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FINAL ENVIRONMENTAL ASSESSMENT

Drill and Test Wailua Homesteads Well No. 3

Prepared for:
County of Kauai
DEPARTMENT OF WATER

July 2001

FUKUNAGA AND ASSOCIATES, INC.
Consulting Engineers
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FINAL
ENVIRONMENTAL ASSESSMENT

**DRILL AND TEST
WAILUA HOMESTEADS WELL NO. 3**

T.M.K. 4-4-01: por. 1
South Olohena-Kapaa, Kawaihau
Kauai, Hawaii

Proposing Agency:

***County of Kauai
DEPARTMENT OF WATER***

Submitted Pursuant to Chapter 343, HRS

Responsible Official:


Ernest Y. W. Lau
Manager & Chief Engineer

Date: 7/19/01

Prepared by:

Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, Second Floor
Honolulu, Hawaii 96814

July 2001

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I. INTRODUCTION

A. GENERAL INFORMATION

The County of Kauai Department of Water desires to develop a new water source to meet the maximum day demand of the Wailua Homesteads area in accordance with the *Water Plan 2020*, dated March 2001. The additional water source would minimize the need to supplement the County Wailua Water System with source water from the County Kapaa Water System. This environmental assessment evaluates Job No. 98-33, Drill and Test Wailua Homesteads Well No. 3. The project will proceed in two major phases. Phase I will involve drilling, casing and testing of the well to evaluate water quality and well capacity. Upon successful completion of Phase I, Phase II will proceed with outfitting the well and constructing other associated site and water system improvements.

This environmental assessment is prepared only for Phase I, drilling, testing and casing of the proposed well.

B. PROPOSING AGENCY

The proposing agency for this project is the County of Kauai Department of Water (DOW).

II. PROJECT DESCRIPTION

A. LOCATION

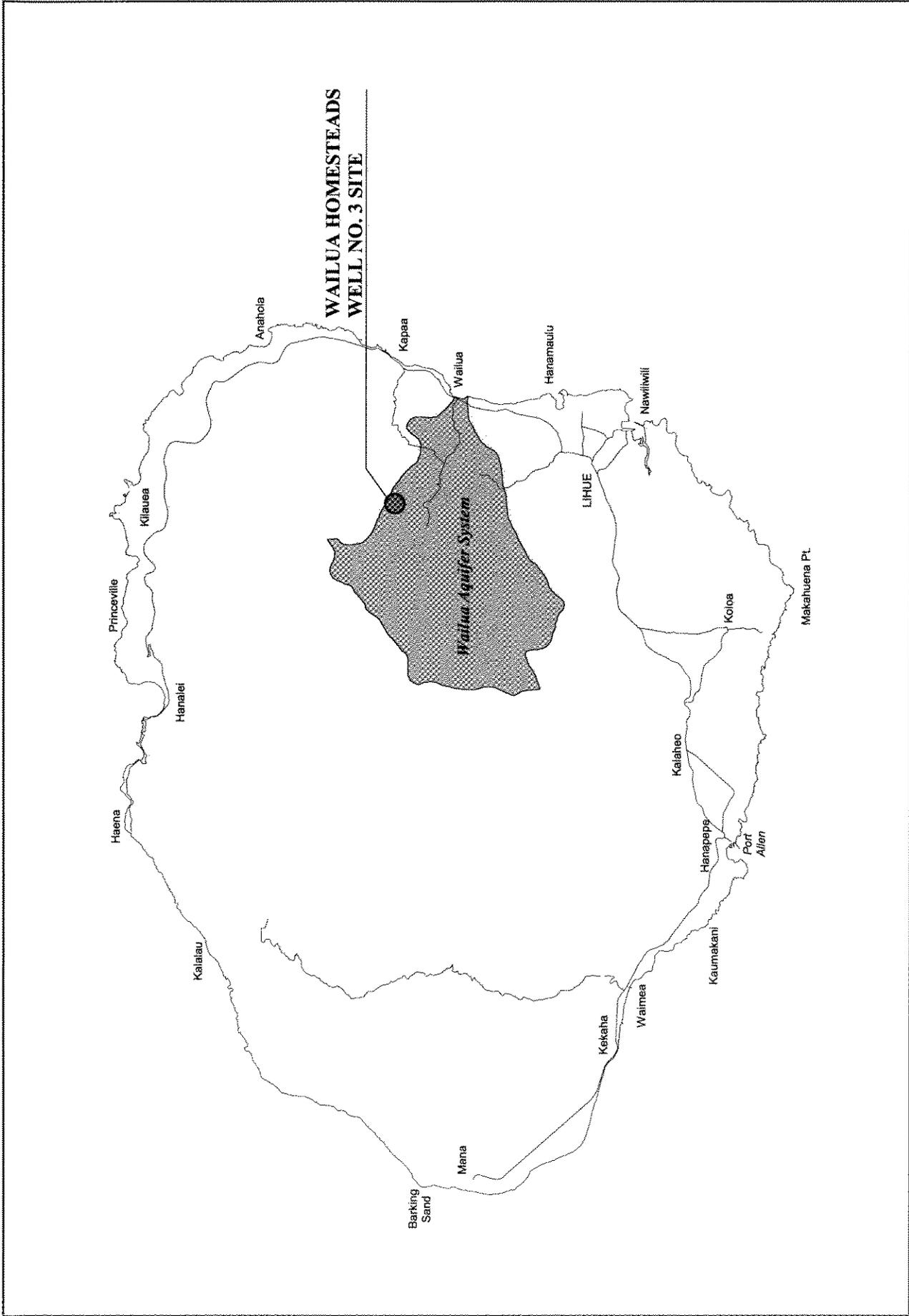
The proposed Wailua Well No. 3 project site is located approximately 4 miles northwest of Wailua. See **Figures 1** and **2**. The project site is on lands owned by the State of Hawaii and managed by the Division of Forestry and Wildlife. The site is on parcel TMK 4-4-01:1, which is currently leased by the survivor of Samuel Thronas (deceased) as a Game Management Area. See **Figure 3**. The proposed project site and access and utility easement have been withdrawn from the lease, and the Right-of-Entry approved by the Board of Land and Natural Resources.

Upon successful completion of the well drilling and testing (Phase I), and construction of the well source improvements (Phase II), the Wailua Homesteads Well No. 3 project site will be acquired by DOW by Executive Order.

B. PROPOSED PROJECT

The proposed project includes the following major tasks:

1. Drilling a 14-inch diameter cased well to approximately 680 feet below an approximate ground surface elevation of 680 feet. The exact depth will depend on hydrogeologic field observations and evaluations.

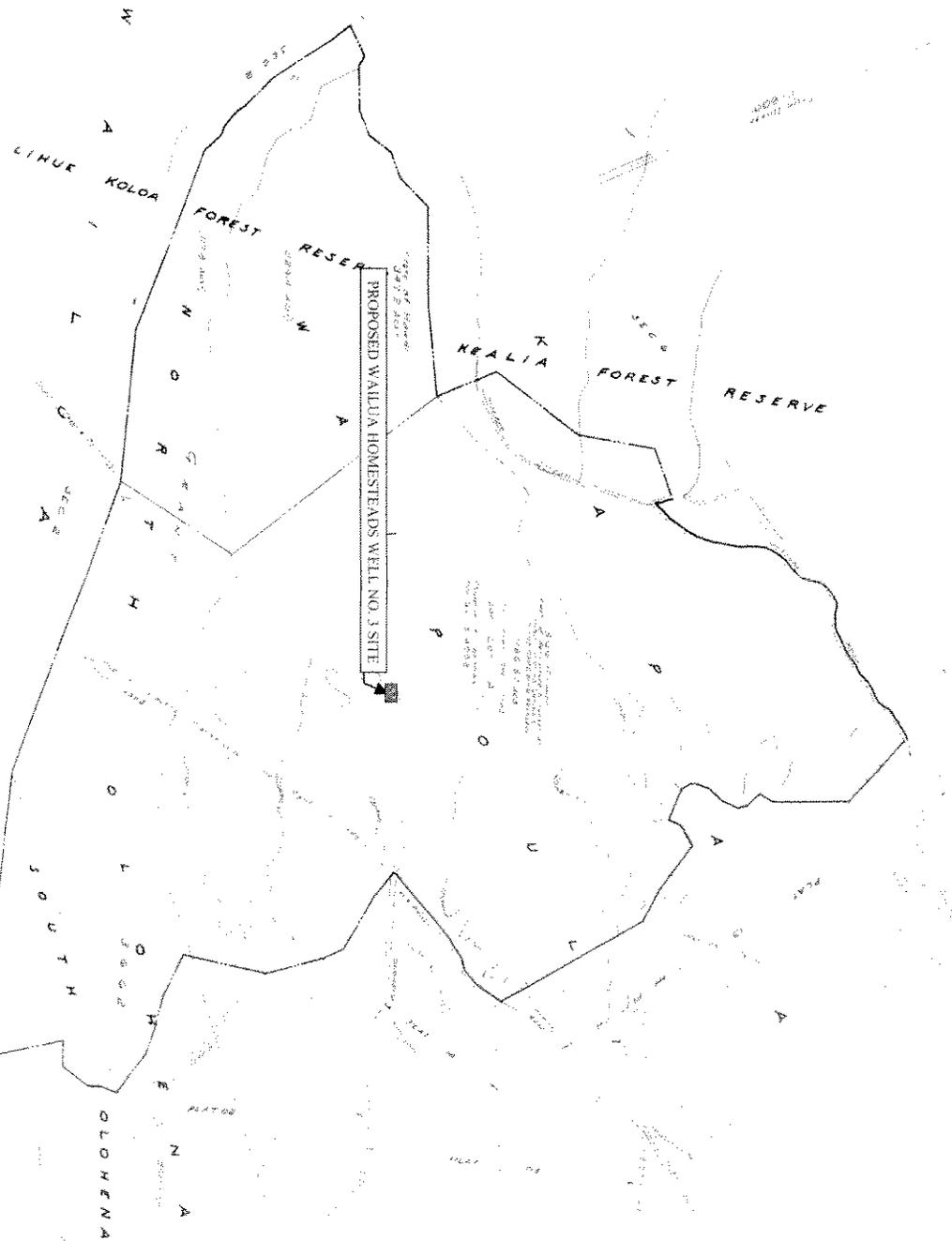


ISLAND OF KAUAI

FIGURE 1

Map No. 445a
 Source: Tax Maps Bureau, 2 Survey Dept
 By: I. K. H. H. S. September, 1936

FOR SOUTH OLOHENA - KAWAIA KAWAIA, KAWAIA



MAKAIKIHI DISTRICT OF HAWAII
 COUNTY OF KAUAI
 TAX MAP
 4 4 01

TAX MAP KEY

2. Installing approximately 430 feet of 14-inch I.D. steel casing (bottom 100 feet perforated). Grouting the annular space surrounding the casing from the ground surface to a depth of approximately 330 feet.
3. Pump testing the aquifer at a rate up to 700 gallons per minute (gpm).
4. Obtaining water quality data and analyses in accordance with the Department of Health (DOH), Hawaii Administrative Rules, Title 11, Chapter 20 requirements.

The well design documents will conform with the Department of Land and Natural Resources, Commission on Water Resource Management (DLNR-CWRM), *Hawaii Well Construction & Pump Installation Standards* and will address best management practices. The time anticipated to complete the drilling, casing and testing is 6 months. The estimated cost is \$600,000.00.

State appropriated funds will be used for the subject project. There are no restrictions on the water allocation for the project.

III. DESCRIPTION OF THE ENVIRONMENT

A. LAND CLASSIFICATION AND ZONING

State and County laws and regulations govern Land use policies. The State Land Use Commission classifies all State lands as either Urban, Rural, Agricultural, or Conservation with the intent to accommodate growth and development and to retain the natural resources of the area. More detailed land use zoning for the State designated land classifications is regulated by the Comprehensive Zoning Ordinance (CZO) for the County of Kauai. County zoning designations include:

A	Agriculture
O	Open
PF	Public Facilities
R	Resort
RR	Rural Residential
UR	Urban
UMU	Urban Mixed Use

The project site is located on lands that have been designated as Conservation District by the State Land Use Commission, which does not have a County classification. A Conservation District Use Permit from the State will be required for the well site.

B. PHYSICAL FEATURES

1. Topography

The proposed Wailua Homesteads Well No. 3 site is on a relatively flat area bounded by steep terrain and an existing dirt road maintained by the State Forest Reserve.

2. Soils

According to the Soil Survey issued in 1972 by the U.S. Department of Agriculture Soil Conservation Service (USDA-SCS), the soil in the area of the proposed well site is characterized as Kapaa silty clay, 3 to 8 percent slopes (KkB). The soil type is acidic, provides slow runoff, and there is little erosion hazard.

3. Hydrology

The proposed Wailua Homesteads Well No. 3 site is within the Wailua Aquifer System defined by the DLNR-CWRM (1990), and located north of a tributary of Kalama Stream. The aquifer system extends in an east-west direction from Waialeale-Makaleha Mountains west of Wailua Town to Wailua Bay, and in a north-south direction from Konohiki Stream to Wailua River. See **Figures 1 and 2**. There are no wells located within 6000 feet of the proposed well site; therefore, no data is available to determine the direction of groundwater flow or contours. Presumably, groundwater flows in an eastward direction from the mountain to the sea.

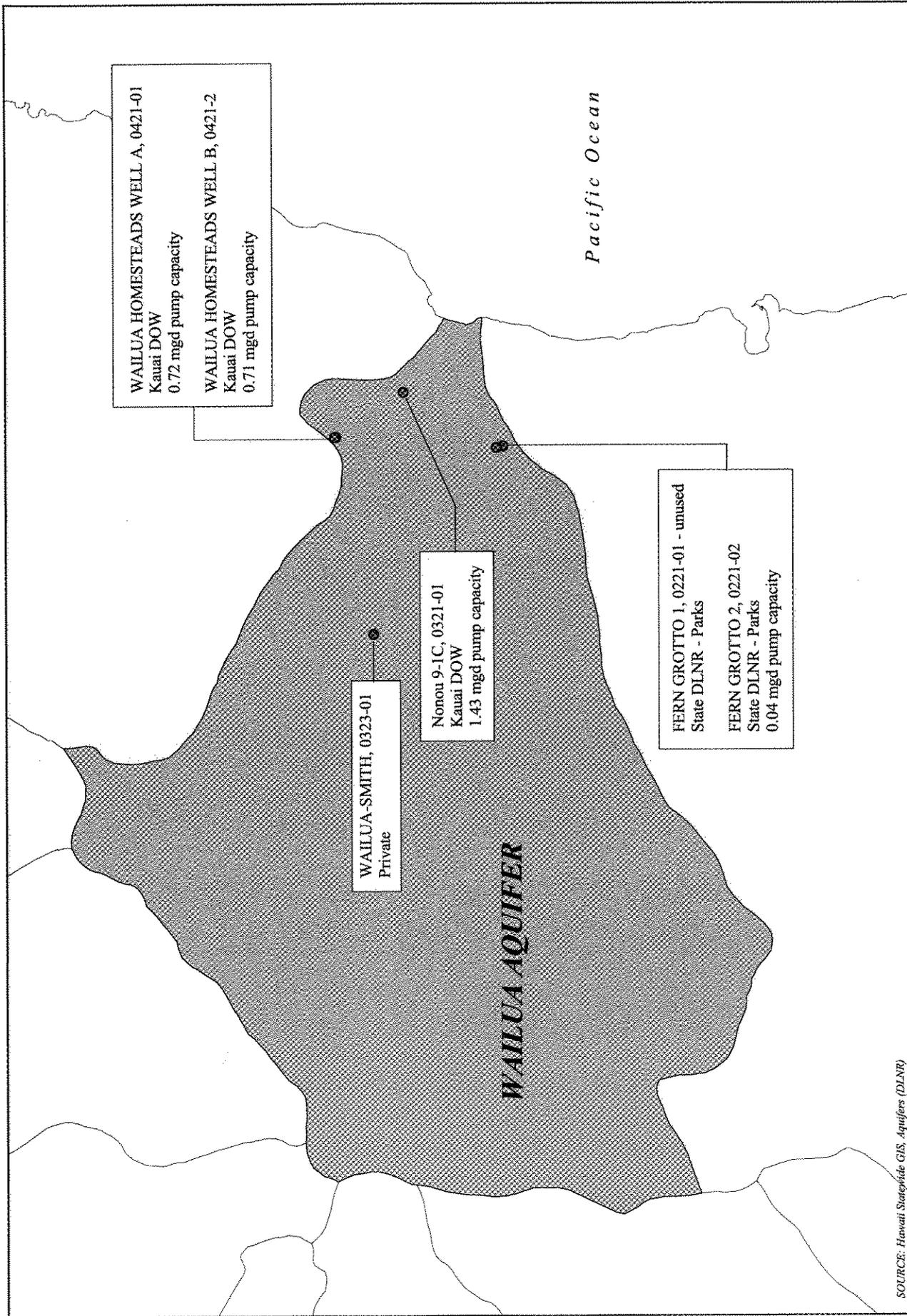
a. Estimated Groundwater Yield

According to the State Water Resources Protection Plan, Vol. I and II (June 1990), the Wailua Aquifer System receives an average rainfall volume of 364 million gallons per day (mgd); a portion of which becomes groundwater and the rest is lost to evapotranspiration and runoff. The sustainable yield of the Wailua Aquifer System has been estimated at approximately 60 mgd.

b. Existing Wells and Water Use

Data on the existing wells within the Wailua Aquifer were obtained from the DLNR-CWRM database and are shown on **Figure 4**.

The municipal potable water consumption for FY97/98 supplied by the Wailua Water System was approximately 1.9 mgd.



WAILUA AQUIFER - EXISTING WATER WELLS

FIGURE 4

4. Climate

The mean annual rainfall throughout the study area ranges from 50 inches a year near the coast to 200 inches a year in the mauka area. The temperature ranges from an average high of 80°F to an average low of 65°F. The northeasterly trade winds which prevail throughout the year, result in winds with velocities averaging 20 miles per hour.

5. Flood and Tsunami

The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) panel 150002 0130D dated September 30, 1995, designates the well site within Zone X, area determined to be outside of the 500-year flood plain. Therefore, impact of the project on the flood zone is not expected.

C. WATER QUALITY

The existing Wailua Homesteads Well Nos. 1 and 2 (A and B) are located approximately 2.5 miles east of the proposed Wailua Homesteads Well No. 3 site. Water quality analyses for these existing potable water wells are performed by DOW and the State Department of Health, Safe Drinking Water Branch (DOH-SDWB), and indicate that the well waters meet the chemical and microbiological safe drinking water standards.

Upon completion of drilling the proposed Wailua Homesteads Well No. 3, water quality tests will be performed in accordance with the DOH, Hawaii Administrative Rules, Title 11, Chapter 20, Potable Water System rules.

D. CONTAMINATION ANALYSIS AND VULNERABILITY ASSESSMENT

1. KAUAI AGRICULTURAL RESEARCH CENTER

- a. The University of Hawaii Kauai Agricultural Research Center (KARC) is located approximately 1.3 miles south of the proposed Wailua Well No. 3 site as shown on Figure 2.

Treatment Storage and Disposal Facility – Dioxin/Furan Concentration in Soils

A Treatment Storage and Disposal Facility used in the 1960's to dispose of chemical herbicides and growth inhibitors, adjuvant chemicals and mixtures, solvents and empty containers is located on the KARC parcel. This facility sits on approximately one-quarter acre of land at an elevation of 560 to 600 feet above mean sea level, and consists of a land treatment unit (burial site), a containment building (for containerized waste only), and a soil staging pile. The environmental concern is for halogenated aromatic hydrocarbons, specifically the dioxin/furan concentration in the soils.

Initial investigations of soils at the Treatment Storage and Disposal Facility indicate dioxin/furan concentrations of less than 3.8 parts per billion (ppb). According to the U.S. Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response Directive 9200.4-26, the recommended cleanup level for dioxin-contaminated soils at industrial sites is 5 to 20 ppb. Although the dioxin/furan concentration in the soils at the facility is likely less than the recommended cleanup level, the U.S. Agency for Toxic Substances and Disease Registry recommends that for sites with dioxin concentrations greater than 1 ppb the likelihood of exposure and health implications should be evaluated further.

The University currently is pursuing closure of the facility, and plans to perform a site assessment to determine the extent of contamination and a risk assessment to determine the associated health risks and required cleanup effort. A *Closure Plan for Treatment, Storage and Disposal Facility at KARC*, dated March 7, 2001 has been submitted to the DOH for approval.

The *National Primary Drinking Water Regulations Consumer Factsheet on: DIOXIN (2,3,7,8-TCDD)*, published by the U.S. EPA, Office of Water states the following on dioxin:

Due to its very low water solubility, most of the dioxin occurring in water will adhere to sediments and suspended silts. Similarly, it tends to adhere to soil if released to land, and is not likely to leach to ground water.

In light of the facts summarized below, dioxin contamination at the proposed well site is not anticipated:

- Dioxin is not likely to leach into groundwater;
- The proposed well site is approximately 100 feet higher in elevation than KARC and is likely hydraulically up-gradient;
- The proposed well site is over a mile away from KARC.

b. Cesspool

The State DOH Safe Drinking Water Branch (DOH-SDWB) recently began discussion with KARC regarding a cesspool on the property. DOH will require KARC to upgrade to a treatment system or abandon the cesspool.

According to Hawaii Administrative Rules, Title 11, Chapter 23, Underground Injection Control, injection wells are prohibited within one-quarter mile of a drinking water source. As stated earlier, the proposed well site is over a mile away from KARC and is likely hydraulically up-gradient; therefore, impacts of this existing cesspool on the water quality are not anticipated.

2. DOH-SDWB has no other records of points of known or potential contamination.

3. Vulnerability of the water source to contamination is anticipated to be minimal due to the land use designation of the subject parcel and the surrounding areas. As described earlier, the parcel is within the conservation district and is bounded on the mauka side (hydraulically up-gradient) by the Kealia and Lihue Koloa Forest Reserves. Land use within the conservation district is regulated and managed by the State to conserve, protect and preserve the important natural resources of the State. Changes in the land use are unlikely.

E. ARCHAEOLOGICAL AND HISTORICAL CONSIDERATIONS

The project site is located in undeveloped lands used as hunting grounds and cattle pasture. Based on a visual inspection of the site by the State Historic Preservation Officer on Kauai, there is no evidence of archaeological or historical remains. However, if construction work uncovers any archaeological remains, work will cease and the State Historic Preservation Division contacted.

F. FLORA

The project site primarily is covered with grass and is grazed by cattle; therefore the existence of endangered species in the project area is unlikely.

G. FAUNA

Animals found in the area include field mice, rats, geckos, and small feral animals. Birds include doves of various kinds, mynahs, cardinals, and pheasants.

IV. PROBABLE IMPACTS AND MITIGATIVE MEASURES

A. SHORT TERM IMPACTS

1. Construction Related

Anticipated short term impacts are associated with construction activity required to drill, case and test the well. The Contractor will be required to conform to the DLNR-CWRM well construction standards and best management practices. Increased intermittent traffic, noise, dust, and vehicular and equipment emissions can be expected. These impacts will not be significant because the site is small and secluded within a public hunting ground and upland game bird preserve. There will not be any site grading, therefore, dust generation will be minimal. The construction related impacts will be short-term and temporary. Equipment noise controls will be implemented according to DOH guidelines. Dust control will be maintained by sprinkling with water when needed.

Drilling of the well will result in the need to dispose of drill cuttings, possible foaming agents (biodegradable detergents) depending on the drilling method used,

and a limited amount of pumped well testing waters. Disposal of drill cuttings and foaming agents, if used, will be the Contractor's responsibility and shall be handled and disposed of in an environmentally safe manner in accordance with DOH guidelines. The pumped well water quality is expected to be of potable water quality. The pumped water will be discharged into an existing ravine. Measures will be taken to avoid and prevent erosion and siltation. The Contractor will be responsible for obtaining approval from the DOH for his waste disposal methods; a National Pollutant Discharge Elimination System (NPDES) Permit may be required by the DOH depending on the Contractor's selected waste disposal methods.

2. Hydrogeology

Possible temporary fluctuations of the groundwater table may occur during testing of the well.

B. LONG TERM IMPACTS

The parcel on which the well site is proposed encompasses close to 1200 acres of land for public hunting grounds and upland game bird preserve. This parcel is bounded on the mauka side by vast forest reserve. The proposed site will occupy less than one acre; therefore, the impact on the general environment within the region is anticipated to be minimal.

No long term negative impacts on historical and archaeological sites are anticipated. If the well testing indicates that a safe and adequate supply of potable water can be supplied from the wells, then planning for future permanent improvements will proceed (Phase II).

V. ALTERNATIVES TO THE PROPOSED PROJECTS

A. ABANDON PROPOSED PROJECT AND RELY ON WATER CONSERVATION

The purpose of the proposed Wailua Homesteads Well No. 3 is to provide additional water source for the Wailua Homesteads community. Water conservation will not meet the demands. Therefore, abandoning the project is an unacceptable alternative.

B. ALTERNATIVE SITES

The siting of exploratory wells is based on hydrologic, hydrogeologic, land ownership and availability, and engineering studies for the particular location. DOW considered several alternate sites, and deemed the proposed site to be the most favorable.

C. ALTERNATIVE WATER SOURCES

Alternative water sources such as desalination and use of surface water were considered, but rejected because of higher construction, operation, maintenance and administration costs.

VI. PERMITS AND APPROVALS REQUIRED

A. APPROVALS

1. State Department of Land and Natural Resources, Division of Forestry and Wildlife
2. State Department of Health
Engineering report conforming to Section 11-20-29 after testing and before using well water.
3. State Office of Environmental Quality Control
Environmental Assessment for Well Drilling
4. County of Kauai Department of Water
Environmental Assessment for Well Drilling

B. PERMITS

1. State Department of Land and Natural Resources, Land Division
Conservation District Use Permit
2. State Commission on Water Resource Management
 - a. Well Construction Permit
 - b. Pump Installation Permit (Phase II)
3. State Department of Health
Noise Permit from Noise and Radiation Branch

VII. AGENCIES AND ORGANIZATIONS CONSULTED

A. FEDERAL GOVERNMENT

U.S. Department of Army, Army Corps of Engineers
U.S. Department of the Interior, Fish and Wildlife Service

B. STATE GOVERNMENT

Department of Agriculture
Department of Land and Natural Resources
Land Division
Division of Forestry and Wildlife

Commission on Water Resource Management
State Historic Preservation Division
Department of Hawaiian Home Lands
Department of Health
Clean Water Branch
Noise and Radiation Branch
Safe Drinking Water Branch
Office of Environmental Quality Control
Office of Hawaiian Affairs
University of Hawaii
Environmental Center
Water Resource Research Center

C. COUNTY GOVERNMENT

Planning Department
Department of Water

D. ORGANIZATIONS

Kauai Heritage Center of Hawaiian Culture & the Arts
Konohiki-Pukalani Water System Association

VIII. FINDINGS AND DETERMINATION

A. FINDINGS

Based upon the guidelines and provisions of Title 11, Chapter 200, Environmental Impact Statement Rules and Chapter 343, HRS, the findings of this environmental assessment follow:

1. The proposed Wailua Homesteads Well No. 3 will not result in an irrevocable commitment to loss or destruction of natural or cultural resources.
 - The well capacity is anticipated to be not more than 700 gpm or 1 mgd; the sustainable yield of the Wailua Aquifer System has been estimated at approximately 60 mgd and therefore can support the proposed well draft.
 - The parcel on which the well site is proposed encompasses close to 1200 acres for public hunting grounds and upland game bird preserve. This parcel, in turn, is surrounded by vast forest reserve. The proposed site will occupy less than one acre, and will not affect the land use. Access to and use of the area and resources including flora and fauna surrounding the site will not be affected.
 - The project site is located in undeveloped lands used as hunting grounds and cattle pasture. Based on a visual inspection of the site by the State Historic Preservation Officer on Kauai, there is no evidence of archaeological or historical remains. However, if construction work uncovers any

archaeological remains, work will cease and the State Historic Preservation Division contacted.

2. The proposed Wailua Homesteads Well No. 3 will not curtail the range of beneficial uses of the environment. The proposed site is within the conservation district which is regulated and managed by the State to conserve, protect and preserve the important natural resources of the State. If the well drilling and testing prove successful and DOW proceeds with the well development and pump installation, a Conservation District Use application will be processed with the Board of Land and Natural Resources. The well development and associated water system improvements will comply with the permit requirements.

The proposed project will enhance the beneficial use of the environment, as it will draw upon the naturally occurring groundwater supply in the area to serve the existing drinking water demands of the community. The required land area is a minute fraction of the total area within the Conservation District, and the project will provide valuable groundwater for the Wailua Water System.

3. The proposed Wailua Homesteads Well No. 3 does not conflict with the State's long-term environmental policies and goals as expressed in Chapter 344 HRS. The proposed well will provide additional source water to meet the current demands of the Wailua Water System and minimize the need to supplement with water from the Kapaa Water System. The required permits and approvals will be obtained from the appropriate State and County agencies.
4. The proposed Wailua Homesteads Well No. 3 will not substantially affect the economic or social welfare of the community or State. The proposed well will serve to increase the amount of potable water available for the Wailua Water System, and will enhance the welfare of the community by increasing the potable water source capacity to users.
5. The proposed Wailua Homesteads Well No. 3 will not adversely affect public health. The well will be owned and operated by the DOW, which is dedicated to providing safe drinking water that meets the State drinking water standards.
6. The proposed Wailua Homesteads Well No. 3 will not involve substantial secondary impacts. The well will provide additional source water to a water deficient system; the intent is to better support existing population and facilities in the area.
7. The proposed Wailua Homesteads Well No. 3 will not involve substantial degradation of environmental quality. The well will be designed and constructed in accordance with the DLNR-CWRM well construction standards to prevent pollutants from entering the ground water aquifer at the well. Additionally, the Wailua Aquifer System sustainable yield far surpasses the current and proposed well draft.

8. The proposed Wailua Homesteads Well No. 3, in its fully developed state, will not have considerable effect upon the environment. The drilling, testing and casing of the well is the first phase. Upon successful completion of Phase I, Phase II will proceed with outfitting the well and constructing other associated site and water system improvements.
9. The proposed Wailua Homesteads Well No. 3 will not substantially affect a rare, threatened or endangered species, or its habitat. The proposed site is covered with grass and is grazed by cattle; therefore, the existence of endangered species in the project area is unlikely.
10. The proposed Wailua Homesteads Well No. 3 will not detrimentally affect air or water quality or ambient noise levels. The proposed project will provide potable groundwater for human use and consumption. The well will be designed and constructed in accordance with the DLNR-CWRM well construction standards to prevent pollutants from entering the ground water aquifer at the well.
11. The proposed Wailua Homesteads Well No. 3 site will not affect or 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 water. The proposed site is on a ridge at an elevation of approximately 680 feet above mean sea level. The Flood Insurance Rate Map designates the well site within Zone X, determined to be outside of the 500-year flood plain.
12. The proposed Wailua Homesteads Well No. 3 site will not affect scenic vistas and viewplanes identified in county or state plans or studies.
13. The proposed Wailua Homesteads Well No. 3 will not consume a substantial amount of energy. If development of the well proves feasible, the amount of energy to construct, operate, and maintain the proposed well and associated water system improvements would be a small fraction of the total amount of energy currently being used in the area.

B. DETERMINATION

Based upon the above data and analyses, the proposed project is not anticipated to have significant adverse impacts on the coastal waters, local ecology, hydrology, and atmosphere. Mitigative measures will be implemented as deemed necessary and as required by the governmental agencies. A Finding of No Significant Impact determination (Environmental Impact Statement document is not required) has been issued.

IX. REFERENCES

1. County of Kauai Department of Water, Water Plan 2020, March 2001. Prepared by R.W. Beck and CH2MHill.
2. State of Hawaii, Commission on Water Resource Management, Department of Land and Natural Resources, State Water Resources Protection Plan, Vol. I & II, June 1990. Prepared by George A.L. Yuen & Associates, Inc.
3. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey, Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.
4. University of Hawaii, Department of Geography, Atlas of Hawaii, Second Edition, University of Hawaii Press, 1983.
5. Use and Development Plan, January 1990. Prepared by R.M. Towill Corporation.

APPENDIX



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

236 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4186
FACSIMILE (808) 586-4186

March 7, 2001

Mr. Ernest Y. W. Lau, Manager and Chief Engineer
Department of Water, County of Kauai
4398 Pea Loke Street
Lihue, Hawaii 96766

Dear Mr. Lau:

We have reviewed the draft environmental assessment (DEA) for the Waialua Homesteads Well No. 3. Drill and Test, Tax Map Key 4-4-01: por. 1, Kawaihan District, and submit the following comments for your consideration and response.

1. ENVIRONMENTAL SETTING: Please describe the points or regions of known contamination, points of potential contamination (landfills, individual wastewater disposal systems, hazardous waste/substance disposal sites, dry wells and injection wells), known or assumed chloride levels at specified depths in relation to nearest or adjacent wells, and the likely wellhead protection area for the proposed well. Please check with the Office of Hazard Evaluation and Emergency Response of the Department of Health as to the proximity of the Agent Orange burial site on University of Hawaii property in the region and the status of any any remediation work that may have taken place to mitigate potential groundwater contamination.
2. AQUIFER STATUS: Aquifer Status - Please include the following information in the environmental assessment: (1) data table presenting current water use totals, including subtotals for individual users; (2) current installed capacity including subtotals for individual wells and/or groups of wells; (3) pending installed capacity and/or use for proposed well and subtotals for individual wells and/or groups of wells within the aquifer.
3. CONTAMINATION ANALYSIS AND VULNERABILITY ASSESSMENT: A record of contamination problems in the aquifer including but not limited to saltwater intrusion, turbidity, heavy metals, inorganic and organic chemicals, microbiological agents, water quality parameters and radioactivity should be included in the environmental assessment. If contamination exists, the sources and duration of contamination should be listed. Water quality data from nearby wells should also be presented as well as any anticipated need for treatment of filtering systems. Discuss past and existing land uses within the likely wellhead protection area and the potential for future contamination from those uses. The potential for contamination should be assessed based on geologic and hydrologic considerations. Although sources of contamination might be presently absent, vulnerability to contamination might be great, if contamination sources occur in the future, due to factors such as high rates of infiltration or thin, protective soil horizons. Also, any hazardous materials used and/or produced during drilling and treatment should be described. The method for handling these hazardous materials should also be disclosed.
4. HYDROLOGIC IMPACT ANALYSIS: A description of the associated watershed and recharge area and a discussion of the potential effects the well development may have on affiliated groundwater and surface water (e.g., streams and wetlands). Relevant hydrologic, physical, chemical, and biological data for potentially affected waters should be included. If potential impacts exist, a monitoring program for surface waters should be included. The environmental assessment should also include pump test data on water level, extraction rates, and water quality. Similar data from nearby wells should also be included. The precise criteria used

to determine if the well should be converted to production should also be disclosed. Any provisions for future use and monitoring of wells not placed into production should also be described.

5. BIOLOGICAL IMPACT ASSESSMENT: The environmental assessment discusses flora and fauna within the project site which lays within the State conservation district. Please consider the indirect and cumulative effects of this copy on regional flora and fauna especially native species (not necessarily endangered or threatened). A copy of the content guidelines for biological surveys, ecosystem impact analysis and mitigation measures is included for your use.

6. EARLY CONSULTATION WITH INDIVIDUALS AND ORGANIZATIONS OTHER THAN AGENCY IS REQUIRED BY RULE: Section 11-200-9, Hawai'i Administrative Rules, requires that you consult with "other agencies having jurisdiction or expertise as well as those citizen groups and individuals which the proposing agency reasonably believes to be affected." As proposing agency, it is reasonable to believe that your consumers of water will be affected. Please consult with community associations, homestead associations, environmental groups and cultural impact practitioners in the Waialua region.

7. CULTURAL IMPACT ASSESSMENT UNDER ACT 50, 2000 SESSION LAWS OF HAWAII: Enclosed are the guidelines for assessing cultural impacts of the proposed project, required now by law. Please consult with cultural practitioners and native gatherers in the region and determine what impact if any, your project may have on such practices.

8. FINANCIAL ARRANGEMENTS, PROJECT SCHEDULE AND COST: In certain instances, a well is explored/developed by private financing, the transfer of public lands to government or private developers, or in return for a water allocation credit to supply a development. The environmental assessment needs to disclose if any of the above factors are relevant to this project.

9. WATERSHED AND LAND USE ANALYSIS: The environmental assessment should contain a discussion of how waters from the well would be used, and an analysis of how the proposed well development may affect land and water uses in the region and on the island (see enclosed guidance for details).

10. ANALYSIS OF SIGNIFICANCE UNDER SECTION 11-200-12, HAWAII ADMINISTRATIVE RULES: In your Findings and Determination Section, please examine each of the criteria set forth in Section 11-200-12, Hawai'i Administrative Rules, and narratively explain how the proposed project does or does not significantly impact the environment. A sample analysis is enclosed for your review.

To ensure that your next submittal meets the administrative content requirements defining an environmental assessment, and hence is eligible for publication in the *Environmental Notice*, see Chapter 343, HRS, document, please ensure that each of the above items is addressed. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

Enclosures

- c: Mr. Keith Fujimoto, DWS
Ms. Lynn Katahara, Fukunaga and Associates, Inc.

July 25, 2001

Ms. Genevieve Salmonson, Director
State of Hawaii, Office of Environmental Quality Control
235 South Heretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Final Environmental Assessment (FEA) – Finding of No Significant Impact
Drill and Test Waihua Homesteads Well No. 3

Thank you for your review and comments on the Draft EA. This letter is written on behalf of the County of Kauai Department of Water in response to the comments in your letter dated March 7, 2001.

I. ENVIRONMENTAL SETTING:

a. The University of Hawaii Kauai Agricultural Research Center (KARC) is located approximately 1.3 miles south of the proposed Waihua Well No. 3 site. The *Closure Plan for Treatment, Storage and Disposal Facility* at KARC, dated March 7, 2001 was obtained from the DOH, Office of Hazard Evaluation and Emergency Response (DOH-IHER). The environmental concern is for halogenated aromatic hydrocarbons, specifically the dioxin/furan concentration in the soils.

Initial investigations of soils at the Treatment Storage and Disposal Facility indicate dioxin/furan concentrations of less than 3.8 parts per billion (ppb). According to the U.S. Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response Directive 9200.4-26, the recommended cleanup level for dioxin-contaminated soils at industrial sites is 5 to 20 ppb. Although the dioxin/furan concentration in the soils at the facility is likely less than the recommended cleanup level, the U.S. Agency for Toxic Substances and Disease Registry recommends that for sites with dioxin concentrations greater than 1 ppb the likelihood of exposure and health implications should be evaluated further. The University currently is pursuing closure of the facility and plans to perform a site assessment to determine the extent of contamination and a risk assessment to determine the associated health risks and required cleanup effort.

The *National Primary Drinking Water Regulations Consumer Factsheet on: DIOXIN (2,3,7,8-TCDD)*, published by the U.S. EPA, Office of Water states the following on dioxin:

Due to its very low water solubility, most of the dioxin occurring in water will adhere to sediments and suspended silts. Similarly, it tends to adhere to soil if released to land, and is not likely to leach to ground water.

FUKUNAGA & ASSOCIATES, INC.



Ms. Genevieve Salmonson, Director
Page 2
July 25, 2001

In light of the facts as summarized below, dioxin contamination at the proposed well site is not anticipated:

- Dioxin is not likely to leach into groundwater;
- The proposed well site is approximately 100 feet higher in elevation than KARC and is likely hydraulically up-gradient;
- The proposed well site is over a mile away from KARC.

b. According to the Department of Health, Safe Drinking Water Branch (DOH-SDWB), DOH recently began discussion with KARC regarding a cesspool on the property. DOH will require KARC to upgrade to a treatment system or abandon the cesspool.

According to Hawaii Administrative Rules, Title 11, Chapter 23, Underground Injection Control, the minimum horizontal distance between a potable water well and cesspool is 1000 feet. As stated earlier, the proposed well site is over a mile away from KARC and is likely hydraulically up-gradient; therefore, impacts of this existing cesspool on the water quality are not anticipated.

c. DOH-SDWB has no other records of points of known or potential contamination.

2. AQUIFER STATUS:

a. Based on the best available information, DOW reports that the municipal potable water consumption for FY 97/98 supplied by the Waihua Water System (County of Kauai water system) was approximately 1.9 mgd. The Waihua Water System is supplemented with source water from the Kapaa Water System; therefore the quantity supplied by the Waihua Aquifer is less than 1.9 mgd.

b. The current and pending installed pump capacity of wells is shown on Figure 4 and include the following (Source: State DLNR – Hawaii Statewide GIS, Aquifers):

- Waihua Homesteads Well A (DOW) – 0.72 mgd
- Waihua Homesteads Well B (DOW) – 0.71 mgd
- Nonou 9-1C (DOW) – 1.43 mgd
- Fern Grotto 1 (State DLNR, Parks) – unused
- Fern Grotto 2 (State DLNR, Parks) – 0.04 mgd
- Waihua-Smith (Private)

3. CONTAMINATION ANALYSIS AND VULNERABILITY ASSESSMENT:

As discussed in Item 1, the dioxin/furan concentration in the soils and the existing cesspool on KARC property are points of potential contamination; however, impacts on the water quality of the proposed well are not anticipated.

The project site is in the middle of parcel TMK 4-4-01:1, as shown on Figure 3. The parcel currently is leased by the survivor of Samuel Thomas (deceased) as a Game Management Area, and classified as Conservation District by the State Land Use Commission, which does not have a County classification. Changes in the land use are unlikely because land use within the conservation district is regulated and managed by the State to conserve, protect and preserve the important natural resources of the State. This parcel also is bounded on the mauka side by the Keaia and Lihue Kolea Forest Reserves. Therefore vulnerability to contamination is anticipated to be minimal.

4. HYDROLOGIC IMPACT ANALYSIS:

As discussed in the Draft EA, according to the State Water Resources Protection Plan, the sustainable yield of the Waialua Aquifer System has been estimated at approximately 60 mgd. The current water use from the aquifer is estimated to be close to 2 mgd; therefore, additional hydrologic impacts associated with the proposed well are anticipated to be minimal. Should DOW pursue development of this well, the pump test data and discussion of the criteria to determine converting the well to production will be included in the environmental assessment for Phase II.

5. BIOLOGICAL IMPACT ASSESSMENT

The parcel on which the well site is proposed encompasses close to 1200 acres for public hunting grounds and upland game bird preserve. This parcel, in turn, is surrounded by vast forest reserve. The proposed site will occupy less than one acre; therefore the impact on the flora and fauna within the region is anticipated to be minimal.

6. EARLY CONSULTATION

- a. The Konohiki-Pukalani Water System Association was contacted. They have no objections to the subject project as they will benefit from additional source water to serve their community.
- b. The Kauai Office of Hawaiian Affairs suggested contacting Ms. Kehaulani Kekua of the Kauai Heritage Center of Hawaiian Culture and the Arts. Ms. Kekua visited the site and stated, "it is of our professional opinion that the development project estimated to take up no more than one acre, will not pose any negative impacts on the natural, cultural and historical resources of the area." However, there is concern regarding access to the area. She was informed and understands that the developed site will be fenced, but access will be allowed around the perimeter of the fenced area. Access to and use of the area and resources including flora and fauna surrounding the site will not be affected. Please refer to the attached facsimile received on July 11, 2001.

7. CULTURAL IMPACT ASSESSMENT

See response to Item 6.

8. FINANCIAL ARRANGEMENTS, PROJECT SCHEDULE AND COST

As stated in the Draft EA, State appropriated funds will be used for the subject project. There are no restrictions on the water allocation for the project.

9. WATERSHED AND LAND USE ANALYSIS

As stated in the Draft EA, KDOW desires to develop a new water source to serve Waialua Homesteads. The new water source will minimize the need to supplement the Waialua Water System with source water from the Kapaa Water System.

10. ANALYSIS OF SIGNIFICANCE

The Analysis of Significance in the format requested has been incorporated into the Final EA. Please refer to the section on Findings and Determination.

We hope the responses address your comments to your satisfaction.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.


Lynn T. Katahara

encl.

cc: County of Kauai Department of Water

received
7/11/01

Kauai Heritage Center Of Hawaiian Culture & The Arts

Located at Kauai Village in Waipouli
4-831 Kuhio Highway Kapaa, Kauai, Hawaii 96746
(808) 821-2070 Telephone and Fax

To: Lynn Katahara
Fukunaga & Associates
From: Kehaulani Kekua
Kauai Heritage Center
Fax: (808) 846-8339
Date: July 2, 2001
Phone: (808) 944-1821
Pages: 1

Re: EA -- PROPOSED WATER TANK SITE FOR CCI
KAUAI DEPARTMENT OF WATER

Urgent For Review Please Comment Please Reply Please Recycle

Aloha Lynn,

Thank you for your patience in awaiting our reply.

We have had the opportunity to visit the project area that is being considered for the proposed Wailua Homesteads Well No. 3 site. It is our professional opinion that the development project estimated to take up no more than one acre, will not pose any negative impacts on the natural, cultural and historical resources of the area. As I mentioned in our prior conversation, the greatest concerns lie with the questions of restricted access to the area, and environmental harm to the resources as a result of the proposed development. However, based on the information that you shared with us in your fax of June 13, 2001, access will be provided around the perimeter of the fenced area.

As such, we would not be opposed to the project unless other negative impacts are found in your environmental assessment. In this case, we would greatly appreciate notification of your findings and subsequent plans whenever possible.

Lynn, mahalo nui loa once again for inviting our input



PHONE (808) 594-1986

FAX (808) 594-1985

cc: BOT
Administrator
Kawai CRC



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

March 8, 2001

Lynn T. Katahara
Fukunaga & Associates
1388 Kapiolani Blvd, 2nd Floor
Honolulu, HI 96814

RE: Draft Environmental Assessment – Drill and Test Wailua Homesteads Well No 3.

Dear Ms. Katahara,

Thank you for the opportunity to comment on the Draft Environmental Assessment – Drill and Test Wailua Homesteads Well No. 3.

OHA's only comment at this time concerns the lack of a cultural assessment for this project. OHA notes that Act 50, passed by the legislature last year and signed into law by the governor, requires that a cultural assessment, as well as an archaeological assessment be done for all state projects. This draft EA does not address the impacts of the project on traditional and cultural practices, particularly those related to gathering rights for Native Hawaiians.

If you have questions, please call Pua Aiu, policy analyst at 594-1931.

Sincerely,

A handwritten signature in cursive script that reads "Pua Aiu for".

Colin Kippen, Jr
Deputy Administrator, Hawaiian Rights Division

July 25, 2001

Mr. Colin Kippen, Jr.
Deputy Administrator, Hawaiian Rights Division
State of Hawaii, Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Kippen:

Subject: Final Environmental Assessment (FEA) -- Finding of No Significant Impact
Drill and Test Wailua Homesteads Well No. 3

Thank you for your comments on the Draft EA for the subject project. This letter is in response to your letter dated March 8, 2001.

The parcel on which the well site is proposed encompasses close to 1200 acres of land for public hunting grounds and upland game bird preserve. This parcel is bounded on the mauka side by the Kealia and Lihue Koloa Forest Reserves. The proposed site will occupy less than one acre; therefore, the impact on the general environment within the region is anticipated to be minimal, and will not affect the land use. Access to and use of the area and resources including flora and fauna surrounding the proposed future fenced site will not be affected.

The proposed project will enhance the beneficial use of the environment, as it will draw upon the naturally occurring groundwater supply in the area to serve and support the existing drinking water demands of the community. The proposed site is within the Conservation District which is regulated and managed by the State to conserve, protect and preserve the important natural resources of the State. The required land area is a minute fraction of the total area within the Conservation District. If the well drilling and testing prove successful and the Department of Water proceeds with the well development and pump installation, a Conservation District Use application will be processed with the Board of Land and Natural Resources. The well development and associated water system improvements will comply with the permit requirements.

With regards to archaeological and historical considerations, based on a visual inspection of the site by the State Historic Preservation Officer on Kauai, there is no evidence of archaeological or historical remains. However, if construction work uncovers any archaeological remains, work will cease and the State Historic Preservation Division contacted.

The Kauai Office of Hawaiian Affairs suggested consulting Ms. Kehaulani Kekua of the Kauai Heritage Center of Hawaiian Culture and the Arts regarding the subject project. Ms. Kekua visited the site and stated, "it is of our professional opinion that the development project estimated to take up no more than one acre, will not pose any negative impacts on the natural, cultural and historical resources of the area." However, she voiced concern regarding access to the area. She was informed and understands that the developed site will be fenced, but access

FUKUNAGA & ASSOCIATES, INC.



Mr. Colin Kippen, Jr.
Deputy Administrator, Hawaiian Rights Division
Page 2
July 25, 2001

will be allowed around the perimeter of the fenced area. Please refer to the attached facsimile received on July 11, 2001.

We hope the responses address your comments to your satisfaction.

Sincerely,
FUKUNAGA & ASSOCIATES, INC.


Lynn T. Katahara

encl.
cc: County of Kauai Department of Water

received
7/11/01

Kaua'i Heritage Center Of Hawaiian Culture & The Arts

Located at Kaua'i Village in Waipouli
4-831 Kuhio Highway Kapaa, Kaua'i, Hawaii 96746
(808) 821-3070 Telephone and Fax

To: Lynn Katahara
Fukunaga & Associates

From: Kehaulani Kekua
Kaua'i Heritage Center

Fax: (808) 946-8339
Date: July 2, 2001

Phone: (808) 944-1821
Pages: 1

Re: EA -- PROPOSED WATER TANK SITE FOR CC;
KAUAI DEPARTMENT OF WATER

Urgent For Review Please Comment Please Reply Please Recycle

Aloha Lynn,

Thank you for your patience in awaiting our reply.

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As such, we would not be opposed to the project unless other negative impacts are found in your environmental assessment. In this case, we would greatly appreciate notification of your findings and subsequent plans whenever possible.

Lynn, mahalo nui loa once again for inviting our input.





STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 565
801 Kamehaha Boulevard
Honolulu, Hawaii 96814

February 26, 2001

Ms. Lynn Katakaha
Fukunaga & Associates
1388 Kapiolani Blvd.
Honolulu, Hawaii 96814

Dear Ms. Katakaha:

SUBJECT: Historic Preservation Review - Draft Environmental Assessment -
Drill and Test Waitua Homesteads Well No. 3, TMK: 4-4-01: por. 1
South Oloheua-Kapaa, Kawaihau, Kauai

A review of our records indicates the absence of historic sites on this property. Our staff archaeologist conducted a field inspection of the area and no significant historic sites were found. Therefore, we believe that this project will have "no effect" on significant historic sites.

If by some chance historic sites or human remains are found, please stop work in the immediate area and contact our office, so that appropriate mitigation can be taken.

If you have any questions, please call Nancy McMahon at 742-7033.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

NMI:amk

DEPUTY
JANET T. KAWILO
UNDEPUTED

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONSERVATION AND RESOURCES
HISTORIC PRESERVATION
LAND
STATE PARKS

LOG NO: 26858 ✓
DOC NO: 0201NM09

BENJAMIN J. CAVETANO
Governor



State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512

February 12, 2001

Ms. Lynn T. Katakaha
Fukunaga & Associates, Inc.
1388 Kapiolani Boulevard, 2nd Floor
Honolulu, HI 96814

Dear Ms. Katakaha:

RE: Draft Environmental Assessment –
Drill and Test Waitua Homesteads Well No. 3

Thank you for your February 8, 2001 letter. The Department of Agriculture has no objections to the Draft Environmental Assessment.

Sincerely,

PAUL T. MATSUO, P.E.
Administrator and Chief Engineer
Agricultural Resource Management
Division



JAMES J. NAKATANI
Chairperson, Board of Agriculture
LEITITA N. UYEHARA
Deputy to the Chairperson

Mailing Address:
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Honolulu, Hawaii 96823-2159
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