objective:**

*Stimulate public awareness, education, and participation in coastal management.*

**Policies:**

- (a) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;*
- (b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and*
- (c) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

**Response:** Opportunities for agency and public review will be provided as part of the notification review and comment process required for the EA.

**9. Beach Protection**

**Objective:**

*Protect beaches for public use and recreation.*

**Policies:**

- (a) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;*

- (b) *Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and*
- (c) *Minimize the construction of public erosion-protection structures seaward of the shoreline.*

**Response:** The proposed project is located inland, approximately 2.5 miles from the shoreline. As a result, there are no anticipated adverse impacts on beach resources.

## 10. **Marine Resources**

### **Objective:**

*Implement the State's ocean resources management plan.*

### **Policies:**

- (a) *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*
- (b) *Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- (c) *Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;*
- (d) *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
- (e) *Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
- (f) *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

**Response:** As previously stated, the project site is located at an elevation of 612 feet MSL and inland, 2.5 miles away from the ocean and is therefore, not anticipated to have any adverse impact on marine or coastal resources.

**H. HAWAI'I DRINKING WATER STATE REVOLVING FUND ENVIRONMENTAL CROSSCUTTERS**

The proposed project will be built by RCFC and conveyed to the County of Maui DWS upon completion of construction. The proposed improvements will not be funded by the Hawai'i Drinking Water State Revolving Fund (DWSRF). As such, the Environmental Cross-Cutters and Federal Requirements for DWSRF projects are not applicable.

**IV. UNAVOIDABLE  
ADVERSE ENVIRONMENTAL  
EFFECTS AND  
IRREVERSIBLE AND  
IRRETRIEVABLE  
COMMITMENTS OF  
RESOURCES**

## **IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

In the short term, the proposed Well No. 2 and related improvements will result in unavoidable construction-related impacts, including noise impacts generated by construction equipment and activities. In addition, there may be temporary air quality impacts associated with dust generated from site work and exhaust emissions from construction equipment and vehicles. These noise and air quality impacts will be temporary in nature, occurring only during the construction period, and will be mitigated to the extent practicable through implementation of Best Management Practices (BMPs).

The proposed project commits a small area of land, about 0.81 acre, for the construction of the Well No. 2 site. Other resources which will be committed in the implementation of the proposed action include material and fuel resources. The project will result in short-term beneficial impacts related to temporary construction employment and spending.

## **V. ALTERNATIVES TO THE PROPOSED ACTION**

## V. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives to the preferred alternative, which is the proposed action, include the “no action”, “deferred action,” and “alternative site location”. These alternatives are addressed below.

### A. NO ACTION ALTERNATIVE

The “No Action” alternative is not considered a viable option as this scenario will result in the continued reliance on Shaft 33 as a Central Maui’s water source. The reliability of Shaft 33 is not considered sustainable due to the source’s aging infrastructure system. Replacement of this source is essential towards maintaining public health and welfare through the provision of new wells (including Well No.2) which will redistribute pumpage throughout the Iao Aquifer.

### B. DEFERRED ACTION ALTERNATIVE

The “Deferred Alternative” will also compromise the long-term sustainability of source reliability for the Central Maui Water System. As noted previously, Shaft 33, with its aging infrastructure must be replaced to ensure that residents and businesses can be assured of a safe and continuous source of water, while maintaining the integrity of the Iao Aquifer.

### C. ALTERNATIVE SITE LOCATION ALTERNATIVE

This alternative would involve site selection and property acquisition to develop a new source well for water at a new location. This alternative was not pursued because the site identified in the preferred alternative has been geologically assessed as providing the best opportunity for a new water source, and pertinent infrastructure, making it ideally suited for a production well. An alternative site would be a greater distance from the existing infrastructure facilities and, therefore, was not pursued by RCFC.

# **VI. SIGNIFICANCE CRITERIA ASSESSMENT**

## VI. SIGNIFICANCE CRITERIA ASSESSMENT

The proposed project involves the conversion of an exploratory well to a production well, a control building, 100,000 gallon control tank, and related improvements to connect to the existing water system infrastructure in Wailuku and to the DWS Central Maui Service area. The proposed improvements include the construction of a control valve station at the existing Wailuku Well No. 1 site to enable the combining of flows from Well No. 1 and Well No. 2.

Pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), and Chapter 200 (Title 11), Hawai'i Administrative Rules, Environmental Impact Statement Rules, every aspect of the proposed action, expected primary and secondary consequences, and the cumulative as well as the short-term and long-term effects of the action have been evaluated in accordance with the Significance Criteria of Section 11-200-12 of the Administrative Rules. Discussion of project conformance to the Significance Criteria is as follows:

1. **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.**

There are no endangered or threatened flora or fauna on the site, nor are there any archaeological, historic or cultural resources that may be affected by the proposed project. By letter dated August 27, 2015, the State Historic Preservation Division (SHPD) confirmed that based on the findings of a previously completed Archaeological Inventory Survey, no historic properties will be affected by the proposed action. See **Chapter VIII**. Notwithstanding, in the event cultural or historic resources are identified during construction, work in the immediate vicinity will cease and the SHPD will be contacted.

No impacts to streams or wetlands are anticipated to result from the proposed action.

Based on the discussion provided above, the proposed project is not anticipated to involve an irrevocable commitment to loss or destruction of any natural or cultural resource.

2. **Curtails the range of beneficial uses of the environment**

There are no adverse impacts to climate, topography, or soils anticipated to result from the proposed project. The project area has been previously graded as part of the Kehalani master planned community and most recently, for the exploratory

well. There are also no known rare, threatened, or endangered species of flora, fauna, or avifauna located within the project site.

The project site involves lands designated for urban uses. While the project site was historically used for sugar cane cultivation, active cultivation ended in the 1990s. Furthermore, the project commits a small area of land that is in close proximity to existing DWS infrastructure. Based on the foregoing facts, the proposed project will not curtail the beneficial use of the site.

3. **Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.**

The proposed project does not conflict with the State's Environmental Policy and Guidelines as set forth in Chapter 344, Hawai'i Revised Statutes (HRS).

4. **Substantially affects the economic welfare, social welfare, and cultural practices of the community or State.**

The proposed project will directly benefit the local economy by providing construction and construction-related employment. Therefore, the proposed project will have a positive short-term effect on economic and social welfare. From a long-term perspective, the proposed project will ensure that a reliable drinking water source is provided to meet the needs of Central Maui residents and businesses. The cultural impact assessment did not identify any ongoing cultural practices occurring within the project site. As such, adverse impacts to cultural practices are not anticipated.

5. **Substantially affects public health.**

During the construction period, appropriate Best Management Practices will be implemented to mitigate potential air quality and noise impacts. Following construction, long-term adverse public health impacts resulting from the proposed project are not anticipated. The proposed project will ensure that safe and clean drinking water will be provided to residents in Central Maui.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project is not anticipated to result in significant adverse secondary impacts. Population changes anticipated as a result of the proposed project have been accounted for through the master planning process for the Kehalani Project District entitlement process. Anticipated impacts on public services, such as police, fire, medical, educational, or solid waste collection, as service limits or service capacities have been mitigated through the project district development process, such as roadway and traffic intersection improvements, drainage improvements, parks, and school site dedication requirements. The proposed infrastructure improvements are not anticipated to impact public facilities or services.

7. **Involves a substantial degradation of environmental quality.**

Construction activities will create temporary short-term nuisances related to noise and dust. Appropriate dust control and noise mitigation measures will be implemented by the contractor to ensure that fugitive dust and noise generated in connection with construction is minimized.

As previously discussed in Chapter II of this EA document, adverse impacts to natural resources, cultural resources, and the natural environment are not anticipated.

8. **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

The proposed improvements are not anticipated to cumulatively have a negative impact on the physical environment. See **Chapter II, Section E**.

9. **Substantially affects a rare, threatened, or endangered species, or its habitat.**

Rare, threatened or endangered species of flora, fauna, avifauna or their habitats are not expected to be affected by the proposed project. The proposed action is situated in the midst of a master-planned residential community currently under implementation.

10. **Detrimentially affects air or water quality or ambient noise levels.**

Construction activities will result in short-term air quality and noise impacts. Best Management Practices (BMPs) for dust control measures, such as regular watering and sprinkling, and erection of dust screens will be implemented to minimize construction-related air quality impacts, as warranted. Short-term noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper equipment and vehicle maintenance and other BMPs are anticipated to mitigate noise from construction activities. Erosion control measures implemented during construction, including the installation of silt fences, will reduce the amount of silt and stormwater runoff flowing into downstream properties.

There are no noise generating equipment which will create nuisance noise effects.

Based on the discussion provided above, the proposed project is not anticipated to detrimentally affect air or water quality or ambient noise levels.

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

The proposed project is not located within an environmentally sensitive area and, as such, there are no anticipated adverse effects as a result of the proposed project.

12. **Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.**

The proposed project is not anticipated to adversely affect scenic view corridors. The development will primarily entail low-profile improvements for the control building and control tank. The structures proposed for the project site will have heights and footprints which are not anticipated to significantly impact scenic vistas and view planes.

13. **Requires substantial energy consumption.**

Substantial new energy requirements are not anticipated for the proposed project.

Based on the aforementioned findings, the DWS has determined that the proposed project will result in an Anticipated Finding of No Significant Impact (AFONSI).

## **VII. LIST OF PERMITS AND APPROVALS**

## VII. LIST OF PERMITS AND APPROVALS

The following permits and approvals will be required for the implementation of the project:

### State of Hawai'i

1. Commission on Water Resource Management (CWRM), Water Use Permit (WUP)
2. CWRM Pump Installation Permit
3. Community Noise Permit, as applicable

### County of Maui

1. Project District Phase III Approval (completed, refer to **Appendix "E"**)
2. Construction Permits (i.e., grading permit, building permit)

**VIII. PARTIES CONSULTED  
DURING THE PREPARATION  
OF THE DRAFT  
ENVIRONMENTAL  
ASSESSMENT; LETTERS  
RECEIVED AND RESPONSES  
TO SUBSTANTIVE  
COMMENTS**

# VIII. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

The following agencies were consulted during preparation of the Draft Environmental Assessment (EA). Agency comments and responses to substantive comments are included herein.

## FEDERAL AGENCIES

1. Ranae Ganske-Cerizo, Soil Conservationist  
Natural Resources Conservation Service  
U.S. Department of Agriculture  
77 Hookele Street, Suite 202  
Kahului, Hawai'i 96732
2. Shelly Lynch, Chief, Regulatory Branch  
U.S. Department of the Army  
U.S. Army Engineer District, Honolulu  
Regulatory Branch, Building 230  
Fort Shafter, Hawai'i 96858-5440
3. Kristi Young, Acting Field Supervisor  
U. S. Fish and Wildlife Service  
300 Ala Moana Blvd., Rm. 3-122  
Box 50088  
Honolulu, Hawai'i 96813

## STATE AGENCIES

4. Douglas G. Murdock, Comptroller  
Department of Accounting and General  
Services  
1151 Punchbowl Street, #426  
Honolulu, Hawai'i 96813
5. Scott Enright, Chair  
Department of Agriculture  
1428 South King Street  
Honolulu, Hawai'i 96814-2512

6. Luis P. Salaveria, Director  
State of Hawai'i  
Department of Business, Economic  
Development & Tourism  
P.O. Box 2359  
Honolulu, Hawai'i 96804
7. Heidi Meeker  
Office of Business Services  
Department of Education  
c/o Kalani High School  
4680 Kalaniana'ole Highway, #T-B1A  
Honolulu, Hawai'i 96821
8. Virginia "Ginny" Pressler, MD, MBA,  
FACS, Director  
State of Hawai'i  
Department of Health  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawai'i 96814
9. Alec Wong, P.E., Chief  
Clean Water Branch  
State of Hawai'i  
Department of Health  
919 Ala Moana Blvd., Room 300  
Honolulu, Hawai'i 96814
10. Patti Kitkowski  
State of Hawai'i  
Department of Health  
Maui Sanitation Branch  
54 South High Street, Room 300  
Wailuku, Hawai'i 96793

11. Laura McIntyre, AICP  
Environmental Planning Office  
Department of Health  
919 Ala Moana Blvd., Suite 312  
Honolulu, Hawai'i 96814
  12. Lene Ichinotsubo  
State of Hawai'i  
Department of Health  
919 Ala Moana Blvd., Room 212  
Honolulu, Hawai'i 96814
  13. Suzanne Case, Chairperson  
State of Hawai'i  
Department of Land and Natural Resources  
P. O. Box 621  
Honolulu, Hawai'i 96809
  14. Alan Downer, Administrator  
State of Hawai'i  
Department of Land and Natural Resources  
State Historic Preservation Division  
601 Kamokila Blvd., Room 555  
Kapolei, Hawai'i 96707
  15. Morgan Davis  
State of Hawai'i  
Department of Land and Natural Resources  
State Historic Preservation Division  
130 Mahalani Street  
Wailuku, Hawai'i 96793
  16. Ford Fuchigami, Director  
State of Hawai'i  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawai'i 96813
  17. Jobie Masagatani, Chair  
Hawaiian Home Lands Commission  
P.O. Box 1879  
Honolulu, Hawai'i 96805
  18. Jessica Wooley, Director  
Office of Environmental Quality Control  
235 S. Beretania Street, Suite 702  
Honolulu, Hawai'i 96813
  19. Dr. Kamana'opono Crabbe, Chief Executive Officer  
Office of Hawaiian Affairs  
560 N. Nimitz Highway, Suite 200  
Honolulu, Hawai'i 96817
  20. Leo R. Asuncion, Jr., AICP, Acting Director  
State of Hawai'i  
Office of Planning  
P. O. Box 2359  
Honolulu, Hawai'i 96804
  21. Dan Orodener, Executive Officer  
State of Hawai'i  
State Land Use Commission  
P.O. Box 2359  
Honolulu, Hawai'i 96804
- COUNTY AGENCIES**
22. Teena Rasmussen  
County of Maui  
Office of Economic Development  
2200 Main Street, Suite 305  
Wailuku, Hawai'i 96793
  23. Kyle Ginoza, Director  
County of Maui  
Department of Environmental Management  
2050 Main Street, Suite 1C  
Wailuku, Hawai'i 96793
  24. Jeffrey A. Murray, Fire Chief  
County of Maui  
Department of Fire and Public Safety  
200 Dairy Road  
Kahului, Hawai'i 96732
  25. Carole Reimann, Director  
County of Maui  
Department of Housing and Human Concerns  
One Main Plaza  
2200 Main Street, Suite 546  
Wailuku, Hawai'i 96793
  26. Ka'ala Buenconsejo, Director  
County of Maui  
Department of Parks and Recreation  
700 Halia Nakoia Street, Unit 2  
Wailuku, Hawaii 96793
  27. William Spence, Director  
County of Maui  
Department of Planning  
2200 Main Street, Suite 315  
Wailuku, Hawaii 96793

- 28. Tivoli Faaumu, Chief  
County of Maui  
Police Department  
55 Mahalani Street  
Wailuku, Hawaii 96793
  
- 29. David Goode, Director  
County of Maui  
Department of Public Works  
200 South High Street  
Wailuku, Hawaii 96793
  
- 30. Jo Anne Johnson Winer, Director  
County of Maui  
Department of Transportation  
200 South High Street  
Wailuku, Hawaii 96793

**OTHER**

- 31. Michael Grider  
Maui Electric Company, Ltd.  
P.O. Box 398  
Kahului, Hawaii 96733
  
- 32. Hawaiian Telcom  
60 South Church Street  
Wailuku, Hawaii 96793



DEPARTMENT OF THE ARMY  
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
FORT SHAFTER, HAWAII 96858-5440

August 27, 2015

SUBJECT: Preliminary Jurisdictional Determination for Wailuku Well Production Facility and Associated Improvements (Wailuku Well No. 2) located at Wailuku, Maui Island, Hawaii. DA File No. POH-2012-00222.

Munekiyo Hiraga  
Attn: Ms. Charlene Shibuya,  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Ms. Hiraga:

The U.S. Army Corps of Engineers, Honolulu District (Corps) has received your letter, dated August 18, 2015, requesting comments for a Chapter 343, Hawaii Revised Statutes environmental assessment (EA) being prepared for the above-subject project. Department of the Army (DA) file number POH-2012-00222 is assigned this project. Please reference this number in all future correspondence with the office concerning this preliminary jurisdictional determination.

We have completed our review of your submittal pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)(Section 10) and Section 404 of the Clean Water Act (33 U.S.C. 1344)(Section 404). Section 10 requires that a Department of the Army (DA) permit be obtained for certain structures and/or work in or affecting navigable waters of the U.S. prior to conducting the work. Section 404 requires that a DA permit be obtained for the discharge of dredged and/or fill material into waters of the U.S., including wetlands, prior to conducting the work.

Based on the information provided and available resources, we have preliminarily determined that the proposed project site in close proximity to an unnamed stream, which is located west of Wai Loop and near coordinates 20.877408°N latitude, 156.512687°W longitude, and may be a water of the U.S. (Enclosure 1). Additional information is required to complete an approved jurisdictional determination (JD) for the unnamed stream, and to determine whether a DA permit is required for the proposed project, which includes the other related structures near/within the unnamed stream detailed on Figure 2 (Enclosure 2). A Section 404 DA permit will be required for any activity resulting in the discharge and/or placement of dredged or fill material (i.e., construction of headwalls, culverts, and bridge abutments) into the unnamed stream, if determined to be subject to the Corps' regulatory jurisdiction.

Because additional information is required to complete an approved JD and/or a DA permit determination, we recommend either you or the landowner to submit the following information:

1. Center coordinates of the proposed project site;
2. Photographs of the stream's bed and banks;
3. A delineation of the stream's ordinary high water mark (OHWM);
4. A written description of the flow characteristics of the stream to the Pacific Ocean; and
5. A written description of proposed structures to be constructed near to or below the banks of the unnamed stream.

This letter contains a preliminary JD, which is a written indication that wetlands and waterways within your project area may be waters of the U.S. (Enclosure 3). For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. If you concur with the findings of the preliminary JD, please sign it and return it to the following address within two weeks. If you believe the preliminary JD is inaccurate, please submit the additional information listed above and request an approved JD, which is an official determination regarding the presence or absence of waters of the U.S.

U.S. Army Corps of Engineers, Honolulu District  
Regulatory Office, CEPOH-RO, Building 230  
Fort Shafter, Hawaii 96858-5440

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this preliminary determination, please contact Ms. Joy Anamizu at (808) 835-4308 or via e-mail at [joy.n.anamizu@usace.army.mil](mailto:joy.n.anamizu@usace.army.mil).

Sincerely,



Michelle R. Lynch  
Chief, Regulatory Office

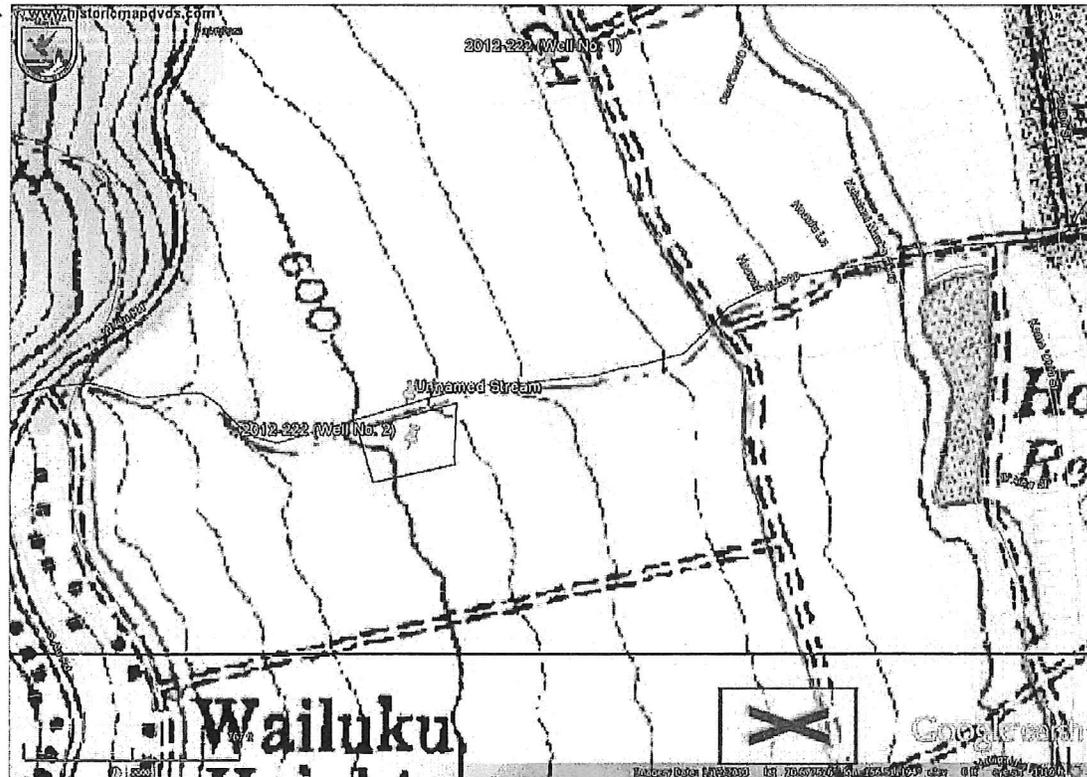
Enclosures

cc:

State, CZM Program (J. Nakagawa)  
State, DOH-CWB (Branch email)

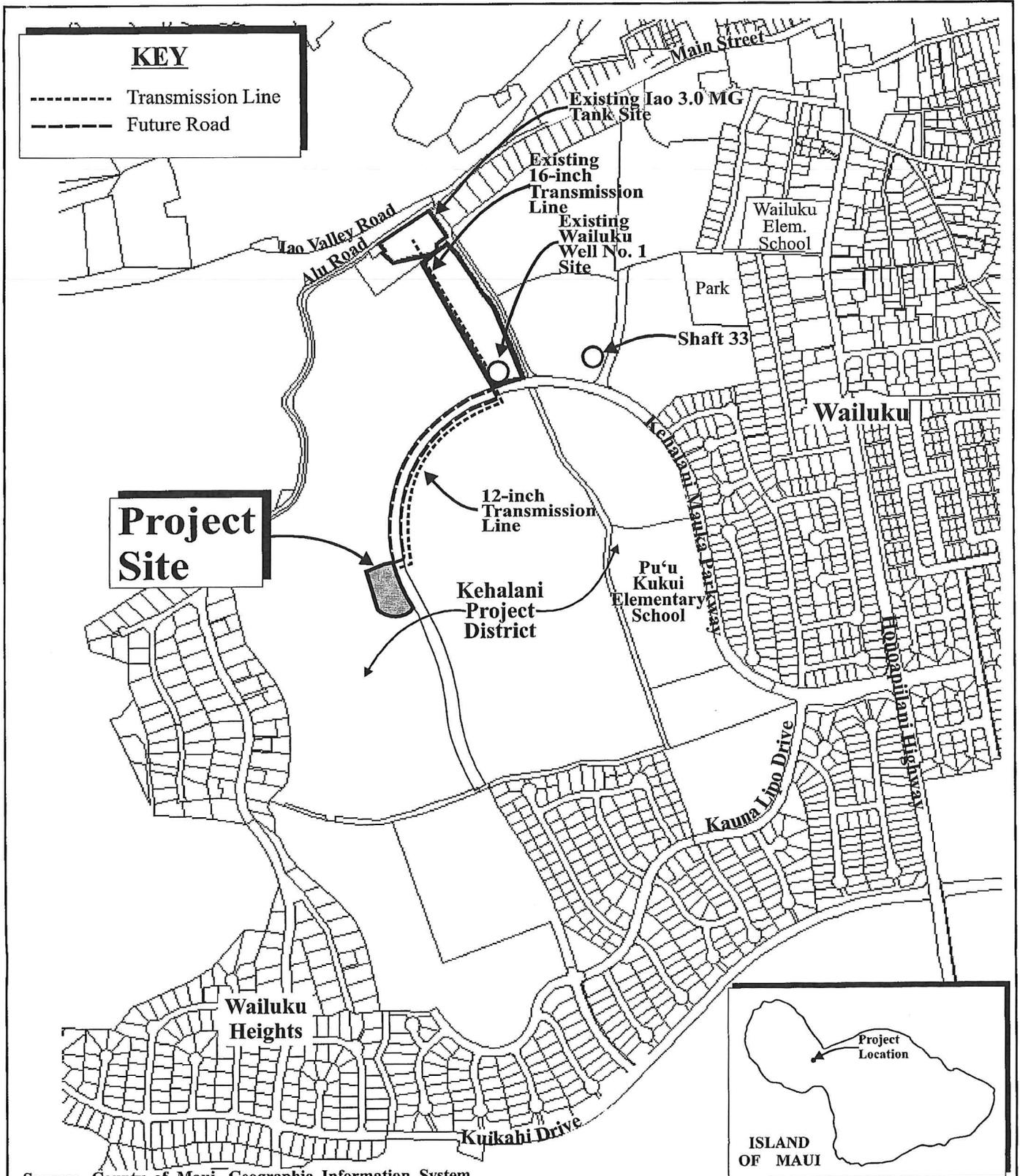


Above: Aerial Satellite Photo w/USFWS-NWI overlay (Project area in red, above (Google Earth, 2013);  
 Below: USGS Quad Topo Map w/ USFWS-NWI overlay, below (Google Earth, 2013). Note: the Waihee Ditch runs north-south and perpendicular to the unnamed stream.



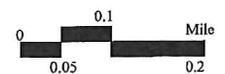
POH-2012-00222 - Wailuku Well Production Facility and Associated Improvements (Wailuku Well No. 2), Wailuku, Maui Isle, Hawaii  
 POH-2012-00222

Enclosure 1



Source: County of Maui, Geographic Information System

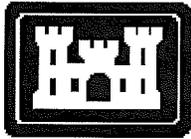
**Figure 1 Proposed Wailuku Well No. 2 Regional Location Map**



Prepared for: RCFC Kehalani, LLC







US Army Corps of Engineers, Honolulu District  
PRELIMINARY JURISDICTIONAL DETERMINATION FORM

File Number: POH-2012-00222  
Project Title: Wailuku Well Production Facility and Associated Improvements  
Subject: PRELIMINARY JURISDICTIONAL DETERMINATION FORM

**This preliminary jurisdictional determination (JD) finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION:** 27 Aug 2015

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**

Ms. Charlene Shibuya, Munekiyo Hiraga (agent)  
305 High Street, Suite 104  
Wailuku, HI 96793

**C. DISTRICT OFFICE:** Honolulu District, CEPOH-RO

**FILE NAME:** Wailuku Well Production Facility and Associated Improvements  
**FILE NUMBER:** POH-2012-00222

**D. PROJECT LOCATION(S), BACKGROUND INFORMATION, AND WATERS:**

State or Territory: Hawaii

City: Wailuku

County: Maui

Center Coordinates of Site: Lat: 20.876991°N, Long: 156.512661°W (approximate)

Name of nearest waterbody: Unnamed Stream

Identify the amount of waters in the review area:

- Non-wetland waters: 100 linear feet; TBD width (ft); and/or TBD acres.  
Cowardin Classification: Riverine
- Wetlands: 0 acres  
Cowardin Classification:
- Other: N/A

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: N/A

Non-Tidal: N/A

**E. REVIEW PERFORMED FOR SITE EVALUATION:**

- Office (Desk) Determination. Date: 25 Aug 2015  
 Field Determination. Date(s):

**F. EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:**

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
  
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or

to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

**G. SUPPORTING DATA:**

**Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figures 1 & 2 attached with M&N letter, dated 18 Aug 2015 (C. Shibuya)
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite quad name: 7.5-min series, Wailuku quad
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: USFWS NWI online e-map
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Google Earth aerial imagery, 10 Mar '13 or  Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

//s// Joy Anamizu, 26 Aug 2015

Signature and date of  
Regulatory Project Manager  
(REQUIRED)  
signature is impracticable)

\_\_\_\_\_  
Signature and date of  
person requesting preliminary JD  
(REQUIRED, unless obtaining the



October 20, 2015

Michelle R. Lynch, Chief, Regulatory Office  
U.S. Army Corps of Engineers, Honolulu District  
Regulatory Office, CEPOH-RO, Building 230  
Fort Shafter, Hawai'i 96858-5440

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (DA File No. POH-2012-00222)

Dear Ms. Lynch:

Thank you for your letter dated August 27, 2015, regarding the subject project. We also appreciate the guidance provided by Ms. Joy Anamizu towards addressing the comments provided in your letter.

As discussed with Ms. Anamizu, the proposed Wailuku Well No.2 improvements do not encroach into the adjacent unnamed gulch. To facilitate your review and confirmation that the Wailuku Well No. 2 project is not subject to the Department's jurisdiction, we have attached the following information for your review.

1. Center Coordinates of the proposed project site 1291.12S;5818.04W (see **Attachment "A"**).
2. Site Plan of the well site relative to the existing unnamed gulch (refer to **Attachment "A"**).
3. Site Photographs (see **Attachment "B"**).

We note that there will be no structures which will be constructed below the banks of the unnamed gulch. The project's CRM drainage apron is located approximately 17 feet from the top of the bank of the unnamed gulch (refer to **Attachment "A"**). In addition, the unnamed gulch conveys stormwater only during high rainfall events.

Michelle R. Lynch, Chief, Regulatory Office  
October 20, 2015  
Page 2

Please feel free to call if additional information is required to facilitate your determination of jurisdiction.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

CSS:yp

Attachments

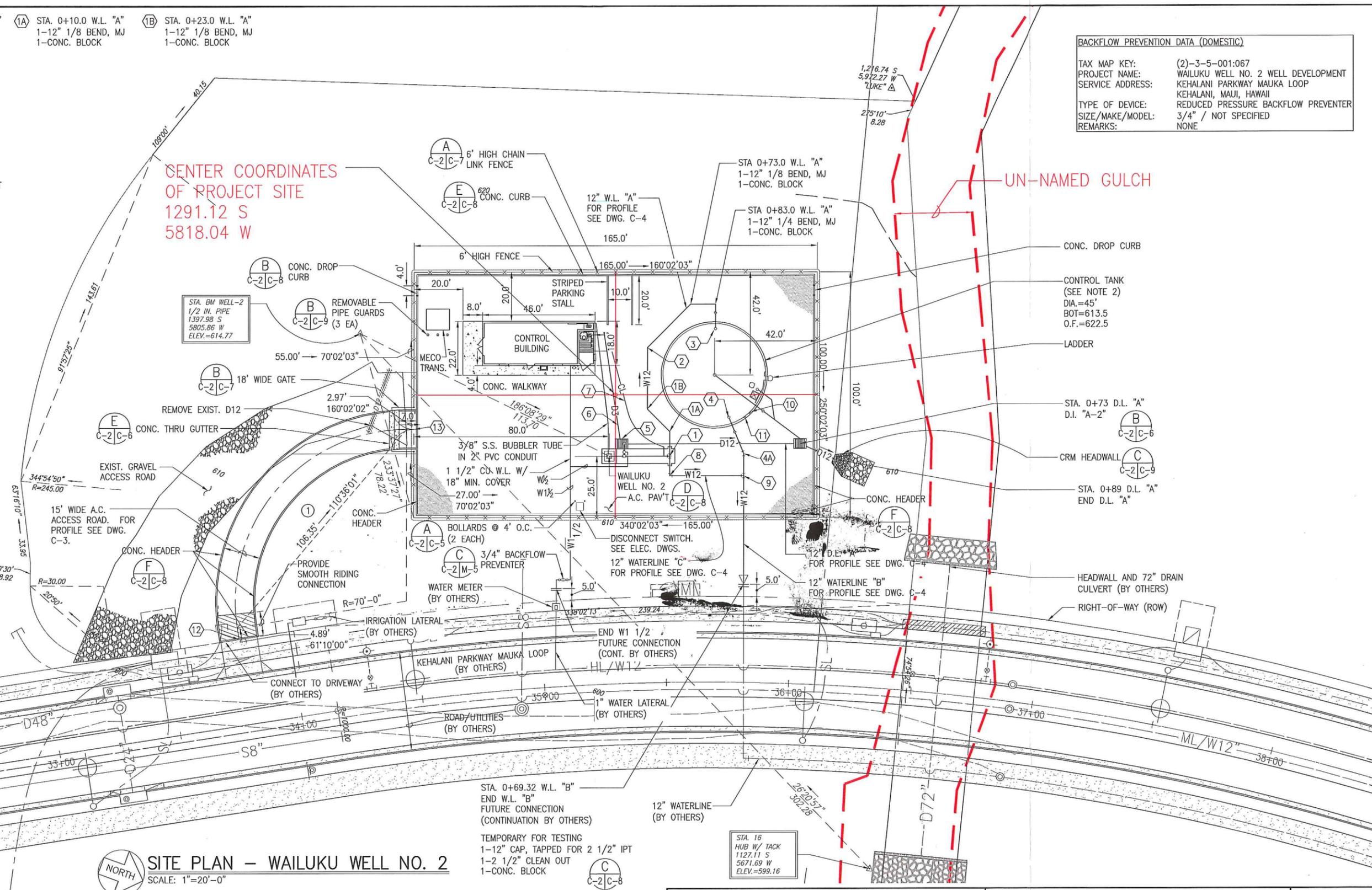
cc: Tammy Yeh, Department of Water Supply (w/attachments)  
Brian Ige, RCFC Kehalani, LLC (w/attachments)  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc. (w/attachments)

K:\DATA\RCFC Kehalani\KehalaniWellNo2\EC Res\DA.doc

# **ATTACHMENT A.**

## **Project Plans**

- ① STA. 0+00 W.L. "A" & W.L. "C"  
BEGIN W.L. "A" & W.L. "C"  
1-12" x 8" TEE, MJ,  
W/ RETAINING GLANDS  
1-CONC. BLOCK
- ② STA. 0+48.0 W.L. "A"  
1-12" 1/8 BEND, MJ,  
1-CONC. BLOCK
- ③ STA. 0+93.0 W.L. "A"  
END W.L. "A" @ TANK INLET  
1-12" 1/4 BEND, MJ (BV)
- ④ STA. 0+00 W.L. "B"  
BEGIN W.L. "B" @ TANK OUTLET  
1-12" 1/4 BEND, MJ (BV)
- ④A STA. 0+16.0 W.L. "B"  
1-12" 1/16 BEND, MJ  
1-CONC. BLOCK
- ⑤ STA. 0+00 D.L. "A"  
D.I. "A-1"
- ⑥ CHLORINATION ROOM  
FLOOR DRAINLINE  
FOR PROFILE  
SEE DWG. C-3
- ⑦ 3/8" POLY TUBING CHLORINE  
SOLUTION LINE IN 2" PVC  
CONDUIT
- ⑧ STA. 0+08 W.L. "C"  
1-12" 1/4 BEND, MJ  
1-CONC. BLOCK
- ⑨ STA. 0+38.0 W.L. "C"  
=STA. 0+25.0 W.L. "B"  
END W.L. "C"  
1-12" TEE, MJ  
1-CONC. BLOCK
- ⑩ TANK LEVEL TRANSMITTER  
(PT-3)
- ⑪ CHLORINE RESIDUAL ANALYZER
- ⑫ STA. 0+00 ACCESS ROAD  
BEGIN ACCESS ROAD @  
RIGHT-OF-WAY
- ⑬ STA. 1+28.65 ACCESS ROAD  
END ACCESS ROAD @ GATE



BACKFLOW PREVENTION DATA (DOMESTIC)	
TAX MAP KEY:	(2)-3-5-001:067
PROJECT NAME:	WAILUKU WELL NO. 2 WELL DEVELOPMENT
SERVICE ADDRESS:	KEHALANI PARKWAY MAUKA LOOP KEHALANI, MAUI, HAWAII
TYPE OF DEVICE:	REDUCED PRESSURE BACKFLOW PREVENTER
SIZE/MAKE/MODEL:	3/4" / NOT SPECIFIED
REMARKS:	NONE

**SITE PLAN - WAILUKU WELL NO. 2**  
SCALE: 1"=20'-0"

- NOTES:
- DESIGN OF FUTURE KEHALANI MAUKA PARKWAY EXTENSION BY WARREN S. UNEMORI ENGINEERING, INC., JULY 29, 2014.
  - REMOVE TOP 18" OF EXISTING SOIL UNDER CONTROL TANK SLAB AND FOOTING AND REPLACE WITH NON-EXPANSIVE FILL AFTER MOISTURE CONDITIONING AND COMPACTING TOP 12" OF SUBGRADE BELOW NON-EXPANSIVE FILL.

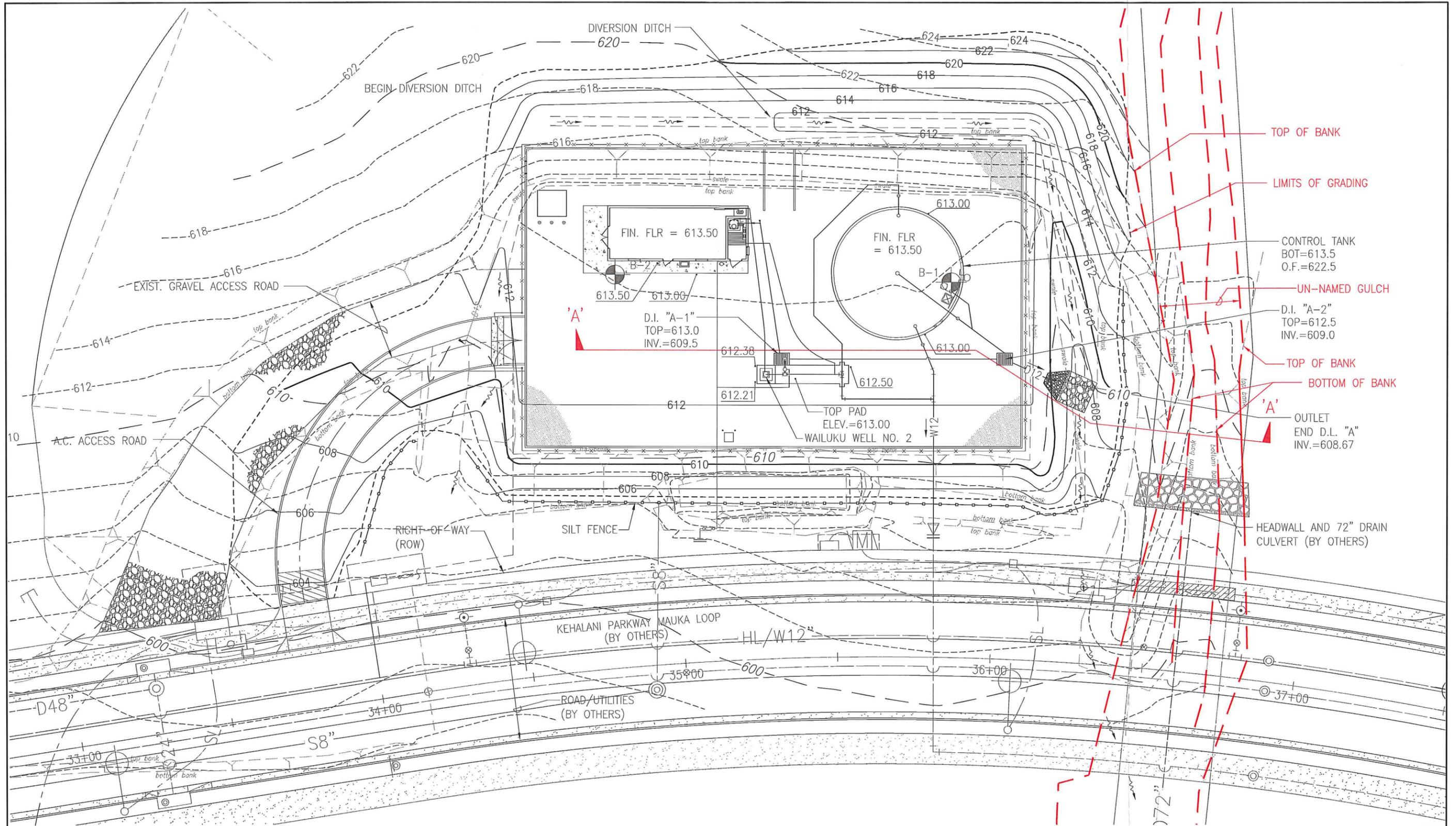


RCFC KEHALANI, LLC  
WAILUKU WELL NO. 2  
ENVIRONMENTAL ASSESSMENT  
WAILUKU, MAUI, HAWAII

**ATA** AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII

**SITE PLAN -  
WAILUKU WELL NO. 2**

EXHIBIT  
**1**



**GRADING AND EROSION CONTROL PLAN- WAILUKU WELL NO. 2**

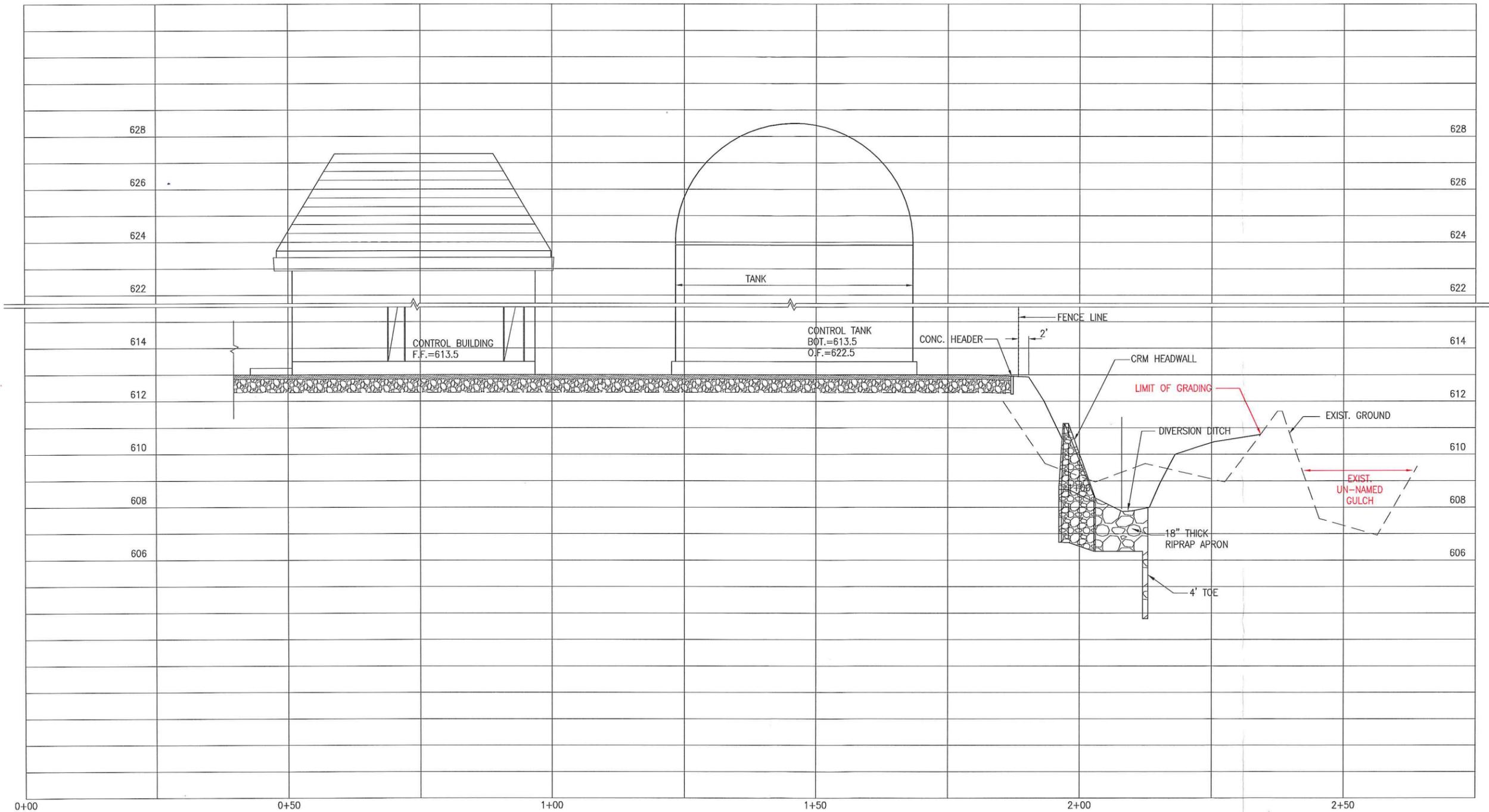
SCALE: 1"=30'-0"

0 1  
1 INCHES AT FULL SIZE  
(if NOT 1-inches : Scale Accordingly)

RCFC KEHALANI, LLC  
WAILUKU WELL NO. 2  
ENVIRONMENTAL ASSESSMENT  
WAILUKU, MAUI, HAWAII

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII  
GRADING AND EROSION CONTROL  
PLAN - WAILUKU WELL NO. 2

EXHIBIT  
**2**



**SITE SECTION 'A'-A'**

SCALE: HORZ: 1" = 10'  
VERT: 1" = 2'

0 ————— 1  
1 INCHES AT FULL SIZE  
(If NOT 1-inches : Scale Accordingly)

RCFC KEHALANI, LLC  
WAILUKU WELL NO. 2  
ENVIRONMENTAL ASSESSMENT  
WAILUKU, MAUI, HAWAII

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII

SITE SECTION 'A'-A'

EXHIBIT

3

**ATTACHMENT B.**  
**Site Photographs**



Mauka View of Unnamed Gulch in Vicinity of Well Site No. 2



Makai View of Unnamed Gulch in Vicinity of Well Site No. 2



Downstream Culvert Inlet for Unnamed Gulch



Downstream Culvert for Unnamed Gulch

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

August 27, 2015

Munekiyo Hiraga  
Charlene Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku HI 96793  
Via email ([charlene@mhplanning.com](mailto:charlene@mhplanning.com))

LOG NO: 2015.03182  
DOC NO: 1508JP17  
Archaeology

Aloha Ms. Shibuya,

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Maui County  
Hawai'i Revised Statutes Chapter 343 Early Consultation Request  
Proposed Wailuku Well No. 2  
Wailuku Ahupua'a, Wailuku District, Island of Maui  
TMK (2) 3-5-001:067 por. and 3-5-001:106 por.**

Thank you for the opportunity to comment on plans for the proposed project received by our office on August 20, 2015. Submitted plans include a proposal by RCFC Kehalani, LLC to convert an existing exploratory well into a production well (Well No. 2). Water will be transmitted through a 12-inch water line to the existing Wailuku Well No. 1. The proposed work will be on portions of parcels 067 and 106 in the vicinity of the developing Kehalani subdivision. Plans include constructing a pump, piping, electrical controls, an approximate 826 square foot single-story control building, 100,000 gallon control water tank, driveway and paving with on-site drainage system. The Kehalani Mauka Parkway is currently being constructed and will provide access between the two well sites. The roadway work also includes a 12-inch transmission water line to convey water from Well No. 2 to Well No. 1.

In 2003, Scientific Consultant Services completed an Archaeological Inventory Survey that included the subject area. Eight historic properties listed on the State Inventory of Historic Places as 50-50-04-5473 Hopoi Reservoir; 5474 Kama Ditch; 5493 unnamed ditch; 5491 artifact scatter; 5489 historic roadways; 5490 drainage ditches; 5492 clearing mounds, and 5197 Waihe'e Ditch were all identified. We agreed all sites were significant for information content with sufficient information collected and no further archaeological work warranted (*Log 2004.0123, Doc 0401MK07*). Based on the accepted archaeological survey, **no historic properties will be affected** during the proposed project.

In the event that cultural resources, including human skeletal remains, structural remains, cultural deposits, sand deposits, or lava tubes are identified during work, please cease work in the immediate vicinity of the find, protect the find from disturbance, and contact the State Historic Preservation Division at (808) 243-1285. Please contact Jenny Pickett at (808) 243-5169 or [Jenny.L.Pickett@hawaii.gov](mailto:Jenny.L.Pickett@hawaii.gov) if you have any questions or concerns regarding this letter.

Mahalo,

Morgan E. Davis  
Lead Archaeologist, Maui Section

cc: County of Maui  
Department of Planning  
([Planning@co.maui.hi.us](mailto:Planning@co.maui.hi.us))

County of Maui  
Department of Public Works – DSA  
([Renee.Segundo@co.maui.hi.us](mailto:Renee.Segundo@co.maui.hi.us))

County of Maui  
Cultural Resources Commission  
([Annalise.Kehler@co.maui.hi.us](mailto:Annalise.Kehler@co.maui.hi.us))

AUG 27 2015

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



## MUNEKIYO HIRAGA

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Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Morgan E. Davis, Lead Archaeologist, Maui Section  
Department of Land and Natural Resources  
State Historic Preservation Division  
DLNR Maui Office Annex  
130 Mahalani Street  
Wailuku, Hawai'i 96793

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (Log No. 2015.03182) (Doc No. 1508JP17)

---

Dear Ms. Davis:

Thank you for your letter dated August 27, 2015, regarding the subject project. We appreciate your response noting that "no historic properties will be affected" by the proposed project. In the event that cultural resources are identified during project construction, work will cease in the immediate area of the find and your office will be contacted for review and protocol.

A copy of your letter, as well as this response letter will be included in the Draft Environmental Assessment (EA) for the project. A copy of the Draft EA will be provided to your office for review and comment.

Morgan E. Davis, Lead Archaeologist, Maui Section  
October 20, 2015  
Page 2

Should you have any questions, please contact me at 244-2015.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC

K:\DATA\RCFC Kehalani\KehalaniWellNo2\EC Res\SHPD Maui.doc

SEP 10 2015

DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
File:

EPO 15-212

September 3, 2015

Ms. Charlene Shibuya  
Senior Associate  
Munekiyo Hiraga  
3-5 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

**SUBJECT: Early Consultation (EC) Request for the Proposed Wailuku Well No. 2, Wailuku, Maui  
TMK: (2) 3-5-001:067 (por) and 106 (por)**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your EC to our office on August 20, 2015. Thank you for allowing us to review and comment on the proposed project. The EC was routed to the District Health Office on Maui and the Safe Drinking Water Branch. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: <https://eha-cloud.doh.hawaii.gov>

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

A handwritten signature in cursive script, appearing to read "Laura Leialoha Phillips McIntyre".

Laura Leialoha Phillips McIntyre, AICP  
Program Manager, Environmental Planning Office

c: DHO Maui, SDWB {via email only}



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PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Laura Leialoha Phillips McIntyre, AICP  
Program Manager  
Environmental Planning Office  
State of Hawaii  
Department of Health  
P.O. Box 3378  
Honolulu, Hawai'i 96801-3378

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (EPO 15-212)

Dear Ms. McIntyre:

Thank you for your letter dated September 3, 2015 regarding the subject project. On behalf of the applicant, RCFC Kehalani, LLC, we provide the following responses to your comments.

We appreciate your recommendation to review the standard comments on the Department's website pertaining to strategies to support sustainable and healthy design. The standard comments will be addressed by the applicant and their consultants, as may be applicable.

The applicant and their consultants have also been advised of the need to review the Hawaii Environmental Health Portal.

A copy of your comment letter and our response will be incorporated in the Draft Environmental Assessment (EA). A copy of the Draft EA will be provided to your office for review and comment.

Thank you again for providing input on the proposed Well No. 2 project.

---

Maui: 305 High Street, Suite 104 \* Wailuku, Hawaii 96793 \* Tel: 808.244.2015 \* Fax: 808.244.8729

Oahu: 735 Bishop Street, Suite 321 \* Honolulu, Hawaii 96813 \* Tel: 808.983.1233

www.munekiyoHIRAGA.com

Laura Leialoha Phillips McIntyre  
October 20, 2015  
Page 2

Should you have any additional questions, please call me at (808) 244-2015.

Very truly yours,



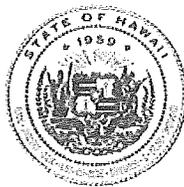
Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.  
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SEP 14 2015

DAVID Y. IGE  
GOVERNOR



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

FORD N. FUCHIGAMI  
DIRECTOR

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

IN REPLY REFER TO:  
STP 8.1849

September 4, 2015

Ms. Charlene S. Shibuya  
Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

Subject: Wailuku Well No. 2  
Early Consultation for an Environmental Assessment  
Wailuku, Maui, Hawaii  
TMK: (2) 3-5-001:067 (Por.) and 106 (Por.)

The subject project is not expected to significantly impact the State highway facility. However, a permit from DOT Highways Division, Maui District Office is required for the transport of oversized and/or overweight materials and equipment on State highway facilities.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Ford N. Fuchigami".

FORD N. FUCHIGAMI  
Director of Transportation



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PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Ford N. Fuchigami, Director of Transportation  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawai'i 96813-5097

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (STP8.1849)

Dear Mr. Fuchigami:

Thank you for your letter dated September 4, 2015, regarding the subject project.

In response to your comments, the Department of Water Supply and its contractor will, as applicable, work with the Department of Transportation's Maui District Office to obtain the required permit for the transport of oversized and/or overweight materials and equipment on State highway facilities.

A copy of your comment letter and our response will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will also be provided to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

Ford N. Fuchigami, Director of Transportation  
October 20, 2015  
Page 2

Thank you again for providing comments on the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Charlene S. Shibuya', with a long horizontal flourish extending to the right.

Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.  
K:\DATA\RCFC Kehalani\KehalaniWellNo2\IEC Res\SDOT.doc



SEP 11 2015

VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.  
DISTRICT HEALTH OFFICER

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
MAUI DISTRICT HEALTH OFFICE  
54 HIGH STREET  
WAILUKU, HAWAII 96793-3378

September 8, 2015

Ms. Charlene S. Shibuya  
Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

**Subject: Chapter 343, Hawaii Revised Statutes Early Consultation  
Request for the Proposed Wailuku Well No. 2  
TMK: (2) 3-5-001:067 (por.) and 106 (por.)**

Thank you for the opportunity to review this project. We have the following comments to offer:

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.
2. All lands formerly in the production of sugarcane should be characterized for arsenic contamination. If arsenic is detected above the US EPA Region Preliminary Remediation Goal (PRG) for non-cancerous effects, then a removal and/or remedial plan must be submitted to the Hazard Evaluation and Emergency Response (HEER) Office of the State Department of Health for approval. Please contact them at 808 586-4249.
3. The proposed Wailuku Well No.2 might impact the adjacent properties that are served by cesspool/septic tanks. These adjacent properties may be required to upgrade once they apply for building permit modifications and must comply with Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems." If you have any questions, please call Roland Tejano, Environmental Engineer, at 808 984-8232.

Ms. Charlene S. Shibuya  
September 8, 2015  
Page 2

It is strongly recommended that the Standard Comments found at the Department's website: <http://health.hawaii.gov/epo/home/landuse-planning-review-program/> be reviewed and any comments specifically applicable to this project should be adhered to.

Should you have any questions, please contact me at 808 984-8230 or email me at [patricia.kitkowski@doh.hawaii.gov](mailto:patricia.kitkowski@doh.hawaii.gov).

Sincerely yours,



Patti Kitkowski  
District Environmental Health Program Chief

c EPO



October 20, 2015

Patti Kitkowski  
District Environmental Health Program Chief  
State of Hawaii  
Department of Health  
Maui District Health Office  
54 High Street  
Wailuku, Hawai'i 96793-3378

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (P)1233.5

Dear Ms. Kitkowski:

Thank you for your letter dated September 8, 2015, regarding the subject project. On behalf of the applicant, RCFC Kehalani, LLC, we provide the following responses to your comments.

1. A National Pollutant Discharge Elimination System (NPDES) Permit will be secured, as applicable.
2. Based on information received from RCFC Kehalani, LLC, the project area was tested for agricultural chemicals, which included soil sampling with laboratory analysis. Agricultural chemicals were not detected at or above regulatory levels.
3. We understand the compliance requirements of Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems", and will coordinate with Mr. Roland Tejano, as applicable.

We also note your recommendation to review the standard comments on the Department's website. The comments will be addressed by the applicant and their consultants, as applicable.

Patti Kitkowski  
October 20, 2015  
Page 2

A copy of your comment letter and our response will be incorporated in the Draft Environmental Assessment (EA). A copy of the Draft EA will be provided to your office for review and comment.

Should you have any additional questions, please call me at 244-2015.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.

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DAVID Y. IGE  
GOVERNOR OF HAWAII



SEP 04 2015

VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

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

In reply, please refer to:  
EMD/CWB

09001PJF.15

September 1, 2015

Ms. Charlene Shibuya  
Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

**SUBJECT: Early Consultation Request for Proposed Wailuku Well No. 2  
Wailuku, Island of Maui, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated August 18, 2015, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
  - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
  - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects

natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb/>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

  
ALEC WONG, P.E., CHIEF  
Clean Water Branch

JF:ay



# MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Alec Wong, P.E., Chief  
State of Hawaii  
Department of Health  
Clean Water Branch  
P.O. Box 3378  
Honolulu, Hawai'i 96801-3378

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) (EMD/CWB 09001PJF.15)

Dear Mr. Wong:

Thank you for your letter dated September 1, 2015, regarding the subject project. On behalf of the applicant, RCFC Kehalani, LLC (RCFC or Applicant), we provide the following responses to your comments. The responses follow the order of your comments.

1. *Any project and its potential impacts to State waters must meet the following criteria:*
  - a. *Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.*
  - b. *Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.*
  - c. *Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).*

**Response:** We note your comments regarding the need for the project to meet the criteria noted in Hawai'i Administrative Rules (HAR) Section 11-54-1.1,

Section 11-54-3 and Section 11-54-4 through 11-54-8 relative to potential impacts to State waters. The Draft Environmental Assessment (EA) document will include a discussion on proposed mitigation measures during construction to minimize potential impacts. Additionally, the project site is located over one (1) mile away from the shoreline.

2. *You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).*

*For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.*

**Response:** Thank you for the information relative to the National Pollutant Discharge Elimination System (NPDES) permit requirements. The project's civil engineering consultant will apply for a NPDES permit, if applicable, prior to the start of construction improvements.

3. *If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.*

*Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added).*

*The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.*

**Response:** An early consultation request for comments was also submitted to the Army Corps of Engineers, Regulatory Branch. We will continue to communicate with the Corps regarding their requirements as the EA project proceeds.

4. *Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.*

**Response:** As may be applicable, project actions will comply with HAR Chapters 11-54 and 11-55.

5. *It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:*
  - a. *Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and*

*traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.*

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.*
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.*
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.*
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.*

**Response:** We note your comments relative to the reduction, reuse and recycling of storm water for projects. Your comment has been shared with the Applicant and project's civil engineer for review and consideration in the proposed project.

Alec Wong, P.E., Chief  
October 20, 2015  
Page 5

We also note the recommendation to review the standard comments on the Clean Water Branch website. The comments will be reviewed and incorporated into the project, as applicable.

A copy of your comment letter and the response will be included in the Draft EA. A copy of the Draft EA will also be provided to your office for review and comment.

Should you have any additional questions, please call me at (808)244-2015.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

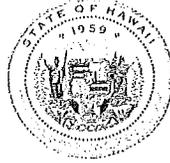
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cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.

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SEP 08 2015

DAVID Y. IGE  
GOVERNOR OF HAWAII



JESSICA E. WOOLEY  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Department of Health  
235 South Beretania Street, Suite 702  
Honolulu, Hawai'i 96813  
Telephone (808) 586-4185  
Facsimile (808) 586-4186  
Email: oeqchawaii@doh.hawaii.gov

File No.  
OEQC 15-090

September 2, 2015

Munekiyo Hiraga  
Attn: Charlene S. Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku, Hawai'i 96793

Dear Ms. Shibuya,

SUBJECT: Chapter 343, Hawai'i Revised Statutes Early Consultation Request for the Proposed Wailuku Well No. 2 at TMK (2) 3-5-001:067 (por.) and 106 (por.); Wailuku, Maui, Hawai'i

The Office of Environmental Quality Control (OEQC) has reviewed the information contained in your August 20, 2015 letter about the subject project, and offers the following standard comments for your consideration.

We received your present assessment of the subject project under the provisions of Chapter 343, Hawai'i Revised Statutes and Chapter 11-200, Hawai'i Administrative Rules. We understand the proposed project is an Applicant Action being processed by the Department of Water Supply (DWS). Accordingly, this agency would be the Approving Agency that implements the environmental review process for this project by either 1) anticipating a Finding of No Significant Impact and then preparing a Draft Environmental Assessment (EA) for public review and comment, or 2) based on their judgment and experience, deciding to by-pass the EA step and proceeding directly to the Environmental Impact Statement (EIS) Preparation Notice step if significant effects may or will occur from the project.

In the event that the agency makes a determination to prepare an EIS, either initially or if significant impacts are identified in the Final EA, then the DWS would also determine the acceptability of the subsequent Final EIS.

As to specific comments on the proposed project, at this time we suggest the consideration of using the industry appropriate best practices while working on the new well. Additionally, the OEQC has a prepared guidance for Well Development that we highly recommend consulting before you begin the EA. This is the link for our online Well Guidelines:

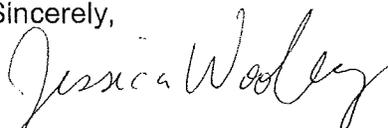
[http://oeqc.doh.hawaii.gov/Shared%20Documents/Preparation\\_of\\_Hawaii\\_Environmental\\_Policy\\_Act\\_Documents/Guidance\\_for\\_Assessing\\_Water\\_Well\\_Development\\_Projects/1998%20Guidelines%20for%20Assessing%20Water%20Well%20Development%20Projects.pdf](http://oeqc.doh.hawaii.gov/Shared%20Documents/Preparation_of_Hawaii_Environmental_Policy_Act_Documents/Guidance_for_Assessing_Water_Well_Development_Projects/1998%20Guidelines%20for%20Assessing%20Water%20Well%20Development%20Projects.pdf) Lastly, we

Ms. Charlene Shibuya  
September 2, 2015  
Page 2 of 2

recommend that the EA includes sufficiently thorough information to enable recipients and the public to understand the project and to be able to provide substantive feedback.

Thank you for your role in Hawai'i's environmental review process and for the opportunity to comment at this early stage of this project. As you prepare to submit documents for publication and public review in The Environmental Notice, we appreciate your diligence in using current and correct publication forms available online. If you have any questions as you navigate this process, please consult our website at <http://health.hawaii.gov/oeqc> (see in particular the link to the Environmental Assessment Preparation Toolkit on the right panel) or contact our office at (808) 586-4185.

Sincerely,



Jessica E. Wooley, Director  
Office of Environmental Quality Control

)  
)

October 20, 2015

Jessica E. Wooley, Director  
State Department of Health  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawai'i 96813

**SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (File No. OEQC 15-090)**

Dear Ms. Wooley:

Thank you for your letter dated September 2, 2015, regarding the subject project. On behalf of the applicant, RCFC Kehalani, LLC, we provide the following responses to your comments.

We understand that the Department of Water Supply, as the approving agency, does have the discretion to render its determination on whether the Draft Environmental Assessment (EA) is to be issued as an Anticipated Finding of No Significant Impact or an Environmental Impact Preparation Notice.

We will review the online guidelines for well development as we prepare the Draft Environmental Assessment (EA). We also note your comment with respect to providing sufficient detail in the Draft EA document to allow reviewers to understand the project and provide comments. The Draft EA will include the project plans for the proposed production well in addition to maps and figures to provide reviewers with project information.

A copy of your letter, as well as this response letter will be included in the Draft EA for the project. Additionally, a copy of the Draft EA will be provided to your office for review and comment.

Jessica E. Wooley, Director  
October 20, 2015  
Page 2

Should you have any questions, please contact me at (808)244-2015.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC

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SEP 11 2015

DAVID Y. IGE  
GOVERNOR  
STATE OF HAWAII



JOBIE M. K. MASAGATANI  
CHAIRMAN  
HAWAIIAN HOMES COMMISSION

SHAN S. TSUTSUI  
LT. GOVERNOR  
STATE OF HAWAII

WILLIAM J. AILA, JR.  
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879  
HONOLULU, HAWAII 96805

September 9, 2015

Munekiyo Hiraga  
Attn: Charlene S. Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku, Hawai'i 96793

Dear Ms. Charlene S. Shibuya:

Subject: Chapter 343, Hawaii Revised Statutes Early Consultation Request for the Proposed Wailuku Well No. 2 at TMK (2) 3-5-001:067 (por.) and 106 (por.); Wailuku, Maui, Hawai'i.

Mahalo for consulting the Department of Hawaiian Home Lands (DHHL) on RCFC Kehalani, LLC's (Kehalani) proposal to convert an existing exploratory well into a production well (Wailuku Well No. 2) at TMK (2) 3-5-001:067 (por.). DHHL reviewed your August 18, 2015 request for consultation and provides the following comments.

**Comment #1: More specific notice of the proposed action would improve effectiveness of consultation with DHHL.**

DHHL assesses its interests in water development by considering its legal rights, duties, and privileges in specific aquifer areas and the quantity of water at issue. Our ability to properly undertake these considerations depends on sufficient information being provided by applicants, which was lacking in this letter.

We understand, while it was not specified in the letter, that this well proposed to draw water from the contested 'Īao Aquifer. We are aware that in 1990, CWRM established the sustainable yield of 'Īao aquifer as 20 million gallons per day (mgd). We have also determined that on October 16, 2013, the Commission on Water Resource Management (CWRM) approved Kehalani's application for a well-construction and pump installation permit in 'Īao aquifer for Well No. 6-5230-005, (Well name, "Wailuku 2") with a proposed use of 1.5 mgd and a capacity of 2.016 mgd.<sup>1</sup> We assume Kehalani's request for consultation on "Wailuku Well No. 2" referred

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<sup>1</sup> See CWRM Water Bulletin, Oct. 2014.

to Well No. 6-5230-005, which draws from the 'Īao aquifer and lies in a designated ground water management area (WMA). Your confirming these understandings would assist us in appropriately responding to your request for comments.

Please also know that DHHL also considers water resource protection as one of its interests.<sup>2</sup> Such protection includes best practices spacing of different wells in aquifer systems, particularly in the historically over-exploited 'Īao aquifer system area. This information appears to have been provided in a Final Environmental Assessment (FEA) prepared for the Wailuku exploratory well in 2011 by the Maui County Department of Water Supply (DWS).<sup>3</sup> DHHL was not consulted on that action and contents of the Wailuku Exploratory Well FEA were useful in preparing its comments on Wailuku Well No. 2. In 2013, DWS submitted another FEA for its proposal to convert Wailuku Well No. 1 from an exploratory to a production well.<sup>4</sup>

Reference to, or provision of, such specific information about the proposed action would assist DHHL in providing consultation on the same.

**Comment #2: This consultation process and the preparation of any resulting documents needs to be firmly integrated into previous planning and disclosure efforts.**

DHHL's comments are premised on information provided in FEAs prepared for the exploratory Wailuku Well No.2 and conversion of Wailuku Well No.1 from exploratory to production purposes. Please include key observations in those FEAs in any environmental assessment prepared for a production-capacity Wailuku Well No.2. Those observations include:

- (a) Both FEAs indicate DWS seeks to replace Wailuku Shaft 33 with four wells: an 'Īao Tank Site Well, Wailuku Wells No. 1, Waikapū Mauka Tank Site Well, and a Future Well, which will have a collective yield of 5.2 mgd. Retiring Wailuku Shaft 33 is

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<sup>2</sup> See The Hawaiian Homes Commission Water Policy Plan, adopted July 22, 2014 available at: <http://dhhl.hawaii.gov/wp-content/uploads/2013/09/HHC-Water-Policy-Plan-140722.pdf>.

<sup>3</sup> See Final Environmental Assessment, Proposed Wailuku Exploratory Well, Wailuku, Maui, Hawai'i (TMK (2)3-5-001:100(por.)), prepared by Munekiyo & Hiraga, Inc. at \*3-5 (Jul. 2011). This Wailuku Exploratory Well FEA stated that TMK (2) 3-5-001:067 was newly designated as TMK (2)3-5-001:100, although a recent review of Maui real property records did not confirm this new designation. Wailuku Exploratory Well FEA, at \*1.

<sup>4</sup> See Final Environmental Assessment, Proposed Wailuku Well Production Facility, Wailuku, Maui, Hawai'i (TMK (2)3-5-001:021 (por.), 091 (por.) and 100 (por.)), prepared by Munekiyo & Hiraga, Inc. at \*3-5 (Sep. 2013).

anticipated to better disperse pumping in 'Īao aquifer. As indicated in DHHL comments on DWS' proposed conversion of Wailuku Well No. 1 from exploratory to production purposes;

- (b) The Wailuku Well No. 2 will be one of four wells replacing Wailuku Shaft 33, which currently pumps approximately 5 mgd, and was described as having a capacity of 5.491 mgd,<sup>5</sup> from the 'Īao Aquifer system to service the DWS Central Maui system;
- (c) Kehalani and DWS have existing water use permits that will not be exceeded through the increased pumpage of 'Īao Aquifer waters by Wailuku Well No. 2;
- (d) Each of four wells planned to replace Wailuku Shaft 33, including Wailuku Wells No.1 and No.2, will have a capacity of 1.3 mgd and a combined yield of 5.2 mgd, which is less than that of Wailuku Shaft 33, which has an allocation of 5.491 mgd;
- (e) How CWRM will approve the "reassignment" of water use for these new wells

**Comment #3: Kehalani's EA should fully and expressly address DHHL's rights in 'Īao aquifer waters and potential development needs for those water resources.**

DHHL's general interests in water should be fully addressed in Kehalani's EA. In general, the State and its subdivisions (including CWRM and Kehalani's partner, DWS) have duties to protect DHHL's rights in water resources as enumerated in the Hawaiian Homes Commission Act, 1920, as amended, §§ 101(4), 20, 221; the Hawai'i Constitution, article XI, §§ 1 and 7; and Chapter 174C, Hawai'i Revised Statutes (HRS), also known as the State Water Code. Our environmental review law, HRS Chapter 343, also contains clear language requiring that EAs examine the impacts of proposed actions on Hawaiian rights, including those of DHHL.

Kehalani's EA should expressly address DHHL's water rights in the 'Īao aquifer WMA and DHHL's potential need to exercise them.<sup>6</sup> Please keep in mind that DHHL is entitled to reservations of water for its current and foreseeable water uses.<sup>7</sup>

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<sup>5</sup> In 2004, Wailuku Shaft 33 was thought to provide 5.77 mgd, but other reports have suggested only 4.85 mgd was a more appropriate estimate. See P. Tummons and T. Dawson, "Maui County Encounters Opposition in Effort to Acquire 'Īao Aquifer Rights," *Environment Hawai'i* Vol. 15, No. 7 (Jan. 2005).

<sup>6</sup> HRS §174C-49(e) provides: "All permits issued by the commission shall be subject to the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act, whether or not the condition is explicitly stated in the permit."

Approximately 75 percent of the water supplying the Central Maui water system is withdrawn from the 'Īao Aquifer in the vicinity of 'Īao and Wai'e hu streams. The remaining 25 percent of the water supply is withdrawn from the adjacent Waihe'e Aquifer to the northwest. Beyond the distribution network in Wailuku-Kahului, two major transmission pipelines deliver water to Kihei-Mākena and to Pā'ia. The proposed Wailuku Well No. 2 lies in an area in which DHHL has developed homesteads that benefit from sustainable uses of the 'Īao Aquifer.

Further, DHHL owns approximately 831 acres of lands at Pūlehunui, also known as Pu'unene, in Central Maui. DHHL's Pūlehunui lands were designated by the Hawaiian Homes Commission (HHC) for agricultural, industrial, commercial, and energy development and land use. DHHL does not currently hold allocations or reservations of water for these lands. Although Pūlehunui lands overlie the Kahului Aquifer, DHHL's right to water is not limited to this aquifer. DHHL is required to investigate development of diverse sources of water, including the 'Īao Aquifer system, and related infrastructure, to ascertain the means of providing water service to these lands.

DHHL has previously raised the need to plan for DHHL rights and interests. Since 2004, DHHL has had a pending water reservation request for 0.6 mgd for 100 acres of industrial use in Pūlehunui. DHHL's updated current and foreseeable water needs are included in a draft update to the State Water Projects Plan (SWPP), which is to be considered by the CWRM in the near future.

### **Conclusion:**

Based on the foregoing, DHHL requests that Kehalani's EA fully and expressly address impacts of its proposed production Wailuku Well No. 2 on DHHL land and water rights. Previous EAs addressing the construction of an exploratory Wailuku Well No. 2 and conversion of Wailuku Well No. 1 into a production well have both failed to address impacts of DHHL's: (1) rights overlying those of water use permit holders in 'Īao aquifer WMA; and (2) pending water reservation request for 'Īao aquifer.

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<sup>7</sup> See HRS §174C-49(d); HAR §13-171-60(b) ("The commission shall adopt within this subchapter specific reservations of water in water management areas in such quantities as are deemed necessary for purposes which are consistent with the public interest, including the provision of water for current and foreseeable development and use of Hawaiian home lands pursuant to section 221 of the Hawaiian Homes Commission Act and HRS §174C-101(a).").

Ms. Charlene S. Shibuya  
Page 5  
September 9, 2015

Mahalo nui for Kehalani's request for consultation on the proposed Wailuku Well No. 2 conversion project. If you have any questions, please contact Kaleo Manuel in our Planning Office at (808) 620-9485 or at [Kaleo.L.Manuel@hawaii.gov](mailto:Kaleo.L.Manuel@hawaii.gov).

Aloha,



Jobie M. K. Masagatani, Chair  
Hawaiian Homes Commission



**MUNEKIYO HIRAGA**

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Jobie M. K. Masagatani, Chair  
Hawaiian Homes Commission  
State of Hawaii  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui, Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.) (File No. OEQC 15-090)

Dear Chair Masagatani:

Thank you for your letter dated September 9, 2015 regarding the subject project. Our responses to your comments are provided below.

**Comment #1: More specific notice of the proposed action would improve effectiveness of consultation with DHHL**

The Wailuku Well No. 2 is Well No. 6-5230-005 which draws from the Iao Aquifer. The Draft Environmental Assessment (EA) will include an explanation of the project's relationship to the overall management of the aquifer as described in previous environmental documents prepared by the Department of Water Supply.

**Comment #2: This consultation process and the preparation of any resulting documents needs to be firmly integrated into previous planning and disclosure efforts**

The Draft EA will provide the context for the project's need in relation to the retirement of Shaft 33 and development of other wells in the vicinity.

---

Maui: 305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Tel: 808.244.2015 • Fax: 808.244.8729

Oahu: 735 Bishop Street, Suite 321 • Honolulu, Hawaii 96813 • Tel: 808.983.1233

[www.munekiyoHIRAGA.com](http://www.munekiyoHIRAGA.com)

**Comment #3: Kehalani's EA should fully and expressly address DHHL's rights in Iao aquifer waters and potential development needs for those water resources**

The DWS Central Maui system, including Wailuku Shaft 33 and its replacement wells serve homes built by the Department of Hawaiian Home Lands (DHHL). The replacement wells are necessary to ensure continued service to DHHL projects. The proposed Wailuku Well No. 2 and related improvements are intended to increase system reliability and quality, and groundwater resources resiliency, which will support the objectives of DHHL.

A copy of your comment letter and our response will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will also be provided to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

Very truly yours,



Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.

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AUG 27 2015

DAVID Y. IGE  
GOVERNOR



KATHRYN S. MATAYOSHI  
SUPERINTENDENT

STATE OF HAWAII  
DEPARTMENT OF EDUCATION

P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

August 25, 2015

Munekiyo Hiraga  
Attention: Charlene Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes Early Consultation Request for the Proposed Wailuku Well No.2 at TMK (2) 3-5-001:067 (por.) and 106 (por.); Wailuku, Maui, Hawaii

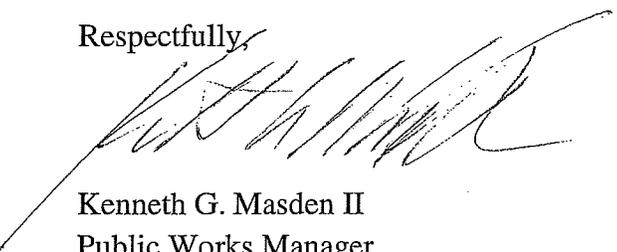
Dear Ms. Shibuya:

The Department of Education (DOE) has reviewed the early consultation request for the proposed Wailuku Well No.2.

The DOE has no comment to offer regarding this project.

We appreciate the opportunity to provide comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at (808) 377-8301.

Respectfully,



Kenneth G. Masden II  
Public Works Manager  
Planning Section

KGM:jmb

DAVID Y. IGE  
GOVERNOR



SEP 11 2015

DOUGLAS MURDOCK  
Comptroller

AUDREY HIDANO  
Deputy Comptroller

**STATE OF HAWAII**  
**DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES**

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

**SEP - 9 2015**

(P)1233.5

Ms. Charlene S. Shibuya, Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

Subject: Chapter 343, Hawaii Revised Statutes Early Consultation Request for the  
Proposed Wailuku Well No. 2, Wailuku, Maui, Hawaii  
TMK: (2) 3-5-001: por 067 and 106

Thank you for the opportunity to comment on the subject project. The proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities and we have no comments to offer at this time

If you have any questions, your staff may contact Ms. Dora Choy of the Public Works Division at (808) 586-0488.

Sincerely,

  
DOUGLAS MURDOCK  
Comptroller

c: Mr. Wade Shimabukuro, DAGS Maui District Office

PHONE (808) 594-1888

FAX (808) 594-1938



**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
 560 N. NIMITZ HWY., SUITE 200  
 HONOLULU, HAWAII 96817

HRD 15-4597B

September 11, 2015

Munekiyo & Hiraga, Inc.  
 Attn: Charlene Shibuya, Senior Associate  
 305 High Street, Suite 104  
 Wailuku, Hawaii 'i 96793

Re: Chapter 343, Hawaii 'i Revised Statutes Early Consultation Request for the Proposed  
 Wailuku Well No. 2  
 Wailuku Ahupua 'a, Pū 'ali Komohana Moku, Maui Mokupuni  
 TMK: (2) 3-5-001:067 (por.), (2) 3-5-001:106 (por.)

Aloha Ms. Shibuya:

The Office of Hawaiian Affairs (OHA) received your letter dated August 18, 2015, requesting comments on the above-titled project. Given the project descriptions provided, our agency has no comments at this time, but we look forward to reviewing the DEA for the project. Should you have any questions, please contact Everett Ohta at 594-0231 or everetto@oha.org.

'O wau iho nō me ka 'oia 'i'o,

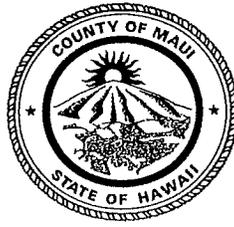
Kamana'opono M. Crabbe, Ph.D.  
 Ka Pouhana, Chief Executive Officer

KC: eo

*\*Please address replies and similar, future correspondence to our agency:*

*Dr. Kamana'opono Crabbe  
 Attn: OHA Compliance Enforcement  
 560 N. Nimitz Hwy., Ste. 200  
 Honolulu, Hawaii 'i 96817*

ALAN M. ARAKAWA  
Mayor  
KYLE K. GINOZA, P.E.  
Director  
MICHAEL M. MIYAMOTO  
Deputy Director



SEP 14 2015  
MICHAEL RATTE  
Solid Waste Division  
ERIC NAKAGAWA, P.E.  
Wastewater Reclamation Division

**COUNTY OF MAUI  
DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**  
2050 MAIN STREET, SUITE 1C  
WAILUKU, MAUI, HAWAII 96793

September 9, 2015

Ms. Charlene Shibuya  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

**SUBJECT: WAILUKU WELL NO. 2  
EARLY CONSULTATION REQUEST  
TMK (2) 3-5-001:067 (POR.) AND 106 (POR.), WAILUKU**

We reviewed the subject application and have the following comments:

1. Solid Waste Division comments:
  - a. None.
2. Wastewater Reclamation Division (WWRD) comments:
  - a. Submit construction plans for review and approval prior to the start of construction.

If you have any questions regarding this memorandum, please contact Michael Miyamoto at 270-8230.

Sincerely,

A handwritten signature in black ink, appearing to read "K.K.G.", is written over a horizontal line.

KYLE K. GINOZA, P.E.  
Director of Environmental Management



# MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Kyle K. Ginoza, P.E.  
Director of Environmental Management  
County of Maui  
Department of Environmental Management  
2050 Main Street, Suite 1C  
Wailuku, Hawai'i 96793

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.)

Dear Mr. Ginoza:

Thank you for your letter dated September 9, 2015, regarding the subject project. We provide following response to the comment provided by the Wastewater Reclamation Division (WWRD).

Construction plans were provided to the WWRD for review and comment.

A copy of your comment letter and our response will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will also be provided to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

Kyle K. Ginoza, P.E.  
October 20, 2015  
Page 2

Thank you again for providing comments on the proposed action.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Charlene S. Shibuya', with a long horizontal flourish extending to the right.

Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.  
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SEP 28 2015

KA'ALA BUENCONSEJO  
Director

ALAN M. ARAKAWA  
Mayor



BRIANNE L. SAVAGE  
Deputy Director

**DEPARTMENT OF PARKS & RECREATION**

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

(808) 270-7230  
FAX (808) 270-7934

September 18, 2015

Munekiyo Hiraga  
Attn: Charlene Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Ms. Shibuya:

**SUBJECT: Chapter 343, Hawaii Revised Statutes Early Consultation Request for the Proposed Wailuku Well No. 2 at TMK (2) 3-5-001:067 (por.) and 106 (por.); Wailuku, Maui, Hawaii**

Thank you for the opportunity to review and comment on the subject project. The Department of Parks & Recreation has no comment at this time, and looks forward to reviewing the Environmental Assessment when it is available.

Please feel free to contact me or Robert Halvorson, Chief of Planning and Development, at 270-7387, should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Ka'ala Buenconsejo".

KA'ALA BUENCONSEJO  
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning and Development

KB:RH:do

SEP 30 2015

ALAN M. ARAKAWA  
Mayor

WILLIAM R. SPENCE  
Director

MICHELE CHOUTEAU McLEAN  
Deputy Director



COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

September 29, 2015

Ms. Charlene S. Shibuya, Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

**SUBJECT: RESPONSE TO REQUEST FOR EARLY CONSULTATION ON THE  
PROPOSED WAILUKU WELL NO. 2 LOCATED AT  
TMK: (2) 3-5-001:067 (POR.); KEHALANI, WAILUKU, ISLAND OF  
MAUI, HAWAII (RFC 2015/0138)**

Dear Ms. Shibuya:

The Current Division of the Department of Planning (Department) is in receipt of the above-referenced request for comment. The Department understands that in regards to the proposed action:

- The Applicant is proposing to convert an existing exploratory well into a production well (to be known as Wailuku Well No. 2). Water from Wailuku Well No. 2 will be transmitted via a 12-inch water line to the Wailuku Well No. 1 site at Parcel 106 and conveyed from there via an existing 16-inch waterline to the existing 3.0 Million Gallon Iao Water Tank.
- Planned improvements include pump, piping, electrical controls, control valve, a control building, a water tank, driveway, and paving with onsite drainage system.
- Water will be used for new water meters for the build-out of the Kehalani Project District.

Based on the foregoing, the Department has no comments with regards to the proposed well conversion.

Ms. Charlene S. Shibuya, Senior Associate  
September 29, 2015  
Page 2

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Livit Callentine at [livit.callentine@mauicounty.gov](mailto:livit.callentine@mauicounty.gov) or at (808) 270-5537.

Sincerely,



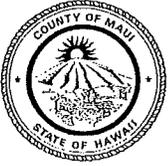
CLAYTON I. YOSHIDA, AICP  
Planning Program Administrator

*for* WILLIAM SPENCE  
Planning Director

xc: John S. Rapacz, Planning Program Administrator (PDF)  
Livit U. Callentine, AICP, Staff Planner (PDF)  
Project File  
General File

WRS:CIY:LUC:nt  
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SEP 14 2015



**POLICE DEPARTMENT**  
COUNTY OF MAUI

ALAN M. ARAKAWA  
MAYOR

OUR REFERENCE

YOUR REFERENCE

55 MAHALANI STREET  
WAILUKU, HAWAII 96793  
(808) 244-6400  
FAX (808) 244-6411

TIVOLI S. FAAUMU  
CHIEF OF POLICE

DEAN M. RICKARD  
DEPUTY CHIEF OF POLICE

September 4, 2015

Ms. Charlene Shibuya  
Senior Associate  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, HI 96793

Dear Ms. Shibuya:

SUBJECT: Chapter 343, HRS, Early Consultation Request for Proposed Wailuku Well No. 2 at TMK (2) 3-5-001:067 (por.) and 106 (por)

We have reviewed the information submitted for this project and have submitted our comments and/or recommendations. Thank you for giving us the opportunity to comment on this project.

Very truly yours,

A handwritten signature in black ink, appearing to read "Victor K. Ramos".

Assistant Chief Victor K. Ramos  
for: Tivoli S. Faumu  
Chief of Police

c: William Spence, Dept. of Planning

**TO :** TIVOLI S. FAAUMU, CHIEF OF POLICE, COUNTY OF MAUI  
**VIA :** CHANNELS  
**FROM :** AYLETT WALLWORK, POLICE OFFICER III, COMMUNITY POLICING, WAILUKU PATROL DIVISION  
**SUBJECT :** RESPONSE TO A REQUEST FOR COMMENTS REGARDING WAILUKU WELL NO.2

*Victor X. Ramos*  
Victor X. Ramos  
Assistant Chief

*2/21/16*

This communication is submitted as a response to a request for comments by the Muneikiyo Hiraga, who represents RCFC Kehalani, LLC. RCFC Kehalani, LLC is proposing to convert an existing exploratory well into a production well referred to as Wailuku Well No.2.

**PROJECT :** PROPOSED TO CONVERT EXISTING EXPLORATORY WELL INTO WAILUKU WELL NO.2  
**LOCATION :** AREA OF KEHALANI DEVELOPMENT WAILUKU, MAUI, HAWAII  
**TMK :** (2) 3 – 5 – 001:067 (POR.) 106 (POR.)

Wailuku Well No.2 development plans consist of a pump, piping, electrical controls, single story control building, 100,000 gallon control water tank, driveway and paving with on-site drainage system. A control valve station at Wailuku Well Number 1 site on parcel 106 will also be constructed as part of the proposed project.

**RESPONSE:**

In review of the submitted documents, the concern from the police perspective is the impacts upon vehicular and pedestrian movement as well as the public's safety. Construction should not have any impact to vehicular and pedestrian movements or the public's safety. The proposed site is not in an area that can be accessed by the general public. Kehalani Mauka Parkway is the roadway leading up to the proposed site. Kehalani Mauka Parkway ends at Omaomao Street, as the area is barricaded and there is no development or roadway past the barricade. There are no other roadways or sidewalks that will allow vehicles or pedestrians through. There is adequate on-site parking for workers and their vehicles as not to interfere with vehicular movement on Kehalani Mauka Parkway or Omaomao Street. At this time it is undetermined when this project will commence.

There are no objections to the progression of this project. It must be stated that all those involved in this project must remain cognizant in maintaining the safety of the general public.

Page 2 of 2

Respectfully submitted for your review and approval.



Aylett Wallwork e#11764  
P.O. III, Community Policing, Wailuku Patrol Division  
08/27/2015 @ 1600 hours

Concur with Ofc Wallwork's Review's response  
w regards to the proposed development  
and installation of a water well. Area  
of development will not impact traffic  
or interfere w/ pedestrian/vehicular movement.

Syft 

8-28-15 @ 0800 hrs

No issues noted by  
Ofc. Wallwork  
Capt. Allam  
8/28/15



**MUNEKIYO HIRAGA**

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Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Tivoli S. Faaumu, Chief of Police  
County of Maui  
Police Department  
55 Mahalani Street  
Wailuku, Hawai'i 96793

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.)

Dear Chief Faaumu:

Thank you for your letter dated September 4, 2015, regarding the subject project. Our responses to your comments are provided below.

RCFC Kehalani, LLC (RCFC) and the Department of Water Supply (DWS) understand the need to maintain the safety of the general public. Appropriate Best Management Practices (BMPs) will be utilized by RCFC's contractor to ensure that impacts to pedestrians and traffic are minimized through construction and during the long-term operations of the wells.

A copy of your comment letter and our response will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will also be provided to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

---

Maui: 305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Tel: 808.244.2015 • Fax: 808.244.8729

Oahu: 735 Bishop Street, Suite 321 • Honolulu, Hawaii 96813 • Tel: 808.983.1233

[www.munekiyo-hiraga.com](http://www.munekiyo-hiraga.com)

Tivoli S. Faaumu, Chief of Police  
October 20, 2015  
Page 2

Thank you again for providing comments on the proposed action.

Very truly yours,



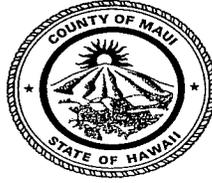
Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.  
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OCT 15 2015

ALAN M. ARAKAWA  
MAYOR



JEFFREY A. MURRAY  
FIRE CHIEF

ROBERT M. SHIMADA  
DEPUTY FIRE CHIEF

**COUNTY OF MAUI**  
**DEPARTMENT OF FIRE AND PUBLIC SAFETY**  
**FIRE PREVENTION BUREAU**

313 MANEA PLACE . WAILUKU, HAWAII 96793  
(808) 244-9161 . FAX (808) 244-1363

October 9, 2015

Munekiyo & Hiraga, Inc.  
Attn: Charlene Shibuya, Senior Associate  
305 High Street, Suite 104  
Wailuku, HI 96793

Re: Proposed Wailuku Well No. 2  
Early Consultation  
Wailuku, Maui, HI  
(2) 3-5-001: 067 (por.) & :106 (por.)

Dear Charlene:

Thank you for the opportunity to comment on this subject. At this time, our office provides the following comments:

- Our office has no specific comments at this time, and because this completed project will be turned over to the Department of Water Supply, we defer all future comments to that department.
- Our office may provide additional comments during the building permit process if plans are routed to us for review.

If there are any questions or comments, please feel free to contact me at (808) 876-4693.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Haake".

Paul Haake  
Captain, Fire Prevention Bureau



# MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Michael T. Munekiyo  
PRESIDENT

Karlynn K. Fukuda  
EXECUTIVE VICE PRESIDENT

Mark Alexander Roy  
VICE PRESIDENT

Tessa Munekiyo Ng  
VICE PRESIDENT

October 20, 2015

Paul Haake, Captain  
Fire Prevention Bureau  
County of Maui  
Department of Fire and Public Safety  
313 Manea Place  
Wailuku, Hawai'i 96793

SUBJECT: Proposed Wailuku Well No. 2, Wailuku, Maui Hawai'i, TMK (2) 3-5-001:067 (por.) and 106 (por.)

Dear Captain Haake:

Thank you for your letter dated October 9, 2015, regarding the subject project.

We understand that your office has no specific comments at this time and that additional comments may be provided during the building permit review process, as applicable.

A copy of your comment letter and our response will be included in the Draft Environmental Assessment (EA). A copy of the Draft EA will also be provided to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

Thank you again for providing comments on the proposed action.

Very truly yours,

Charlene S. Shibuya  
Senior Associate

CSS:yp

cc: Tammy Yeh, Department of Water Supply  
Brian Ige, RCFC Kehalani, LLC  
Ivan Nakatsuka, Austin, Tsutsumi & Associates, Inc.

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Maui: 305 High Street, Suite 104 • Wailuku, Hawaii 96793 • Tel: 808.244.2015 • Fax: 808.244.8729

Oahu: 735 Bishop Street, Suite 321 • Honolulu, Hawaii 96813 • Tel: 808.983.1233

www.munekiyo-hiraga.com



DEPARTMENT OF  
**HOUSING AND HUMAN CONCERNS**  
COUNTY OF MAUI

AUG 31 2015  
ALAN M. ARAKAWA  
Mayor  
CAROL K. REIMANN  
Director  
JAN SHISHIDO  
Deputy Director

---

2200 MAIN STREET • SUITE 546 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7805 • FAX (808) 270-7165  
MAILING ADDRESS: 200 SOUTH HIGH STREET • WAILUKU, HAWAII 96793 • EMAIL: director.hhc@mauicounty.gov

August 25, 2015

Ms. Charlene Shibuya  
Senior Associate  
Munekiyo Hiraga  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Shibuya:

**Subject: Chapter 343, Hawaii Revised Statutes Early Consultation  
Request for the Proposed Wailuku Well No. 2 at TMK (2) 3-5-  
001:067 (por) and 106 (por); Wailuku, Maui, Hawaii**

The Department has reviewed the request for Early Consultation for the above subject project. Based on our review, we have determined that the subject project is not subject to Chapter 2.96, Maui County Code. At the present time, the Department has no additional comments to offer.

Please call Mr. Veranio Tongson Jr. of our Housing Division at (808) 270-1741 if you have any questions.

Sincerely,

BUDDY A. ALMEIDA  
Assistant Housing Administrator

cc: Director of Housing and Human Concerns

SEP 04 2015

ALAN M. ARAKAWA  
Mayor

DAVID C. GOODE  
Director

ROWENA M. DAGDAG-ANDAYA  
Deputy Director

Telephone: (808) 270-7845  
Fax: (808) 270-7955



COUNTY OF MAUI  
**DEPARTMENT OF PUBLIC WORKS**

200 SOUTH HIGH STREET, ROOM NO. 434  
WAILUKU, MAUI, HAWAII 96793

GLEN A. UENO, P.E., P.L.S.  
Development Services Administration

CARY YAMASHITA, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

September 1, 2015

Ms. Charlene S. Shibuya  
Senior Associate  
MUNEKIYO HIRAGA  
305 High Street, Suite 104  
Wailuku, Maui, Hawaii 96793

Dear Ms. Shibuya:

**SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES EARLY  
CONSULTATION REQUEST FOR THE PROPOSED WAILUKU  
WELL NO. 2; TMK: 3-5-001:067 (POR) AND 106 (POR)**

We reviewed your early consultation request and have no comments at this time.

If you have any questions regarding this memorandum, please call Rowena Dagdag-Andaya at 270-7845.

Sincerely,

  
DAVID C. GOODE  
Director of Public Works

DCG:jso  
xc: Highways Division  
Engineering Division

S:\DSA\Engr\CZM\Draft Comments\35001067\_106\_wailuku\_well\_no2\_ec.wpd

## **IX. REFERENCES**

## IX. REFERENCES

County of Maui, 2030 General Plan, Countywide Policy Plan, March 2010.

County of Maui, 2030 General Plan, Maui Island Plan, December 2012.

County of Maui, Office of Economic Development, Maui County Data Book 2011, December 2011.

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Mink and Yuen, Inc., Addendum Report-Replacement Well No. 2, Iao Aquifer System, Wailuku, Maui, Hawai'i, prepared for Ronald M. Fukumoto Engineering, Inc., July 2009.

Munekiyo & Hiraga, Inc., Final Environmental Assessment Proposed Wailuku Production Facility, Wailuku, Maui, Hawai'i, September 2013.

State of Hawai'i, Department of Agriculture, Agricultural Lands of Importance to the State of Hawai'i, January 1977.

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# **APPENDIX A.**

## **Project Plans**

RCFC KEHALANI, LLC  
WAILUKU, MAUI, HAWAII

**WAILUKU WELL NO. 2**  
**WELL DEVELOPMENT**  
WAILUKU, MAUI, HAWAII

TAX MAP KEY: 2ND DIVISION 3-5-001: PORTION 067. PROPOSED LOT P-3 (WELL NO. 2 SITE)  
TAX MAP KEY: 2ND DIVISION 3-5-001: 106. PROPOSED LOT P-2-A (WELL NO. 1 SITE)

PREPARED BY:



**AUSTIN, TSUTSUMI & ASSOCIATES, INC.**

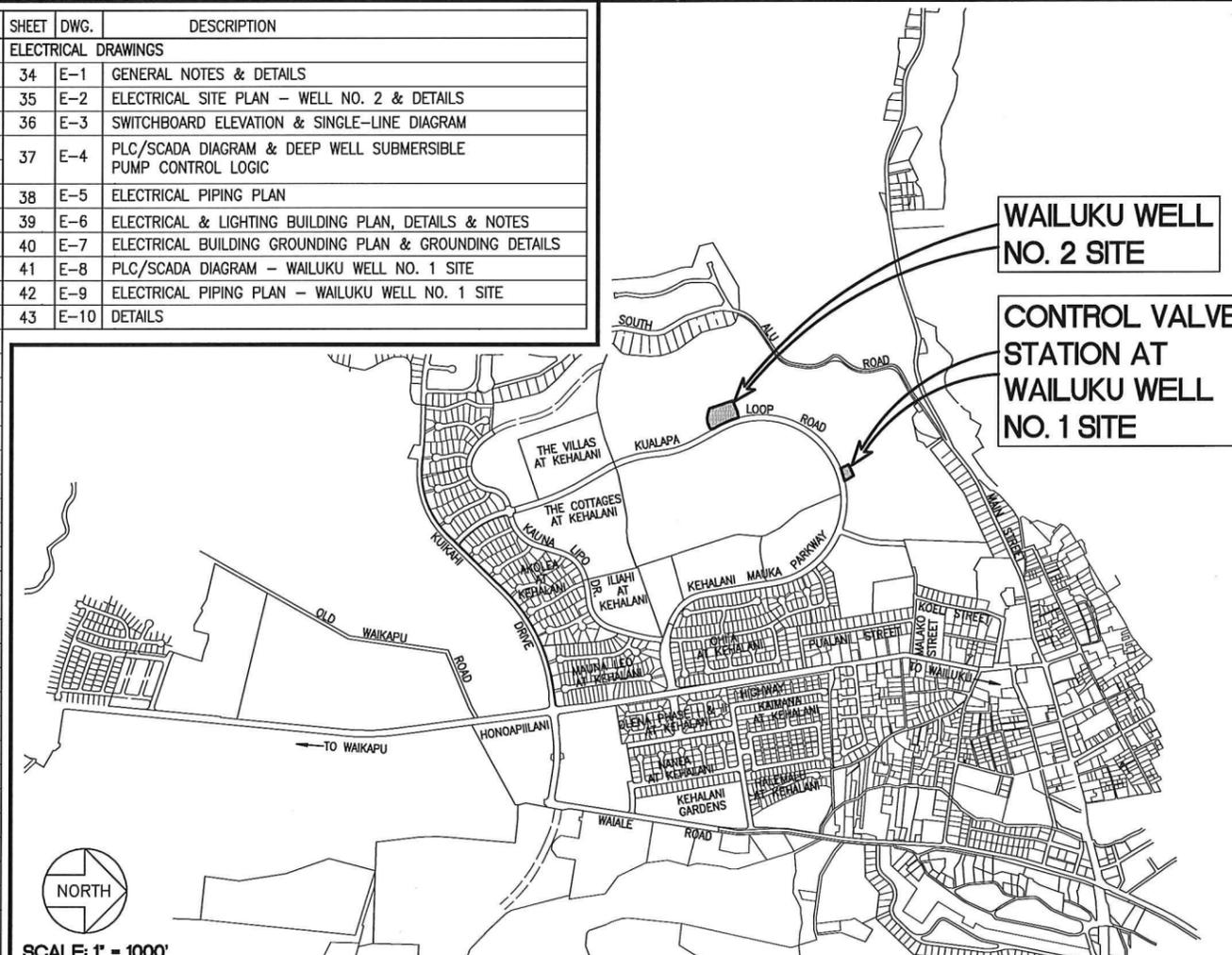
ENGINEERS, SURVEYORS

HONOLULU • WAILUKU • HILO, HAWAII

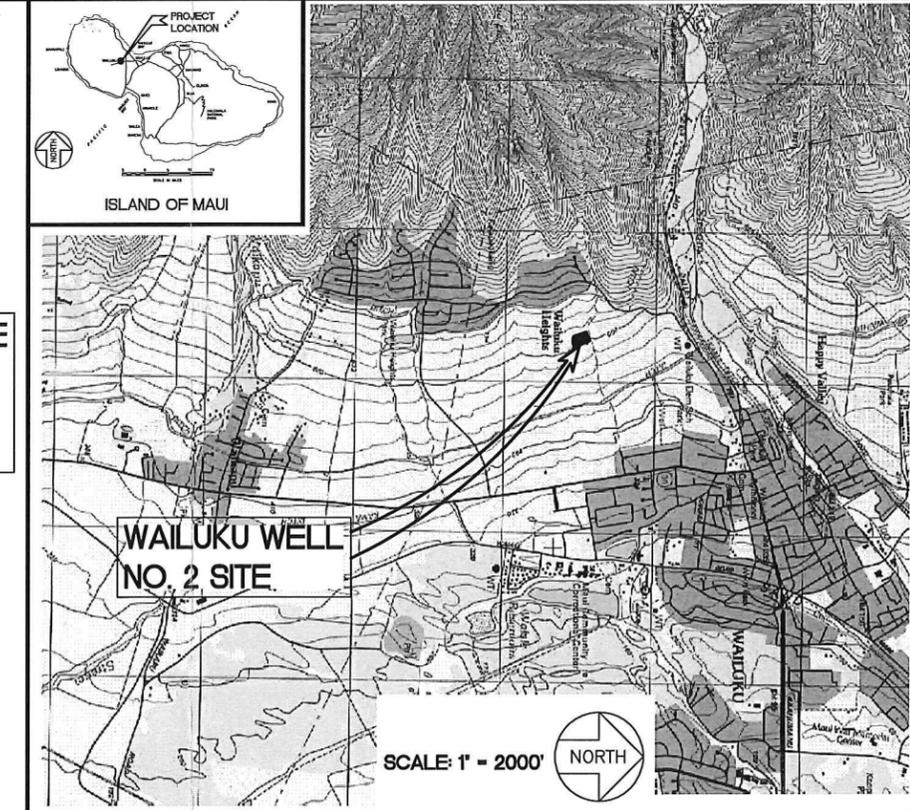
INDEX OF DRAWINGS

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12	C-8	MISCELLANEOUS CIVIL DETAILS - 3	16	M-2	WAILUKU WELL NO. 2 SECTION AND DETAILS
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31	S-6	CONTROL BUILDING SECTION			
32	S-7	WELL PIPING FOUNDATION PLAN AND DETAILS			
33	S-8	CONTROL VALVE STATION - FOUNDATION PLAN & DETAILS			

VICINITY MAP



PROJECT LOCATION MAP



APPROVED

DIRECTOR, DEPARTMENT OF WATER SUPPLY  
COUNTY OF MAUI

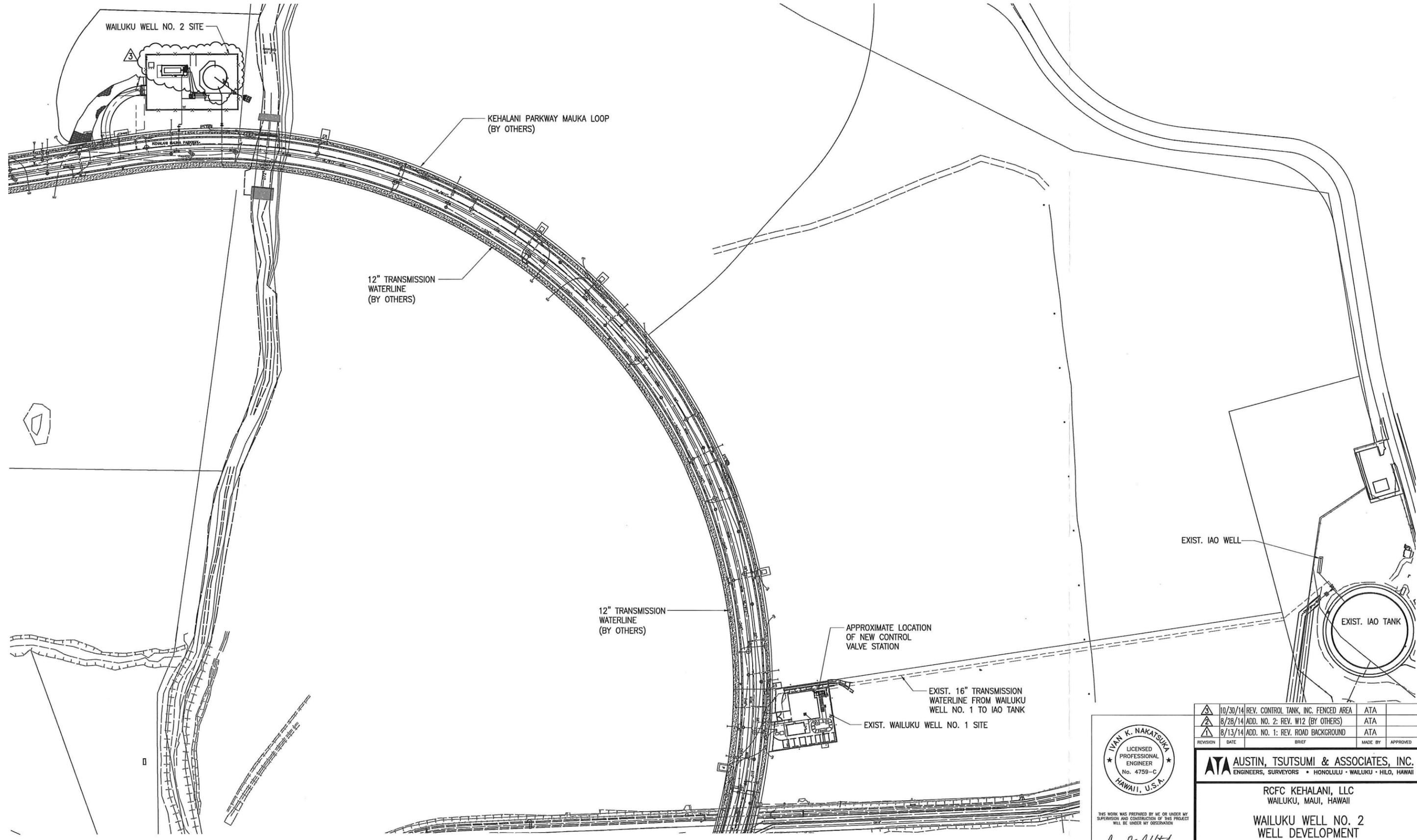
DATE

10/30/14 REV LOT NUMBER

ATA

DWG. NO. **T-1**  
SHEET 1 OF 43

FILENAME: C:\2 - WORK FILES\PROJECT FOLDERS\2013-024 - WAILUKU WELL #2 - PRODUCTION WELL DRAWINGS\REVISION 3 - 10-2014\C-1 GENERAL SITE PLAN.DWG Oct 30, 2014-10:03 AM



**GENERAL SITE PLAN**  
 SCALE: 1"=80'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

*I. K. Nakatsuka* EXP. 4/30/16

0 1 2  
 LINE IS 2 INCHES AT FULL SIZE  
 (IF NOT 2-INCHES : SCALE ACCORDINGLY)

DWG. NO. **C-1**

SHEET 5 OF 43

REVISION	DATE	BRIEF	MADE BY	APPROVED
△	10/30/14	REV. CONTROL TANK, INC. FENCED AREA	ATA	
△	8/28/14	ADD. NO. 2: REV. W12 (BY OTHERS)	ATA	
△	8/13/14	ADD. NO. 1: REV. ROAD BACKGROUND	ATA	

**ATA** AUSTIN, TSUTSUMI & ASSOCIATES, INC.  
 ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII

RCFC KEHALANI, LLC  
 WAILUKU, MAUI, HAWAII

**WAILUKU WELL NO. 2  
 WELL DEVELOPMENT**  
 WAILUKU, MAUI, HAWAII

**GENERAL SITE PLAN**

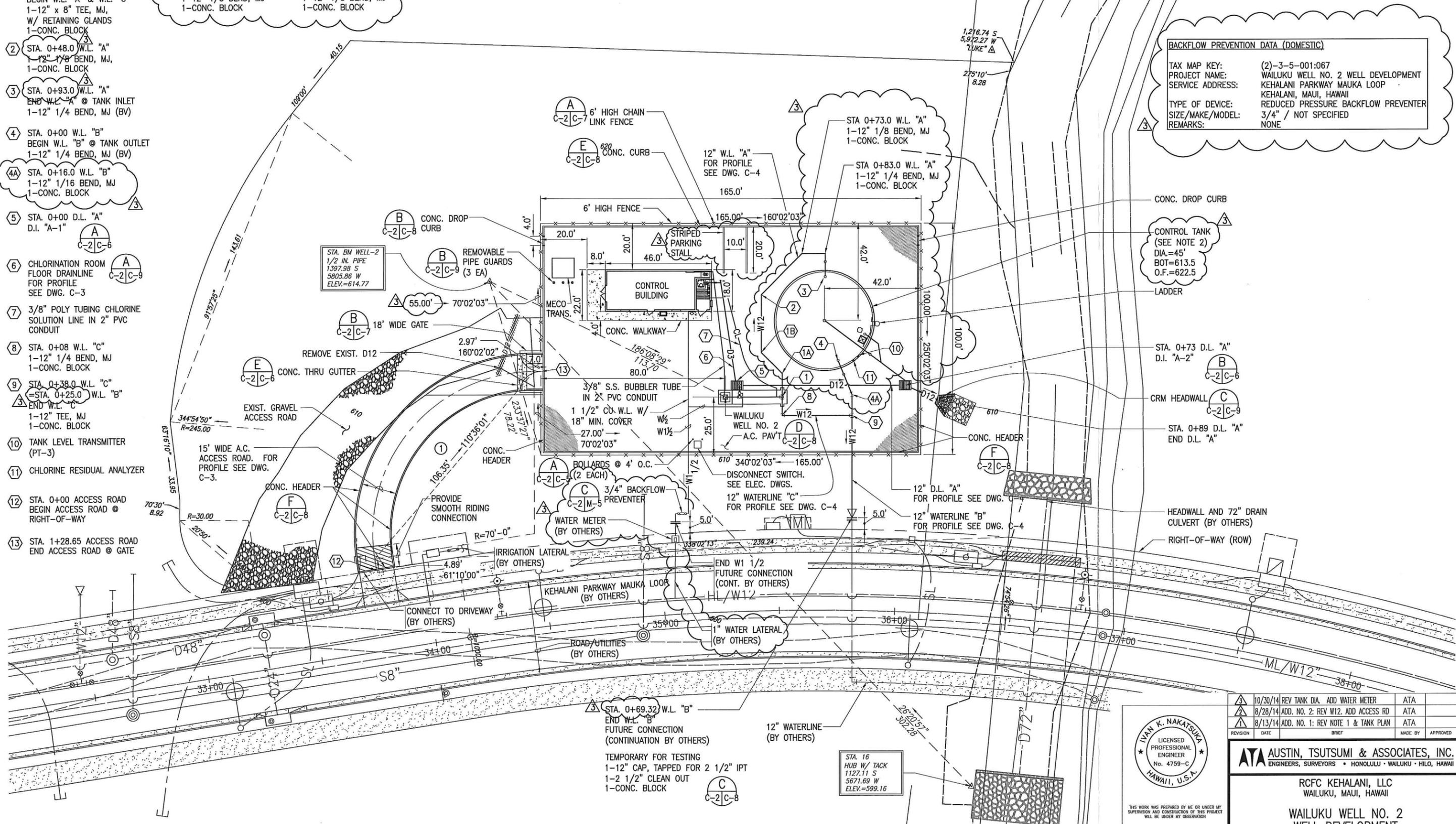
DESIGNED BY LLA	DRAWN BY LLA	CHECKED BY IKN
APPROVED	APPROVED	APPROVED
DATE	DATE	DATE

FILENAME: C:\2 - WORK FILES\PROJECT FOLDERS\2013\13-024 - WAILUKU WELL #2 - PRODUCTION WELL DRAWINGS\REVISION 3 - 10-2014\C-2 SITE PLAN.DWG Oct 30, 2014-10:04 AM

- ① STA. 0+00 W.L. "A" & W.L. "C"  
BEGIN W.L. "A" & W.L. "C"  
1-12" x 8" TEE, MJ,  
W/ RETAINING GLANDS  
1-CONC. BLOCK
- ② STA. 0+48.0 W.L. "A"  
1-12" 1/8 BEND, MJ,  
1-CONC. BLOCK
- ③ STA. 0+93.0 W.L. "A"  
END W.L. "A" @ TANK INLET  
1-12" 1/4 BEND, MJ (BV)
- ④ STA. 0+00 W.L. "B"  
BEGIN W.L. "B" @ TANK OUTLET  
1-12" 1/4 BEND, MJ (BV)
- ④A STA. 0+16.0 W.L. "B"  
1-12" 1/16 BEND, MJ  
1-CONC. BLOCK
- ⑤ STA. 0+00 D.L. "A"  
D.I. "A-1"
- ⑥ CHLORINATION ROOM  
FLOOR DRAINLINE  
FOR PROFILE  
SEE DWG. C-3
- ⑦ 3/8" POLY TUBING CHLORINE  
SOLUTION LINE IN 2" PVC  
CONDUIT
- ⑧ STA. 0+08 W.L. "C"  
1-12" 1/4 BEND, MJ  
1-CONC. BLOCK
- ⑨ STA. 0+38.0 W.L. "C"  
=STA. 0+25.0 W.L. "B"  
END W.L. "C"
- ⑩ TANK LEVEL TRANSMITTER  
(PT-3)
- ⑪ CHLORINE RESIDUAL ANALYZER
- ⑫ STA. 0+00 ACCESS ROAD  
BEGIN ACCESS ROAD @  
RIGHT-OF-WAY
- ⑬ STA. 1+28.65 ACCESS ROAD  
END ACCESS ROAD @ GATE
- ①A STA. 0+10.0 W.L. "A"  
1-12" 1/8 BEND, MJ  
1-CONC. BLOCK
- ①B STA. 0+23.0 W.L. "A"  
1-12" 1/8 BEND, MJ  
1-CONC. BLOCK

**BACKFLOW PREVENTION DATA (DOMESTIC)**

TAX MAP KEY: (2)-3-5-001:067  
PROJECT NAME: WAILUKU WELL NO. 2 WELL DEVELOPMENT  
SERVICE ADDRESS: KEHALANI PARKWAY MAUKA LOOP  
KEHALANI, MAUI, HAWAII  
TYPE OF DEVICE: REDUCED PRESSURE BACKFLOW PREVENTER  
SIZE/MAKE/MODEL: 3/4" / NOT SPECIFIED  
REMARKS: NONE



**CURVE DATA**

Curve #	Δ	Δ/2	R	T	Ch	Lc
①	98°52'02"	49°26'01"	70.00'	81.77	106.35'	120.79'

**SITE PLAN - WAILUKU WELL NO. 2**  
SCALE: 1"=20'-0"

- NOTES:
- DESIGN OF FUTURE KEHALANI MAUKA PARKWAY EXTENSION BY WARREN S. UNEMORI ENGINEERING, INC., JULY 29, 2014.
  - REMOVE TOP 18" OF EXISTING SOIL UNDER CONTROL TANK SLAB AND FOOTING AND REPLACE WITH NON-EXPANSIVE FILL AFTER MOISTURE CONDITIONING AND COMPACTING TOP 12" OF SUBGRADE BELOW NON-EXPANSIVE FILL.



REVISION	DATE	BRIEF	MADE BY	APPROVED
③	10/30/14	REV TANK DIA. ADD WATER METER	ATA	
②	8/28/14	ADD. NO. 2: REV W12. ADD ACCESS RD	ATA	
①	8/13/14	ADD. NO. 1: REV NOTE 1 & TANK PLAN	ATA	

**ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.**  
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RCFC KEHALANI, LLC  
WAILUKU, MAUI, HAWAII

**WAILUKU WELL NO. 2  
WELL DEVELOPMENT**  
WAILUKU, MAUI, HAWAII

**SITE PLAN - WAILUKU WELL NO. 2**

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

*I. K. Nakatsuka* EXP. 4/30/16

LINE IS 2 INCHES AT FULL SIZE  
(IF NOT 2-INCHES: SCALE ACCORDINGLY)

DWG. NO. **C-2**

SHEET 6 OF 43

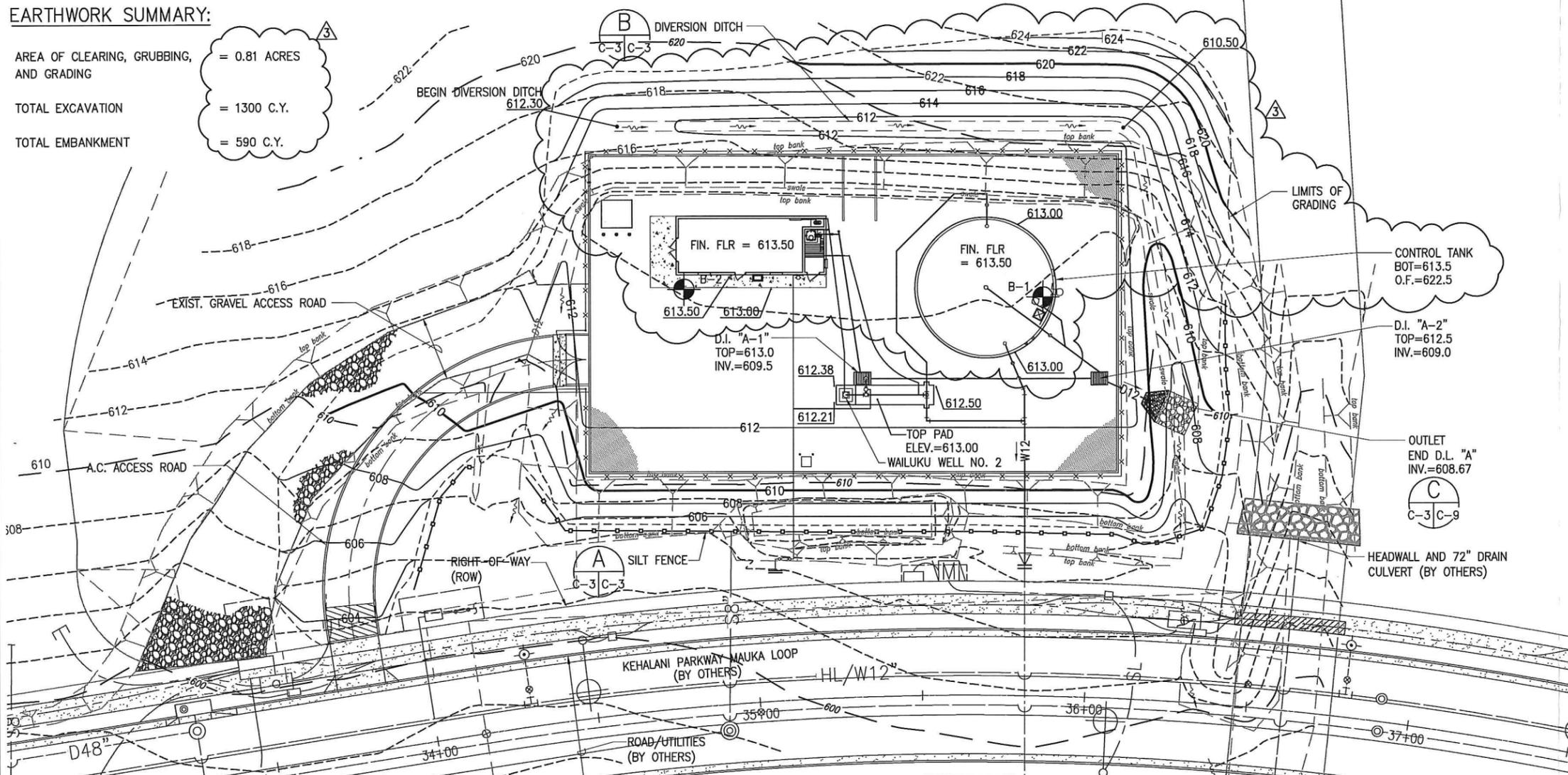
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
LLA	LLA	IKN	

**EARTHWORK SUMMARY:**

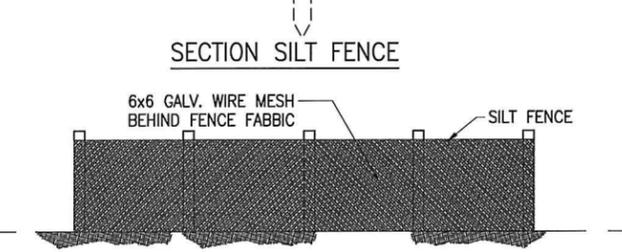
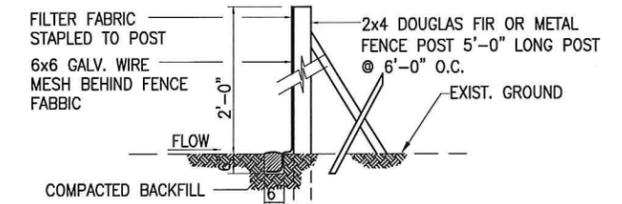
AREA OF CLEARING, GRUBBING,  
AND GRADING = 0.81 ACRES

TOTAL EXCAVATION = 1300 C.Y.

TOTAL EMBANKMENT = 590 C.Y.



**GRADING AND EROSION CONTROL PLAN- WAILUKU WELL NO. 2**  
SCALE: 1"=20'-0"

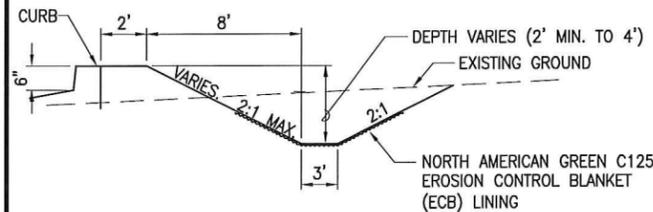


NOT TO SCALE

**SILT FENCE DETAIL A**  
C-3 C-3

**NOTES:**

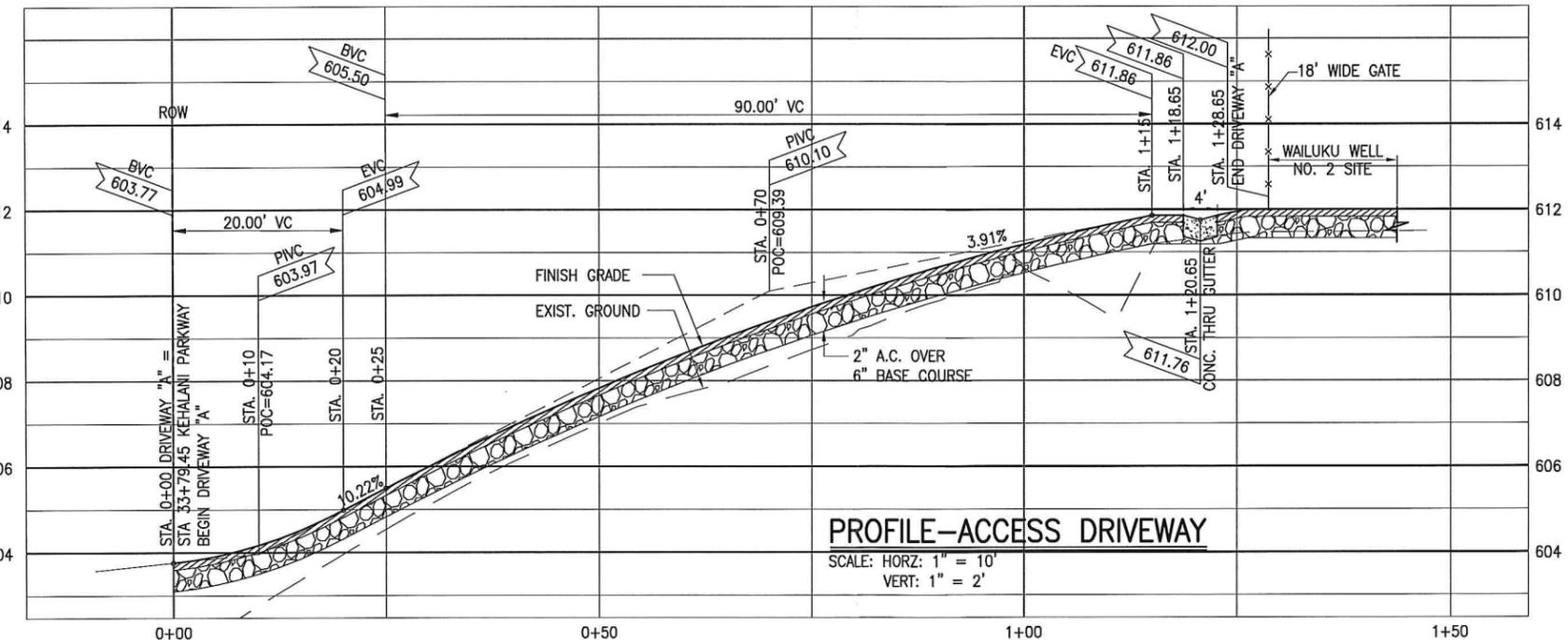
- FILTER FABRIC SHALL BE A PERVIOUS SHEET OF POLYPROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN WITH UV INHIBITORS AND STABILIZERS.
- BURY FENCE POST 1 FOOT MINIMUM.



**TYPICAL SECTION DIVERSION DITCH B**  
NOT TO SCALE  
C-3 C-3

**LEGEND**

- EXISTING CONTOUR
- FINISHED CONTOUR
- - - LIMITS OF GRADING
- - - SILT FENCE
- FINISHED GRADE
- APPROXIMATE LOCATION OF BORING AND NUMBER (SEE DWG. C-10 FOR BORING LOGS)



**PROFILE-ACCESS DRIVEWAY**  
SCALE: HORIZ: 1" = 10'  
VERT: 1" = 2'



REVISION	DATE	BRIEF	MADE BY	APPROVED
10/30/14	REV. TANK SIZE, INCREASE FENCED AREA		ATA	
8/28/14	ADD. NO. 2: ADD ACCESS RD		ATA	

**ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.**  
ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII

RCFC KEHALANI, LLC  
WAILUKU, MAUI, HAWAII

**WAILUKU WELL NO. 2**  
WELL DEVELOPMENT  
WAILUKU, MAUI, HAWAII

**GRADING AND EROSION CONTROL**  
PLAN - WAILUKU WELL NO. 2

DESIGNED BY LLA DRAWN BY LLA CHECKED BY IKN

DWG. NO. **C-3**

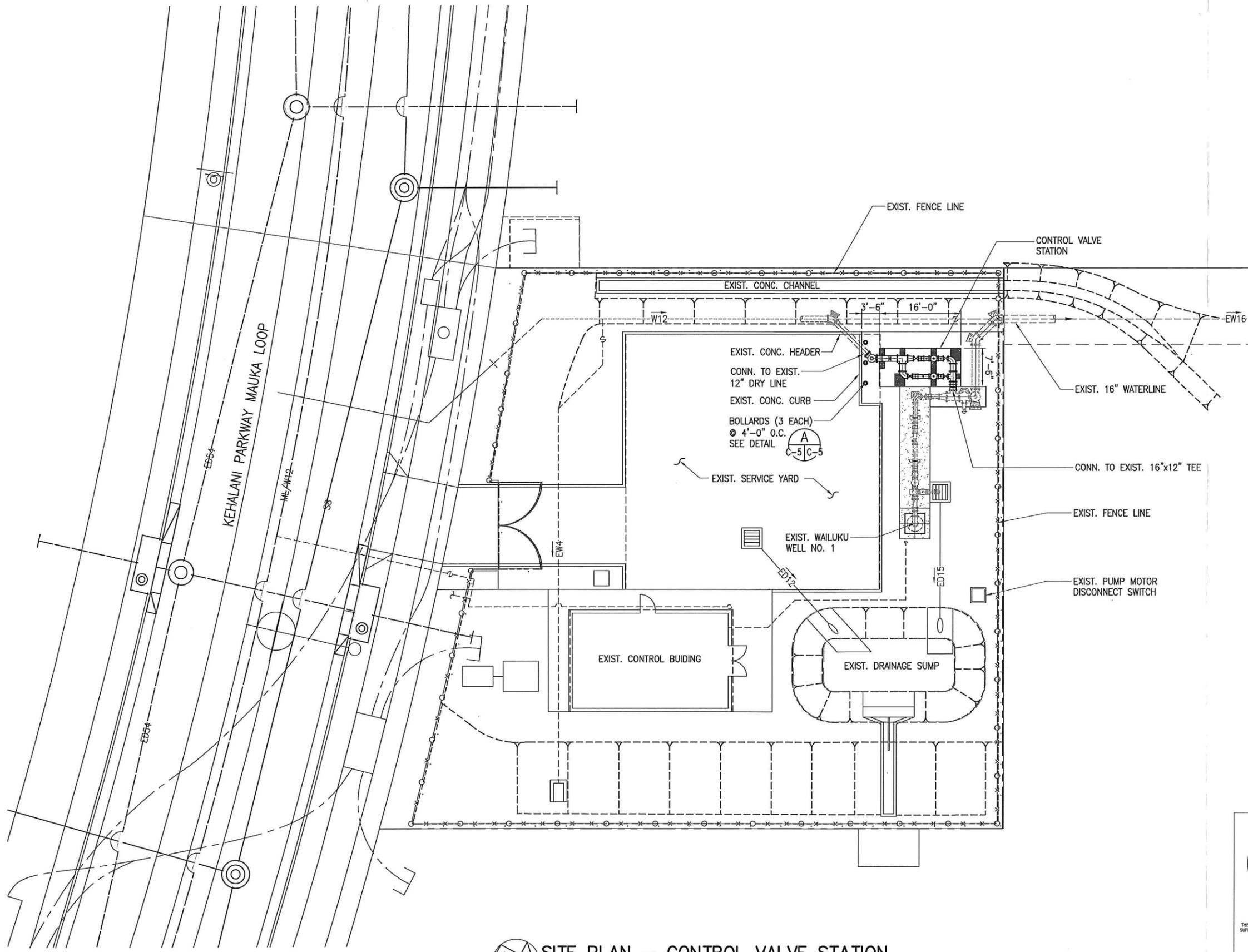
SHEET 7 OF 43

APPROVED APPROVED

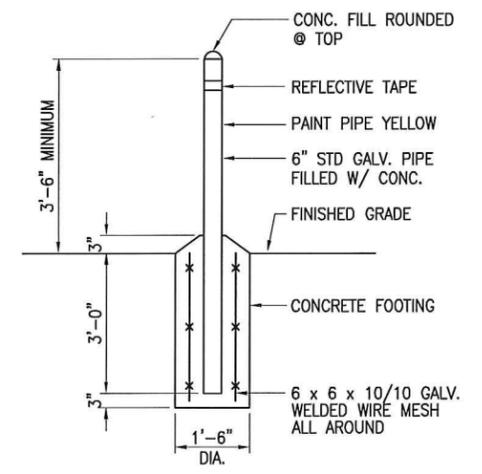
DATE DATE

FILENAME: C:\2 - WORK FILES\PROJECT FOLDERS\2013\13-024 - WAILUKU WELL #2 - PRODUCTION WELL DRAWINGS\REVISION 3 - 10-2014\C-3 GRADING PLAN.DWG Oct 30, 2014-10:04 AM

FILENAME: C:\2 - WORK FILES\PROJECT FOLDERS\2013\13-024 - WAILUKU WELL #2 - PRODUCTION WELL\DRAWINGS\C-5 WELL NO. 1 SITE PLAN.DWG Jul 16, 2014-12:27 PM



15'-0" EXIST. EASEMENT



**BOLLARD DETAIL** A  
NOT TO SCALE C-5 C-5  
C-2

**SITE PLAN - CONTROL VALVE STATION AT WAILUKU WELL NO. 1**  
SCALE: 1"=10'-0"

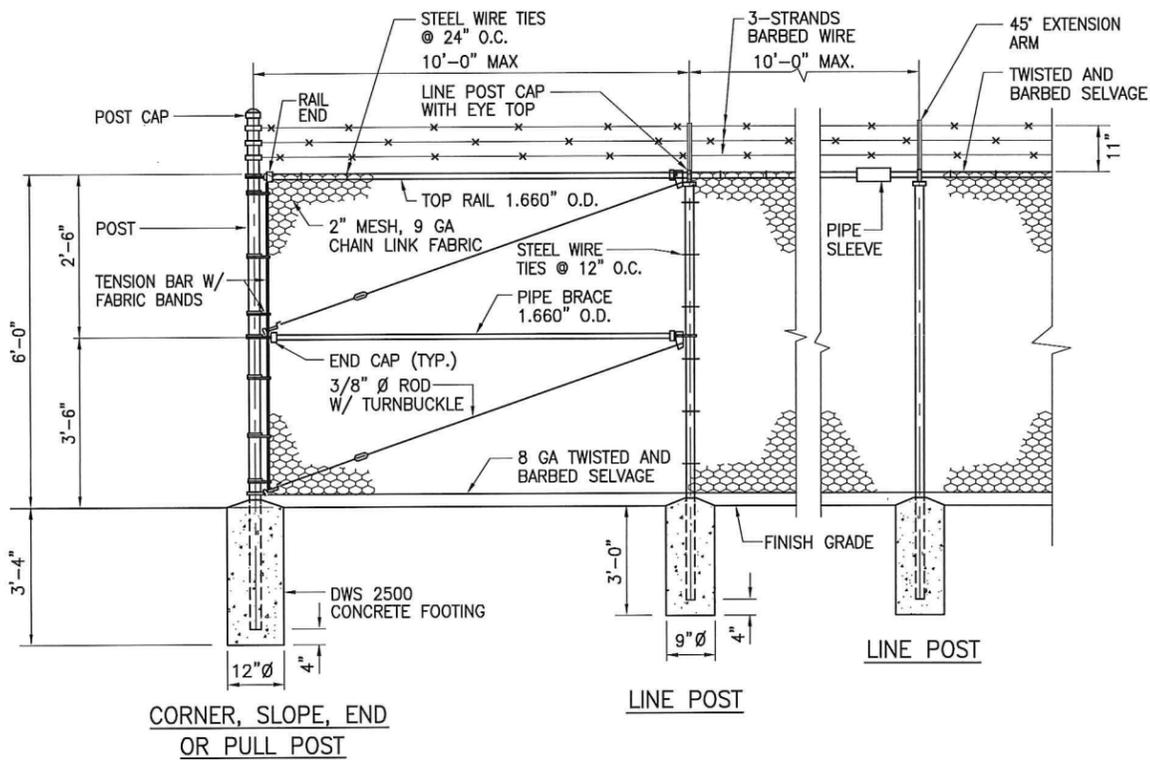


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION  
*I. K. Nakatsuka* EXP. 4/30/18

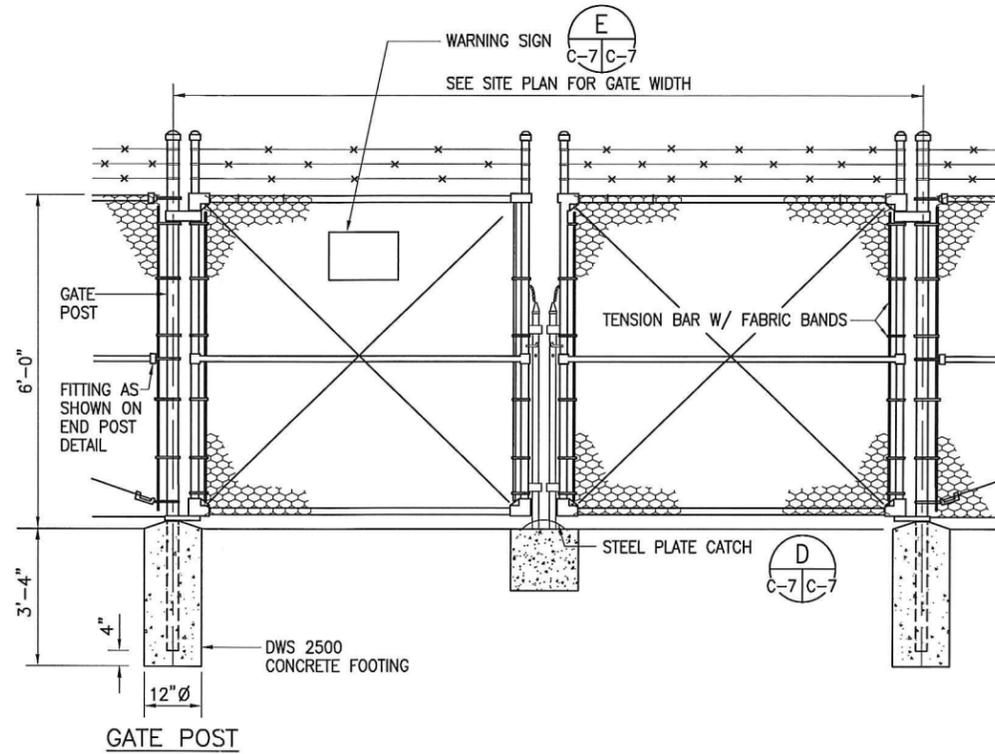
0 1 2  
LINE IS 2 INCHES AT FULL SIZE  
(IF NOT 2-INCHES : SCALE ACCORDINGLY)  
DWG. NO. **C-5**  
SHEET 9 OF 43

REVISION	DATE	BRIEF	MADE BY	APPROVED
<b>ATA AUSTIN, TSUTSUMI &amp; ASSOCIATES, INC.</b> ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII				
RFCF KEHALANI, LLC WAILUKU, MAUI, HAWAII				
WAILUKU WELL NO. 2 WELL DEVELOPMENT WAILUKU, MAUI, HAWAII				
<b>SITE PLAN - CONTROL VALVE STATION AT WAILUKU WELL NO. 1</b>				
DESIGNED BY LLA		DRAWN BY LLA		CHECKED BY IKN
APPROVED		APPROVED		DATE

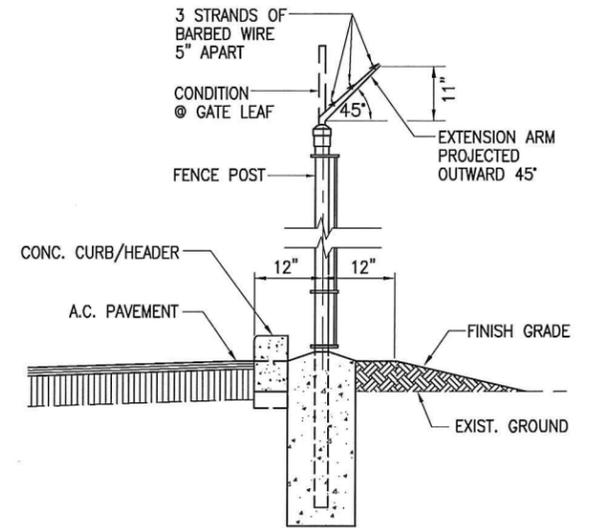
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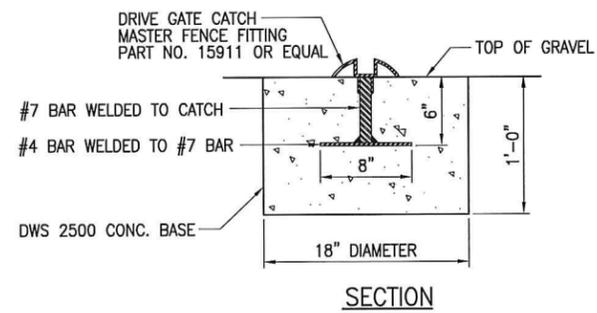
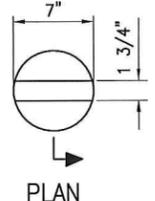
**CHAIN LINK FENCE DETAIL A**  
NOT TO SCALE



**CHAIN LINK GATE DETAIL B**  
NOT TO SCALE

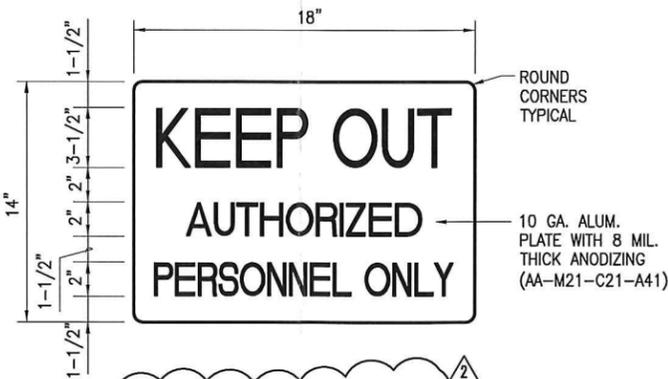


**TYPICAL DETAIL FOR EXTENSION ARM & BARBED WIRE C**  
NOT TO SCALE



**STEEL PLATE CATCH DETAIL D**  
SCALE: 1 1/2" = 1'-0"

- NOTES:**
1. PROVIDE 2 GATE STOPS, SIMILAR IN CONSTRUCTION AS GATE CATCH FOR DRIVE GATES WHEN FULLY OPEN.
  2. ALL MATERIALS SHALL BE HOT-DIPPED GALVANIZED UNLESS SPECIFIED OTHERWISE.



NOTE: FOUR SIGNS REQUIRED: ONE ON GATE AND ONE AT MID-SPAN OF OTHER THREE SIDES OF FENCING.

**WARNING SIGN TO BE MOUNTED ON FENCE E**  
NOT TO SCALE

**NOTES:**

1. FENCING MATERIAL SHALL BE OF GALVANIZED STEEL AS CALLED FOR IN THE SPECIFICATIONS.
2. POSTS, BRACES AND GATE FRAMES SHALL BE SCHEDULE 40 (STANDARD WEIGHT) PIPE. SIZES SPECIFIED ARE NOMINAL DIAMETER.
3. DOUBLE SWING GATE SHALL BE PROVIDED WITH TUBULAR PLUNGER BAR, 1 LOCK KEEPER, 1 LOCK KEEPER GUIDE, 2 LATCH FORKS, 2 FORK CATCHES, 1 CATCH FOR PLUNGER BAR AND 2 GATE STOPS.
4. PADLOCK AS APPROVED BY OWNER.
5. POSTS, CAPS AND OTHER NECESSARY FENCE FITTINGS SHALL BE AS MANUFACTURED BY THE FENCE MANUFACTURER, OR EQUAL, EXCEPT HINGES SHALL BE OF GALVANIZED STEEL.
6. POSTS SHALL BE SPACED EQUIDISTANT, BUT NOT MORE THAN 10' O.C.
7. POSTS IN CONCRETE FOOTING TO HAVE HEAVY COAT OF BITUMINOUS MASTIC.
8. SIGNS SHALL BE SAME AS TRAFFIC SIGNS WITH BLACK LETTERING AND BORDER ON WHITE BACKGROUND. 1/4" HOLES SHALL BE PUNCTURED IN EACH CORNER OF THE SIGN. #14 GAGE IRON TIE WIRE SHALL BE USED TO ATTACH THE SIGN TO THE CHAIN LINK FABRIC.

	8/28/14	ADD. NO. 2: ADDED NOTE	ATA	
	REVISION	DATE	BRIEF	MADE BY
<p><b>ATA AUSTIN, TSUTSUMI &amp; ASSOCIATES, INC.</b> ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII</p> <p>RCFC KEHALANI, LLC WAILUKU, MAUI, HAWAII</p> <p>WAILUKU WELL NO. 2 WELL DEVELOPMENT WAILUKU, MAUI, HAWAII</p> <p>MISCELLANEOUS CIVIL DETAILS - 2</p>				
DESIGNED BY LLA		DRAWN BY LLA		CHECKED BY IKN
APPROVED		APPROVED		
DWG. NO. C-7		DATE		
SHEET 11 OF 43		DATE		

## **APPENDIX B.**

# **Engineering Report for a New Drinking Water Source Wailuku Well No. 2**

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# ENGINEERING REPORT FOR A NEW DRINKING WATER SOURCE WAILUKU WELL NO. 2

Wailuku, Maui, Hawaii

March 2, 2015

Prepared for:

RCFC Kehalani, LLC  
c/o Dowling Company, Inc  
2005 Main Street  
Wailuku, Maui, Hawaii 96793



*Austin, Tsutsumi & Associates, Inc.*

Civil Engineers • Surveyors  
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Telephone: (808) 533-3646  
Facsimile: (808) 526-1267  
E-mail: [atahnl@atahawaii.com](mailto:atahnl@atahawaii.com)  
Honolulu • Wailuku • Hilo, Hawaii

---

**ENGINEERING REPORT**  
**FOR A NEW DRINKING WATER SOURCE**  
**WAILUKU WELL NO. 2**  
Wailuku, Maui, Hawaii

Prepared for

RCFC Kehalani, LLC  
c/o Dowling Company, Inc  
2005 Main Street  
Wailuku, Maui, Hawaii 96793

Prepared by

Austin, Tsutsumi & Associates, Inc.  
Civil Engineers • Surveyors  
Honolulu • Wailuku • Hilo, Hawaii

March 2, 2015



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3	GENERAL SITE PLAN
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- H PROFESSIONAL ENGINEER’S STATEMENT



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**ENGINEERING REPORT FOR A  
NEW DRINKING WATER SOURCE  
WAILUKU WELL NO. 2  
Wailuku, Maui, Hawaii**

**A. GENERAL INFORMATION**

**1. Project Description, Location and Phasing**

Wailuku Well No. 2, State Well No. 5230-05, is located in the Wailuku area on the Island of Maui. (See Exhibit 1, Vicinity Map.) The well is located within the Kehalani Mauka development above Old Wailuku Town on a portion of an undeveloped parcel. (See Exhibit 2, Photograph of Well Site.) Wailuku Well No. 2 is being developed by RCFC Kehalani, Inc., but will be dedicated to the County of Maui, Department of Water Supply (DWS) upon completion. The well will become part of DWS's existing Wailuku Water System. Wailuku Well No. 2 will pump water from the underlying Iao Aquifer.

Wailuku Well No. 2 is located at an approximate elevation of 613 feet mean sea level (msl). The well has been drilled and tested, and installation of the well pump and construction of the well piping is expected to commence before the end of 2014. The well is expected to produce 1,400 gallons per minute (gpm).

Another well being developed by DWS in the Kehalani development is Wailuku Well No. 1, State Well No 5230-04. A new control valve station at Well No. 1 will be constructed as part of the Wailuku Well No. 2 project to allow water from both wells to be combined at the Well No. 1 site. Water from both wells



would then be conveyed to DWS's existing Iao 3.0 Million Gallon (MG) tank via a new 16-inch waterline. (See Exhibit 3, General Site Plan.)

Wailuku Well No. 2 is located on a parcel identified by Tax Map Key (2) 3-5-001: Portion 067. (See Exhibit 4, Tax Map Key.) Well No. 1 is located on an undeveloped parcel identified by Tax Map Key (2) 3-5-001: Portion 100.

Both of these wells are being developed as a replacement water source in anticipation of the closure of Wailuku Shaft 33 (Well No. 5330-05) as part of DWS's continuing effort to create distance between the pumping operations within the Iao Aquifer System.

## **2. Communities Served**

Water from Wailuku Well No. 2 will be conveyed to DWS's existing 3.0 MG Iao Tank, which primarily services the nearby community of Wailuku.

## **3. Public Water System**

The public water system (PWS) number assigned by DOH is PWS # 212 Wailuku.

## **4. Conformance with Local Land Use Planning and Zoning Regulations**

Wailuku Well No. 2 is located within an undeveloped parcel that is currently planned for a future park as part of a residential subdivision. However, the land owner plans to designate the well site as "open space", which allows for pump houses, reservoirs and utility facilities. The land was previously classified as "Agricultural", but in 1991 was urbanized to Wailuku-Kahului Project District 3 (Wailuku). The owner is currently in the process of obtaining building permits for construction of the well site.

The well is not located within a Conservation District or within a Special Management Area. The site has been developed in conformance with local and state land use regulations.



**5. Well Owner and Land Owner**

The current well and land owner is:

RFCF Kehalani, LLC  
2005 Main Street  
Wailuku, Maui, Hawaii 96783

Upon completion of the well, the well will be dedicated to the County:

County of Maui, Department of Water Supply  
200 South High Street  
Wailuku, Maui, Hawaii 96793



## **B. PHYSICAL CHARACTERISTICS OF THE AREA**

### **1. Site Plan**

Exhibit 5 reflects the site plan showing Wailuku Well No. 2 and its associated components. The well site will include the well, a 100,000-gallon control tank and a control building.

### **2. Earthquake Consideration and Design Parameters**

Based on the 1997 Uniform Building Code, Wailuku Well No. 2 is located within Seismic Zone 2B. Within Seismic Zone 2B, a seismic factor (Z) equal to 0.2 is recommended for calculation of shear and lateral load imparted on structures during an earthquake.

### **3. Flood Problems**

The National Flood Insurance Program prints Flood Insurance Rate Maps (FIRMs) showing areas of flooding. The property is located within Panel 391 of 825, Map Number 150003039E, revised September 25, 2009. The well site area is designated as Zone X, areas determined to be outside the 0.2% annual chance floodplain.

There is a natural drainageway to the north of the project area. The approximate 100-year flood inundation limits for this drainageway were determined to be below the top of the bank of the drainageway, and therefore, flooding of the project from this drainageway site should not occur.

The well site is not located within the tsunami inundation zone.



## C. WELL INFORMATION

### 1. Well Coordinates, State Well Number and Tax Map Key Number

The coordinates for Wailuku Well No. 2 in WGS 84 are N 20° 52' 36.5", W 156° 30' 47.7". The coordinates in NAD 83 are N1692786.29 and E197425.04. Wailuku Well No. 2 is identified as State Well No. 5230-005 and is located in Tax Map Key (2) 3-5-001: Portion 067. (Refer to Exhibit 4, Tax Map Key.)

### 2. Well Cross Section

Exhibit 6 is a cross-sectional view of Wailuku Well No. 2. (See Appendix A for Well Completion Report, Part I.) Part II of the Well Completion Report is not available at this time, since the permanent pump has not yet been installed in the well.

### 3. Water Quality of Wells in the Area

A description of the closest wells in the vicinity of Wailuku Well No. 2 and the water use of the wells are described in Table 1. A summary of contaminants detected in the wells currently in use are included in Appendix B. (See Exhibit 7, Map of Wells in the Area.)



**Table 1. Water Quality of Wells in the Area**

<b>Well Name</b>	<b>State Well No.</b>	<b>Comments</b>
Iao Tank Well	5230-03	<ul style="list-style-type: none"><li>• Contributes to Wailuku water system.</li><li>• Produces drinking water that meets DOH drinking water requirements.</li></ul>
Shaft 33	5330-05	<ul style="list-style-type: none"><li>• Contributes to Wailuku water system.</li><li>• Produces drinking water that meets DOH drinking water requirements.</li><li>• Will be taken off-line when Iao Tank Well, Wailuku Well Nos. 1 and 2 and the Waikapu Tank Site Well are brought into full production.</li></ul>
Wailuku Well No. 1	5230-04	<ul style="list-style-type: none"><li>• Not in production yet.</li><li>• Will contribute to Wailuku water system.</li><li>• Produces drinking water that meets DOH drinking water requirements.</li></ul>
Waikapu Tank Site Well	5130-01	<ul style="list-style-type: none"><li>• Contributes to Wailuku water system.</li><li>• Produces drinking water that meets DOH drinking water requirements.</li></ul>
Waikapu Well 1	5131-01	<ul style="list-style-type: none"><li>• Exploratory well constructed in 1961.</li><li>• Not in use.</li></ul>
Waikapu Well 2	5130-02	<ul style="list-style-type: none"><li>• Exploratory well constructed in 1974.</li><li>• Not in use.</li></ul>
Mokuhau Well No. 1	5330-09	<ul style="list-style-type: none"><li>• Contributes to Wailuku water system.</li><li>• Produces drinking water that meets DOH drinking water requirements.</li></ul>
Mokuhau Well No. 2	5330-10	
Mokuhau Well No. 3	5330-11	

**4. Nature of Soil and Stratum within and Overlaying the Water Source**

Hawaii Geotechnical Consulting, Inc. prepared a report, "Geotechnical Investigation Report, Wailuku Well No. 2, Wailuku, Maui, Hawaii", dated February 15, 2014. The report includes information obtained from field work conducted on



January 5, 2014, where 2 auger borings were drilled – one at the proposed location of the control tank and one at the proposed location of the control building. The tank boring was drilled to a depth of 30.5 feet below the existing ground surface and the control building boring was drilled to a depth of 15.5 feet below the existing ground surface. The report states that the results of laboratory testing indicate that the site is underlain by more than 13 feet of potentially expansive hard alluvial silt and clay which is then underlain by alluvial sand and gravel to a depth of at least 31 feet. Groundwater was not encountered in either boring.

The following is a description of the subsurface conditions from the report:

#### Upper Alluvial Soil

A stratum of brown with light orange alluvial (water deposited) sandy clay was encountered at the control building location while a stratum of brown alluvial silty clay was encountered at the tank location. The sandy clay and silty clay, typically classified as MH and CH under the Unified Soil Classification System (USCS), respectively, were encountered between the ground surface and a depth of 13 feet at the tank location and 15 feet at the control building location. The alluvial clays were generally hard and moist.

#### Lower Alluvial Soil

Layers of brown with light orange grained alluvial silty sand and sandy gravel were encountered at the tank site below the upper alluvium. The lower silty sand and sandy gravel alluvium, typically classified as SM and GM, respectively, under the USCS was encountered between the depths of 13 and 30.5 below the ground surface. The coarse grained lower alluvium sands and gravels were generally medium dense (sandy gravel) to very dense (silty sand) and moist.



In addition to the geotechnical investigation report, information on the type of rock encountered during the drilling of the well is included in the Driller's Log in the well completion report. (Refer to Appendix A.) Soft to medium rock was encountered to a depth of 286 feet. Medium to hard rock and hard rock was found at depths between 286 feet and 566 feet. A layer of soft ratty rock was encountered between 566 and 597 feet below ground. Medium to hard rock and hard blue rock was encountered in the well to final depth of 720 feet.

## **5. Slope of Water Table**

The water level in Wailuku Well No. 2, which is at a ground elevation of 614 feet msl, was measured at 9.57 feet msl. The water level measured in Wailuku Well No. 1, which is at a ground elevation of 483 feet msl, is approximately 8.5 feet msl. The horizontal distance upgradient between the two wells is approximately 1,100 feet, which would indicate a significant water level drop of approximately 1.07 feet over the measured map distance of 1,100 feet, and which is considered unlikely. Two factors which could cause this apparent drop are: (1) error in survey measuring points due to inconsistent benchmarks; and; (2) the water level in Wailuku Well No. 1 is draw down by the continuous pumping of Shaft 33 at a rate of 5 mgd, due to the Shaft's close proximity to the well.

To determine a more realistic slope of the water table, Wailuku Well No. 2 is assumed to discharge at depth offshore with a 10-foot head drop over the distance. This results in a more expected slope of about one foot per mile.

## **6. Quality and Quantity of the Source Water**

Three pump tests have been performed for Wailuku Well No. 2. The first test was an open borehole pump test that was performed on February 20, 2014 in the 12-inch bore hole. The well was tested at 500 gpm to establish that 1,400 gpm could be achieved by the completed well. The second test was a step-drawdown test that was conducted on June 27, 2014, after completion of the well drilling. The well was tested at 970 gpm, 1405 gpm and 1765 gpm for 45



minutes each and the draw-down was measured at each pump rate. Specific conductance, chloride and temperature were also monitored during the test. The third test was the 96-hour constant rate test, which was conducted between July 14, 2014 and July 18, 2014. (See Appendix C for results of all three of the tests for Wailuku Well 2.)

Results of the constant rate pump test for Wailuku Well No. 2 indicate that the quality and quantity of the well water is excellent and that the well can produce the planned pump rate of 1400 gpm. The average pumping rate during the constant rate pump test was approximately 1430 gpm. The drawdown was less than three feet and the pumped water salinity chlorides were in the low 60s. (See Appendix C for Results of the Constant Rate Test of Wailuku Well 2.)

#### **7. Analysis of Source Water by DOH Certified Laboratories**

Water quality testing of the well was conducted twice. The first sample was obtained during the open borehole test on February 20, 2014. (See Appendix D for water quality analysis results.) The second sample was obtained on July 16, 2014 during the constant rate test. (See Appendix E for water quality analysis results.) All detected constituents of the water were below the maximum contaminant levels (MCLs) established by the State of Hawaii Department of Health (DOH). Table 2 gives a summary of detected water quality components in the water from Wailuku Well No. 2 for the two samples.



**Table 2. Summary of Detected Water Quality Components**

Water Quality Parameters	Sample Results		MCL	Units
	2/20/2014	7/16/2014		
Alkalinity in CaCO3 units	74	79	NR	mg/l
Alpha, Gross	3.7	ND	15	pCi/L
Barium, Total ICAP/MS	5.7	5.8	2000	µg/l
Calcium, Total, ICAP	30	29	NR	mg/l
Chromium, Total, ICAP/MS	2.5	1.8	100	µg/l
Fluoride	ND	0.057	4	mg/l
Gross Alpha + Adjusted error	6.3	ND	15	pCi/L
Nitrate as Nitrogen by IC	1.4	I	10	mg/l
Nitrate as NO3 (calc)	6.3	I	45	mg/l
Specific Conductance <sup>1</sup>	454	442	NR	µmho/cm
pH <sup>1</sup>	7.22	7.25	NR	units
Temperature <sup>1</sup>	71	70.3	NR	°F
Turbidity <sup>2</sup>	0.27	0.13		NTU

<sup>1</sup> Measured in the field by Tom Nance Water Resource Engineering, Inc.

<sup>2</sup> Turbidity is regulated by DOH for surface water sources only.

ND: Non Detectable

NR: Not Regulated by DOH

I: Results past hold time and are Invalid

In addition to the testing listed above, the water from Wailuku Well No. 2 was sampled and tested locally on July 14, 2014 for total coliform and E. coli. (See Appendix F for microbiological test results.) The test results show that the total counts were less than 1 per 100 ml.

The results of the water quality tests indicate that there were detected levels for some contaminants regulated by DOH. The levels of these contaminants are all significantly lower than the allowable MCLs. The exact source of these contaminants cannot be determined, however, possible sources of these contaminants could be as follows:



- Alpha/Gross Alpha – Alpha particles are a type of ionizing radiation ejected by the nuclei of some unstable atoms. The Gross Alpha measurement is an adjusted measure of alpha particles in the water, not including radon or uranium. Most drinking water sources have very low levels of radioactive contaminants (“radionuclides”), which are not considered to be a public health concern. Certain rock types have naturally occurring trace amounts of “mildly radioactive” elements.
- Barium – erosion of natural deposits and man-made products. Barium and its compounds are also used in automotive paints, stabilizers for plastics, bricks, tiles, lubricating oils, and in various types of pesticides.
- Chromium – erosion of natural deposits.
- Fluoride – erosion of natural deposits and/or discharge from agricultural chemicals.
- Nitrate – Nitrate, from both natural and human activities, is a common groundwater contaminant. Natural sources of nitrogen are animal manure and the breakdown of organically bound nitrogen in vegetation. As organic matter is oxidized, nitrogen is released primarily as nitrate. If the nitrate is not used by crops, nitrate accumulates in the soil and can leach into the groundwater. Nitrate can also enter the groundwater from discharge from agricultural chemicals and leaching fields associated with septic tanks.



## **D. EXISTING OR POTENTIAL SOURCES OF CONTAMINATION IN SWAP ZONES**

### **1. Extent of SWAP Zones Likely to Contribute Water to the Source**

The Safe Drinking Water Branch of DOH is the lead agency for development and implementation of Hawaii's Source Water Assessment Program (SWAP). The SWAP utilizes fixed distance and time of travel criteria for delineating individual zones within the assessment area for each well that supplies a public water system. The shape of the delineated internal zones is dependent on the hydrologic properties of the underlying aquifer (conductivity, porosity, and hydraulic gradient), the location of surrounding flow boundaries, and the characteristics of the well (e.g., depth of penetration and pumping rate).

There is currently no SWAP zone identified for Wailuku Well No. 2. However, Tom Nance Water Resource Engineering (TNWRE) has calculated 2-year and 10-year zones of contribution for the well, which are areas where aquifer contamination from surface sources could occur. (See Appendix G for TNWRE Memorandum.)

### **2. Type of Contaminants**

There are no commercial or industrial areas in the vicinity of the Wailuku Well No. 2. There is an area of land overlaying part of the 2-year travel zone that was previously used for sugar cane cultivation. (See Exhibits 8 and 9 for maps showing potential sources of contamination.) One possible type of contaminant may be agricultural chemicals from previously cultivated fields. However, dissolved fertilizer salts in normal groundwater concentrations are generally benign. There is currently no active agricultural activity in the vicinity of the well.

There is also a single-family residential development overlaying part of the 2-year travel zone. Contaminants associated with the residential area could be fertilizers used for landscaping around the house lots, and contaminants associated with septic tanks or cesspools. The single-family residences utilize



individual wastewater systems, e.g., septic tanks, for treatment of wastewater since the residences are not connected to the County's sewer system.

The majority of the land overlaying the zones of contribution for the well is within the West Maui Forest Reserve. Within the Forest Reserve, naturally occurring sources of contamination may be from animal waste, such as birds and pigs.

### **3. Distance to the Proposed Well**

The ground elevation at the well site is 614.77 feet mean sea level (msl) and the water level in the well was measured at elevation 9.57 feet msl. Therefore, any surface contaminants, such as agricultural chemicals and animal wastes, would need to travel more than 600 feet through the ground to reach the groundwater. The 600-foot+ depth to water provides filtering of contaminants during the vertical travel time down to groundwater. Some contaminants may still potentially reach the groundwater, as possibly indicated by the nitrate measured in the well and trace amounts of other chemicals. However, the levels of the constituents are well below the maximum contaminant level. Therefore, significant contamination of the well water is not anticipated.

### **4. Method of Disposal**

The potential sources of contamination within the neighboring area of Wailuku Well No. 2 are previously applied agricultural chemicals, fertilizers and animal wastes, and contaminants associated with septic tanks and leaching fields. These contaminants are surface sources or shallow subsurface sources, and are not expected to significantly contaminate the well water.

### **5. Sources of Contamination**

The principal recharge area for the aquifer is the high rainfall mountain region of the West Maui Forest Reserve, which is undeveloped forest land. Little or no contamination of the aquifer originates in this region. Wild pigs and other



animals may live in the forests, but contamination of the deep aquifer is not expected from animal wastes.

Potential sources of contamination are previously applied agricultural chemicals and fertilizers used for landscaping, and septic tanks and leaching fields.. There are plans to develop single-family residences as part of the Kehalani subdivision around the well site. However, as with the existing residential area, the only anticipated potential source of contamination from the future residences would be fertilizers used for landscaping. A piped drainage system within the future subdivision roadway would convey storm runoff from the subdivision away from the well site. At this time, there are no known future plans for commercial or industrial developments.

#### **6. USGS Map Showing Sources of Contamination**

Potential sources of contamination are shown in Exhibits 8 and 9. The maps show potential sources of contamination from previously cultivated sugar cane land and existing residential houses in the vicinity of Wailuku Well No. 2.

#### **7. Probability and Effect of Surface Drainage or Contaminated Underground Water Entering the Subject Water Source**

The well annulus has been grouted approximately 597 feet to an approximate depth of 18 feet msl. The solid casing extends approximately 645 feet to a depth of (-)30 feet msl. The grout and the solid casing will minimize surface drainage or contaminated groundwater from entering the well bore or percolating downward to the water table at the well site.

#### **8. Significant Factors Having Potential for Contaminating the Water Source**

Although there are potential sources of contamination (i.e., agricultural chemicals, leaching fields), and nitrate has been detected in the well water, significant contamination of the well water is not expected to occur, since the levels of all contaminants detected in the groundwater are well below the



maximum contaminant levels. The results of the water quality analysis indicate that the well water meets all drinking water regulations.

Direct contamination of the wells will be prevented by the grouted annulus and well seal at the top of the well. The depth to the water table is approximately 605 feet at the well, which further lessens the possibility of contamination.

## **9. Control Measures**

Control measures to prevent contamination of the well are designed into the well. The top 597 feet of annulus has been cement grouted and there is approximately 645 feet of solid casing that extends to an approximate elevation of (-)30 feet msl. In addition, the well discharge surface plate is mounted on a concrete pad, with the top of the pad being 18-inches above the finish grade at the well. These control measures will prevent surface drainage or contaminated groundwater from entering the well.



**E. PROPOSED TREATMENT WORKS**

This section is not applicable as treatment, other than disinfection of the groundwater, is not required.



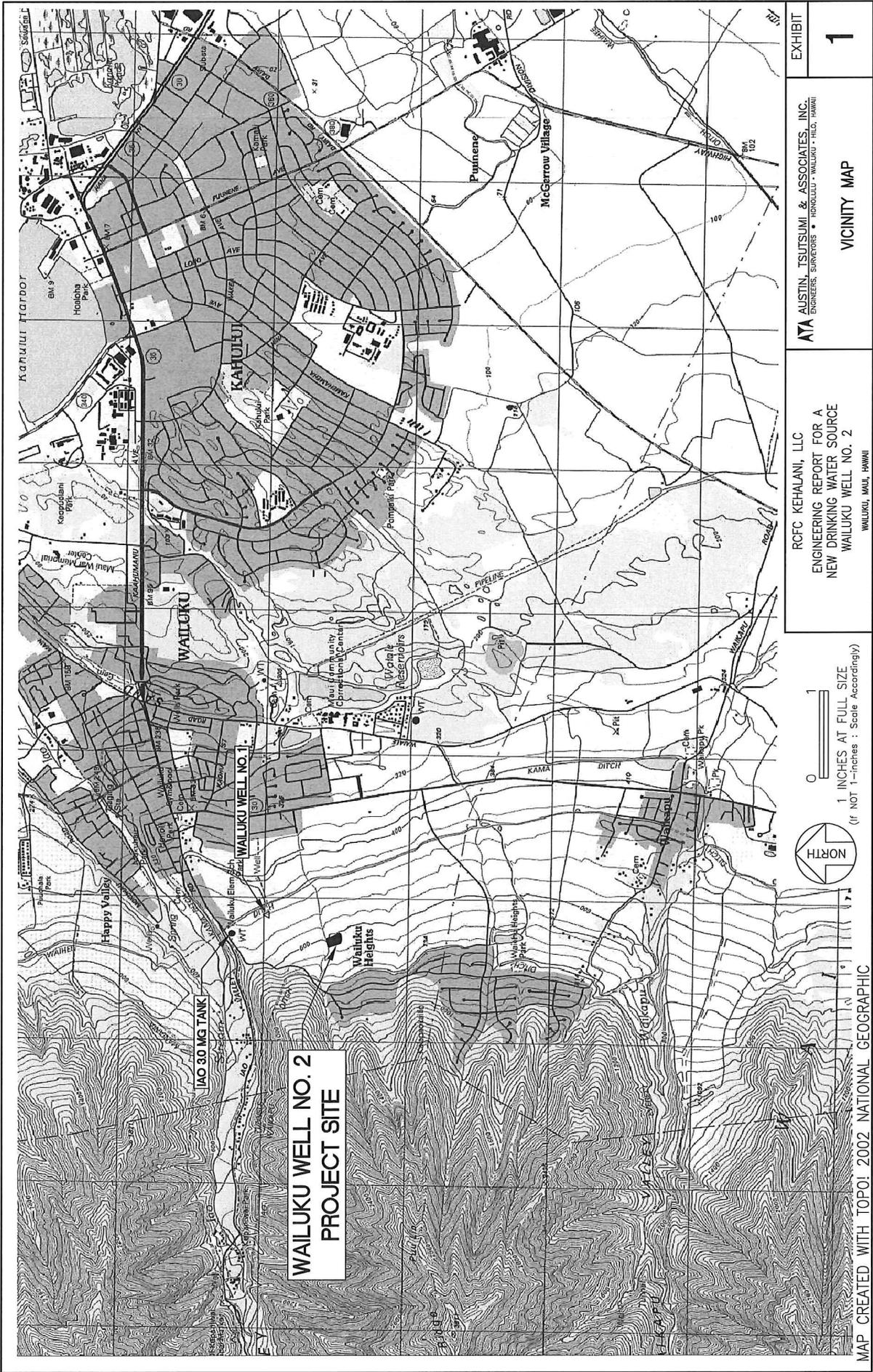
## **F. PROFESSIONAL ENGINEER CERTIFICATION**

This Engineering Report (ER) for Wailuku Well No. 2 has been prepared by Austin Tsutsumi & Associates, Inc. (ATA) pursuant to the State of Hawaii Department of Health (DOH) Public Health Regulation, Chapter 20 of Title 11, Administrative Rules, "Rules Relating to Public Water Systems," and in accordance with DOH's "Guidelines for Preparation of Engineering Reports for New Potable Water Sources", dated September 12, 2007. This ER was prepared by, or under the supervision of Lisa L. Appelgate, whose "Professional Engineer's Statement" is included in Appendix H.

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# EXHIBITS

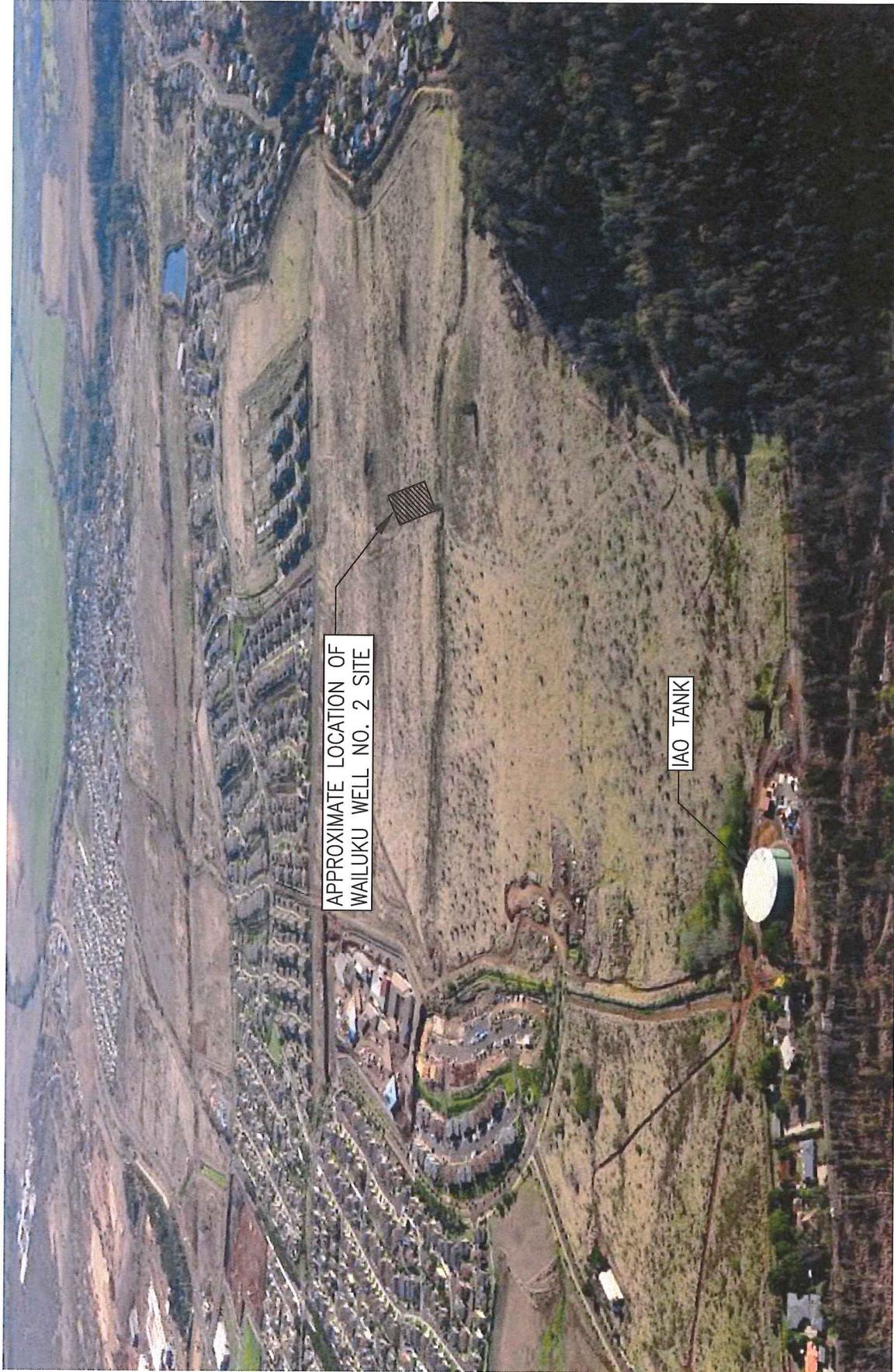
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MAP CREATED WITH TOPOI: 2002 NATIONAL GEOGRAPHIC

FILENAME: C:\WORK FILES\PROJECT FOLDERS\2013\3-324 - WAILUKU WELL #2\EXHIBITS\EXHIBIT 1 - VICINITY MAP.DWG Sep 16, 2014-11:07 AM

<p><b>AUSTIN, TSUTSUMI &amp; ASSOCIATES, INC.</b> ENGINEERS, SURVEYORS • HONOLULU • WAILUKU • HILO, HAWAII</p>	<p>RCFC KEHALANI, LLC ENGINEERING REPORT FOR A NEW DRINKING WATER SOURCE WAILUKU WELL NO. 2 WAILUKU, MAUI, HAWAII</p>	<p>EXHIBIT <b>1</b> VICINITY MAP</p>
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← TOWARDS WAILUKU



NOT TO SCALE

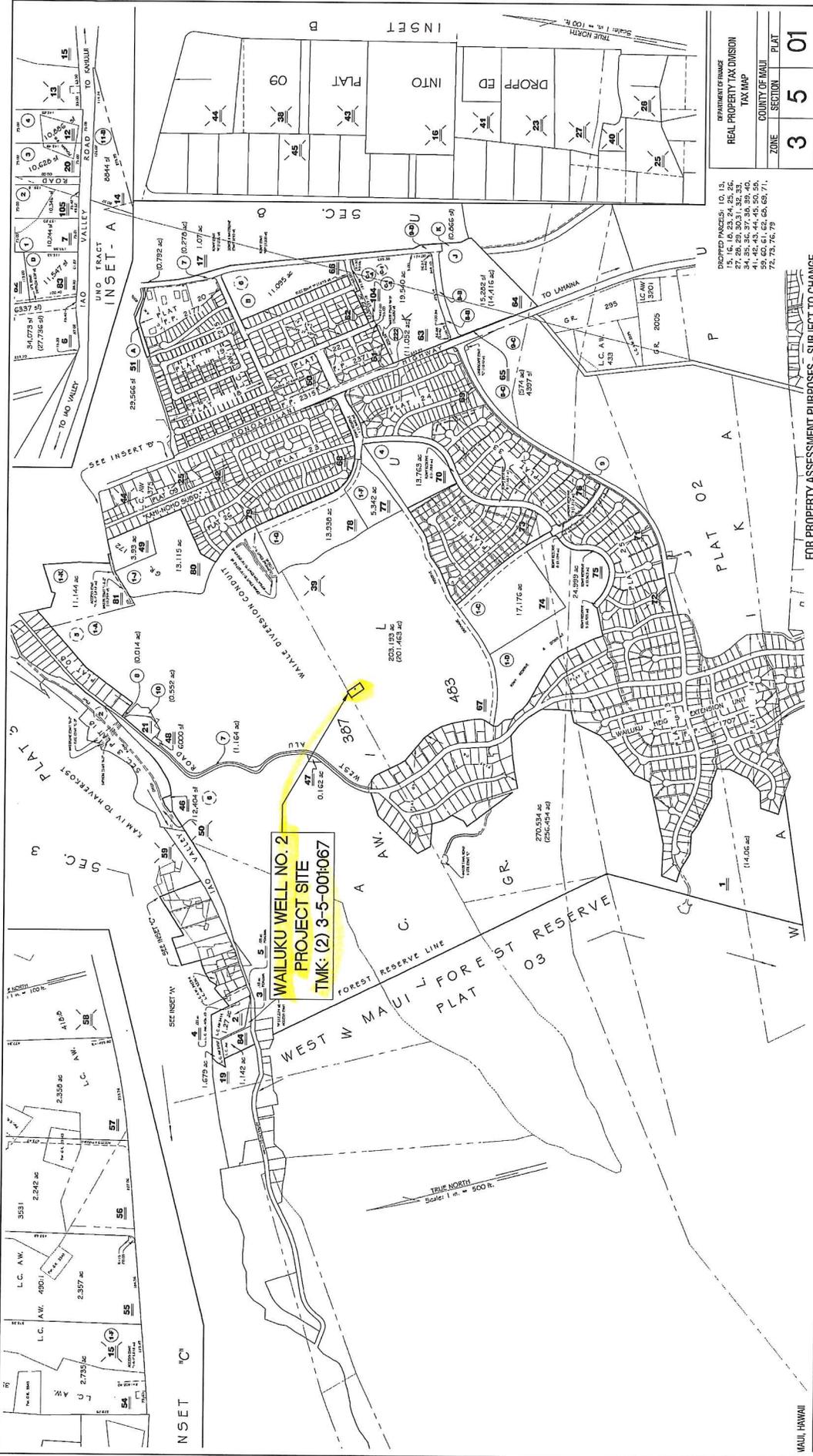
RCFC KEHALANI, LLC  
 ENGINEERING REPORT FOR A  
 NEW DRINKING WATER SOURCE  
 WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

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PHOTOGRAPH OF WELL SITE

EXHIBIT

2



DEPICTED PARCELS: 10, 13, 15, 16, 18, 23, 24, 25, 26, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 50, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 71, 72, 73, 76, 79

DEPARTMENT OF HAWAII  
REAL PROPERTY TAX DIVISION  
TAX MAP  
COUNTY OF MAUI  
ZONE SECTION PLAT  
3 5 01  
SCALE: 1 IN = 500'

FOR PROPERTY ASSESSMENT PURPOSES - SUBJECT TO CHANGE

MAUI, HAWAII

NORTH

SCALE: 1" = 1000'  
(If NOT 1-inches : Scale Accordingly)

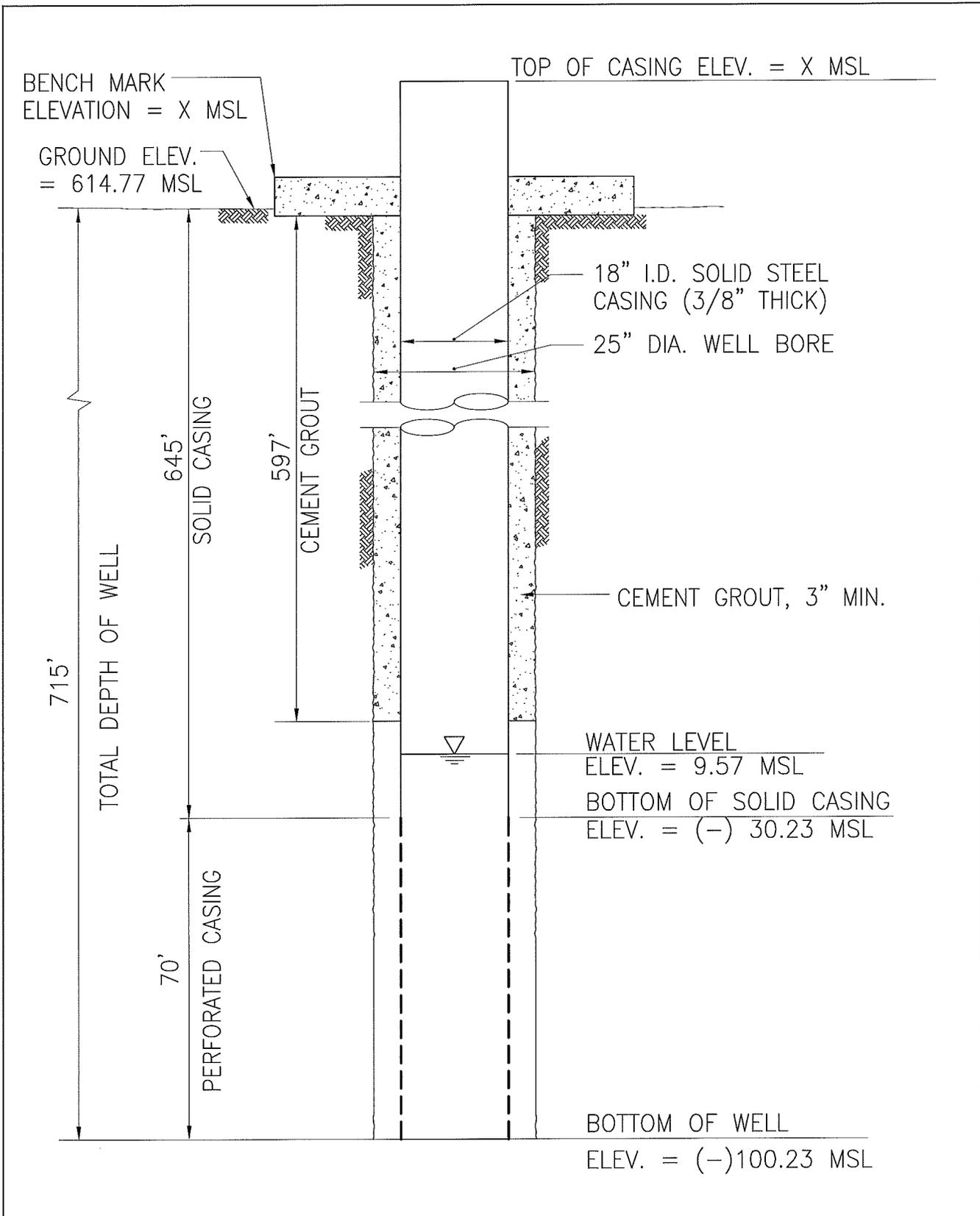
0 1  
1 INCHES AT FULL SIZE

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NEW DRINKING WATER SOURCE  
WAILUKU WELL NO. 2  
WAILUKU, MAUI, HAWAII

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EXHIBIT  
**4**  
TAX MAP KEY



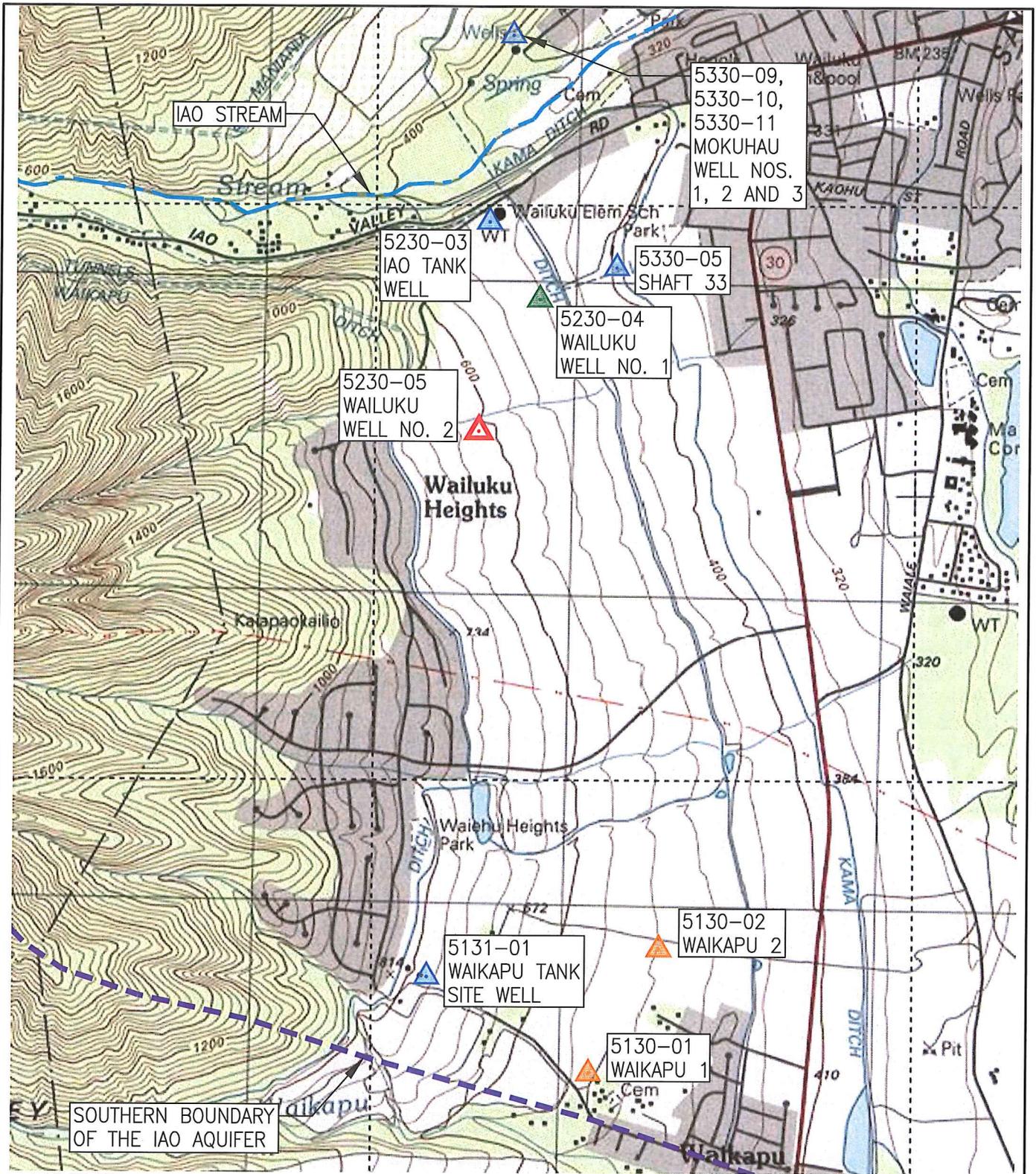


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 ENGINEERING REPORT FOR A  
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 WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

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**WELL NO. 2 SECTION**

EXHIBIT  
**6**



**LEGEND**

- ▲ PROJECT WELL – NOT YET IN PRODUCTION    ▲ EXIST. WELL
- ▲ DRILLED WELL – NOT YET IN PRODUCTION    ▲ DRILLED WELL – NOT IN USE



SCALE: 1' = 1500'

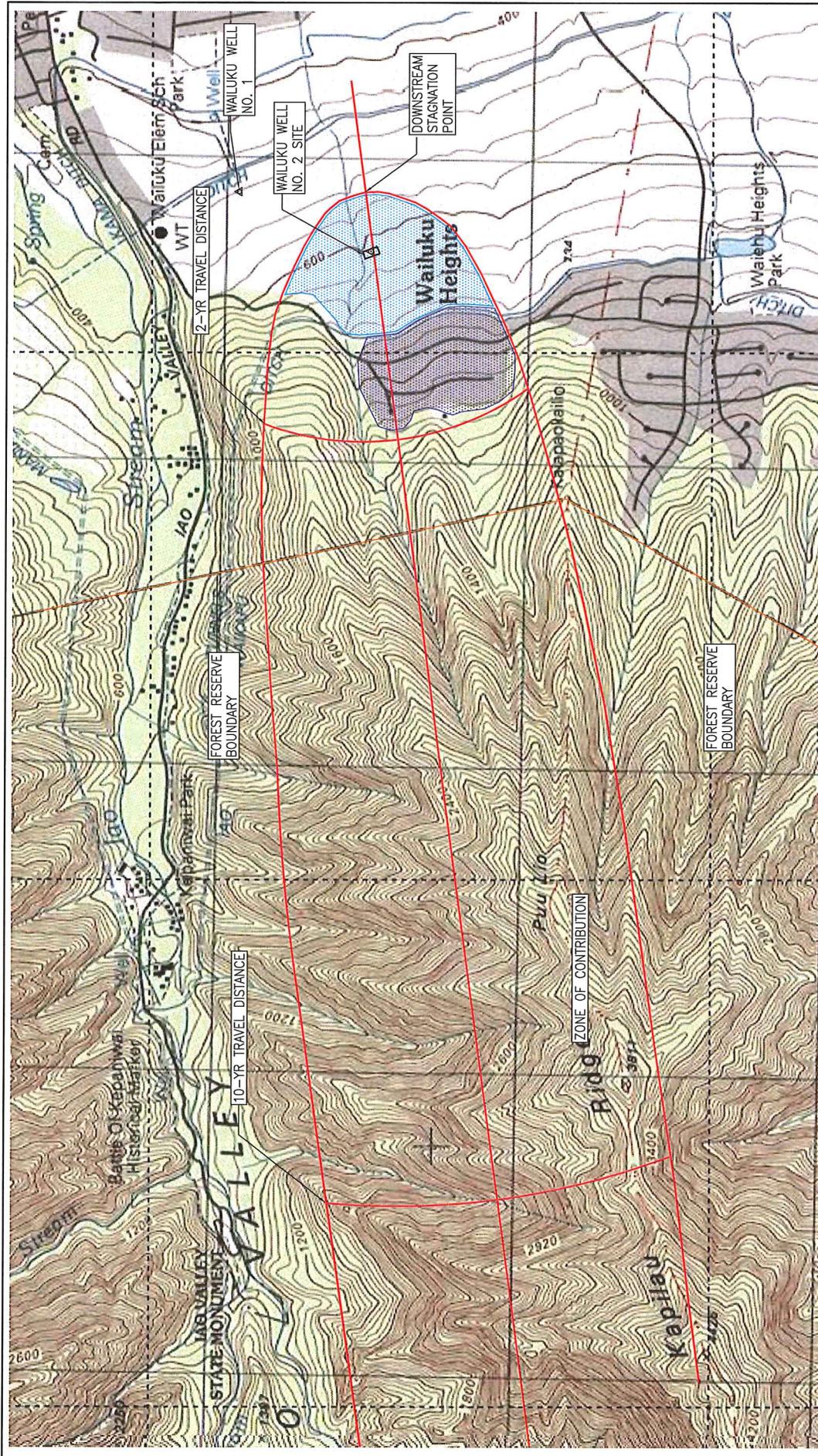
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 WAILUKU, MAUI, HAWAII

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EXHIBIT

**MAP OF WELLS IN THE AREA**

**7**



POTENTIAL AREAS OF CONTAMINATION:

- SINGLE-FAMILY RESIDENCES
- FORMER SUGAR CANE CULTIVATION

SCALE: 1" = 1000'  
 0 1  
 1 INCHES AT FULL SIZE  
 (if NOT 1-inches : Scale Accordingly)

NORTH

POTENTIAL SOURCES OF CONTAMINATION - USGS MAP

MAP CREATED WITH TOPOI, 2002 NATIONAL GEOGRAPHIC EXHIBIT

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 NEW DRINKING WATER SOURCE  
 WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

8



- POTENTIAL AREAS OF CONTAMINATION:
- SINGLE-FAMILY RESIDENCES
  - FORMER SUGAR CANE CULTIVATION

SCALE: 1" = 1000'  
  
 1 INCHES AT FULL SIZE  
 (If NOT 1--inches : Scale Accordingly)

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 WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

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POTENTIAL SOURCES  
 OF CONTAMINATION – AERIAL MAP

REF: GOOGLE EARTH  
 EXHIBIT





STATE OF HAWAII  
DEPARTMENT OF HEALTH  
SAFE DRINKING WATER BRANCH  
919 ALA MOANA BLVD., ROOM 308  
HONOLULU, HI 96814-4920

In reply, please refer to:  
File: SDWB  
5230-05F.docx

April 28, 2015

Mr. David Taylor, P.E.  
Director  
Department of Water Supply  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793-2155

Dear Mr. Taylor:

SUBJECT: ENGINEERING REPORT FOR NEW DRINKING WATER SOURCE  
WAILUKU WELL NO. 2  
STATE WELL NO. 5230-05  
WAILUKU, MAUI, HAWAII

We would like to acknowledge receipt of the engineering report for Wailuku Well No. 2 (report dated: March 2, 2015). The Safe Drinking Water Branch (SDWB) has completed its review and has determined that the engineering report is satisfactory.

The Department of Health (DOH) SDWB hereby grants conditional approval for the use of the Wailuku Well No. 2 as a drinking water source for a public water system. In its operation of Wailuku Well No. 2, the County of Maui, Department of Water Supply (DWS) shall be subject to the following conditions:

1. A final and complete engineering report (1 copy) addressing all prior comments shall be provided to the SDWB in ".pdf" format (hard copy previously provided). This new policy has been incorporated into the newly revised "Guidelines for Preparation of Engineering Reports for New Drinking Water Sources For Regulated Public Water Systems," dated September 12, 2007.
2. Prior to commencing operation, the Wailuku Well No. 2 shall be equipped with properly installed sampling taps.
  - a. The well shall be equipped with a sampling tap prior to any treatment, to allow for the sampling of the raw, untreated water from each individual well.
  - b. Another sampling point, representative of the combined flow from both Wailuku Well No. 1 and Wailuku Well No. 2, after all treatment, at the entry point to the distribution system (i.e., prior to any service connection)

shall be installed and clearly identified. Prior to installation, construction plans shall be submitted to the SDWB for review and approval in order to ensure the satisfactory placement of the sampling tap which will be utilized as the primary compliance monitoring point for both wells, unless otherwise indicated.

Clearly labeled, digital photos with dates imprinted must be provided to document that the above requirements have been met.

3. The Wailuku Well No. 2 shall deliver drinking water of the quality in compliance with Hawaii Administrative Rules (HAR), Chapter 11-20, "Rules Relating to Public Water Systems." The water quality shall be subject to verification by the SDWB.
4. The DWS, in its operation of the Wailuku Well No. 2, shall comply with all other relevant provisions of HAR Chapter 11-20.
5. The DWS shall notify the SDWB of any condition that may arise or be revealed which may contaminate the source and pose a threat to human health.
6. Immediately prior to, or upon startup, the Wailuku Well No. 2 shall be retested (at the same detection level used in the original analyses) to confirm the presence of Nitrate as Nitrogen.

Please note that pH, Temperature, and Conductivity must be measured at the well head using EPA-approved methods, at the same time that the required samples are collected.

All of the laboratory analyses must be performed by a laboratory certified or approved by the State Laboratories Division (DOH-SLD), using EPA-approved methods for drinking water.

These results are to be submitted to the SDWB along with copies of the chain of custodies and laboratory reports for the contaminants specified in the preceding paragraphs no later than sixty (60) days after the startup of the wells. The submittal shall be clearly labeled as "Wailuku Well No. 2 Confirmation Testing Results."

7. Water quality data is valid for five (5) years from the sampling date. If any water quality data expires (i.e., exceeds the five year time period) prior to start-up of the well, the well shall be retested for the expired contaminants.

8. The DWS shall notify the SDWB of the planned source activation date in writing, at least ten (10) days in advance. This will help the SDWB incorporate the source into its monitoring schedules. A sample New Source Activation Letter is enclosed for your use.
9. In accordance with HAR Section 11-20-12(h)(20), the DWS shall be responsible for performing the following initial monitoring of Wailuku Well No. 2:
  - One (1) initial sample for inorganic chemicals,
  - Two (2) initial consecutive quarterly samples for organic chemicals, and
  - Four (4) initial consecutive quarterly samples for radionuclides. *Note: non-detection of radionuclides (gross alpha, gross beta, radium 226, radium 228 and uranium) in the first two quarters allows the DWS to apply for a waiver from the requirement to sample the two final quarters.*

All of the above analyses shall be performed by a laboratory certified or approved by the DOH-SLD, using EPA-approved methods. The chain of custodies and laboratory reports shall be submitted to the SDWB no later than ten (10) days after the end of each quarterly period (i.e., January – March data due on April 10, April – June data due on July 10, July – September data due on October 10, and October – November data due January 10). The submittal shall be clearly labeled as “Wailuku Well No. 2 Initial Chemical Testing.”

Initial quarterly monitoring samples shall be collected at the existing EPD.

Please refer to the enclosure for the specific list of contaminants to be tested.

10. Hawaii Revised Statutes, Section 340E-24, requires suppliers of water to notify the SDWB, in writing, of any previously undetected chemical contaminant found in a source of drinking water, within seven (7) days of the positive detection.
11. The DWS must sample and analyze the Wailuku Well No. 2 for all required contaminants that are not analyzed by the DOH-SLD. Please contact Zhaohui Wang of the SDWB Compliance and Enforcement Section for more information.
12. Prior to activation of the Wailuku Well No. 2, the DWS shall submit water quality data and well information to demonstrate that Wailuku Well No. 2 is similar in water chemistry to all existing sources in the DWS water system or upon activation of the Wailuku Well No. 2, the Wailuku (PWS 212) water system shall return to standard lead and copper monitoring every six months in accordance

Mr. David Taylor, P.E.  
April 28, 2015  
Page 4

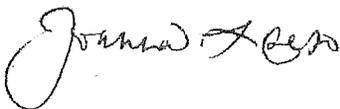
with 40 CFR 141.86(d)(4)(vii). The submitted water quality data and well information shall reference "Wailuku Water System (PWS 212) Requesting Review of Lead & Copper Monitoring Requirement."

Water quality data and well information shall include all available pH, alkalinity, calcium, magnesium and total dissolved solids data, a map showing the location of Wailuku Well No. 2 in relation to all existing wells, and the aquifer and well depth for each well. The PWS shall include a comparison of all data and preliminary determination that the new well is similar in water chemistry to all existing sources in the PWS water system. The submittal of data in only a laboratory report format and partial submittals are not acceptable and will not be reviewed. Upon review of the submitted information, the SDWB will render a decision on the lead and copper monitoring schedule for the Wailuku water system. Please contact Jennifer Nikaido of the SDWB Engineering Section for more information.

The SDWB reserves the right to suspend or revoke this conditional approval upon either a finding of violation on any of the above conditions or a determination of a threat to public health from factors which may arise in the future.

If there are any questions, please call Ms. Jennifer Nikaido of the SDWB Engineering Section at (808) 586-4258.

Sincerely,



JOANNA L. SETO, P.E., CHIEF  
Safe Drinking Water Branch

JN:cb

Enclosures

c: Ms. Lisa Appelgate, Austin, Tsutsumi & Associates, Inc., via e-mail, w/enc.  
([lappelgate@atahawaii.com](mailto:lappelgate@atahawaii.com))

Ms. Cari Sumabat, Maui DWS, via e-mail, w/enc. ([cari.sumabat@co.maui.hi.us](mailto:cari.sumabat@co.maui.hi.us))  
SDWB Monitoring Section  
SDWB Compliance Section

Ms. Joanna Seto, P.E. Chief  
Department of Health  
Safe Drinking Water Branch  
919 Ala Moana Boulevard, #308  
Honolulu, HI 96814

NEW SOURCE ACTIVATION LETTER

Dear Ms. Seto:

SUBJECT: PUBLIC WATER SYSTEM (PWS) NO. 212, WAILUKU  
ACTIVATION OF WAILUKU WELL NO. 2, STATE WELL NO. 5230-05

The DWS would like to inform the Department of Health, Safe Drinking Water Branch that the Wailuku Well No. 2, State Well I.D. no. 5230-05 will be activated on \_\_\_\_\_ (date). This written notification is in accordance with the April 28, 2015, letter from the Department of Health granting conditional approval to use this source.

We would like to request SDWIS facility IDs and sample point IDs for the source and the entry-point-to-distribution-system (EPD) as follows:

	Source	EPD
Facility Name:	Wailuku Well No. 2	_____ (e.g., Iao Tank chlorinator)
Facility ID no.:	_____(a)	_____(a)
Sampling Pt. Location:	Wellhead	_____
Sample Pt. ID no.:	_____(a)	_____(a)

Note: (a) DOH will assign this number

Initial monitoring will be conducted at the new EPD.

If you have any questions on this new source activation, please call \_\_\_\_\_  
(contact person).

Sincerely,

\_\_\_\_\_

**INITIAL QUARTERLY MONITORING (IQM) FOR NEW SOURCES -** Effective 1/1/10  
**CHEMICAL AND RADIOLOGICAL CONTAMINANTS** revised 7/3/13  
**(required to be monitored for by the water purveyor)**

These monitoring requirements pertain to a NEW source that has been approved through new source monitoring, and has been activated.

**INORGANIC CHEMICALS** (1 sample)

Contam Contaminant

code

1074 Antimony  
 1005 Arsenic  
 1094 Asbestos <sup>a</sup>  
 1010 Barium  
 1075 Beryllium  
 1015 Cadmium  
 1020 Chromium  
 1022 Copper  
 1024 Cyanide  
 1025 Fluoride  
 1030 Lead  
 1035 Mercury  
 1036 Nickel  
 1040 Nitrate (as N)  
 1041 Nitrite (as N)  
 1045 Selenium  
 1085 Thallium

<sup>a</sup> One sample must be collected in the distribution system, at a tap served by asbestos-cement pipe.

**ORGANIC CHEMICALS** (2 consecutive quarterly samples)

**Volatile Organic Chemicals**

2981 1,1,1-Trichloroethane (TCA)  
 2985 1,1,2-Trichloroethane  
 2977 1,1-Dichloroethylene  
 2378 1,2,4-Trichlorobenzene  
 2980 1,2-Dichloroethane (EDC)  
 2983 1,2-Dichloropropane (DCP)  
 2990 Benzene  
 2982 Carbon Tetrachloride (CTC)  
 2989 Chlorobenzene  
 2380 cis-1,2-Dichloroethylene  
 2964 Dichloromethane  
 2992 Ethylbenzene  
 2968 o-Dichlorobenzene  
 2969 p-Dichlorobenzene  
 2996 Styrene  
 2987 Tetrachloroethylene  
 2991 Toulene  
 2979 trans-1,2-Dichloroethylene  
 2984 Trichloroethylene (TCE)  
 2976 Vinyl Chloride  
 2955 Xylenes (total)

**Synthetic Organic Chemicals**

2931 1,2-Dibromo-3-Chloropropane (DBCP)  
 2946 Ethylene Dibromide (EDB)  
 2414 1,2,3-Trichloropropane (TCP)  
 2110 2,4,5-TP  
 2105 2,4-D  
 2051 Alachlor (Lasso)  
 2050 Atrazine  
 2306 Benzo(a)pyrene  
 2046 Carbofuran  
 2959 Chlordane  
 2031 Dalapon  
 2035 Di(2-ethylhexyl)adipate  
 2039 Di(2-ethylhexyl)phthalate  
 2070 Dieldrin  
 2041 Dinoseb  
 2063 Dioxin (2,3,7,8-TCDD)  
 2032 Diquat  
 2033 Endothall  
 2005 Endrin  
 2010 Gamma-BHC (Lindane)  
 2034 Glyphosate  
 2065 Heptachlor  
 2087 Heptachlor Epoxide  
 2274 Hexachlorobenzene  
 2042 Hexachlorocyclopentadiene  
 2015 Methoxychlor  
 2036 Oxamyl (Vydate)  
 2326 Pentachlorophenol  
 2040 Picloram  
 2383 Polychlorinated biphenyls (PCBs)  
 2037 Simazine  
 2020 Toxaphene

**RADIONUCLIDES** (4 consec. quarterly samples)

4109 Gross alpha particle activity  
 4100 Gross beta particle activity  
 4020 Radium 226  
 4030 Radium 228  
 4006 Uranium

**Notes:**

-Unless otherwise stated, samples must be collected at the entry-point-to the distribution system, after source treatment.

- All analyses must be performed by a lab certified or approved by the Hawaii Department of Health, State Laboratories Division.

-All analyses must be performed using EPA approved methods for drinking water analysis. The EPA method & detection levels must be clearly stated for each contaminant tested.

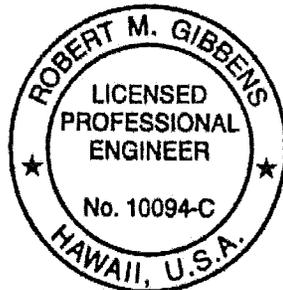
# **APPENDIX C.**

## **Geotechnical Investigation Report Wailuku Well No. 2 Wailuku, Hawai'i**

**GEOTECHNICAL INVESTIGATION REPORT  
WAILUKU WELL NO. 2  
WAILUKU, MAUI, HAWAII**

A report by:  
**HAWAII GEOTECHNICAL CONSULTING, INC.**

February 15, 2014



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

A handwritten signature in black ink, appearing to be "R. M. Gibbens", written over a horizontal line.

SIGNATURE

04/30/2014

EXPIRATION DATE  
OF LICENSE

# Hawaii Geotechnical Consulting

- Incorporated -

P.O. Box 331223 • Wailuku, Hawaii 96733 • Phone (808) 205-1727

February 15, 2014  
File No. 14004.01

**Mr. Brian Ige**  
RCFC Kehalani, LLC  
c/o Dowling Company, Inc.  
2005 Main Street  
Wailuku, Hawaii 96793

Subject: **GEOTECHNICAL INVESTIGATION REPORT FOR  
WAILUKU WELL NO. 2  
WAILUKU, MAUI, HAWAII**

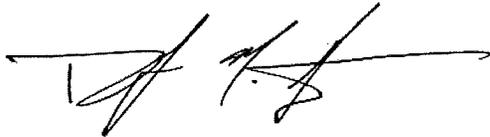
Dear Mr. Ige:

We are pleased to submit our Geotechnical Investigation Report for the proposed Wailuku Well No. 2 project in Wailuku, Maui, Hawaii. The enclosed report describes our investigation and presents our geotechnical recommendations for earthwork, foundation, and pavement design.

We appreciate the opportunity to work with you on this project. If you should have any questions or require additional information, please contact us.

Sincerely,

**HAWAII GEOTECHNICAL CONSULTING, INC.**



Robert M. Gibbens, P.E.  
Senior Geotechnical Engineer

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Figure 1 Boring Location Plan

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Appendix A Field Exploration

Figure A1 USCS Soil Classification Chart

Figure A2 Log of Test Boring 1

Figure A3 Log of Test Boring 2

Appendix B Laboratory Testing

Figure B1 Plasticity Index

## EXECUTIVE SUMMARY

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The proposed tank site is located within the Kehalani building corridor, just north of the Villas at Kehalani subdivision in Wailuku, Maui, Hawaii. The previously graded, relatively level proposed site is roughly rectangular and 165 by 80 feet in plan area. The proposed construction includes the construction of a new, 100,000 gallon, 31 foot diameter by 20 foot tall steel and fused glass water tank. In addition, an 18 by 46 foot single story CMU walled control building is planned. No additional site grading is required.

Our subsurface investigation and the results of our laboratory testing indicate that the site is underlain by more than 13 feet of potentially expansive hard alluvial silt and clay which is then underlain by alluvial sand and gravel to a depth of at least 31 feet. Plasticity indices ranged from 22 at the control building site to 29 at the tank site, indicating a high moderate swell potential at the tank site and a low moderate swell potential at the control building site.

Our analysis indicates swell potentials of as much as 5 percent yielding vertical movements of as much as 3 inches is possible at the tank site based on their current moisture contents. In order to minimize the tank sites swell potential, we recommend that a combination of the removal and replacement of at least 18 inches of the potentially expansive soil along with moisture conditioning the subgrade below the overexcavation to at least 3 to 5 percent above the soils optimum moisture content. We believe that the tank sites swell potential can be reduced to less than 1 percent through the implementation of our recommendations.

We believe that a shallow strip footing foundation and slab on grade floor system bearing directly on compacted non-expansive fill should provide adequate support for the proposed tank provided the tank subgrade is prepared as outlined

in this report. We believe that a shallow spread footing type foundation and slab on grade floor system bearing directly on at least 12 inches of moisture conditioned subgrade soils should provide adequate support for the proposed control building provided the control building subgrade is prepared as outlined in this report.

## SUMMARY OF RECOMMENDATIONS

Design Item	Recommendations/ Site Conditions	Reference Report Page No.
<b>Foundations (both sites):</b>		
Footing Bearing Pressure (psf)	3,000	12
Passive Lateral Resistance (pcf)	275	13
Coefficient of Friction	0.40	14
Foundation Type	Strip/Spread Footings	12/13
<b>Slabs (both sites):</b>		
Concrete Slabs/Building Floors	Bearing on compacted Aggregate for Untreated Base	14
<b>Foundation Preparation:</b>		
Tank Site	18 inches of non-expansive fill under slab and footings plus 12 inches of moisture conditioning of the subgrade below the non-expansive fill	12
Control Building Site	12 inches moisture conditioning of the subgrade below the slab and footings	13
<b>Project Site Conditions:</b>		
Existing Fill	3 to 6 feet	3
Groundwater Depth	None	8
Existing Underground Structures	None	--
Existing Aboveground Structures	None	--
Notes:		

# 1. INTRODUCTION

---

## 1.1 Authorization

Hawaii Geotechnical Consulting, Inc. (HGC) was retained by Mr. Brian Ige of Dowling Company, Inc. to conduct a geotechnical investigation for the proposed Wailuku Well No. 2 project in Wailuku, Maui, Hawaii. The scope of our services was outlined in our October 8, 2013 proposal No. P-286.

Authorization to proceed was received via a signed proposal by Mr. Adam Zoger on November 4, 2013.

## 1.2 Purpose and Scope

The purpose of this geotechnical investigation was to explore and evaluate the site's subsurface conditions in order to provide geotechnical recommendations for the proposed project's design and construction. The site's groundwater conditions and IBC seismic design criteria were also addressed. A description of the scope of work is presented below:

*Phase 1 – Field Investigation.* A total of 2 auger borings were drilled with a Mobil B-53 truck mounted drill rig. Four-inch solid stem augers were used to penetrate the underlying soils. The tank boring was drilled to a depth of 30.5 feet below the existing ground surface while the control building boring was drilled to a depth of 15.5 feet below the existing ground surface. A senior engineer with Hawaii Geotechnical Consulting, Inc. observed and directed the boring investigation, maintained a log of the subsurface soils encountered, and collected relatively undisturbed drive and disturbed grab samples for laboratory testing. A description of the field exploration and the Logs of Test Borings are presented in Appendix A. The boring locations are presented on the Boring Location Plan, Figure 1.

*Phase 2 – Laboratory Testing.* Laboratory tests were performed on drive and grab samples obtained during our field investigation. Laboratory tests were selected to verify field classifications and provide geotechnical parameters for use in design. Testing consisted of in-place moisture content and dry density, gradation, and Atterberg limit tests. The laboratory test results are presented on the Logs of Borings in Appendix A while the laboratory test methods are described in Appendix B.

*Phase 3 – Geotechnical Analysis.* The water tank foundation was analyzed for bearing capacity and settlement using Terzaghi's bearing capacity equation and Peck's settlement equations. The July 29, 2013 Wailuku Well No. 2 Drilling plans by Austin, Tsutsumi & Associates, Inc. were used in our analysis.

*Phase 4 – Geotechnical Report.* This report was prepared to present our findings, conclusions, and recommendations regarding the geotechnical feasibility for the proposed water tank. Our report describes our field investigation and the site's general subsurface conditions. Discussions regarding critical geotechnical design issues and problem areas, if encountered, are presented. The report provides design level recommendations for the tank foundation as well as construction considerations for tank grading.

### 1.3 Site Location

The proposed tank site is located on the western flank of Haleakala, just southwest of the southern end of Kamaole Road in Wailuku, Maui, Hawaii. The site is bounded by undeveloped agricultural and pasture land in each direction.

The project consists of the construction of a new 100,000 gallon water tank and a control building at the Wailuku Well No. 2 site. The water tank will consist of a 31 foot diameter by 20 foot tall steel and fused glass circular tank founded on a concrete slab on grade foundation. The control building will consist of an 18 by 36 foot single story CMU walled building with a wooden joist roof.

1.4 Site Description and Conditions

The tank site is located within the undeveloped Kehalani project area, directly north of the Villas at Kehalani subdivision project. The site has recently been graded to a relatively level pad, with 1 to 4 foot cuts visible along its western boundary and 3 to 6 foot fills visible along its eastern boundary. The tank pad varies from Elev. 612 to 613. The pads surface is currently bare with a 12x16 foot excavated pit observed near the pads northeastern quadrant.

---

END OF INTRODUCTION

## 2. PROJECT DESIGN CONSIDERATIONS

---

The following sections describe our understanding of the relevant project considerations. Our understanding is based on the 2013 project plans. If final construction plans differ significantly, we should be notified in order to review the applicability of our recommendations.

### 2.1 Proposed Project/Development Plans

We understand that the proposed project will include the construction of a new water tank. A 100,000 gallon steel and fused glass water tank is planned within the 165 by 80 foot Wailuku Well No. 2 site. The proposed tank will be 31 feet in diameter and 20 feet tall. In addition to the tank, a single story 18 by 46 foot CMU walled control building is planned. .

We understand that a shallow strip footing foundation and concrete slab on grade floor is planned for the tank while a shallow concrete slab on grade foundation is planned for the control building.

### 2.2 Grading

When drilling was completed the well site had already been mass graded to a relatively level pad. No additional grading is anticipated.

---

END OF PROJECT DESIGN CONSIDERATIONS

### 3. SUBSURFACE INVESTIGATION

---

On January 5, 2013, a subsurface investigation was performed at the proposed tank site. The following sections describe our investigation.

#### 3.1 Auger Borings

A total of 2 auger borings were drilled with a Mobile B-53 truck mounted drill rig. One boring was located within the proposed tank footprint while another was located within the proposed control building footprint. The tank boring was drilled to a depth of 30.5 feet below the existing ground surface while the control building boring was drilled to a depth of 15.5 feet below the existing ground surface.

Four-inch solid stem augers were used to penetrate the site's subsurface soils. An engineer with HGC observed and directed the boring investigation, maintained a log of the subsurface soils encountered, and collected relatively undisturbed drive and disturbed grab samples for laboratory testing. Samples were obtained at locations determined during the field investigation. The materials encountered in the test borings are shown on the Log of Test Borings in Appendix A. A Soil Classification Chart can also be found in Appendix A.

While penetrating the subsurface soils, relatively undisturbed drive samples were obtained with a California test sampler. The California sampler consisted of a 3-inch O.D. split barrel shaft housing 6-inch long brass sample recovery sleeves. At each test location, the split barrel sampler was driven a total of 18 inches, in three 6-inch increments, with a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the last 12 of 18 inches is termed the blow count and is recorded on the boring logs. Driving was stopped when greater than 50 blows were recorded for any 6-inch increment. When driving was

stopped short of 18 inches, the number of blows required for the indicated penetration was recorded.

### 3.2 Laboratory Testing

Laboratory tests were performed on drive and grab samples obtained during the field investigation. Laboratory tests were selected to verify field classifications and provide geotechnical parameters for use in design. Testing consisted of in-place moisture content and dry density, gradation, and Atterberg limit tests. The laboratory test results are presented on the Logs of Borings in Appendix A. The laboratory test methods are described in Appendix B.

---

END OF SUBSURFACE INVESTIGATION

## 4. SUBSURFACE CONDITIONS

---

The following sections describe the subsurface soil and groundwater conditions encountered during our field investigation.

### 4.1 Upper Alluvial Soil

A stratum of brown with light orange alluvial (water deposited) sandy clay was encountered at the control building location while a stratum of brown alluvial silty clay was encountered at the tank location. The sandy clay and silty clay, typically classified as MH and CH under the Unified Soil Classification System (USCS), respectively, were encountered between the ground surface and a depth of 13 feet at the tank location and 15 feet at the control building location. The alluvial clays were generally hard and moist, with in-place dry densities ranging from 77 to 93 pounds per cubic foot (pcf) and in-place moisture contents ranging from 27 to 32 percent.

An Atterberg limit test, performed at a depth of 4 feet below the propose tank location, indicated a plasticity index (PI) of 29, indicating the silty clay possesses a moderate to high swell potential. An Atterberg limit test, performed at a depth of about 4 feet below the proposed control building location, indicated a PI of 22, indicating the sandy clay possesses a low to moderate swell potential.

### 4.2 Lower Alluvial Soil

Layers of brown with light orange coarse grained alluvial silty sand and sandy gravel were encountered at the tank site below the upper alluvium. The lower silty sand and sandy gravel alluvium, typically classified as SM and GM, respectively, under the USCS was encountered between the depths of 13 and 30.5 feet below the ground surface. The coarse grained lower alluvium sands and gravels were generally medium dense (sandy gravel) to very dense (silty

sand) and moist, with in-place dry densities ranging from 68 to 91 pounds per cubic foot (pcf) and in-place moisture contents ranging from 38 to 40 percent.

The lower alluvium soils possess no to low expansion potential.

#### 4.3 Groundwater Conditions

Groundwater was not encountered in either boring. Groundwater levels within the project area will vary depending on seasonal rainfall and runoff conditions. Therefore, groundwater levels may vary from those presented above at the time of construction.

---

END OF SUBSURFACE CONDITIONS

## 5. DISCUSSION

---

Based on the results of our field exploration and geotechnical analysis, we believe that it is geotechnically feasible to construct the proposed water tank and control building, provided the recommendations of this report are incorporated into the project's design and construction, particularly those recommendations which address minimizing the moderate to high swell potentials of the sites upper subsurface soils.

The most significant geotechnical concern regarding the development of the site is the moderate to high expansion potential of the onsite silty clays below the proposed tank location, which possess a measure PI value of 29. Typically, PI values in the 20 to 30 range possess moderate expansion potential while PI values above 30 possess high expansion potential. While the tank sites measured PI value of 29 is on the extreme boundary of moderately expansive soil, we have experienced PI values as high as 34 within the tank sites east/west Kehalani corridor in past investigations.

Based on the tank sites in-situ moisture contents, our current plasticity testing and on the results of our previous investigations, we anticipate free swells on the order of 3 to 5 percent below the tank site. A swell of 3 to 5 percent has the potential to move as much as 2 to 3 inches.

Various methods of reducing the swell of the subsurface soils are available. The most basic method of reducing the soils swell potential is to increase their in-situ moisture content. A soils swell potential is based on how much water a soil can accept within its voids. The drier a soil, the more water it can accept and the higher its swell potential. We believe that moisture conditioning the soils from the ground surface to at least 18 inches below the bottom of the tank foundations exterior footings will reduce the swell potential to below 1 percent provided these

moisture contents are maintained throughout the life of the project. The maintenance of these moisture contents can be a problem for sites where no grass cover or watering occurs. Because the site will be left bare, it is likely that the insitu moisture contents will increase over time, increasing the soils swell potential back to the 3 to 5 percent range.

A more effective method of reducing the site soils swell potential is to use the moisture conditioning method above in combination with the remove and replace method whereby a portion of the existing soils (typically 1 to 3 feet) are removed, reducing the quantity of soil that can swell, and replaced with non-expansive soil whose overburden pressure counteracts the swell potential of the underlying expansive soil. For the moisture conditions present at the site, we believe that 18 inches of non-expansive material would be required under the tank footings to cap the tank site, along with moisture-conditioning of approximately 12 inches of the in-place subgrade soils. We believe this method would reduce the swell potential of the onsite soils to less than 1 percent.

Although the control buildings subsurface soils were in the low moderate swell potential range, we recommend that the upper 18 inches of soil be moisture conditioned to at least 3 to 5 percent above their optimum moisture content in order to reduce their swell potential to less than 1 percent.

We recommend that all utilities be designed using flexible joints, as the soils outside the remediated tank and control building site still have the potential for vertical swell.

---

END OF DISCUSSION

## 6. ENGINEERING RECOMMENDATIONS

---

### 6.1 General

Foundation preparation and site grading can be developed in accordance with the following recommendations. Unless stated otherwise, the maximum dry density (MDD) and optimum moisture content (OMC) of all engineered fill referenced within this report is based on Laboratory Test Method ASTM D1557.

### 6.2 Seismic Design Considerations

The following sections address what we believe to be the project's major seismic design considerations.

#### 6.2.1 Ground Shaking

The proposed development is located in an area with some seismic activity and the proposed structures will likely be subjected to seismic shaking during their design life. The primary potential seismic hazard is ground shaking. We recommend that the proposed development be designed in accordance with the requirements of the latest (2006) edition of the International Building Code (IBC) for Site Class D.

#### 6.2.2 Liquefaction

Liquefaction occurs in loose, saturated sands that are subjected to earthquake type motions. In sands where constant volume conditions are maintained during shaking (i.e., where no immediate drainage path exists), excess pore water pressures build quickly and as a result, soil strength is rapidly reduced and settlement occurs. Neither loose sands nor a shallow groundwater table underlie the site. Therefore no liquefaction-induced settlements are likely.

### 6.2.3 Other Seismic Considerations

The site is not located within an Earthquake Fault Zone. Therefore the likelihood of the ground surface rupturing due to faulting is considered to be low. Based on the materials encountered and the existing and planned topographic conditions, we do not expect seismic slope instability to be a concern. Due to the site's elevation, we do not believe that tsunamis are a potential threat.

## 6.3 Foundations

The following sections present our recommendations for design of the tank and control room foundations.

### 6.3.1 Water Tank

We believe that the proposed water tank can be adequately supported on a continuous circular strip footing with a concrete slab on grade floor provided the recommendations for site preparation and engineered fill are followed (Sections 6.4.2 and 6.4.3, respectively). We recommend that the strip footing foundation be placed a minimum depth of 18 inches below the lowest adjacent grade onto at least 18 inches of compacted non-expansive fill. We recommend that the subgrade beneath the 18 inches of non-expansive fill be compacted to at least 90 percent of the soils MDD at a moisture content between 3 and 5 percent wet of its OMC. This moisture content should be maintained until the non-expansive fill has been placed and compacted.

For a shallow foundation system designed with the recommendations presented above, an allowable bearing pressure of 3,000 pounds per square foot (psf) may be used. This bearing value is for total dead plus sustained live loads and may be increased by one-third for transient loads such as wind or seismic. We estimate that total and differential settlements should be less than ½-inch for foundations designed as described above.

Footings located near adjacent slopes should be embedded such that a minimum horizontal distance of 5 feet is maintained between the footing's bottom edge and the exposed slope face.

### 6.3.2 Control Building

We believe that the proposed control building can be adequately supported on shallow spread footing type foundation provided the recommendations for site preparation and engineered fill are followed (Sections 6.4.2 and 6.4.3, respectively). We recommend that the strip footing foundation be placed a minimum depth of 12 inches below the lowest adjacent grade onto at least 12 inches of subgrade soil compacted to at least 90 percent of the soils MDD at a moisture content between 3 and 5 percent wet of its OMC. This moisture content should be maintained until foundation concrete has been poured.

For a shallow foundation system designed with the recommendations presented above, an allowable bearing pressure of 3,000 pounds per square foot (psf) may be used. This bearing value is for total dead plus sustained live loads and may be increased by one-third for transient loads such as wind or seismic. We estimate that total and differential settlements should be less than ½-inch for foundations designed as described above.

Footings located near adjacent slopes should be embedded such that a minimum horizontal distance of 5 feet is maintained between the footing's bottom edge and the exposed slope face.

### 6.3.1 Lateral Resistance

Lateral resistance may be derived from passive resistance along the footing sides and friction along the footing bottoms. An allowable passive earth pressure of 275 psf per foot of depth may be used for design. We recommend that the lateral earth pressure of any footing be neglected for the upper 12-inches unless

the surface around the footing is protected from erosion or disturbance by a slab, pavement, or some other form of confinement.

A coefficient of friction value of 0.40 may be used between the bottom of concrete footings and the underlying sand. Sliding resistance should be calculated based on the dead load only.

#### 6.3.4 Slab-on-Grade Floor

A concrete slab on grade floor bearing on at least 18 inches of compacted non-expansive fill may be used for the tank floor while a concrete slab on grade floor bearing on at least 12 inches of subgrade soil compacted to at least 90 percent of its MDD at a moisture content between 3 and 5 percent wet of its OMC may be used for the control building floor. The subgrade beneath the non-expansive fill should be compacted to at least 90 percent of its MDD at a moisture content between 3 and 5 percent wet of its OMC for a depth of at least 12 inches.

### 6.4 Construction Considerations

The following recommendations are provided for foundation design and site fill. All site preparation and fill operations should be performed in accordance with the Standard Specifications.

#### 6.4.1 Stripping and Grubbing

Prior to commencement of grading, the site should be cleared and grubbed to remove all organics, vegetation, and other deleterious materials in accordance with the Standard Specifications. The stripping and grubbing work should include the removal of topsoil that, in the judgment of the geotechnical engineer, is uncertified, compressible, collapsible, or contains significant voids.

#### 6.4.2 Site Preparation

Based on our interpretation of the geotechnical subsurface profile, we anticipate that the soils exposed during construction will consist of potentially expansive alluvial silts and clays to depths in excess of 13 feet below the existing ground surface. All footing areas and areas to be filled should be stripped and grubbed to expose a firm, non-yielding subgrade, free of large voids, organics, and deleterious materials. The soils at all footing subgrades should be compacted to at least 90 percent of their MDD at a moisture content between 3 and 5 percent wet of their OMC for a depth of at least 12 inches.

Fill areas with ground slopes exceeding 5h:1v should be horizontally terraced prior to fill placement. The terraces should be extended through all loose slope material into competent native material.

#### 6.4.3 Engineered Fill

The onsite potentially expansive soils should not be used as fill beneath the water tank or control building foundations. Onsite soils may be used for general site fill outside the tank and control building foundation provided all organics and rocks or clods larger than 6 inches in diameter are removed. It should be understood that any onsite material used as general fill has the potential to swell when exposed to water.

Any imported fill required, including non-expansive fill, should consist of coarse-grained material with a maximum particle size of 3 inches. Additionally, any imported fill should possess a plasticity index less than 5 and should qualify as SW, SP, GP, GM, or SM in accordance with the Unified Soil Classification System.

All fill, including non-expansive fill, should be placed in successive horizontal lifts of not more than 12 inches in loose thickness for the full width of the area being

filled. The fill should be moisture conditioned to within 3 percent of its OMC prior to being compacted to at least 90 percent of its MDD.

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END OF ENGINEERING RECOMMENDATIONS

## 7. ADDITIONAL SERVICES

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We recommend that a thorough review of the project plans and specifications be conducted before they are finalized to verify that our geotechnical recommendations have been properly interpreted and implemented during the design. If we are not accorded this review, we can assume no responsibility for misinterpretation of our recommendations. The review can be completed on a time-and-expense basis in accordance with our current Fee Schedule.

The construction process is an integral design component with respect to the geotechnical aspects of a project. Because geotechnical engineering is an inexact science due to the variability of natural processes and because we sample only a small portion of the soils affecting the performance of the proposed structures, unanticipated or changed conditions can be disclosed during grading. Proper geotechnical observation and testing during construction is imperative to allow the geotechnical engineer the opportunity to verify assumptions made during the design. Therefore, we recommend that Hawaii Geotechnical Consulting, Inc. be kept apprised of design modifications and construction schedules for the proposed development so that design changes can be made if subsurface field conditions warrant.

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END OF ADDITIONAL SERVICES

## 8. LIMITATIONS

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This report has been prepared for the exclusive use of RCFC Kehalani, LLC and their agents for specific application to the proposed Wailuku Well No. 2 project in Wailuku, Maui, Hawaii.

The findings, conclusions, and recommendations presented in this report were prepared in accordance with generally accepted geotechnical engineering practice as it exists in the site area at the time of our study. No warranty is expressed or implied. The recommendations provided in this report are based on the assumption that our firm will conduct an adequate program of tests and observations during the construction phase in order to evaluate compliance with our recommendations. If the scope of the proposed construction, including the proposed loads, grades, or structural locations change from that described in this report, our recommendations should also be reviewed. We have not reviewed a final grading or building plan for the project.

Hazardous materials may have been discovered during the course of Hawaii Geotechnical Consulting, Inc.'s services. Hawaii Geotechnical Consulting, Inc. will assume no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials.

Nothing contained in this scope of work should be construed or interpreted as requiring Hawaii Geotechnical Consulting, Inc. to assume the status of an owner, operator, generator, or person who arranges for disposal, transport, storage, or treatment of hazardous materials within the meaning of any governmental statute, regulation, or order.

The client has the responsibility to see that all parties to the project, including the designer, contractor, subcontractor, etc., are made aware of this report in its entirety. This report contains information that may be useful in the preparation of contract specifications. However, the report is not designed as a specification document and may not contain sufficient information for this use without proper modification.

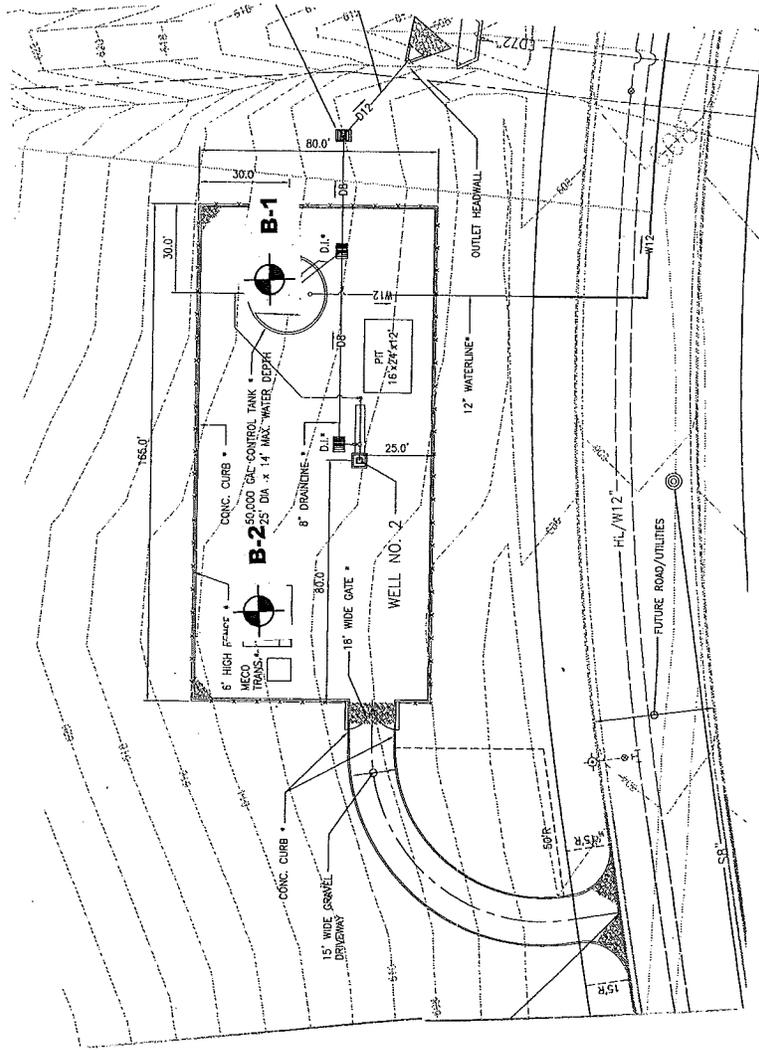
The recommendations contained in this report are based on our field observations and our present knowledge of the proposed construction. It is possible that soil conditions could vary between or beyond the areas observed. If soil conditions are encountered during construction which differ from those described herein, we should be notified immediately in order that a review may be made and any supplemental recommendations provided.

This report may be used only by the client and only for the purpose stated, within a reasonable time from its issuance. Land use, site conditions (both onsite and offsite) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify Hawaii Geotechnical Consulting, Inc. of such intended use. Based on the intended use of this report, Hawaii Geotechnical Consulting, Inc. may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Hawaii Geotechnical Consulting, Inc. from any liability resulting from the use of this report by any unauthorized party.

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END OF LIMITATIONS

# FIGURES



Legend



Boring Location

HAWAII GEOTECHNICAL CONSULTING, INC.	
BORING LOCATION PLAN	
WAILUKU WELL NO. 2	
WAILUKU, MAUI, HAWAII	
14004.01	FEBRUARY 2014
FIGURE 1	

**APPENDIX A**  
Field Exploration

## APPENDIX A FIELD EXPLORATION

---

The subsurface exploration program for the proposed tank development included drilling 2 auger borings. The auger borings were extended to depths ranging from 15.5 feet for the control building to 30.5 feet for the tank. The approximate auger boring locations are shown on the Boring Location Plan, Figure 1.

The Logs of Borings are presented as Figures A2 and A3 in Appendix A. A soil classification chart is presented as Figure A1. The Logs of Borings describe the materials encountered, samples obtained, and show field and laboratory tests performed. The logs also show the boring number, drilling date, name of the logger and drilling subcontractor, and the groundwater level. A senior geotechnical engineer logged the materials encountered in accordance with the USCS. The boundaries between soil types shown on the logs are approximate because the transition between different soil layers may be gradual. Relatively undisturbed drive and disturbed grab samples were obtained at locations determined during the field investigation.

The borings were advanced using a Mobile B-53 truck-mounted drill rig equipped with 4-inch diameter solid-stem augers. Drive samples were obtained at select depths using a 3-inch O.D. California type split spoon sampler. Six-inch long brass sleeves were used to retain relatively undisturbed samples from the sampler. The California sampler was driven with a 140-pound hammer falling 30 inches. Standard penetration values were obtained by recording the number for blows required to drive the sampler the final 12 inches of a total of 18 inches of advancement. Driving was stopped when greater than 50 blows were recorded for any 6-inch increment. When driving was stopped short of 18 inches, the number of blows required for the indicated penetration was recorded. The standard penetration values are recorded on the boring logs. The penetration values are not corrected for sampler type or depth.

COARSE GRAINED SOILS MORE THAN HALF OF THE MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE		FINE GRAINED SOILS MORE THAN HALF OF THE MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE			
GRAVELS MORE THAN HALF OF COURSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES		
		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES		
		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES		
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		
	GRAVELS WITH FINES (APPRECIABLE AMOUNTS OF FINES)				
		SANDS MORE THAN HALF OF COURSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SANDS WITH FINES (APPRECIABLE AMOUNTS OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
SC	CLAYEY SANDS, SAND-CLAY MIXTURES				
SILTS AND CLAYS LIQUID LIMIT LESS THAN 50	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50	ML	INORGANIC SILTSAND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY		
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS		
		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SOILS		
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS		
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS		

USCS SOIL CLASSIFICATION CHART

FIGURE  
A1

Date Completed: 01/05/2014  
 Drilled By: Ige, Inc.  
 Drilling Method: Solid Stem Auger  
 Logged By: R.M. Gibbens, P.E.

Water Depth: Not Encountered  
 Northing: n/a  
 Easting: n/a  
 Elevation: ± 613  
 Description: Water Tank  
 Symbols:  3" OD Spoon  Split  SPT

Depth (feet)	Sample Type	Sample No.	Blow Count	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Additional Tests
0 - 5	1	75/12"		SANDY CLAY (MH) with trace Gravel, brown with light orange, hard, damp to moist ALLUVIUM	--	77	27	Gravel = 8% Sand = 29% Silt/Clay = 63%
5 - 10	2	86/10"		SILTY CLAY (CH) with trace Sand, brown, hard, moist ALLUVIUM	--	93	27	Gravel = 0% Sand = 6% Silt/Clay = 94% LL = 60 PI = 29
10 - 15	3	58		SANDY SILT (MH), brown with light orange, hard, moist ALLUVIUM	--	82	32	Gravel = 1% Sand = 32% Silt/Clay = 66%
15 - 20	4	50/6"		SILTY SAND (SM) with trace Gravel and Cobble, brown with light orange, very dense, moist WEATHERED FORMATION	--	--	26	Gravel = 7% Sand = 53% Silt/Clay = 39%
20 - 25	5	35		SANDY GRAVEL (GM) with some Silt and Cobble, brown with light orange, medium dense to dense, moist WEATHERED FORMATION	--	68	38	Gravel = 51% Sand = 34% Silt/Clay = 15%
25 - 30.5	6	55		Bottom of Borehole at 30.5 feet Groundwater Not Encountered Borehole Backfilled with Excavated Soil	--	91	40	

**Hawaii Geotechnical Consulting, Inc.**

PROJECT NO. 14004.01  
 DATE 01/31/2014

WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

FIGURE

**A2**

**LOG OF TEST BORING 1**

Date Completed: 01/05/2014  
 Drilled By: Ige, Inc.  
 Drilling Method: Solid Stem Auger  
 Logged By: R.M. Gibbens, P.E.

Water Depth: Not Encountered  
 Northing: n/a  
 Easting: n/a  
 Elevation: ± 613  
 Description: Control Building  
 Symbols:  3" OD Spoon  Split SPT

Depth (feet)	Sample Type	Sample No.	Blow Count	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Additional Tests
3		3	58	SANDY CLAY (MH) with some Gravel, brown, stiff, moist ALLUVIUM	--	88	28	Gravel = 13% Sand = 36% Silt/Clay = 51%
5		3	58	SILTY CLAY (MH) with some Sand, brown, hard, moist ALLUVIUM	--	98	--	Gravel = 0% Sand = 85% Silt/Clay = 15% LL = 50 PI = 22
10		3	58	SILTY CLAY (MH) with some Sand, brown, hard, moist ALLUVIUM	--	85	31	Gravel = 0% Sand = 17% Silt/Clay = 83%
15		3	58	ALLUVIUM	--	86	35	
				Bottom of Borehole at 15.5 feet No Groundwater Encountered Borehole backfilled with excavated soil				

**Hawaii Geotechnical Consulting, Inc.**

PROJECT NO. 14004.01  
 DATE 01/31/2014

WAILUKU WELL NO. 2  
 WAILUKU, MAUI, HAWAII

FIGURE

**A2**

**LOG OF TEST BORING 2**

## **APPENDIX B LABORATORY TESTING**

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Laboratory testing was performed on selected drive and bulk samples to estimate their pertinent engineering characteristics. Testing was performed in accordance with ASTM Standards for Soil Testing, latest revision.

### **MOISTURE CONTENT AND DRY DENSITY**

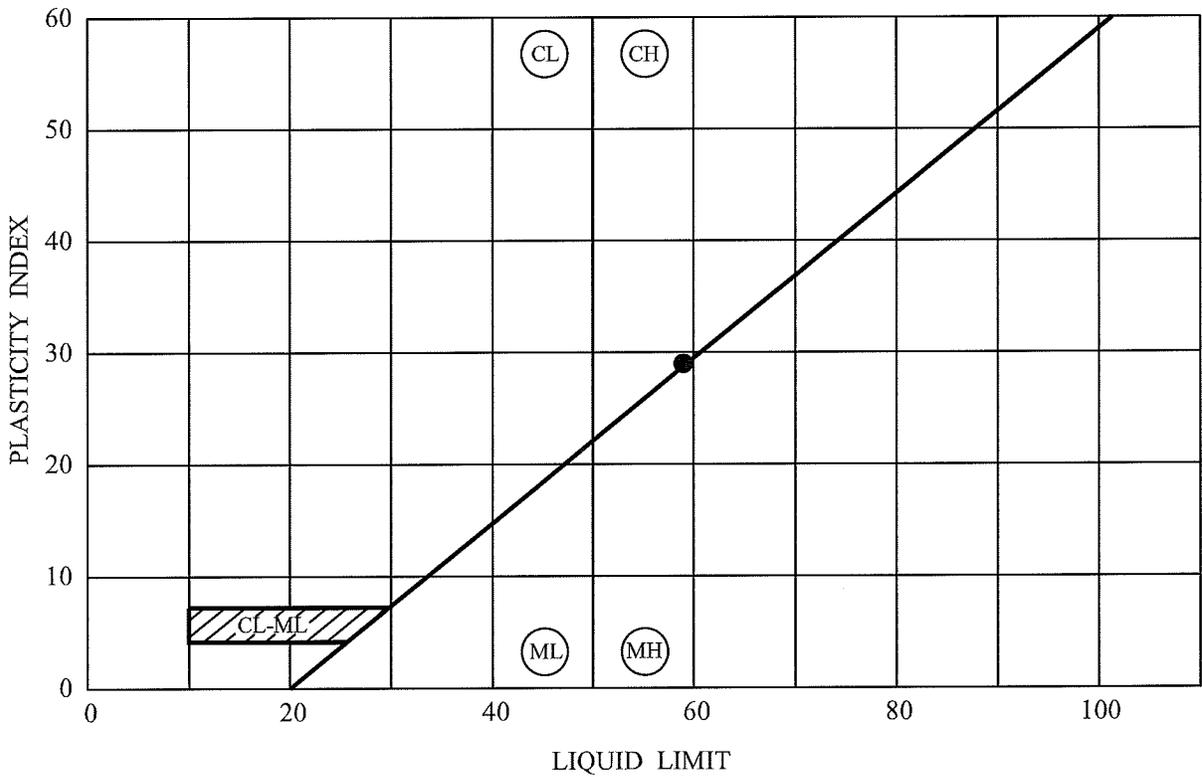
Natural moisture content and dry density tests were performed on samples in accordance with ASTM D2216 and D2937, respectively. The results of these tests are presented on the Logs of Borings in Appendix A.

### **GRAIN SIZE**

Grain size analyses were performed on samples in accordance with ASTM D2487. The results are presented on the Logs of Borings in Appendix A.

### **PLASTICITY**

Atterberg limit tests were performed in accordance with ASTM D4318. The results of the test are presented on the Logs of Borings in Appendix A and graphically in Appendix B



Sample ID	Depth (ft)	LL	PL	PI	Classification
● 1-4	4.0	60	32	28	Brown Silty CLAY (CH)

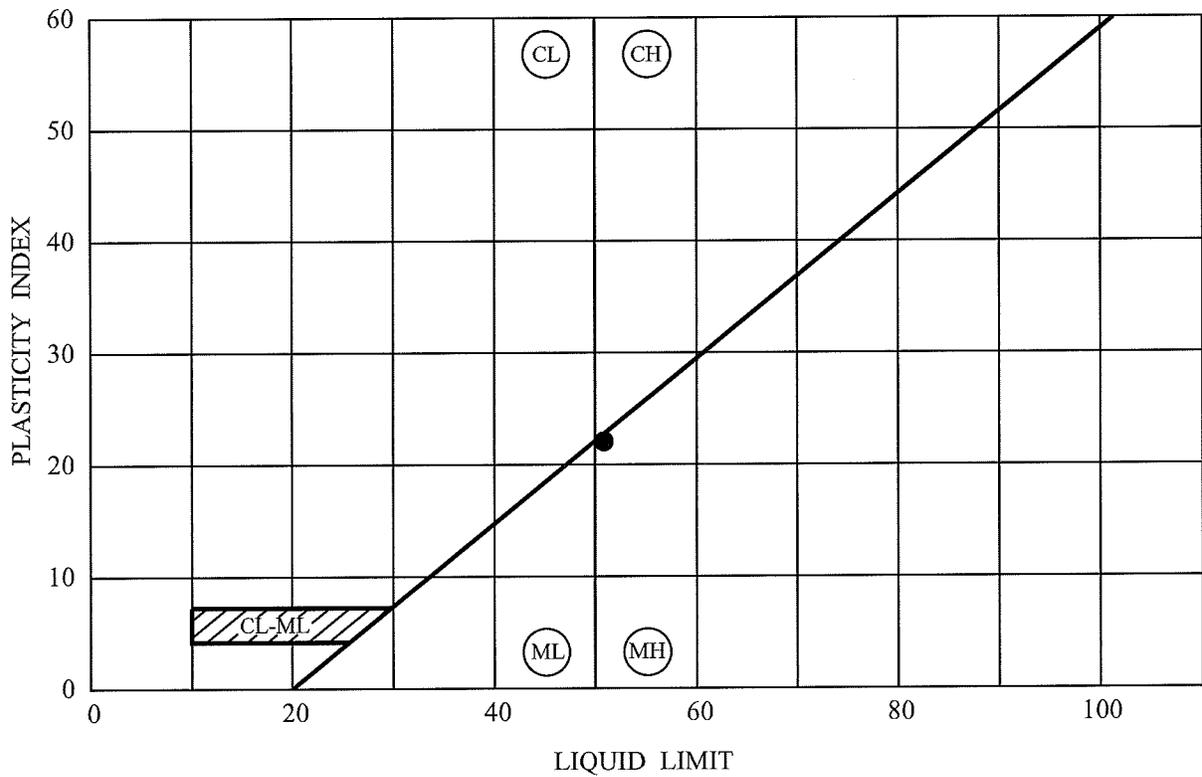
**Hawaii Geotechnical Consulting, Inc.**

PROJECT NO. 14004.01  
DATE 01/30/2014

WAILUKU WELL NO. 2  
WAILUKU, MAUI, HAWAII

**PLASTICITY INDEX**

FIGURE  
**B1**



Sample ID	Depth (ft)	LL	PL	PI	Classification
● 2-4	4.0	51	29	22	Brown Sandy SILT w/some Gravel (MH)

**Hawaii Geotechnical Consulting, Inc.**

PROJECT NO. 14004.01  
DATE 01/30/2014

WAILUKU WELL NO. 2  
WAILUKU, MAUI, HAWAII

**PLASTICITY INDEX**

FIGURE  
**B2**

# **APPENDIX D.**

## **Cultural Impact Assessment Interview Summary**

**WAILUKU WELL NO. 2 – WELL DEVELOPMENT PROJECT**  
**Cultural Interview**

**Interview with:** Clayton Suzuki  
**Interview date:** July 17, 2015  
**Interviewed by:** Charlene Shibuya, Senior Associate, Munekiyo Hiraga

A Cultural Impact Assessment interview was conducted on July 16, 2015 with Clayton Suzuki, Operations Manager of Wailuku Water Company, at his office of employment at 255 East Waiko Road, Waikapu. He was born in 1950 and originally from Laupahoehoe, Hawaii Island. He obtained a Bachelor of Science degree in Civil Engineering in 1974 and worked for Austin, Smith and Associates as an engineer in Honolulu. Then in 1975, he moved to the island of Maui to work for Hawaiian Commercial and Sugar Company (HC&S) until 1978 when he moved to Wailuku Sugar Company. While on the island of Maui, he initially resided in Haliimaile then moved to Waikapu in 1978, and has remained at the same location until today.

Wailuku Sugar Company's name changed to Wailuku Agribusiness in 1989, later becoming Wailuku Water Company (WWC) in 2005. WWC continues to maintain the extensive ditch systems that lies within the Kehalani Mauka lands that the Wailuku Well No. 2 site lies within. The major irrigation ditches in the area is the Iao-Waikapu Ditch mauka of the project site and the Waihee Ditch makai of the project site with both oriented in a North to South direction. The ditch systems still actively function to convey irrigation water to various agricultural fields in Waikapu, Waihee, Wailuku, and Maalaea.

Lands in the Kehalani Mauka area were in sugar cultivation up until 1984 after which the fields turned into pasture land for cattle grazing. C. Brewer Homes acquired the lands after 1984, and later transferred it to Hawaii Land & Farm who started developing the agricultural lands into a master planned residential community.

His connection with the project site and its surrounding area is tied in with his past 37 years employed with WWC and predecessor companies associated with the same lands. Given the historic agricultural use of the property, Mr. Suzuki indicated that he is not familiar with, nor has he observed, cultural practices at the project site and immediate surrounding area. Additionally, he is not familiar with, nor has he observed the project area to be used for traditional mauka-makai access. To the best of his knowledge he knows of no issues which would preclude the implementation of the well project area.

# **APPENDIX E.**

**Department of Planning Letter  
Dated December 12, 2014**

ALAN M. ARAKAWA  
Mayor

WILLIAM R. SPENCE  
Director

MICHELE CHOUTEAU McLEAN  
Deputy Director



DEC 15 2014

COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

December 12, 2014

Ms. Colleen Suyama, Senior Associate  
Munekiyo & Hiraga, Inc.  
305 High Street, Suite 104  
Wailuku, Hawaii 96793

Dear Ms. Suyama:

**SUBJECT: PROJECT DISTRICT PHASE III (PH3) APPROVAL FOR THE PROPOSED IMPROVEMENTS TO WAILUKU WELL NO. 1 AND NO. 2, LOCATED WITHIN THE KEHALANI PROJECT DISTRICT ALONG KEHALANI MAUKA PARKWAY, WAILUKU, ISLAND OF MAUI, HAWAII; TMK(S): (2) 3-5-001:067 (POR) AND 106 (POR) (PH3 2014/0017)**

The Department of Planning (Department) has reviewed the above-referenced application and plans for a PH3 approval submitted on October 31, 2014. The project involves the installation of a control valve station connecting Well No. 1 to Well No. 2, improvements to Well No. 2 consisting of a control building and control tank, along with related improvements.

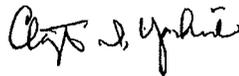
**Pursuant to the aforementioned, PH3 Approval (PH3 2014/0017) is hereby granted subject to the following conditions:**

1. That the project shall be in substantial compliance with plans submitted on October 31, 2014.
2. That if necessary, building permits, landscaping plan approval and signage approval be obtained prior to construction of the proposed project.
3. That any park improvements within the project site, or planned bikeways that traverse the subject property, be constructed prior to, or concurrently with, the proposed project.
4. That full compliance with all Federal, State, and County requirements shall be rendered.

Ms. Colleen Suyama, Senior Associate  
December 12, 2014  
Page 2

Thank you for your cooperation. Should you require further clarification, please contact Staff Planner Danny Dias at [danny.dias@mauicounty.gov](mailto:danny.dias@mauicounty.gov) or at (808) 270-7557.

Sincerely,



CLAYTON I. YOSHIDA, AICP  
Planning Program Administrator

for WILLIAM SPENCE  
Planning Director

xc: John S. Rapacz, Planning Program Administrator (PDF)  
Danny A. Dias, Staff Planner (PDF)  
Development Services Administration  
Kehalani Project District Binder  
Project File  
General File

WRS:CIY:DAD:njm

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