

MARYANNE W. KUSAKA  
MAYOR



*Waimea - Kekaha Water  
System*

MATILDA A. YOSHIOKA  
HOUSING ADMINISTRATOR

KENNETH N. RAINFORTH  
EXECUTIVE ASSISTANT

COUNTY OF KAUAI  
HOUSING AGENCY

4183 Hardy Street  
Lihue, HI 96756  
Development (808) 241-6444  
CDBG/V-TDD (808) 241-6455  
Section 8 (HUD) (808) 241-6440  
FAX (808) 241-6456

QUALITY CONTROL

SEP 16 09:15

September 14, 1998

C:\DOW\KEK\OEQC\_EA.FNL

Mr. Gary Gill, Director  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

Dear Mr. Gill:

Subject: Finding of No significant Impact (FONSI) for  
Waimea-Kekaha Water System: Pakui Housing Program  
CDBG Disaster Grant  
TMK: (4)1-2-02:1, Kekaha, Kauai, Hawaii

The Kauai County Housing Agency has reviewed the comments received during the 30-day comment period which began on June 25, 1998. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the October 8, 1998 OEQC Environmental Notice. ✓

We have enclosed a completed OEQC Publication form and four copies of the final EA, the project summary on disk (on file). Please call Dennis Alkire at (808) 241-6814 if you have any questions.

Sincerely,

MATILDA A. YOSHIOKA  
Housing Administrator

c: Dennis Alkire, KCHA  
Ernest Lau, DOW



AN EQUAL OPPORTUNITY EMPLOYER

170

1998-10-08-KA-FA-Waimea-Kekaha  
Water System

COUNTY OF KAUAI  
HOUSING AGENCY

OCT 8 1998

**FILE COPY**

**FINAL**

ENVIRONMENTAL ASSESSMENT

FOR

WATER SOURCE IMPROVEMENTS  
WAIMEA - KEKAHA WATER SYSTEM  
PAKUI HOUSING PROGRAM  
CDBG DISASTER GRANT  
D.O.W. JOB 96-4

WAIMEA - KEKAHA, KAUAI, HAWAII  
TAX MAP KEY: (4)1-2-02:1

AUGUST 1998

PROPOSING AGENCY:

COUNTY OF KAUAI  
HOUSING AGENCY  
4193 HARDY STREET  
LIHUE, KAUAI, HI. 96766

APPROVING AGENCY:

COUNTY OF KAUAI  
HOUSING AGENCY  
4193 HARDY STREET  
LIHUE, KAUAI, HI. 96766



MATILDA A. YOSHIOKA  
KHCA ADMINISTRATOR

PREPARED BY:

AKINAKA & ASSOCIATES, LTD.  
CONSULTING ENGINEERS  
250 NORTH BERETANIA STREET, SUITE 300  
HONOLULU, HAWAII 96817

**ENVIRONMENTAL IMPACT ASSESSMENT**

**TABLE OF CONTENTS**

	<b><u>PAGE</u></b>
PROJECT SUMMARY .....	iv
I. INTRODUCTION .....	I-1
A. Program Objective .....	I-1
B. Project Description .....	I-1
C. Project Location .....	I-1
II. DESCRIPTION OF THE PROPOSED PROJECT .....	II-1
A. Background .....	II-1
B. Proposed Improvements .....	II-2
C. Project Activity .....	II-2
D. Cost Estimate .....	II-3
III. RELATIONSHIP TO EXISTING LAND USE PLANS AND CONTROLS .....	III-1
D. Existing Land Use .....	III-1
B. State Land Use Designation .....	III-1
C. County of Kauai General Plan .....	III-1
IV. ENVIRONMENT SETTING .....	IV-1
A. Topography .....	IV-1
B. Geology .....	IV-1
C. Climate .....	IV-1
D. Hydrology .....	IV-2
E. Biology .....	IV-2
F. Air Quality .....	IV-2
G. Water Quality .....	IV-3
H. Noise .....	IV-3
I. Archaeology .....	IV-3
J. Flood Hazard .....	IV-3
V. SOCIO-ECONOMIC SETTING .....	V-1

	<u>PAGE</u>
VI. PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT .....	VI-1
A. Short Term Impacts .....	VI-1
B. Long Term Impacts .....	VI-1
VII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED .....	VII-1
VIII. ALTERNATIVES TO THE PROPOSED ACTION .....	VIII-1
A. No Action .....	VIII-1
B. Alternates Site .....	VIII-1
IX. MITIGATING MEASURES TO MINIMIZE ADVERSE IMPACTS ..	IX-1
X. RECOMMENDATION .....	X-1
XI. REASONS SUPPORTING THE RECOMMENDATION .....	XI-1
XII. LIST OF NECESSARY APPROVALS .....	XII-1
XIII. ORGANIZATIONS AND PERSON CONTACTED .....	XIII-1
XIV. BIBLIOGRAPHY .....	XIV-1

**LIST OF EXHIBITS**

1. VICINITY MAP
2. LOCATION MAP
3. SITE PLAN
2. TYPICAL WELL SECTION
5. STATE LAND USE DISTRICTS
6. COUNTY OF KAUAI GENERAL PLAN
7. FLOOD INSURANCE RATE MAP

**RESPONSE TO CONTACTS**

**PROJECT SUMMARY**

**PROJECT:** Water Source Improvements  
Waimea - Kekaha Water System  
Pakui Housing Program  
CDBG Disaster Grant

**APPLICANT:** County of Kauai  
Housing Agency (KCHA)  
4193 Hardy Street  
Lihue, Kauai, Hi. 96766

**CONTACT PERSON:** Mr. Dennis Alkire  
KCHA Project Coordinator  
Phone: 808-241-6814

**APPROVING AGENCY:** County of Kauai  
Housing Agency (KCHA)  
4193 Hardy Street  
Lihue, Kauai, HI. 96766

**LAND OWNER:** State of Hawaii (DLNR)  
Leased to Kekaha Sugar Co.

**TMK:** (4) 1-2-02:1

**EXISTING LAND USE:** Pasture

**LAND USE DESIGNATION:** Agriculture

**ZONING DESIGNATION:** Open

## I. INTRODUCTION

### A. Program Objective

The objective is to provide domestic water to the Waimea-Kekaha Water System for the benefit of all residents of the Waimea and Kekaha communities. The program will be initiated by locating and validating a deepwell source within the Waimea-Kekaha service area.

### B. Project Description

The proposed project consists of drilling and testing an exploratory well located in Kekaha, Kauai. Site grading, drainage control and erosion mitigation features will be included in the project. The well will be tested to determine its potential to service consumers within the Waimea-Kekaha Water System. Should the testing be successful (quality and quantity), the well can be developed and integrated into the existing Kauai Department of Water network.

### C. Project Location

The project is located in the Waimea District of Kauai, approximately 1.3 miles northerly of Kekaha Town. The project site is in Kapilimao Valley (elevation 152') and presently used for pasture. **EXHIBIT 1: VICINITY MAP** and **EXHIBIT 2: LOCATION MAP** shows the project area and location. Access to the project site will be through existing sugar cane field roads.

## II. DESCRIPTION OF PROPOSED PROJECT

### A. Background

The Waimea-Kekaha Water System service area contains 500 to 750 existing housing units in Waimea and Kekaha Towns. The service area is relatively large and includes residences, Waimea High School, Waimea Intermediate School, commercial districts in Waimea and Kekaha and the resort area called Waimea Plantation Cottages.

In 1994, the State of Hawaii Department of Health raised concerns which caused the Kauai Department of Water (DOW) to cease the operation of its Waimea Shaft No. 9 (5939-01). This has resulted in a 27% reduction in source capacity serving the Waimea-Kekaha system. Accordingly, the DOW is pursuing selection and development of a new water source.

A "Well Site Selection Report" has been prepared which reviews and updated the hydrogeologic information in the area. Essential field data has been collected and compared with existing literature and data to select a site for drilling a new well. Recommendations were provided in the report for several new well locations and the report discussed anticipated hydrogeologic considerations associated with the new wells.

The recommended well site, based partially on the site selection report, is located on the west side of Kapilimao Valley, in the north of Kekaha Town. The recommended site and access route are shown in **EXHIBIT 3: SITE PLAN**. Reasons for recommending the Kapilimao Valley site are as follows:

1. Land Ownership: State Department of Land and Natural Resources (DLNR) lands leased to Kekaha Sugar Company (S-4222).
2. Site appears to overlay lavas of the Waimea Napali series (anticipated well yield = 500 - 700 gpm based on performance of Kekaha-Waipao and Paua Valley Wells).
3. It is not expected that a well in this area will be subject to saltwater encroachment based on its location and proposed pumping rate (anticipated water quality Cl = 120 ppm).
4. There are no production wells within 2,000 feet of the proposed exploratory well.



5. There is ready access from canefield roads.

B. Proposed Improvements

The exploratory well will be drilled on State lands leased to Kekaha Sugar Company (TMK: (4)1-2-02:1) in Kapilimao Valley. The site is in close proximity to and accessible from a canefield road. Ground elevations range from 150 to 160 feet (MSL). Well depth will be approximately 195' with final depth determined by the results of drilling and testing. **EXHIBIT 4: TYPICAL WELL SECTION** provides a concept of the exploratory well. If the pumping and water quality test results are satisfactory, the well will be developed (future action). Well development for potable water production consists of pump, controls, pump house, piping, paving, chlorinators fencing etc., and connection to the Waimea-Kekaha water system with a pipeline.

The new well will be installed with solid well casing to sea level and grouted to the land surface. Perforated casing will be placed from elevation -15 MSL but not extending beyond -45' MSL.

C. Project Activity

Site grading is necessary to provide a level working area for the drill rig which could be either rotary or cable tool. Settling pits, rock filters and seepage pits are required for rotary drilling. Actual drilling days are estimated at 30 days for rotary and 60 days for cable tools.

During well drilling, geological and hydrological samples will be gathered and tests conducted to determine yield, drawdown, recovery and water quality at various rates of pumping. Test data will be analyzed by the Department of Water to determine suitability for domestic water production.

Electrical power for pump testing the exploratory well will be furnished by gas/diesel powered generators. If well drilling and testing are successful, permanent power for the developed system must be obtained from Citizen's Utilities Co. and will require a 4,000 feet overhead pole line following the cane roads (future action). If the well is not developed for potable water production, the well will either be sealed or retained as a monitoring well without the installation of appurtenant pumps, controls, connecting pipeline and power line.

D. Cost Estimate

Preliminary cost estimate for the Kapilimao Valley sitework, well drilling, casing and testing is \$400,000. As identified in the Cooperative Funding Agreement between the County of Kauai, Housing Agency and County of Kauai, Department of Water the site improvement, costs "Phase I drill and test" will be supported by the Community Development Block Grant (CDBG) funding.

### III. RELATIONSHIP TO EXISTING LAND USE PLANS AND CONTROLS

#### A. Existing Land Use

The candidate site is presently used as pasture lands. Sparse bush and grasses are the typical site feature. Access to the site is presently limited to cane roads.

#### B. State Land Use Designation

The State Land Use Commission designates properties in four categories: Agriculture, Rural, Urban, and Conservation. The proposed project lies within land designated as Agriculture. (See **EXHIBIT 5: STATE LAND USE DISTRICTS**). The water well is permissible under the rules of practice and procedure, State Land Use District Regulations, Part III Section 3-3 paragraph 7 which reads as follows:

Public, private, and quasi-public utility lines, and roadways, transformer stations, solid waste transfer station, etc., and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants and major storage tanks not ancillary to agricultural practices, or corporation yards or other like structures.

#### C. County of Kauai General Plan

The General Plan for the County of Kauai, dated March 1970, provides information on the surrounding communities and land use designations. Also provided are generalized statements regarding transportation, sewer and water systems, storm drainage, etc.

The proposed project is consistent with the County of Kauai General Plan Update (**Section 7-2.1, June 21, 1984**) which states as its goal:

"To promote and protect the health, safety and welfare of all residents and visitors, and to promote the improvement and expansion of the island's economy, by recognizing and carefully utilizing land and water resource."

The proposed project lies within land zoned as Open District (See EXHIBIT 6: COUNTY OF KAUAI GENERAL PLAN). Under the provisions of the County's Comprehension Zoning Ordinance No. 164, public utilities and facilities are permissible uses in this zoning district.

#### IV. ENVIRONMENTAL SETTING

##### A. Topography

The project is located 1.4 miles mauka of the shoreline above Kekaha Town. The project site is along the western slope of Kapilimao Valley. The valley sides slopes at approximately 40% while the site slopes at approximately 10%. The adjacent canefield road serves as an access route for Kekaha Sugar Co. Topographic information is available on the Waimea Quadrangle Map published by the U.S. Geological Survey (See **EXHIBIT 2: LOCATION MAP**) and aerial topographic maps by the County of Kauai.

##### B. Geology

The Island of Kauai is the oldest of the major islands in the Hawaiian chain. The Kauai Volcanic shield built itself off the ocean floor approximately two to four million years ago. Rock formations belonging to this original shield are part of the Waimea Canyon Volcanic Series, a major portion of which are the thin lava flows of the Napali formation.

Maps by the U.S. Soils Conservation Service within the "Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972" classifies the soil as Waiawa extremely rocky clay (WJF). A thin layer of granular heavy clay loam (2" thick) is underlain by dark reddish-brown clay about 12 inches thick. The substratum is hard rock. Surface soil permeability is moderate to moderately slow. Runoff is very rapid, and the erosion hazard is severe.

##### C. Climate

The climate of Kauai is comfortably uniform and is characterized by the northeast tradewinds generated by regions of high pressure to the north. The consistent approach of the tradewinds from the Northeast distinguishes the island into windward and leeward sides. Windward Kauai receives larger amounts of rainfall as the result of the condensation of water vapor as it is forced up into the atmosphere by the mountain mass. Mount Waialeale, for example, has a mean annual rainfall of 466 inches. The Waimea-Kekaha region, on the leeward side, has a mean annual rainfall of about 22 inches.

Temperatures in the region range from the mid 50's to the low 90's (degree Fahrenheit). Average temperature is 75°F. Temperature varies by about 15 degrees between day and night.

D. Hydrology

The principal sources of ground water on the island of Kauai are from the Napali Formation of the Waimea Canyon volcanic series. This volcanic series are typically highly permeable and yield water readily to wells as experienced by the Kekaha-Waipio and Paua Valley wells. The Koloa Volcanic series, in contrast, tend to be poorly to moderately permeable and offer limited yields. The candidate well site is located in the Napali Formation series.

Groundwater in the region is used for domestic (DOW) and irrigation (Kekaha Sugar Company). Per the Site Selection Report, wells in the vicinity seem to be located where the fresh water lens is thicker. The DOW's Paua Valley well (well #5942-01) was test pumped at a continuous rate of 500 gpm and is equipped with a 500 gpm pump, while the Waipao well 'B' (well #5943-02) was test pumped at a rate of 1,000 gpm and is equipped with a 700 gpm pump.

E. Biology

The Kekaha Sugar Company has utilized the surrounding area for sugar cultivation over the past several decades. The site due to its steep topography, is vacant or at times used for pasture. Vegetation at the site is typically koa haole, lantana, natal redtop and molassesgrass. Native vegetation at the site has been replaced with shrubs and grasses.

A formal biological survey was not performed for the site. Considering the agricultural activity and grazing, threatened or endangered birds are not expected to frequent the site. According to the Hawaii Natural Diversity Database (The Nature Conservancy of Hawaii) there have been no recordings of rare species or ecosystems within the vicinity of the project.

F. Air Quality

Although no information on air quality at the project site was obtained, it is generally assumed that the air is normally relatively clear and low in pollution because of the great distance from the major urban centers. The exception is the seasonal dust created during agricultural planting and harvesting.

G. Water Quality

The well's water quality will be addressed when water samples obtained during pump testing are analyzed. A "Preliminary Engineering Report for New Potable Water Source" as required by the State of Hawaii Department of Health, Chapter 20 of Title 11, Administrative Rules, will include water quality analyses and recommendations.

H. Noise

Noise levels were not measured at the project site. Due to the absence of noise sources, the noise levels are considered to be normal rural and agricultural levels.

I. Archaeology

No formal archaeological survey was performed at the site. Per the DLNR Historic Preservation Division (Kauai), there are no identified historic or archaeologically significant locations at the site or immediate vicinity. However, should any unanticipated sites, artifacts or remains, such as shell, bone or charcoal deposits, be discovered during construction, the work would be halted and the State Historic Preservation Office would be contacted.

J. Flood Hazard

Flood hazard data was not computed for the project site. The Flood Insurance Rate Map (Panel 150002 0156 D dated Sept. 30, 1995) indicates that the site is outside the 100-year floodway. **EXHIBIT 7: FLOOD INSURANCE RATE MAP.**

As shown on the site plan (Exhibit 3), there are no rivers or wetlands in the vicinity to serve as receiving waters of discharges from the proposed site. Settling ponds for the Kekaha mill wastewater are located a mile down gradient from the proposed site. The proposed project should not impact the settling ponds, and no impact due to the wastewater is expected on the groundwater quality at the proposed well.

## V. SOCIO-ECONOMIC SETTING

The project area is located in the Waimea-Kekaha region of Kauai. The population has remained stable in this region over the past several years, as evidenced by no significant increases in water meter installation during this period. Some development by Kikiaola Land Co. in the existing Waimea service area is anticipated within the next few years.

The resident population of the island of Kauai as of 1990 was 51,177. The population of the Waimea District for this same date was 8,888. These statistics are from the State of Hawaii Data Book 1993-94.

Kauai County has no ethnic majority. In 1990, the ethnic percentages were:

Hawaiian & Part-Hawaiian	25.3%
Filipino	17.3%
Japanese	18.4%
Caucasian	18.4%
Other	20.6%

The Kauai economy is primarily geared around agriculture and tourism as the most dynamic industries. The pineapple industry has essentially disappeared since 1960 while the sugar industry has greatly reduced its work force.

In contrast to the decline in agricultural employment, employment in the services sector (dominated by tourism) grew from 9 to 28 percent of total employment since 1960. Other major sources of employment are wholesale and retail trade, 23%; government, 13%; agriculture, 7%, and manufacturing, 6%. The average unemployment rate was 6%.



VI. PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

A. Short Term Impacts

Minor or short term impacts due to the proposed project are expected. Daily traffic of the construction crew (normally two vehicles) through the Waimea and Kekaha Towns area and the noise of the construction equipment will be the primary construction impacts. As the traffic route consists mainly of asphalt concrete roads, and considering the small size of the construction crew, residents should not notice any appreciable increase in traffic. Traffic on the cane roads may create dust but will not have any additional impact to the environment.

Noise from the construction will be limited to site construction and drilling of the proposed well. The work will be restricted to daylight hours and the noise should blend in with the normal activities. Exhaust emissions will be dispersed by the prevailing winds. Distance to denser populated area is approximately 1.3 miles, therefore no adverse impacts are expected.

Dust and erosion from the construction efforts will be related to site construction and traffic movement. Conformance to the County's Grading Ordinance should mitigate any adverse effects. Water discharged from the well during the testing period will be directed to the adjacent valley swale and flow to agricultural irrigation courses. If the well drilling results in discharge of wastewater, a National Pollutant Discharge Elimination System (NPDES) General Permit for discharge activities (HAR Chapter 11-55 Appendix I) is required.

B. Long Term Impacts

Long term impacts from this water well project include loss of land use on the well site. Individual wastewater treatment systems will be restricted within 1,000 feet of the well site. Secondary long term impacts are those relating to the lands necessary for water storage facilities and pipelines.

Visual impacts due to the project will be negligible due to minimal above ground improvements related to exploratory wells. Final well development may include a pump station and aerial power line which could provide some visual concerns. Operational noises at the site will have no impacts if a submersible motor is selected and insignificant

impacts if a line shaft motor is used due to the distance to the nearest residence. Vehicular traffic will be limited to inspections and routine maintenance.

The proposed project will not adversely affect the inventory of rare or endangered species of flora. No rare or endangered species of flora are known to inhabit the project or adjacent areas. The proposed project will have no significant effect upon the animals which frequent the site.

**VII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED**

The noise level will increase during the construction period. This effect will be of short duration, lasting only for the construction phase. The noise level can be reduced by the contractor by ensuring proper functioning of mufflers on all equipment, and conducting construction activity only during daylight hours, between 7:30 a.m. to 5:00 p.m.

Traffic noises, emissions and dust will increase during the construction period. This short duration impact can be mitigated by traffic movement only during daylight hours and dust by mitigation moistening the dirt roads.

## VIII. ALTERNATIVES TO THE PROPOSED ACTION

### A. No Action

In 1994, the State of Hawaii Department of Health raised concerns which caused the DOW to cease the operation of its Waimea Canyon Shaft No. 9 (5939-01). This has resulted in a 27% reduction in source capacity serving the Waimea-Kekaha system. Accordingly, the DOW is pursuing construction of a new well source.

The "No Action" alternative will not allow the Department of Water to meet the resident generated demands that have surpassed the capacity of the existing well sources.

### B. Alternative Site

A "Well Site Selection Report" was prepared for the County of Kauai prior to site selection. Alternative sites in Kekaha and Waimea were investigated and discussed within the report. Three sites in Kekaha and five sites in Waimea were investigated as candidate sites. The Kekaha sites (above Kekaha Town) and the Waimea Valley (in proximity to the Waimea River) were the finalist. Reasons to select the Kapilimao Valley site are provided in SECTION II: DESCRIPTION OF PROPOSED PROJECT.

**IX. MITIGATING MEASURES TO MINIMIZE ADVERSE IMPACTS**

The short term impacts occurring during the construction work will be minimized by applying current techniques and methods. In addition, restrictions of operational hours will minimize noise impacts to the adjoining area. Dust migration can be controlled by use of water wagons and sprinklers.

Long term impacts of the exploratory well project are insignificant. Long term impacts of future well development and operation can be further mitigated by restricting inspections and routine maintenance to normal workday hours. Landscaping can buffer the final development features, such as the control building and chain link fencing.

**X. RECOMMENDATION**

Based on the preceding paragraphs, it is anticipated that the proposed action will result in no significant adverse impacts other than those described in this assessment. Consequently, a "Findings of No Significant Impact" is recommended. If such a finding is issued, an Environmental Impact Statement would not be required.

## XI. REASONS SUPPORTING THE RECOMMENDATION

In considering the significance of potential environmental effects, the applicant has considered the sum of effects on the quality of the environment and evaluated the overall cumulative effects of the proposed action. The applicant has considered every phase of the proposed action, the expected consequences, both primary and secondary and the cumulative as well as the short- and long-term effects of the proposed action. As a result of these considerations, the applicant has determined that:

- A. The proposed action does not involve an irrevocable commitment or loss of or destruction of any natural cultural resource;

There are no natural or cultural resources associated with the project site. The site is presently vacant or used as a pasture.

- B. The proposed action does not curtail the range of beneficial uses of the environment;

The proposed project is consistent with the County's General Plan and the Board of Water Supply policy and would not curtail beneficial uses of the environment in the area. The proposed project will be compatible with the uses of the surrounding area.

- C. The proposed action is in concert with the state's long-term environmental policies, goals and guidelines as expressed in Chapter 343, HRS, and any revisions and amendments thereto, court decisions and executive orders;

The proposed project is consistent with the State Land Use Designation which is in concert with all applicable policies, goals and guidelines. No long-term environmental conflicts are foreseen.

- D. The proposed action does not substantially affect the economic or social welfare of the community or state;

The economic impact will be expressed in the short-term, construction related activities. Upon completion of the project, economic conditions should return to the existing situation since the new well (if developed) will serve the existing community.

- E. The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities:

The proposed project will not result in an increase of population in the area as development is controlled by land use and general plan policies. Normal population growth should not be affected.

- F. The proposed action does not substantially affect public health:

Construction activities will be regulated to minimize noise, dust and erosion concerns. The project includes water quality testing to determine if the water source is suitable for domestic purposes.

- G. The proposed action does not involve a substantial degradation of environmental quality:

The existing physical aspects of the surrounding area will be preserved.

- H. The proposed action is individually limited and cumulatively, does not have a considerable effect upon the environment or involve a commitment for larger actions:

The proposed project will be part of the Waimea-Kekaha Water System. Use is regulated by the County of Kauai, Board of Water Supply. Approval of the project does not involve a commitment for any larger action.

- I. The proposed action does not substantially affect rare, threatened or endangered species or habitats:

There are no known rare, threatened or endangered species or habitat associated with the project site.

- J. The proposed action does not detrimentally affect air or water quality or ambient noise levels:

Development of the site will not increase ambient noise levels as submersible well pump motors are available. If line shaft pump motors are selected, generated noise will have no adverse effects due to the distance to the nearest residence.



Short-term impacts on air and water quality, as well as noise, will occur during the construction period, but will be mitigated by normal construction practices and will be regulated by the project plans, specifications and inspections.

- K. The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters.

The proposed project is not located adjacent to the shoreline and is outside of the 100-year floodplain. No other environmentally sensitive characteristics are associated with this site.

- L. The proposed action does not substantially affect scenic vistas and view planes identified in county or state plans or studies.

When completed, the exploratory well will be capped two feet above ground. The site will be grassed for erosion control. There will be no impacts on scenic vistas or view planes identified in County or State plans or studies.

- M. The proposed action will require energy consumption to drill and test the well.

The energy consumed by the proposed action will be provided by engine-generators and not affect the existing power distribution system.

**XII. LIST OF NECESSARY APPROVALS**

- A. County of Kauai, Planning Department: A use permit is required for all utility installations in agricultural and open zoned land. These requirements are stipulated in the revised ordinances of the County of Kauai, Section 8-7.3 and Section 8-8.3.
- B. County of Kauai, Department of Water: Construction plan approval.
- C. State of Hawaii, Department of Health: Construction plan approval.
- D. State of Hawaii, Commission on Water Resource Management: Well Construction Permit.
- E. State of Hawaii, Department of Land & Natural Resources: Easement

### **XIII. ORGANIZATIONS AND PERSONS CONTACTED**

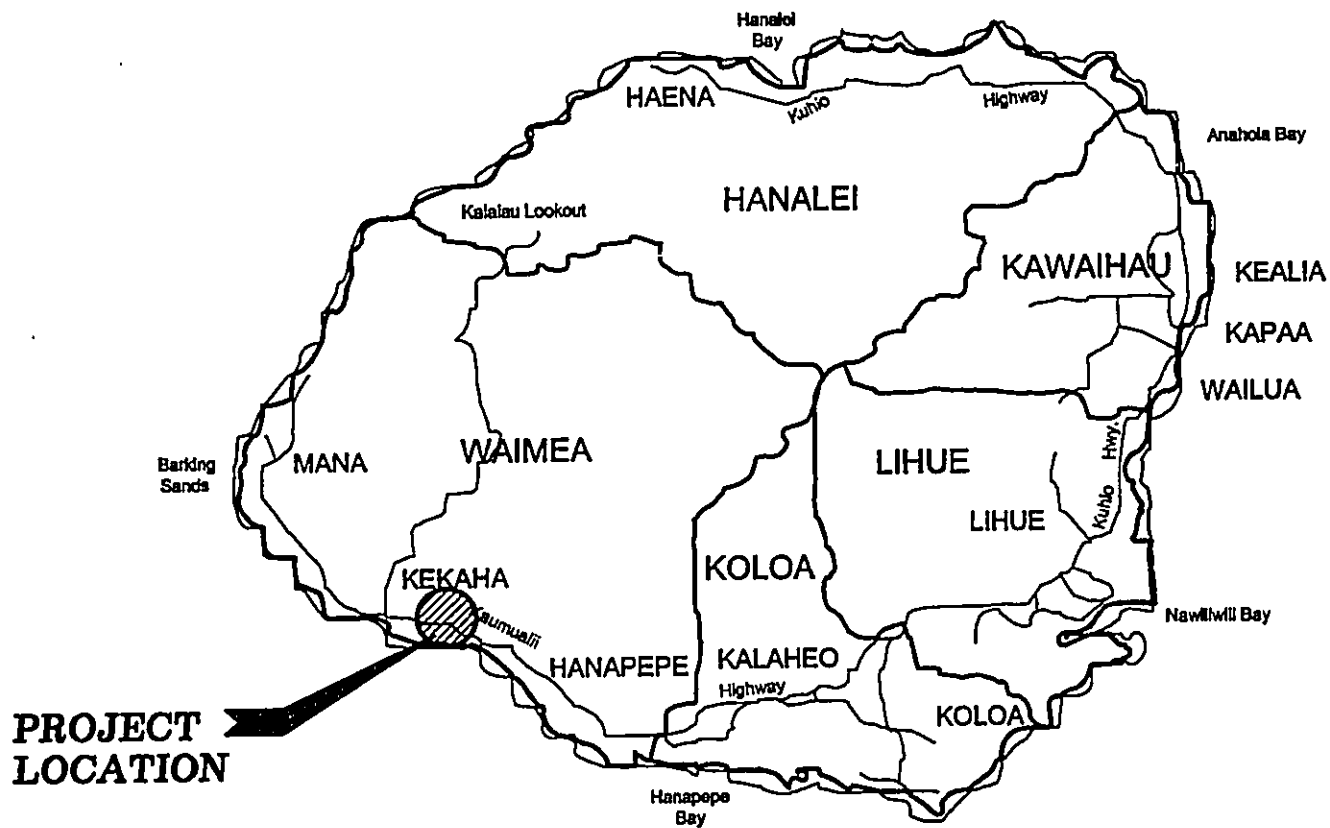
The following agencies provided information in the preparation of the Final Environmental Impact Assessment on the subject project.

- A. Department of Planning  
County of Kauai  
4444 Rice Street, Suite 473  
Lihue, Hawaii 96766
- B. Department of Water  
County of Kauai  
P.O. Box 1706  
Lihue, Hawaii 96766-5706
- C. Department of Hawaiian Home Lands  
State of Hawaii  
335 Merchant Street  
Honolulu, Hawaii 96813
- D. Department of Business, Economic Development and Tourism  
State of Hawaii  
250 South King Street  
Honolulu, Hawaii 96813
- E. Department of Land & Natural Resources  
Division of Land Management  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809
- F. Department of Land & Natural Resources  
State Historic Preservation Division  
33 South King Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813
- G. Department of Land & Natural Resources  
Division of Forestry and Wildlife  
3060 Eiwa St., Room 306  
Lihue, Kauai, HI. 96766

- H. Department of Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, Hawaii 96813
- I. Kekaha Sugar Company, Ltd.  
8315 Kekaha Road  
Kekaha, Hawaii 96752
- J. Kikiaola Land Company, Ltd.  
P.O. Box 367  
Waimea, Kauai, HI. 96796

#### XIV. BIBLIOGRAPHY

1. County of Kauai, Department of Water, A General Plan for Domestic Water/Island of Kauai, (Division of Water and Land Development, Department of Land and Natural Resources, State of Hawaii), Honolulu, February 1972.
2. County of Kauai, A General Plan for the Island of Kauai, (Eckbo, Dean, Austin & William, Inc. and Muroda, Tanaka & Itagaki, Inc.), March, 1970.
3. County of Kauai, Revised Ordinances of Kauai, 1976 and 1978 Cumulative Supplement.
4. Mac Donald, Gordon A., Dan A. Davis and Coak C. Cox, Geology and Ground-Water Resources of the Island of Kauai, Hawaii, Hawaii Division of Hydrography Bulletin 13, 1960.
5. State of Hawaii, Department of Planning and Economic Development, State of Hawaii Data Book, 1991.
6. State of Hawaii, State Land Use Commission, Rules of Practice and Procedure, October, 1975.



ISLAND OF KAUAI

VICINITY MAP  
NOT TO SCALE

10/10/86

WELL NAME: WAIPAO WELL "B"  
STATE WELL NO.: N/A  
CAPACITY = N/A  
GROUND EL. = N/A  
STATIC WATER EL. = N/A  
BOT. OF WELL EL. = N/A  
CASING DIA. = N/A

WELL NAME: KEKAHA-WAIPAO  
STATE WELL NO.: 5842-02  
CAPACITY = 7000 gpm  
GROUND EL. = 180  
STATIC WATER EL. = 7.5  
BOT. OF WELL EL. = -18  
CASING DIA. = 14"

WELL NAME: PAAIA VALLEY  
STATE WELL NO.: 5842-01  
CAPACITY = 500 gpm  
GROUND EL. = 194  
STATIC WATER EL. = 9.4  
BOT. OF WELL EL. = 119  
CASING DIA. = 12"

RESERVOIR  
0.50 MG CONC. TANKS (2)  
SPILLWAY EL. = 196.0  
FLOOR EL. = 177.3

RESERVOIR  
(ABANDONED)  
0.10 MG CONC. TANK  
SPILLWAY EL. = 162.2  
FLOOR EL. = 154.4

WELL NAME: KEKAHA SHAFT  
STATE WELL NO.: 5843-01  
CAPACITY = 2000 gpm  
GROUND EL. = 57  
STATIC WATER EL. = 11  
BOT. OF WELL EL. = 4  
CASING DIA. = N/A

WELL NAME: WAIMEA WELL NO. 26  
STATE WELL NO.: 5840-01  
CAPACITY = 1220 GPM  
GROUND EL. = 169  
STATIC WATER EL. = N/A  
BOT. OF WELL EL. = N/A  
CASING DIA. = N/A

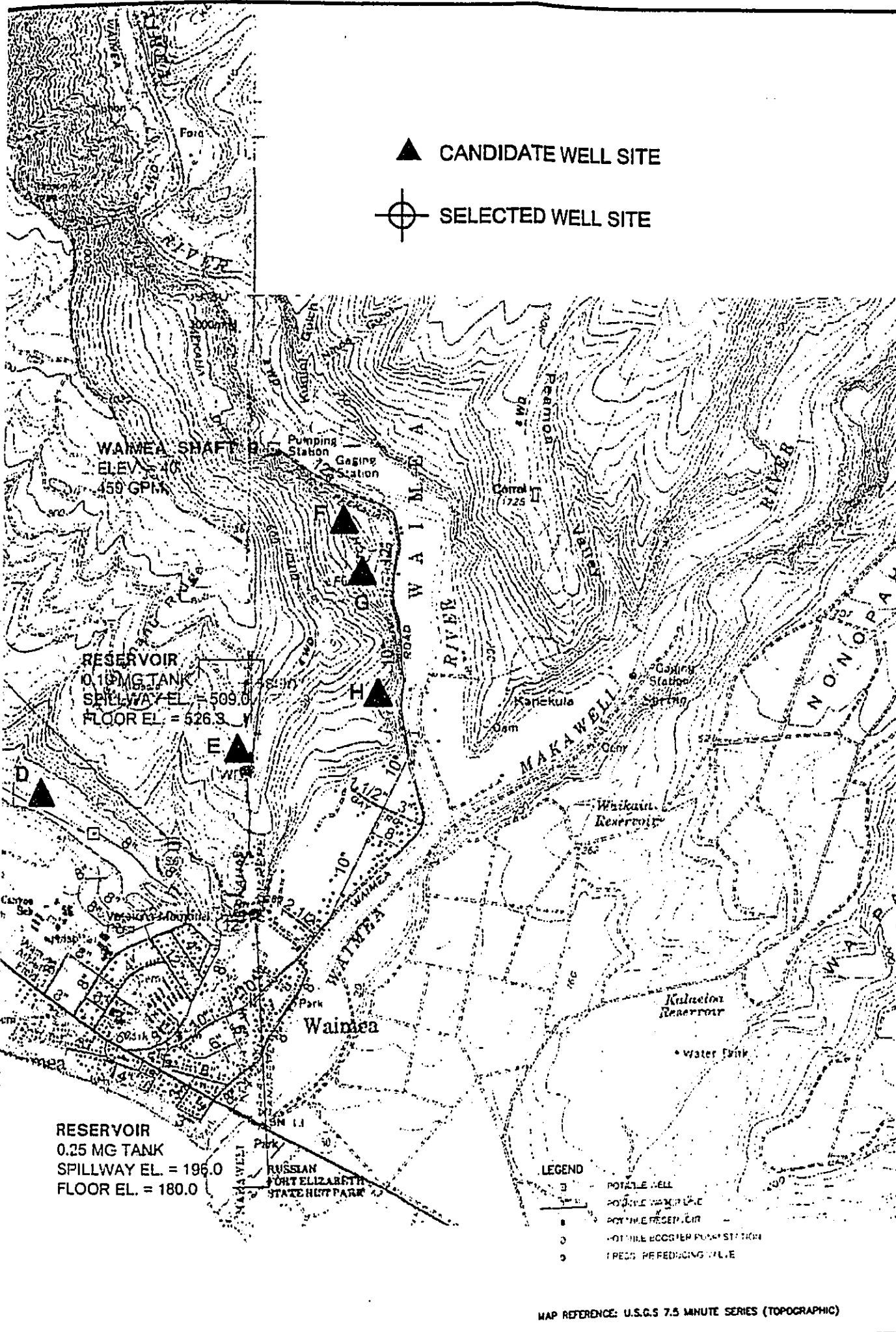
WELL NAME: WAIMEA DEEPWELL NO. 2  
STATE WELL NO.: 5840-02  
CAPACITY = 210 GPM  
GROUND EL. = 114.8  
STATIC WATER EL. = N/A  
BOT. OF WELL EL. = N/A  
CASING DIA. = N/A

WAIMEA SHAFT  
ELEV. = 40  
450 GPM

RESERVOIR  
0.10 MG TANK  
SPILLWAY EL. = 509.0  
FLOOR EL. = 526.3

RESERVOIR  
0.25 MG TANK  
SPILLWAY EL. = 196.0  
FLOOR EL. = 180.0

FL. 3: EXJ  
SCALE: 1"=2000'  
BEGON: 1/7/86  
OPER: SAI  
REVISED: 04/21/88



▲ CANDIDATE WELL SITE  
⊕ SELECTED WELL SITE

1000 0 1000 2000  
SCALE: 1" = 2000'  
PREPARED BY:  
AKINAKA & ASSOCIATES, LTD.

JAN 1998

**LOCATION MAP**  
ENVIRONMENTAL ASSESSMENT  
WAIKEA - KEKAHA WATER SYSTEM

---

**EXHIBIT**  
**2**

MAP REFERENCE: U.S.G.S 7.5 MINUTE SERIES (TOPOGRAPHIC)





SCALE: 1" = 2000'

PREPARED BY:  
AKINAKA & ASSOCIATES, LTD.

JAN 1998

**LOCATION MAP**

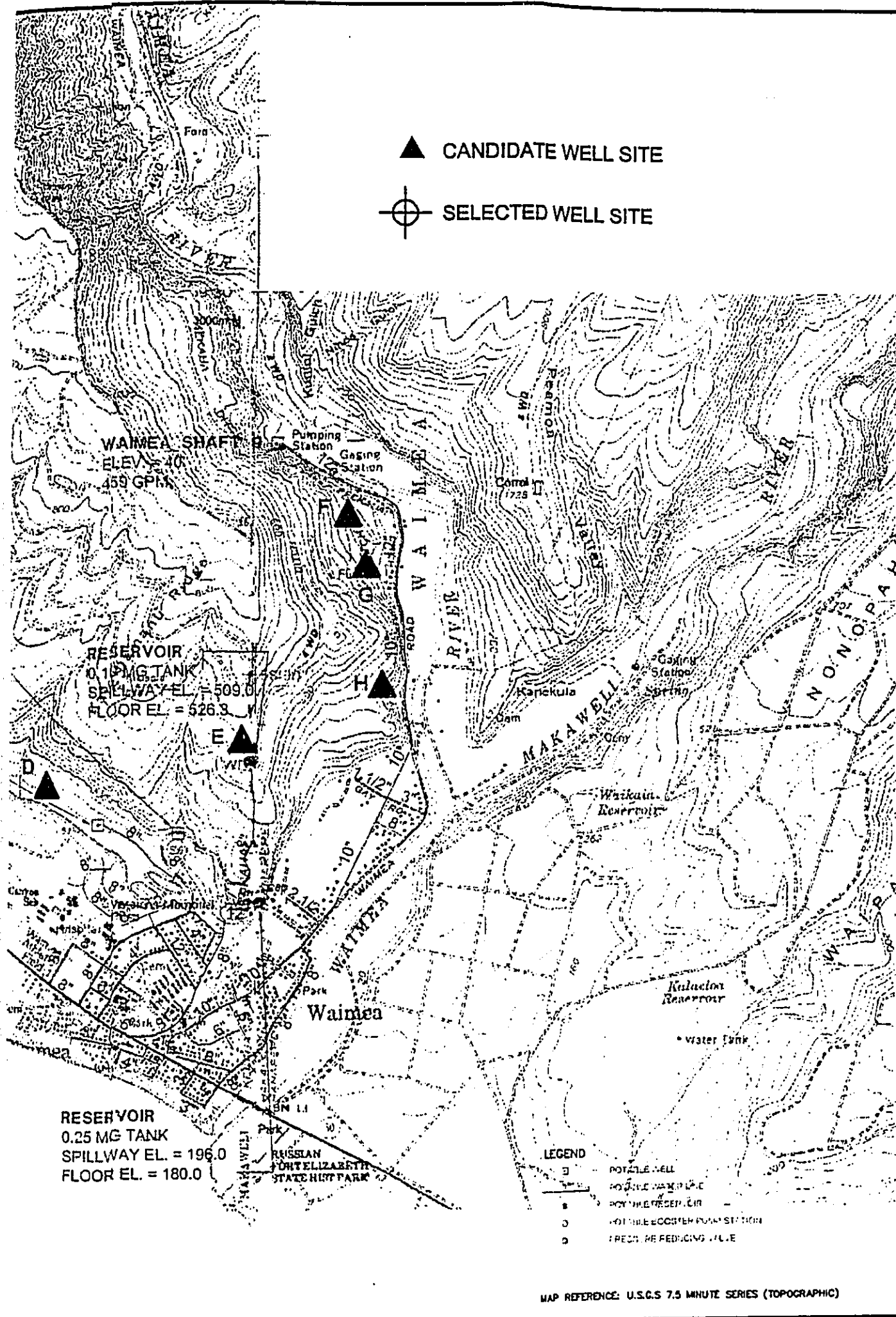
**ENVIRONMENTAL ASSESSMENT  
WAIMEA - KEKAHA WATER SYSTEM**

**EXHIBIT**

**2**

▲ CANDIDATE WELL SITE

⊕ SELECTED WELL SITE



RESERVOIR  
0.25 MG TANK  
SPILLWAY EL. = 196.0  
FLOOR EL. = 180.0

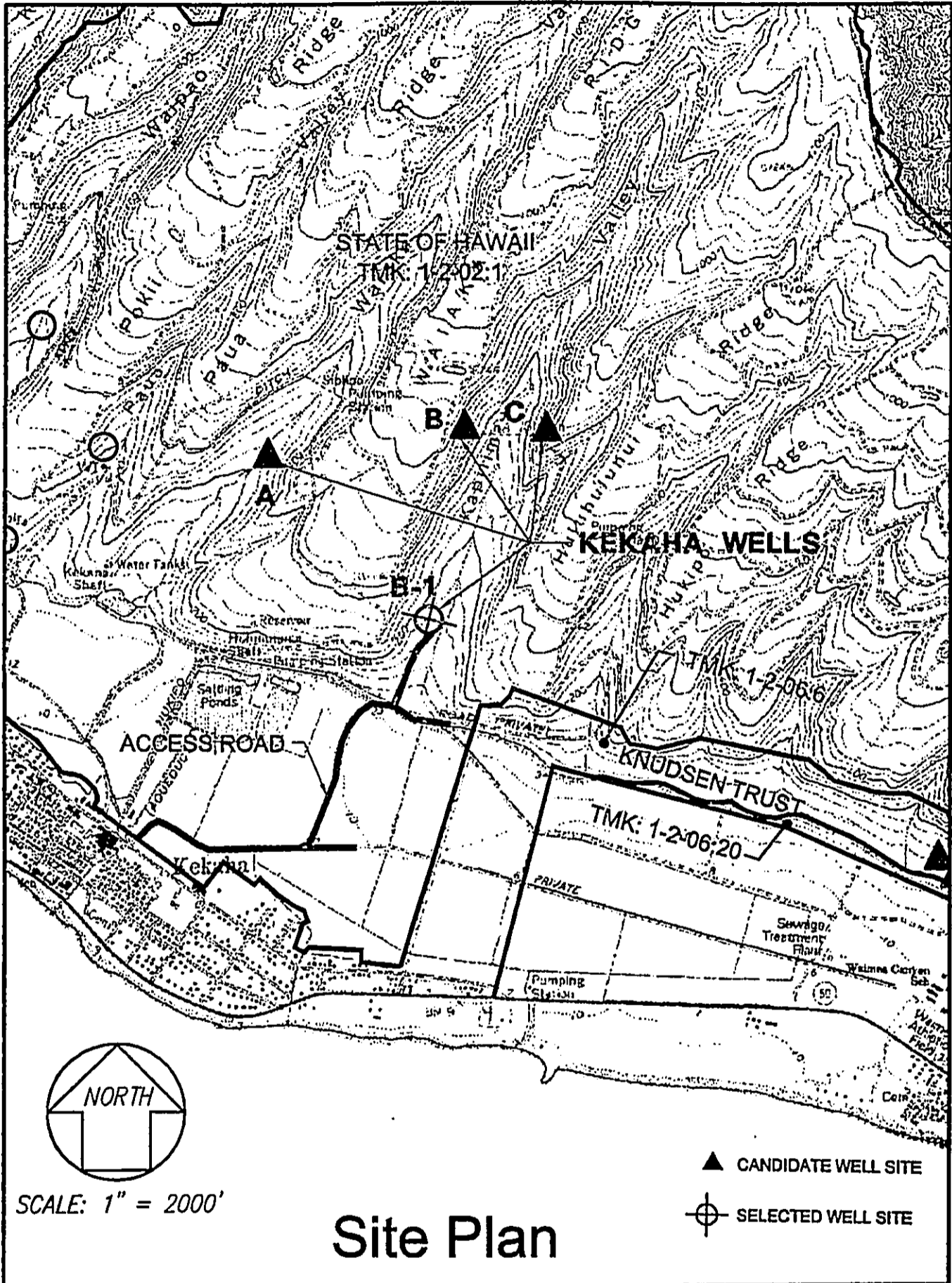
WAIMEA SHAFT  
ELEV. = 40  
450 GPM

RESERVOIR  
0.10 MG TANK  
SPILLWAY EL. = 509.0  
FLOOR EL. = 526.3

**LEGEND**

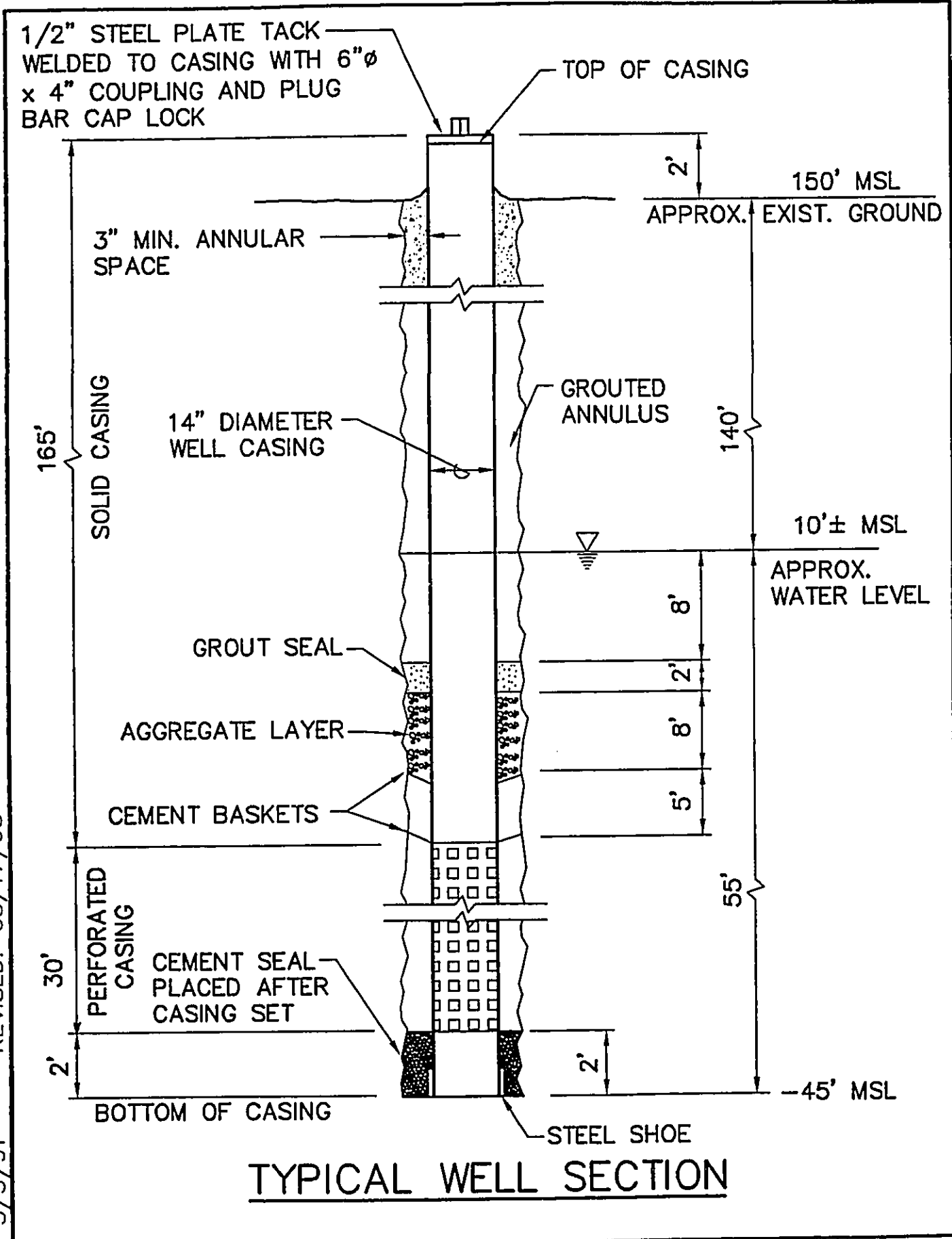
- POTABLE WELL
- POTABLE WASTEWATER
- POTABLE RESEPTIC
- POTABLE BOOSTER PUMP STATION
- POTABLE REDUCING VALVE

MAP REFERENCE: U.S.G.S 7.5 MINUTE SERIES (TOPOGRAPHIC)



ENVIROMENTAL ASSESSMENT  
WAIMEA - KEKAHA WATER SYSTEM

EXHIBIT  
3

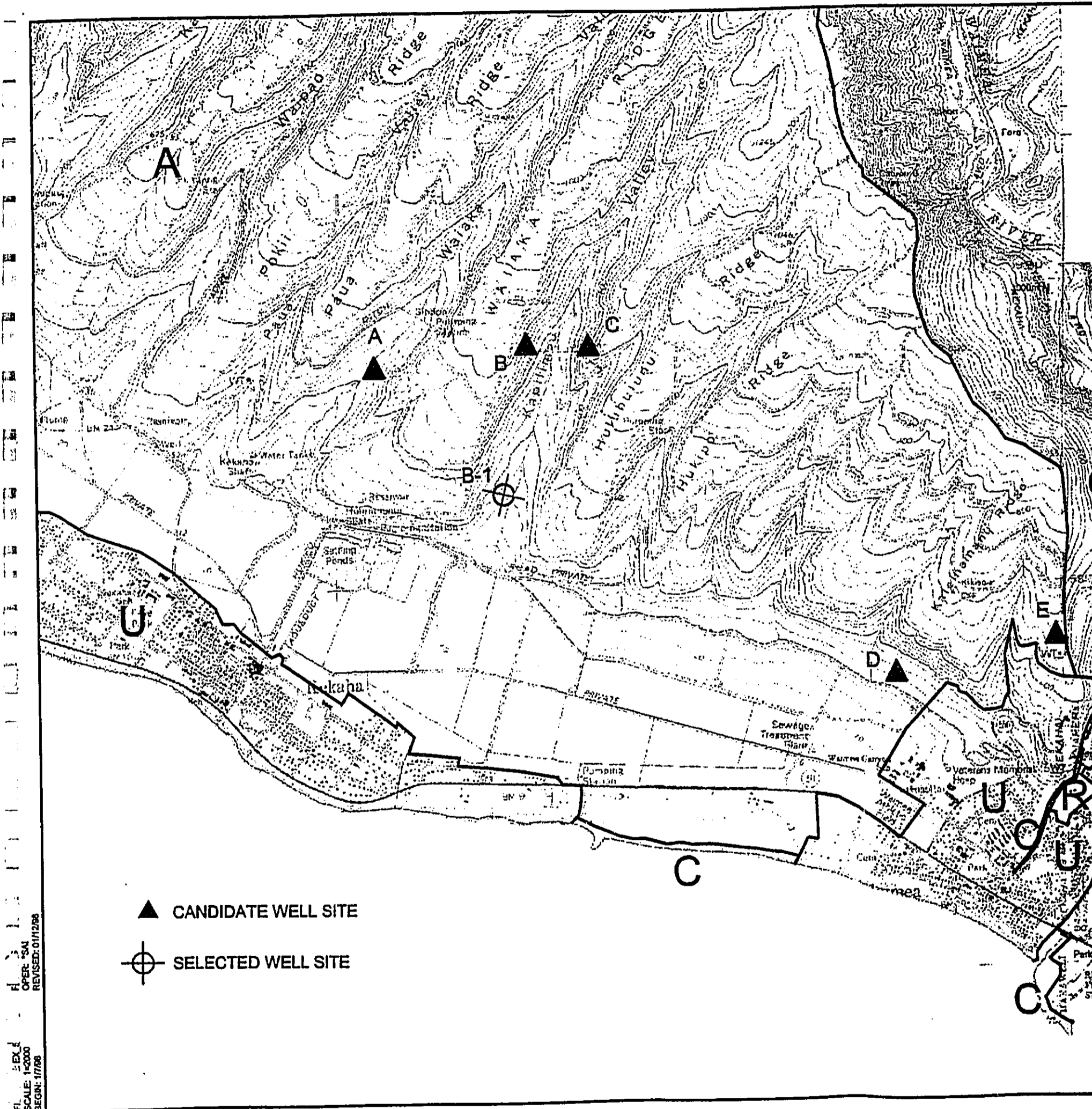


PM: HSM  
 OPR: RGQ,\*BMG,SAI  
 REVISED: 05/17/98

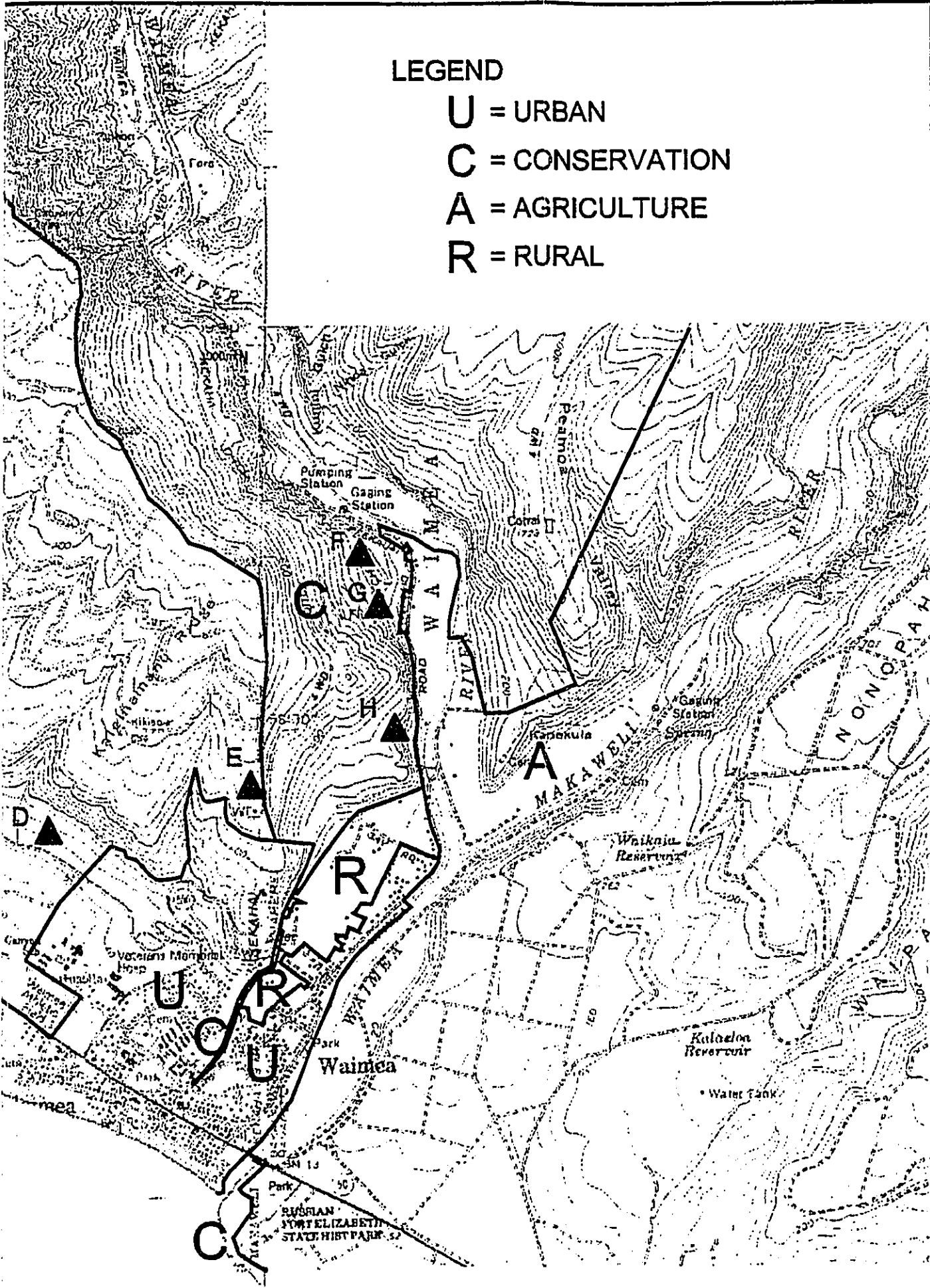
FILE:EX\_4  
 BEG: 3/5/91

ENVIRONMENTAL ASSESSMENT  
 WAIMEA - KEKAHA WATER  
 SYSTEM

EXHIBIT  
 4



FL 2 EX 4  
 SCALE: 1:2000  
 BEGN: 17788  
 OPER: \*SAI  
 REVISED: 01/12/88



PREPARED BY:  
AKINAKA & ASSOCIATES, LTD.

JAN 1998

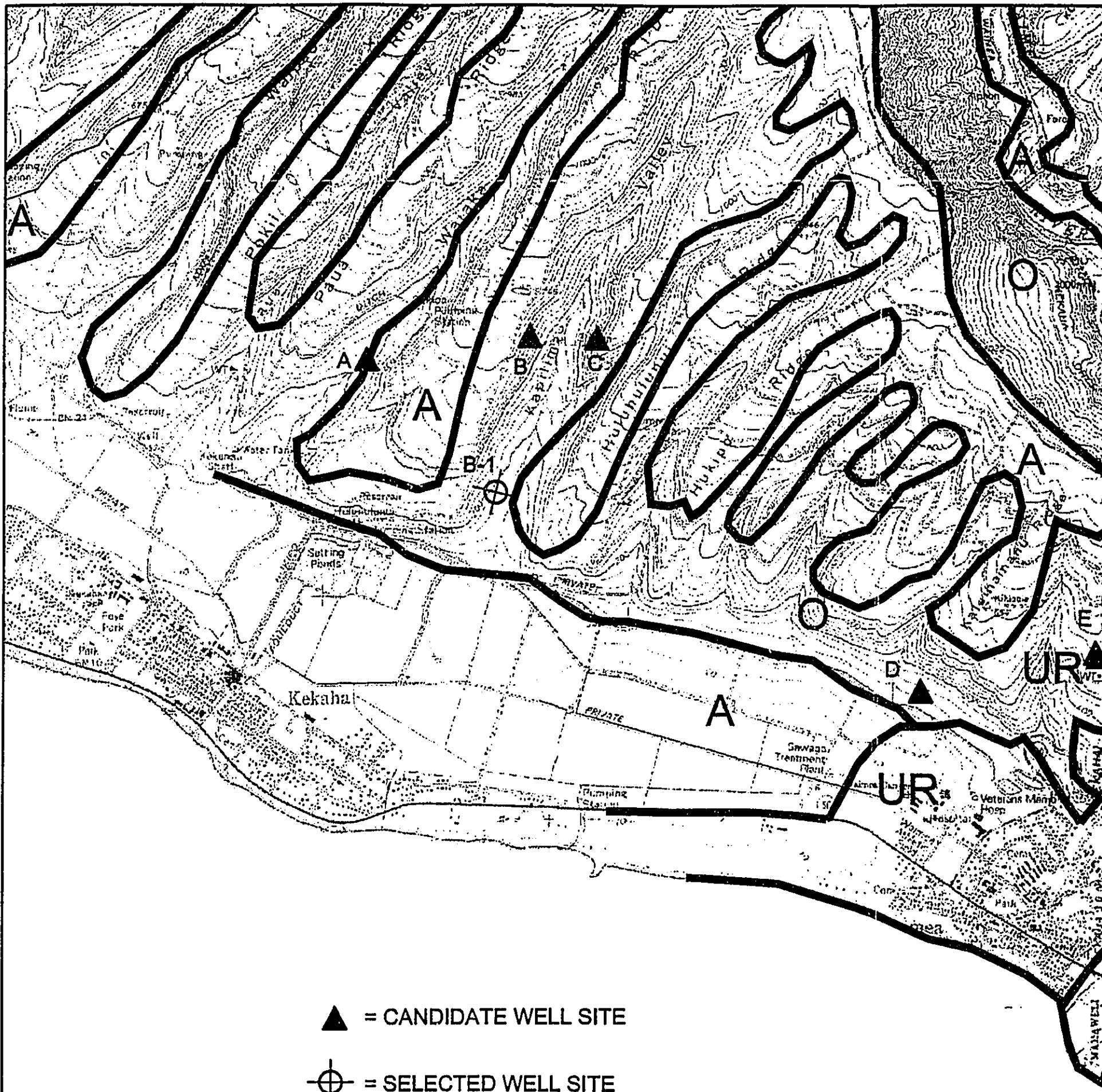
STATE LAND USE  
ENVIRONMENTAL ASSESSMENT  
WAIMEA - KEKAHA WATER SYSTEM

EXHIBIT

5

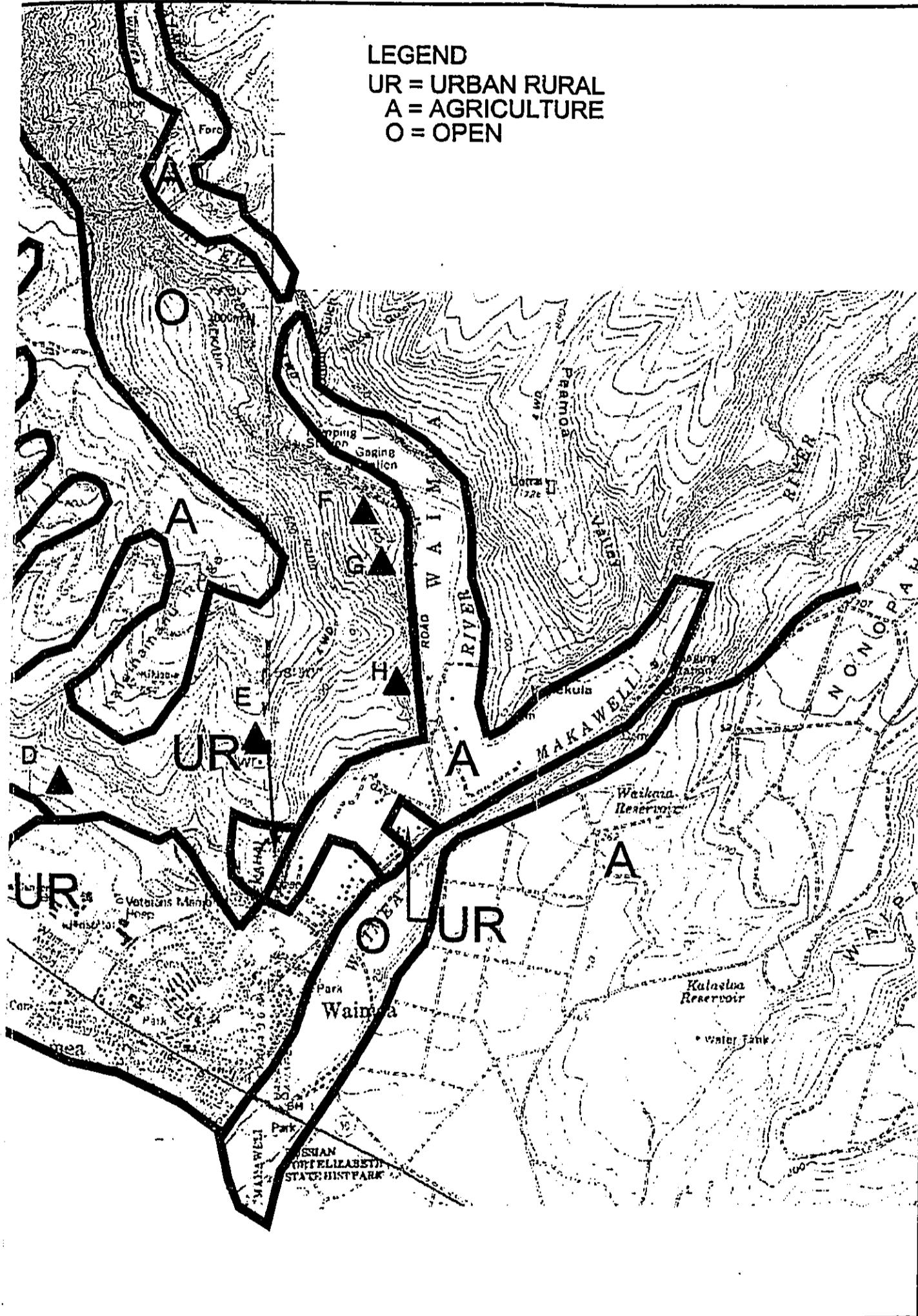
FILENAME: EX\_6  
SCALE: 1:2000  
EGIN: 17798

PL: 10/10  
OPER: SAI  
REVISED: 04/21/98



▲ = CANDIDATE WELL SITE

⊕ = SELECTED WELL SITE



**LEGEND**  
 UR = URBAN RURAL  
 A = AGRICULTURE  
 O = OPEN



PREPARED BY:  
 AKIYAKA & ASSOCIATES, LTD.

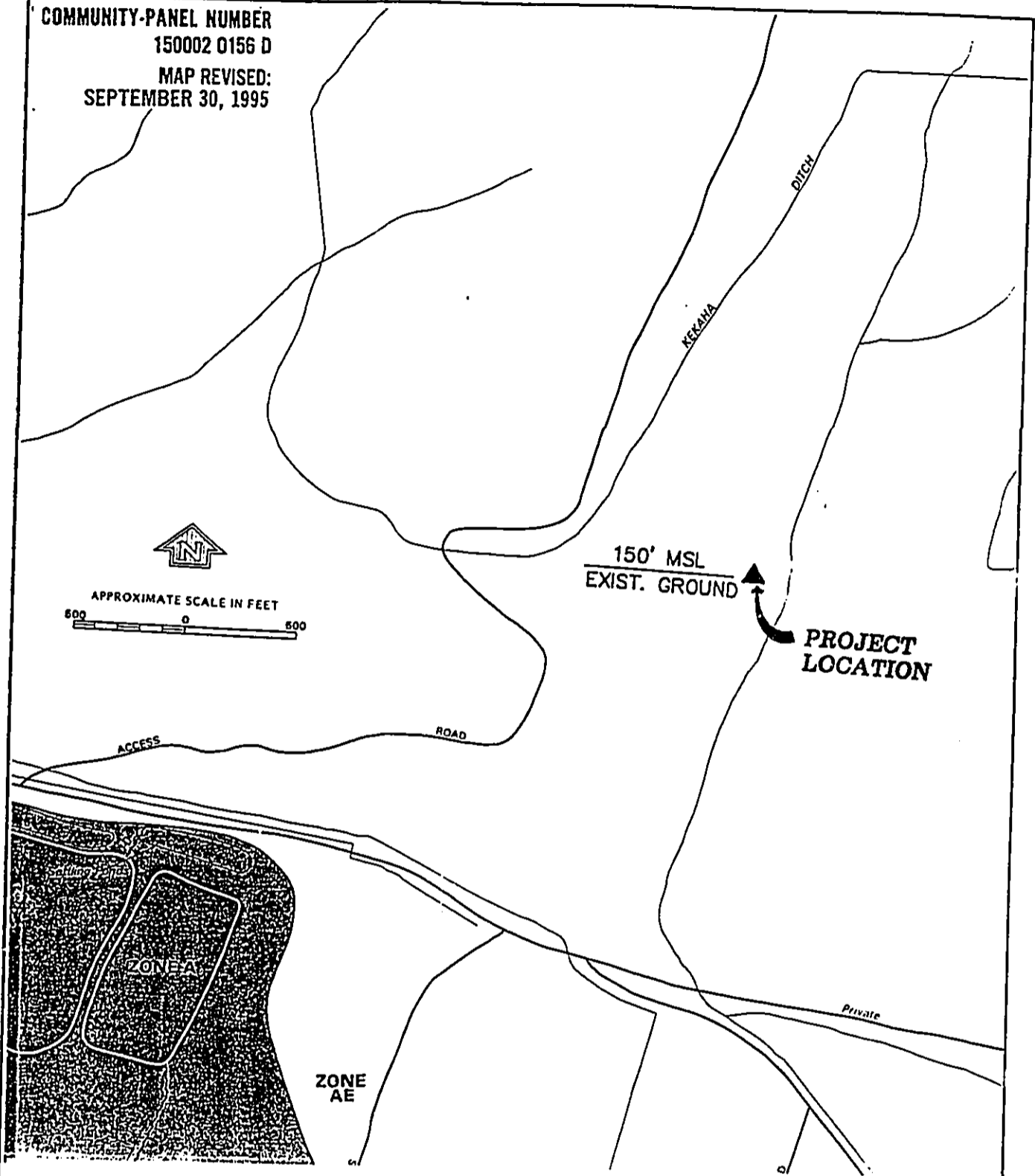
JAN 1998

COUNTY OF KAUAI GENERAL PLAN

ENVIRONMENTAL ASSESSMENT  
 WAIMEA - KEKAHA WATER SYSTEM

EXHIBIT  
**6**

COMMUNITY-PANEL NUMBER  
150002 0156 D  
MAP REVISED:  
SEPTEMBER 30, 1995



# Flood Insurance Rate Map

ENVIROMENTAL ASSESSMENT  
WAIMEA - KEKAHA WATER SYSTEM

EXHIBIT  
7



**RESPONSE TO CONTACTS**

# The Nature Conservancy of Hawaii



RECEIVED

JUN - 8 1998

AKINAKA &amp; ASSOCIATES, LTD.

1116 SMITH STREET SUITE 201 HONOLULU, HAWAII 96813 PH: (808) 537-4508 FAX: (808) 545-2019

**TO:** Henry Morita  
**COMPANY:** Akinaka & Associates  
**DATE:** June 8, 1998  
**FROM:** Roy Kam  
**FAX:**

**FAX #:** 521-2153  
**TEL #:** 536-7721  
**PAGES:** 2

**TEL:**

**SUBJECT:** Kekaha Wells

Attached is the rare species information you requested from the Hawaii Natural Diversity Database. According to our database, there have been no recordings of rare species or ecosystems within the vicinity of your project sites.

If you would like to address in your report, downhill from your sites, there have been recordings of endangered waterbird species at the settling ponds and Kekaha Shaft (Dot numbers 12 & 9). The species recorded there were the *Anas wyvilliana* (Hawaiian Duck), *Fulica alai* (Hawaiian Coot), *Gallinula chloropus sandvicensis* (Hawaiian Gallinule), and the *Himantopus mexicanus knudseni* (Hawaiian Stilt). They were last recorded there through the 1980's and early 1990's. They probably still do still exist there today.

I hope this information proves useful for your project. The charge for this information has been waived. If you have any further questions, please call me at 537-4508.

Roy Kam  
Database Coordinator  
Hawaii Natural Heritage Program

#### Notice

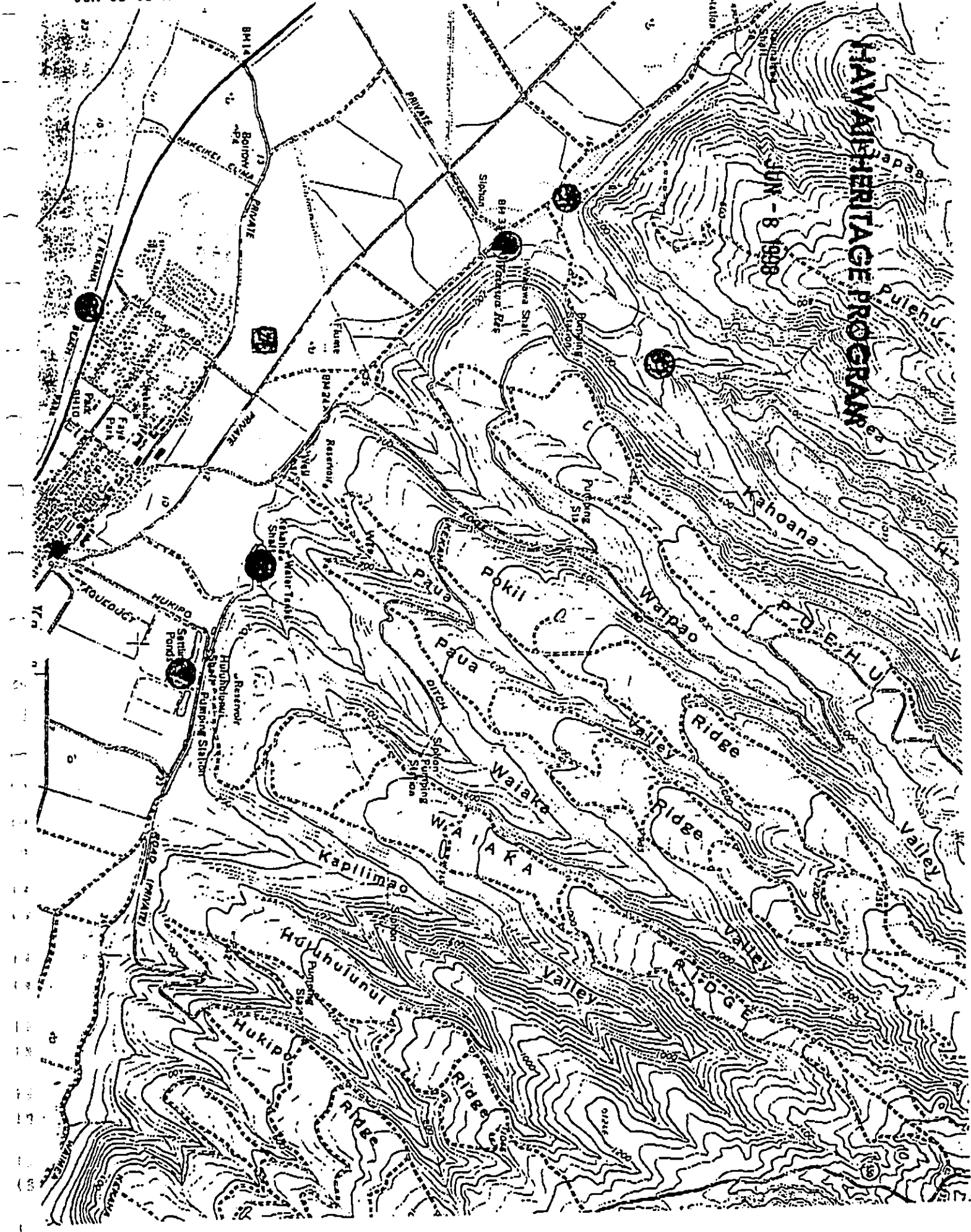
The Nature Conservancy's Hawaii Natural Heritage Program database is dependent on the research and observations of many scientists and individuals. In most cases this information is not the result of comprehensive site-specific field surveys, and is not confirmed by the Heritage staff. Many areas in Hawaii have never been thoroughly surveyed, and new plants and animals are still being discovered. Database information should never be regarded as final statements or substituted for on-site surveys required for environmental assessments. Data provided by the Heritage Program do not represent a position taken by The Nature Conservancy of Hawaii. Heritage Information is only for the intended use of the individual or organization who requested it. It may not be distributed in any way without the consent of the Hawaii Natural Heritage Program.

Please cite the Heritage Program and primary sources in all documentation and reports.

Hawaii Natural Heritage Program, 1116 Smith St. Suite 201, Honolulu, HI 96817

HAWAII HERITAGE PROGRAM

JUN - 8 1998



PHONE (808) 594-1888

FAX (808) 594-1865



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

**RECEIVED**

**JUN 23 1998**

**AKINAKA & ASSOCIATES, LTD.**

June 19, 1998

Mr. Henry S. Morita  
Akinaka & Associates, Ltd.  
250 N. Beretania Street, Suite 300  
Honolulu, HI 96817-4716

Doc. No. EIS-187

**Subject:** Draft Environmental Assessment (DEA) for Water Source  
Improvements, Waimea-Kekaha Water System, Island of Kauai

Dear Mr. Morita:

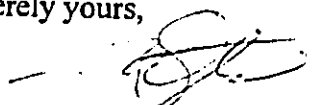
Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for Water Source Improvements, Waimea-Kekaha Water System, Island of Kauai. The County of Kauai is proposing to drill, encase, and test an exploratory well located at Kapilimao Valley (approximately 1.3 miles north of Kekaha town). Should the testing be successful, the well will be developed and integrated into the existing local well network.

The Office of Hawaiian Affairs (OHA) has some concerns at this time to the proposed well development. The well apparently bears no adverse impacts on adjacent lands as it is surrounded by pasture lands. However, no surveys have been conducted on flora, fauna, and archaeological resources. Furthermore, no information is given on potential impacts of the proposed volume rate of pumping (0.72 MGD, assuming continuous pumping at a rate of 500 GPM) on either sustainable yield or quality of the local aquifer system. OHA urges the applicant to address the impacts of the well on natural and archaeological resources and on water availability as well.

Letter to Mr. Henry S. Morita  
June 19, 1998  
Page 2

Please contact Colin Kippen (594-1938), LNR Officer, or Luis Manrique (594-1758), should you have any questions on this matter.

Sincerely yours,



Randall Ogata  
Administrator



Colin Kippen  
Officer,  
Land and Natural  
Resources Division

cc: Board of Trustees  
CAC, Island of Kauai



**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

July 1, 1998

**FILE COPY**

Mr. Randall Ogata, Administrator  
State of Hawaii  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, Hawaii 96813

Attention: Mr. Colin Kippen, Land and Natural Resources Division

Project: Water Source Improvements, Waimea-Kekaha Water System  
Pakui Housing, CDBG Disaster Grant; Kekaha, HI

Subject: Draft Environmental Assessment (DEA)

Reference: Office of Hawaiian Affairs, Doc. No. EIS-187 dated June 19, 1998

Enclosures: 1. The Nature Conservancy of Hawaii fax dated June 8, 1998  
2. Division of Forestry and Wildlife (DLNR) ltr dated June 18, 1998  
3. Sheet IV-3(revised) of the subject DEA  
4. Topographic Map (partial) of Well Site dated Apr. 29, 1998

In response to comments contained in the reference, we provide the following information:

**1. "However, no surveys have been conducted on flora, fauna, and archaeological resources".**

Enclosures 1 and 2 addresses the wildlife in the area. As noted, there should be no concerns in the area. In regards to flora concerns, the area has been used as a pasture for many years. The section on archaeology on Sheet IV-3 (Enclosure 3) has been revised after discussions with the DLNR Historic Preservation Division (Kauai). There are no identified historic or archaeologically significant items at the site or in the immediate vicinity. A topographic survey of the site, shown on Enclosure 4 indicates an absence of man-made features.

Mr. Randall Ogata  
July 1, 1998  
Page 2

2. "Furthermore, no information is given on potential impacts of the proposed volume rate of pumping on either sustainable yield or quality of the local aquifer system".

A "Well Site Selection Report" was developed for this project. The report discussed existing potable sources, other users, pumping rates, hydrogeology, field surveys and interviews. The site recommendation is based on probable yield, recharge and salt water intrusion. The pump tests of the exploratory well will determine volume rate of pumping, sustainable yield and water quality. DLNR's pump installation permit approval will be based on the test results.

Thank-you for providing the review comments. Point of contact is Henry Morita @ 536-7721.

Very truly yours,



Henry S. Morita  
Executive Vice President

cc: M. Matsumura, DOWK  
DOWeaOHA.DOC

The Nature  
Conservancy  
of Hawaii



RECEIVED

JUN - 8 1998

AKINAKA &amp; ASSOCIATES, LTD.

1116 SMITH STREET SUITE 201 HONOLULU, HAWAII 96817 TEL: (808) 537-4508 FAX: (808) 545-2019

TO: Henry Morita  
COMPANY: Akinaka & Associates  
DATE: June 8, 1998  
FROM: Roy Kam  
FAX:

FAX #: 521-2153  
TEL #: 536-7721  
PAGES: 2  
TEL:

SUBJECT: Kekaha Wells

Attached is the rare species information you requested from the Hawaii Natural Diversity Database. According to our database, there have been no recordings of rare species or ecosystems within the vicinity of your project sites.

If you would like to address in your report, downhill from your sites, there have been recordings of endangered waterbird species at the settling ponds and Kekaha Shaft (Dot numbers 12 & 9). The species recorded there were the *Anas wyvilliana* (Hawaiian Duck), *Fulica alai* (Hawaiian Coot), *Gallinula chloropus sandvicensis* (Hawaiian Gallinule), and the *Himantopus mexicanus knudseni* (Hawaiian Stilt). They were last recorded there through the 1980's and early 1990's. They probably still do still exist there today.

I hope this information proves useful for your project. The charge for this information has been waived. If you have any further questions, please call me at 537-4508.

Roy Kam  
Database Coordinator  
Hawaii Natural Heritage Program

Notice

The Nature Conservancy's Hawaii Natural Heritage Program database is dependent on the research and observations of many scientists and individuals. In most cases this information is not the result of comprehensive site-specific field surveys, and is not confirmed by the Heritage staff. Many areas in Hawaii have never been thoroughly surveyed, and new plants and animals are still being discovered. Database information should never be regarded as final statements or substantiated for on-site surveys required for environmental assessments. Data provided by the Heritage Program do not represent a position taken by The Nature Conservancy of Hawaii. Heritage information is only for the intended use of the individual or organization who requested it. It may not be distributed in any way without the consent of the Hawaii Natural Heritage Program.

Please cite the Heritage Program and primary sources in all documentation and reports.

Hawaii Natural Heritage Program, 1116 Smith St. Suite 201, Honolulu, HI 96817

ENCLOSURE 1







HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
KAUAI DISTRICT  
3060 EIWA STREET, ROOM 306  
LIHUE, KAUAI, HAWAII 96766-1875

June 18, 1998

Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street Suite 300  
Honolulu, HI. 816-4716

RECEIVED  
JUN 19 1998  
AKINAKA & ASSOCIATES LTD.  
IN REPLY REFER TO

Project: Pre-assessment - Water Source Improvements, Waimea-Kekaha Water System, Kauai

I have reviewed your Draft E.A. on the subject project, and find no wildlife concerns that need to be addressed, other than that if in its final development, power lines and exterior floodlights are used, that consideration be given to mitigating the potential for light attraction of threatened and endangered seabirds. A brochure is enclosed that describes the problem. If you should need additional consultation on that issue, please contact me.

Thank you for the opportunity to review the E.A.

Sincerely,

Thomas C. Telfer  
District Wildlife Manager

enc.

ENCLOSURE 2

G. Water Quality

The well's water quality will be addressed when water samples obtained during pump testing are analyzed. A "Preliminary Engineering Report for New Potable Water Source" as required by the State of Hawaii Department of Health, Chapter 20 of Title 11, Administrative Rules, will include water quality analyses and recommendations.

H. Noise

Noise levels were not measured at the project site. Due to the absence of noise sources, the noise levels are considered to be normal rural and agricultural levels.

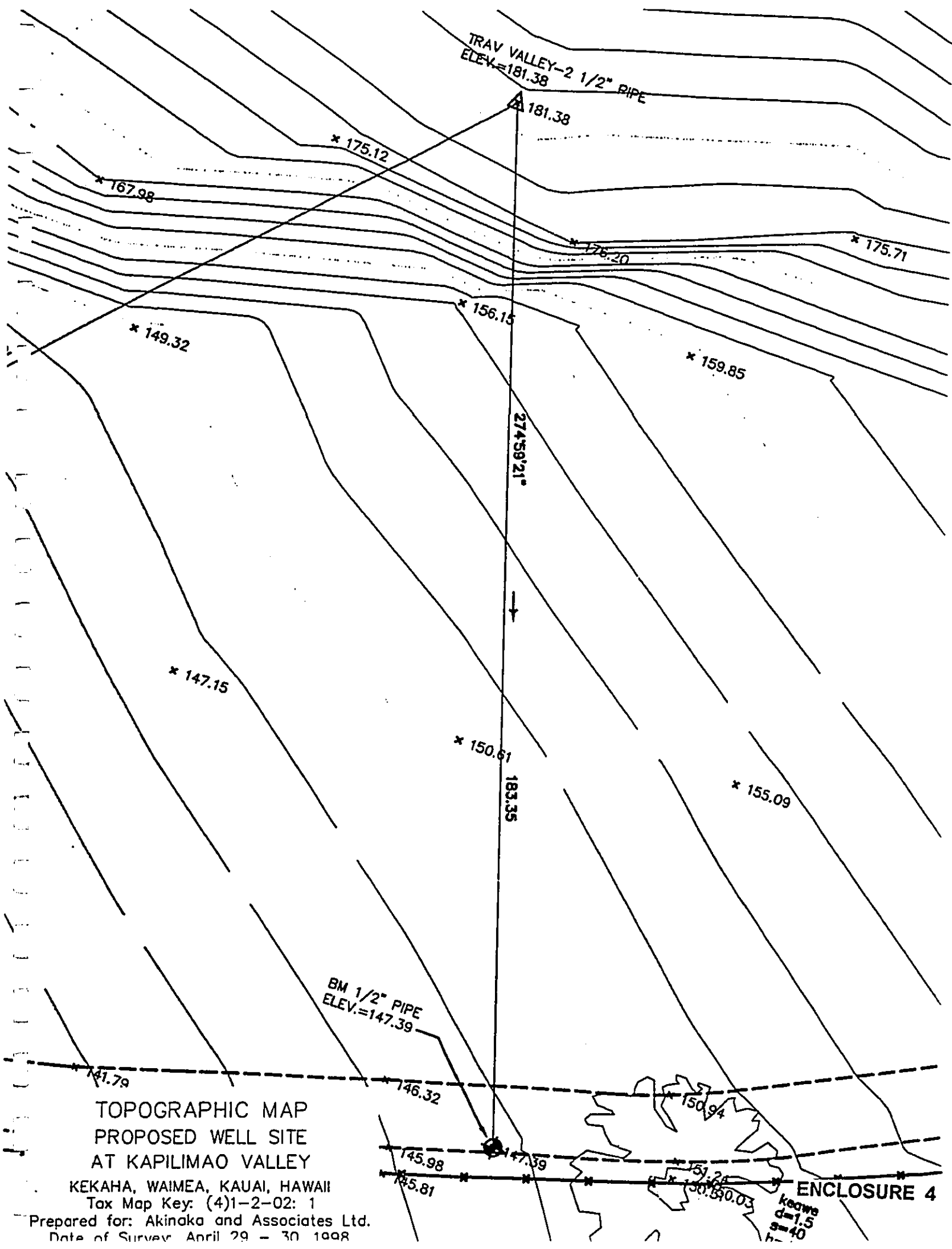
I. Archaeology

No formal archaeological survey was performed at the site. Per the DLNR Historic Preservation Division (Kauai), there are no identified historic or archaeologically significant locations at the site or immediate vicinity. However, should any unanticipated sites, artifacts or remains, such as shell, bone or charcoal deposits, be discovered during construction, the work would be halted and the State Historic Preservation Office would be contacted.

J. Flood Hazard

Flood hazard data was not computed for the project site. The Flood Insurance Rate Map (Panel 150002 0156 D dated Sept. 30, 1995) indicates that the site is outside the 100-year floodway. **EXHIBIT 7: FLOOD INSURANCE RATE MAP.**

As shown on the site plan (**Exhibit 3**), there are no rivers or wetlands in the vicinity to serve as receiving waters of discharges from the proposed site. Settling ponds for the Kekaha mill wastewater are located a mile down gradient from the proposed site. The proposed project should not impact the settling ponds, and no impact due to the wastewater is expected on the groundwater quality at the proposed well.



TOPOGRAPHIC MAP  
PROPOSED WELL SITE  
AT KAPILIMAO VALLEY

KEKAHA, WAIMEA, KAUAI, HAWAII  
Tax Map Key: (4)1-2-02: 1

Prepared for: Akinaka and Associates Ltd.  
Date of Survey: April 29 - 30 1998

MARYANNE W. KUSAKA  
MAYOR



CESAR C. PORTUGAL  
COUNTY ENGINEER  
TELEPHONE 241-6600

RUSSELL SUGANO  
ACTING DEPUTY COUNTY ENGINEER  
TELEPHONE 241-6631

AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI

DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHU'E, KAUAI, HAWAII 96766

June 17, 1998

RECEIVED  
JUN 18 1998

AKINAKA & ASSOCIATES, LTD.

Mr. Henry Morita  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817

Dear Mr. Morita:

**SUBJECT: ENVIRONMENTAL ASSESSMENT (EA)  
PRE-ASSESSMENT CONSULTATION FOR  
WATER SOURCE IMPROVEMENTS, WAIMEA-KEKAHA  
WATER SYSTEM, PAKUI HOUSING PROGRAM  
CDBG DISASTER GRANT, TMK: 1-2-02:1  
PW6.071**

We completed our review of the subject preliminary environmental assessment. We offer the following comments in regards to grading and flood hazards:

**A. FLOOD**

1. Please use the most current Flood Insurance Rate Maps (FIRM). Panel No. 160-C dated March 4, 1987 has been superseded with Panel No. 156-D dated September 30, 1996. For your convenience and use we are enclosing a copy of Panel No. 156-D.
2. Although Panel No. 156-D does not show the well site as a flood prone area, the well site as shown on Exhibit 2 appears to be located close to a natural drainage swale. The site may be the "general flood plain" where detailed flood studies were made and the building may be in a flood prone area. Flood studies will need to be made and submitted for our review and approval.

Mr. Morita  
June 16, 1998  
Page (2)

**B. GRADING**

1. A grading permit will not be required for the well site since the grading work will be within a self-contained government controlled area. However, we expect the owner (State-DLNR) and the Department of Water to monitor the dust and erosion activities as well as the testing of the grading activities. We recommend that a soils report be prepared as well as the soils engineer be retained to monitor the grading activities since the erosion hazard is severe for this type of soil.

Enclosed is a marked set of the draft environmental assessment with our red-marked comments. Please make your revisions and resubmit the marked set. Should you have any questions, please feel free to contact Wallace Kudo of my staff at (808) 241-6620.

Very truly yours,

  
CESAR C. PORTUGAL  
County Engineer

WK/liv  
Attachments



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
KAUAI DISTRICT  
3060 EIWA STREET, ROOM 306  
LIHUE, KAUAI, HAWAII 96766-1875

June 18, 1998

Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street Suite 300  
Honolulu, HI. 816-4716

RECEIVED  
JUN 19 1998  
IN REPLY REFER TO  
AKINAKA & ASSOCIATES LTD.

Project: Pre-assessment - Water Source Improvements, Waimea-Kekaha Water System ,  
Kauai

I have reviewed your Draft E.A. on the subject project, and find no wildlife concerns that need to be addressed, other than that if in its final development, power lines and exterior floodlights are used, that consideration be given to mitigating the potential for light attraction of threatened and endangered seabirds. A brochure is enclosed that describes the problem. If you should need additional consultation on that issue, please contact me.

Thank you for the opportunity to review the E.A.

Sincerely,

Thomas C. Telfer  
District Wildlife Manager

enc.



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A INFANTE

July 1, 1998

Mr. Cesar C. Portugal, County Engineer  
County of Kauai  
Department of Public Works  
4444 Rice Street, Sute275  
Lihue, Kauai HI 96766

**FILE COPY**

Attn: Mr. Wallace Kudo

Project: Waimea-Kekaha Water Source Improvements  
Pakui Housing Program, CDBG Disaster Grant  
T.M.K.: 1-2-02:1

Subject: Environmental Assessment

Reference: Department of Public Works ltr dated June 17, 1998

Thank-you for the review comments contained in the reference. In response to the comments, we offer the following information:

**A. FLOOD**

1. We will revise Exhibit 7 "Flood Insurance Rate Map" to reflect the current map (Panel No. 156-D dated September 30, 1996).
2. The site is in excess of 200 feet away from the flow line of Kapilimao Valley. Hydraulic calculations indicate that the stream section taken below three feet of the well site has sufficient capacity to pass the 100-year peak discharge. The calculations will be forwarded to your office under separate cover.

**B. GRADING**

The exploratory well project will include minimal grading – only that required to maneuver the drill rig and construct the settling ponds.



Mr. Cesar C. Portugal  
July 1, 1998  
Page 2

We have revised the draft environmental assessment per your comments. The corrected sheets are attached to your marked set and returned to your files. Please call the undersigned should you have any questions.

Very truly yours,



Henry S. Morita  
Executive Vice President

cc: M. Matsumura, DOWK  
DOWeaDPW.DOC

G. Water Quality

The well's water quality will be addressed when water samples obtained during pump testing are analyzed. A "Preliminary Engineering Report for New Potable Water Source" as required by the State of Hawaii Department of Health, Chapter 20 of Title 11, Administrative Rules, will include water quality analyses and recommendations.

H. Noise

Noise levels were not measured at the project site. Due to the absence of noise sources, the noise levels are considered to be normal rural and agricultural levels.

I. Archaeology

No formal archaeological survey was performed at the site. Per the DLNR Historic Preservation Division (Kauai), there are no identified historic or archaeologically significant locations at the site or immediate vicinity. However, should any unanticipated sites, artifacts or remains, such as shell, bone or charcoal deposits, be discovered during construction, the work would be halted and the State Historic Preservation Office would be contacted.

J. Flood Hazard

Flood hazard data was not computed for the project site. The Flood Insurance Rate Map (Panel 150002 0156 D dated Sept. 30, 1995) indicates that the site is outside the 100-year floodway. **EXHIBIT 7: FLOOD INSURANCE RATE MAP.**

As shown on the site plan (Exhibit 3), there are no rivers or wetlands in the vicinity to serve as receiving waters of discharges from the proposed site. Settling ponds for the Kekaha mill wastewater are located a mile down gradient from the proposed site. The proposed project should not impact the settling ponds, and no impact due to the wastewater is expected on the groundwater quality at the proposed well.

Short-term impacts on air and water quality, as well as noise, will occur during the construction period, but will be mitigated by normal construction practices and will be regulated by the project plans, specifications and inspections.

- K. The proposed action does not affect an environmentally sensitive area such as a flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters.

The proposed project is not located adjacent to the shoreline and is outside of the 100-year floodplain. No other environmentally sensitive characteristics are associated with this site.

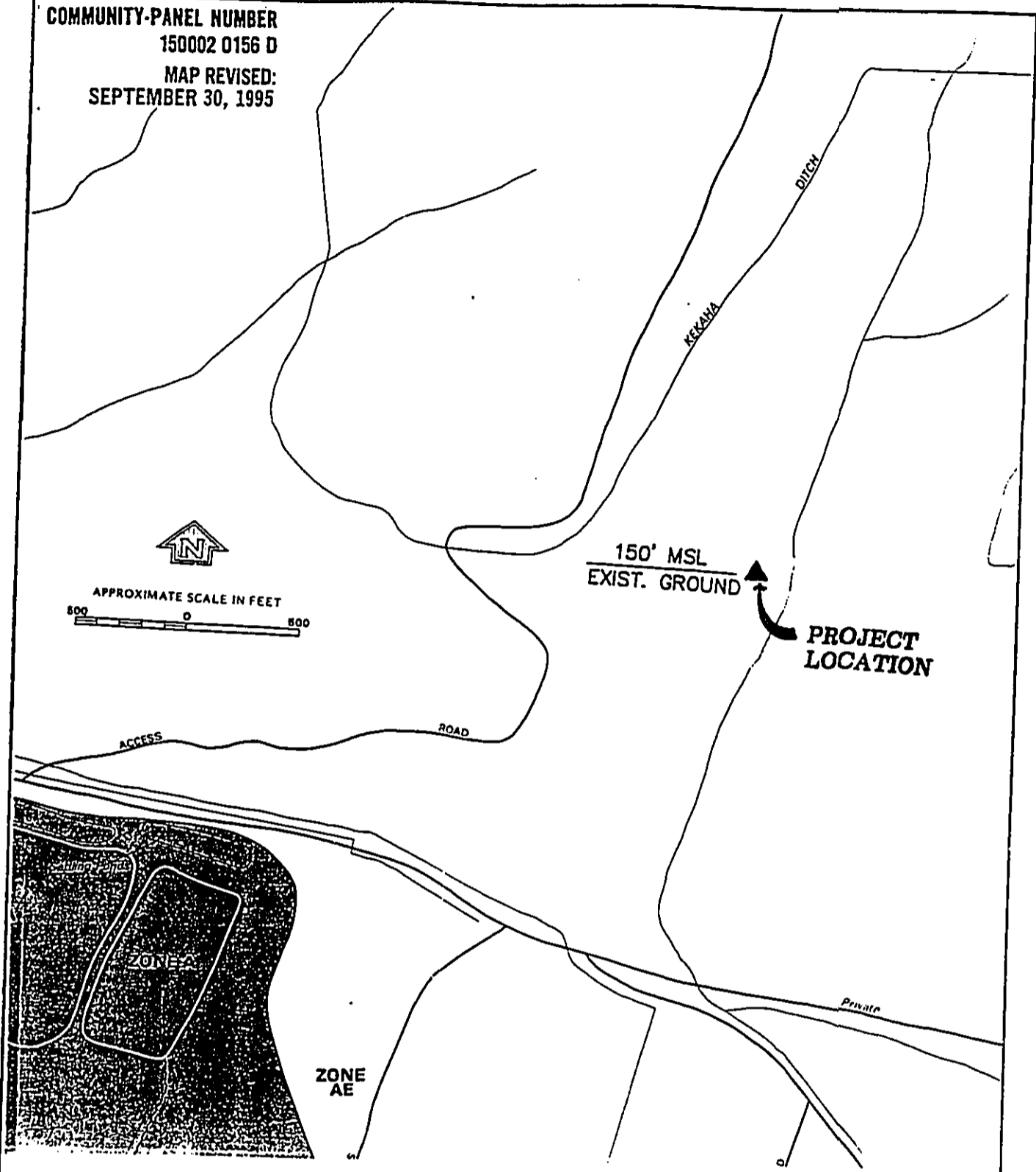
- L. The proposed action does not substantially affect scenic vistas and view planes identified in county or state plans or studies.

When completed, the exploratory well will be capped two feet above ground. The site will be grassed for erosion control. There will be no impacts on scenic vistas or view planes identified in County or State plans or studies.

- M. The proposed action will require energy consumption to drill and test the well.

The energy consumed by the proposed action will be provided by engine-generators and not affect the existing power distribution system.

COMMUNITY-PANEL NUMBER  
150002 0156 D  
MAP REVISED:  
SEPTEMBER 30, 1995



# Flood Insurance Rate Map

ENVIROMENTAL ASSESSMENT  
WAIMEA - KEKAHA WATER SYSTEM

EXHIBIT  
7

MARYANNE W. KUSAKA  
MAYOR



CESAR C. PORTUGAL  
COUNTY ENGINEER  
TELEPHONE 241-6600

RUSSELL SUGANO  
ACTING DEPUTY COUNTY ENGINEER  
TELEPHONE 241-6631

AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI  
DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHU'E, KAUAI, HAWAII 96766

PW7.010  
7.028

July 8, 1998

RECEIVED  
JUL 13 1998

AKINAKA & ASSOCIATES LTD.

Akinaka & Associates, Ltd.  
250 North Beretania St., Suite 300  
Honolulu, Hawaii 96817

Attention: Mr. Henry Morita

Gentlemen:

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR  
WAIMEA-KEKAHA WATER SOURCE IMPROVEMENTS  
PAKUI HOUSING PROGRAM, CDBG DISASTER GRANT  
TMK: 1-2-02: 1

This is to acknowledge receipt of your drainage calculations dated 6/26/98. The drainage calculations are acceptable as well as the revised draft environmental assessment sheets IV-3, XI-3 and Fig. 7.

Should you have any questions, please feel free to contact Mr. Wallace Kudo of my staff at (808) 241-6620.

Very truly yours,

  
CESAR C. PORTUGAL  
County Engineer

WK/cu

cc: Dept. of Water - Mel Matsumura



**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: [akinaka@aloha.net](mailto:akinaka@aloha.net)

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

**FILE COPY**

June 23, 1998

Waimea Public Library  
P.O. Box 397  
Waimea, Hawaii 96796

Project: WAIMEA-KEKAHA WATER SOURCE IMPROVEMENTS  
PAKUI HOUSING PROGRAM, CDBG DISASTER GRANT  
TMK: (4)1-2-02:1  
A&A JOB NO: CKDOW97-01

Subject: Draft Environmental Assessment (DEA)

The "A Guide for the State Environmental Review Process" requires "...a deposit of at least one copy of the draft environmental assessment at the State library closest to the location of the proposed action."

The proposed action consists of drilling & testing an exploratory potable water well in Kekaha. Details of the action are included in the attached DEA.

Point of contact is Henry S. Morita at 536-7721.

Very truly yours,

Henry S. Morita  
Executive Vice President

cc: M. Matsumura, DOWK  
HSM:cyk



**Amfac Land Company, Limited • Kauai Division**

2970 Kele Street • Lihue, Kauai, Hawaii 96766

**RECEIVED**  
JUL 3 1998

AKINAKA & ASSOCIATES LTD.

June 29, 1998

Henry S. Morita  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, HI 96813-3036

Re: Well drilling in Kekaha

Dear Mr. Morita:

Thank you for providing us with the draft environment assessment for the above project. We understand that the scope of this environmental assessment includes only the drilling of the well and not water storage or transmission facilities.

Our primary concern is that the drilling not adversely impact sugar operations in the area. Since the drilling will be taking place outside of our fields, the impacts of this phase should be fairly limited.

Our concerns are:

- That traffic to and from the drilling site not disrupt sugar operations.
- That any ditches, pipelines or other improvements in the area be preserved.
- That the security of the plantation be maintained.
- That the routing of any water discharge from the drilling site be discussed with and approved by plantation officials prior to drilling.

Please call me at 246-7687 should there be anything further that you need.

Very truly yours,  
AMFAC LAND COMPANY, LTD.,  
Agent for AMFAC SUGAR KAUAI

  
Dorothy R. Bekeart  
Land Manager

c: Lyle Tabata

Telephone: 808-245-8786 • Facsimile: 808-246-9549



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: [akinaka@aloha.net](mailto:akinaka@aloha.net)

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

July 15, 1998

## FILE COPY

Amfac Land Company, Limited  
Kauai Division  
2970 Kele Street  
Lihue, Kauai, HI. 96766

Attention: Dorothy R. Beckeart  
Land Manager

Project: Waimea-Kekaha Water System  
Drill & Test Kapilimao Valley Well

Subject: Environmental Assessment

Thank-you for the review comments contained in your letter dated June 29, 1998. We offer the following response to address your concerns:

**That traffic to and from drilling site not disrupt sugar operations.**

During the pre-construction meeting; the Contractor will be instructed to coordinate their movements to and from the well site as not to disrupt sugar operations.

**That any ditches, pipelines or other improvements in the area be preserved.**

The work area does not contain ditches, pipelines or other improvements as shown in the enclosed preliminary construction plans. We will instruct the Contractor to preserve any improvements unless approved for alteration by Kekaha Sugar Co.

**That the security of the plantation be maintained.**

All personnel involved with the project (County as well as Contractor) will be directed to close gates and leave the plantation property when the workday is completed.

**That the routing of any water discharge from the drilling site be discussed with and approved by plantation officials prior to drilling.**

The contract specifications will be revised to address this concern.



Amfac Land Company, Limited  
Kauai Division  
July 15, 1998  
Page 2

Should you have questions on this response letter, please call Henry Morita @  
536-7721.

Very truly yours,



Henry S. Morita  
Executive Vice President

cc: M. Matsumura, KDOW  
HSM:cyk  
ALCL001L.WPD



United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
Water Resources Division  
677 Ala Moana Blvd. Suite 415  
Honolulu, HI 96813

July 13, 1998

RECEIVED  
JUL 15 1998

AKINAKA & ASSOCIATES, LTD.

Mr. Henry Morita  
Executive Vice President  
Akinaka and Associates, Ltd.  
250 N. Beretania St., Suite 300  
Honolulu, HI 96817

Dear Mr. Morita:

This letter is in response to your request (dated June 5, 1998) for comments on the *Draft Environmental Assessment for Water Resource Improvements Waimea-Kekaha Water System Pakui Housing Program CDBG Disaster Grant D.O.W. Job 96-4, Waimea-Kekaha, Kauai, Hawaii, Tax Map Key: (4)1-2-02:1*. (herein referred to as the "DEA"). We have focused our review on the hydrogeologic aspects of the DEA. Because this DEA is only for the construction and testing of an *exploratory* well and not a production well, we do not anticipate any long-term environmental impacts of a hydrologic nature to result from this exploratory drilling, barring any accidents during construction (e.g. contaminant spills, etc.). Long-term impacts can be addressed later if the well is converted to a production well. The proposed exploratory well should provide much of the information needed to assess the feasibility and long-term impacts of a production well.

We also acknowledge that background hydrogeologic data may be sparse in an unexplored area. However, because the DEA does not contain the "Well Site Selection Report" which reportedly contains the hydrologic background material, we were unable to review the hydrologic reasoning and data for some statements appearing in the DEA. Assuming that the "Well Site Selection Report" will not be included in the final Environmental Assessment, a few statements in the DEA need to be supported by some data.

1. Section II-A of the DEA gives estimates of anticipated well yield of 500 to 700 gpm and chloride concentration of 120 ppm for the proposed well, but does not give the basis for the estimates. Are the estimates based on well yields and chloride concentrations from existing wells in similar hydrogeologic settings (such as Kekaha-Waipao [5943-02] and the Paua Valley [5942-01] wells)? If so, this should be stated and the data given (provide historic chloride concentrations and give long-term average pumping rates, not just pump capacities, for the existing wells, if possible).
2. The statement that "it is unlikely that a well in this area will be subject to saltwater encroachment..." (also in Section II-A) is broad and implies absolute certainty, but it is contrary to what would be expected for a well so close to the ocean. The statement should be deleted because it will be difficult to defend. Whether a well will be subject to saltwater

intrusion depends on pumping rate and proximity of the well bottom to the transition zone. Data from the State Water Commission indicate that chloride concentrations in the Huluhulunui Shaft have been as high as 710 mg/L, which shows that saltwater intrusion is possible if the well is pumped hard enough. A State report for well 5840-01 in Waimea states that chlorides were high initially when the well was deep but improved when the well was shortened by backfilling, which shows that saltwater intrusion is possible if a well penetrates too close to the transition zone. Although the Huluhulunui Shaft withdraws much more water than the anticipated production of the proposed Kapilimao Valley well, and the Waimea well (5840-01) is closer to the coast than the Kapilimao Valley site, the data indicate that saltwater intrusion is possible.

Rather than stating that saltwater encroachment is unlikely, a much stronger justification of the proposed well location would be the success of the Kekaha-Waipao (5943-02) and the Paua Valley (5942-01) wells.

3. The purpose of the statement that there are no producing wells nearby (Section II-A of the DEA) is unclear. In an engineering or planning sense, 3,000 ft may not be considered near, but the statement could be misinterpreted to mean that there are no wells within the potential area of pumping influence of the proposed well. The Huluhulunui Shaft and Paua Valley well are close enough to be within range of long-term effects that may result from pumping 500-700 gpm from the proposed well site. Even if drawdowns are expected to be small because of the high anticipated permeability of the Napali lava flows, long-term pumping from Kapilimao Valley may affect the quality of water at existing wells by raising the transition zone. However, because the present DEA concerns only an exploratory well, it would be premature to address long-term effects on existing wells in the present DEA. The statement that there are no wells nearby should therefore either be deleted or the meaning should be clarified.
4. The last paragraph of Section II-B contains the statement, "It is likely that a well in Kapilimao Valley would not be sensitive to over-pumping and likely could be pumped at 500-700 gpm." This statement is closely akin to the statement discussed in item 2 (above) and is likewise hard to defend. Any well can be overpumped. If the reasons for choosing the well site are given adequately in Section II-A, it is not necessary to make this statement in Section II-B. It seems out of place in this section anyway and should be deleted (first sentence in last paragraph in Section II-B).
5. There is an error in the geology section (Section IV-B). The last sentence of the first paragraph reads, "Rock formations belonging to this original shield are part of the Waimea Canyon Volcanic Series, a major portion of which are thin lava flows of the Napali formation which later covered the shield mass." The Napali does not cover the shield, it forms the bulk of the shield. The Olokele, Makaweli and Koloa cover the Napali. The phrase "which later covered the shield mass" should be deleted.
6. As indicated in item 1 (above), the discussion of hydrology in (Section IV-D) should also contain actual average pumpage (not just pump capacity) and chloride data from wells 5942-01 and 5943-02. Section IV-D could then be used to support the estimated well yield and anticipated chlorides for the new well in Kapilimao Valley.

In summary, our comments primarily concern the accuracy of the background information and the need for data supporting certain hydrologic statements. If the "Well Site Selection Report" will not be included in the final Environmental Assessment, the supporting data could be easily incorporated into the existing format of the DEA with a few sentences. This would also eliminate the need for some other statements that are difficult to support.

We hope these comments are helpful for the completion and acceptance of the final environmental assessment. If you have any questions, please feel free to call me at 522-8292.

Sincerely,



William Meyer  
District Chief

cc Kauai Department of Water



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: [akinaka@aloha.net](mailto:akinaka@aloha.net)

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAMIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

## FILE COPY

July 23, 1998

U.S. Geological Survey  
Water Resource Division  
677 Ala Moana Blvd., Suite 415  
Honolulu, Hawaii 96813

Attention: Mr. William Myer  
District Chief

Project: Kapilimao Valley Well, Kekaha, Kauai  
Department of Water, County of Kauai

Subject: Draft Environmental Assessment  
Drill & Test Exploratory Well

Reference: U.S. Geological Survey letter dated 7/13/98

Thank you for supplying review comments on the subject. In response to the reference, the following information is provided:

1. **SECTION II-A:** Are the estimates based on well yields and chloride concentrations from existing wells in similar hydrogeologic settings (such as Kekaha-Waipao [5943-02] and Paua Valley [5942-01] wells)?

Section II-A: Item 2 revised to read "... (anticipated well yield = 500 - 700 gpm based on performance of Kekaha-Waipio and Paua Valley Wells)."

2. **SECTION II-A:** Delete statement "it is unlikely that a well in this area will be subject to salt water encroachment..."

Section II-A: Item 3 revised to read "... It is not expected that a well in this area will be subject to salt water encroachment based on its location and proposed pumping rate..."

3. **SECTION II-A:** The statement that there are no wells nearby should therefore either be deleted or the meaning should be clarified.

Section II-A: Item 4 revised to read ... "There are no production wells within 2,000 feet of the proposed exploratory well."

4. **SECTION II-B:** The statement "It is likely that a well in Kapilimao Valley would not be sensitive to over-pumping and likely could be pumped at 500 - 700 gpm" seems out of place in this section and should be deleted.

The statement will be deleted.

5. **SECTION IV-B:** The phrase "which later covered the shield mass" should be deleted.

The phrase will be deleted.

6. **SECTION IV-D:** Discussion of hydrology should also contain actual average pumpage (not just pump capacity) and chloride data from wells 5942-01 and 5943-02.

The second sentence will be amended to read ... "This volcanic series are typically highly permeable and yield water readily to wells as experienced by the Kekaha-Waipio and Paua Valley wells."

Should there be any questions, please contact the undersigned at 536-7721.

Very truly yours,



Henry S. Morita  
Executive Vice President

cc: M. Matsumura, KDOW  
S. Bowles, WWS

HSM:cyk  
USGS001L.wpd



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

JUL 22 1998

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND DIVISION  
STATE PARKS  
WATER RESOURCE MANAGEMENT

RECEIVED  
JUL 24 1998

AKINAKA & ASSOCIATES, LTD.

Ref.:LD-PEM

LD Ref.:DOW96-4.COM  
A&A Job No.: DOW 97-01

Mr. Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Subject: Request for Comments - Draft Environmental Assessment, Water Source  
Improvements Waimea-Kekaha Water System Pakui Housing, CDBG Disaster  
Grant, Waimea-Kekaha, Kauai, Tax Map Key: 1-2-02:01

We have reviewed the subject Draft Environmental Assessment for the subject project and would like to offer the following comments:

Land Division - Engineering Branch

Our current projects are not affected by the proposed project. Also, there are no known wells within 1,000 feet of the project area.

The proposed project site is not located outside the 100-year floodway as stated in the Draft Environmental Assessment. It is located in Zone X, an area located outside the 500-year floodway.


Division of Aquatic Resources

The Division of Aquatic Resources has no objections to this request since the proposed project is not expected to have significant adverse impact on aquatic resource values in this area. The intermittent stream located near the project site in Kapilimao Valley may harbor some aquatic animals. It is with this possibility that construction activities could have short-term impacts on aquatic resources such as temporary turbidity, biota displacement and disturbance. The applicant should take precautions to prevent contaminants such as drill cuttings, cutting extraction medium, sediment, pollutants, petroleum products, and debris from possibly entering the aquatic environment. We also suggest that site work be scheduled for periods of minimal rainfall and lands denuded of vegetation be replanted or covered as quickly as possible to control.

Mr. Henry S. Morita  
Page 2

Thank you for the opportunity to review the Draft Environmental Assessment for the subject project, we have no further comments to offer at this time. Should you have any questions, please contact Patti Miyashiro of our Land Division at 587-0430.

Very truly yours,

  
Dean Y. Uchida  
Administrator

c: Kauai Land Board Member  
Kauai District Land Office  
Engineering Branch  
Div. of Aquatic Resources





**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

**FILE COPY**

July 31, 1998

Mr. Dean Y. Uchida, Administrator  
Land Division  
Department of Land and Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, HI 96809

Attn: Ms. Patti Miyashiro (587-0430)

Project: Water Source Improvements, Waimea-Kekaha Water System  
Pakui Housing, CDBG Disaster Grant, Kekaha, HI; TMK: 1-2-02:01

Subject: Draft Environmental Assessment

Reference: Land Division ltr DOW96-4.COM dated Jul 22, 1998

Thank-you for providing the review comments contained in the reference. We note the following:

**Land Division – Engineering**

The project site is not located outside the 100-year floodway, it is located in Zone X, an area located outside the 500-year floodway.

**Division of Aquatic Resources**

The Contractor shall be directed to prevent contaminants such as drill cuttings, sediments, pollutants, petroleum products and debris from possibly entering the aquatic environment. Site work has been minimized (graded area = 1,300 sf) to mitigate erosion due to rainfall. Contract specifications provide for grassing as directed by the Engineer in consideration of the subsequent project which will grade the entire site.

If you have any questions, please contact the undersigned at 536-7721.

Very truly yours,

Henry S. Morita  
Executive Vice President

cc. M. Matsumura, KDOW  
DLNRDEA.DOC

BENJAMIN J. CAYLETANO  
GOVERNOR OF HAWAII



MICHAEL D. WILSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

GILBERT COLOMA-AGARAN

AQUACULTURE DEVELOPMENT  
PROGRAM

AQUATIC RESOURCES  
CONSERVATION AND

RESOURCES ENFORCEMENT  
CONVEYANCES

FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION

DIVISION

LAND DIVISION

STATE PARKS

WATER AND LAND DEVELOPMENT

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

June 22, 1998

Mr. Henry Morita  
Akinaka and Assoc.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

RECEIVED  
JUL 10 1998  
AKINAKA & ASSOCIATES LTD.

LOG NO: 21687 ✓  
DOC NO: 9806NM15

Dear Mr. Morita:

**SUBJECT: Historic Preservation Review -- DEA Water Source Improvements,  
Waimea-Kekaha Water System Pakui Housing Program,  
CDBG Disaster Grant Housing Agency (County of Kauai)  
TMK: 1-2-02: 1  
Kekaha, Waimea, Kauai**

We concur with your document that no archaeological inventory surveys have been conducted in the project area. The ridge and valleys of the Waimea area are known to contain significant historic sites such as heiau, house sites and agricultural field walls. We recommend that during the actual topo survey, a qualified archaeologist accompany the survey crew to determine if significant historic sites exist in the area. If such sites are present, plans can be made to adjust the project location in order to avoid and preserve the historic site(s). If this plan can be agreed to then, we believe that the project will have "no effect" on significant historic sites.

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

Aloha,

A handwritten signature in black ink, appearing to read "Don Hibbard".

DON HIBBARD, Administrator  
State Historic Preservation Division

NM:amk



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

July 30, 1998

**FILE COPY**

Mr. Don Hibbard, Administrator  
State Historic Preservation Division  
Department of Land & Natural Resources  
State of Hawaii  
33 South King Street, 6<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Attention: Nancy McMahon (742-7033)

Project: Waimea-Kekaha Water System, Pakui Housing Program  
CDBG Disaster Grant, Kekaha, Kauai, HI TMK: 1-2-02:01

Subject: Draft Environmental Assessment

Reference: State Historic Preservation Division ltr 9806NM15 of 6/22/98

Thank you for the review comments contained in the reference. The topographic survey has been completed and no house sites or walls were found. To confirm the findings we are negotiating with SCS Archaeology (597-1182) to send an archaeologist to the site. The plans can be adjusted if necessary.

Should you have any questions, please call the undersigned at 536-7721.

Very truly yours,

Henry S. Morita  
Executive Vice President

c.c. M. Matsumura, KDOW  
HSM:cyk  
DLNRHPD1.WPD

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



LAWRENCE MIKE  
DIRECTOR OF HEALTH

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

In reply, please refer to:

July 28, 1998

98-126/epo

RECEIVED  
JUL 30 1998

AKINAKA & ASSOCIATES, LTD.

Mr. Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Ltd.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Subject: Preliminary Draft Environmental Assessment  
Kekaha Exploratory Well  
Water Source Improvements for Waimea-Kekaha  
Water System  
County of Kauai  
TMK: 1-2-02: 1

Thank you for the opportunity to review and comment on the subject document. We have the following comments to offer:

1. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems."
2. The proposed project consists of drilling and testing an exploratory well located in Kekaha, Kauai. Chapter 11-20, Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director. However, if the water system is under the jurisdiction of the County of Kauai, the Kauai Department of Water Supply will be responsible for the review and approval of the plans.
3. Section 11-20-29 of Chapter 11-20 requires that all new sources of potable water serving a public water system be approved by the Director of Health prior to its use. Such an approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

Mr. Henry S. Morita  
July 28, 1998  
Page 2

4. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses, performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director upon his review of the information submitted.

If you should have any questions, please contact Ms. Queenie Komori of the Safe Drinking Water Branch, Engineering Section, at 586-4258.

Sincerely,



BRUCE S. ANDERSON, Ph.D.  
Deputy Director for  
Environmental Health

c: SDWB

# CORRECTION

THE PRECEDING DOCUMENT(S) HAS  
BEEN REPHOTOGRAPHED TO ASSURE  
LEGIBILITY  
SEE FRAME(S)  
IMMEDIATELY FOLLOWING

Mr. Henry S. Morita  
July 28, 1998  
Page 2

98-126/epo

4. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses, performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director upon his review of the information submitted.

If you should have any questions, please contact Ms. Queenie Komori of the Safe Drinking Water Branch, Engineering Section, at 586-4258.

Sincerely,



BRUCE S. ANDERSON, Ph.D.  
Deputy Director for  
Environmental Health

c: SDWB



**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

August 5, 1998

Mr. Bruce S. Anderson, Ph.D.  
Deputy Director for Environmental Health  
Department of Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, Hawaii 96801

**FILE COPY**

Attn: Ms. Queenie Komori, Safe Drinking Water Branch

Project: Water Source Improvements, Waimea-Kekaha Water System  
Drill & Test Kapilimao Valley Well, Kekaha, Kauai, HI  
County of Kauai, TMK: 1-2-02:1

Subject: Preliminary Draft Environmental Assessment

Reference: Department of Health ltr 98-126/epo dated 7/24/98

Thank-you for the review comments contained in the reference. In response to the comments, we provide the following information:

1. The County of Kauai, Department of Water will comply with the Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems".
2. The water system will be under the jurisdiction of the County of Kauai, Department of Water.
3. An engineering report, which addresses the requirements of Section 11-20-29, will be submitted to the Director of Health for approval prior to the use of the potable water source.
4. The engineering report will identify potential sources of contamination. AECOS and other certified laboratories will perform the water quality analyses.

Should you have any questions, please call the undersigned at 536-7721.

Very truly yours,

Henry S. Morita  
Executive Vice President

cc: M. Matsumura, KDOW





STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION  
P.O. BOX 621  
HONOLULU, HAWAII 96809

JUL 30 1998

AQUACULTURE DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND  
RESOURCES ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND DIVISION  
STATE PARKS  
WATER RESOURCE MANAGEMENT

RECEIVED  
JUL 31 1998

AKINAKA & ASSOCIATES, LTD.

Ref.:LD-PEM

LD Ref.:DOW96-4.COM  
A&A Job No.: DOW 97-01

Mr. Henry S. Morita  
Executive Vice President  
Akinaka & Associates, Inc.  
250 North Beretania Street, Suite 300  
Honolulu, Hawaii 96817-4716

Dear Mr. Morita:

Subject: Request for Comments - Draft Environmental Assessment, Water Source  
Improvements Waimea-Kekaha Water System Pakui Housing, CDBG Disaster  
Grant, Waimea-Kekaha, Kauai, Tax Map Key: 1-2-02:01

This is a follow-up to our letter dated July 22, 1998 regarding the subject request. At this time we would like to offer the following additional comments:

Commission on Water Resource Management

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

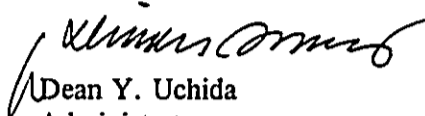
A well construction permit from the Commission is required for the drilling and testing of the proposed exploratory well. If the well is successful, and the county wished to use the well, then a pump installation permit must also be obtained.

We recommend that the report contain a discussion on ground-water availability and disclose the potential impacts on water resources that may result from the proposed action.

Mr. Henry S. Morita  
Page 2

Thank you for the opportunity to provide additional comments for Draft Environmental Assessment the for the subject project. Should you have any questions, please contact Patti Miyashiro of our Land Division in Honolulu at (808) 587-0430.

Very truly yours,

  
Dean Y. Uchida  
Administrator

c: Kauai Land Board Member  
Kauai District Land Office  
CWRM



**AKINAKA & ASSOCIATES, LTD.**

CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: akinaka@aloha.net

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUITORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, JR.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A. INFANTE

August 5, 1998

**FILE COPY**

Mr. Dean Y. Uchida, Administrator  
Land Division  
Department of Land & Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Attention: Ms. Patti Miyashiro (587-0430)

Project: Water Source Improvements, Waimea-Kekaha Water System,  
Pakui Housing, CDBG Disaster Grant, Kekaha, HI TMK: 1-2-02:01

Subject: Draft Environmental Assessment

Reference: Land Division ltr DOW96-04.COM dated July 30, 1998

Thank you for providing the review comments contained in the reference. We provide the following responses to your comments:

**Commission on Water Resource Management**

The project planning and engineering are reviewed and approved by the County's Department of Water.

The project will not alter the bed or the banks of a stream channel.

A well construction permit will be requested from the Commission prior to drilling and testing of the exploratory well. A pump installation permit will be requested if the exploratory well meets the desired yield and water quality.

Based upon the experience of the Department of Water production wells #5942-01 and #5943-02 and expected head of 10 feet, it has been concluded that an exploratory well at this location will be capable of being pumped at rates of about 700 gpm. The purpose of the exploratory well is to determine a production rate and to establish the impact on the aquifer.

Mr. Dean Y. Uchida  
August 5, 1998  
Page 2

If you have any questions, please call the undersigned at 536-7721.

Very truly yours,



Henry S. Morita  
Executive Vice President

c.c. M. Matsumura, KDOW  
HSM:cyk  
DLNRLD01.WPD

BENJAMIN J. CAYETANO  
GOVERNOR



91-01-110-110 REV0

GARY GILL  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 686-4186  
FACSIMILE (808) 686-4186

August 7, 1998

Ms. Mathilda Yoshioka  
County of Kauai Housing Agency  
4193 Hardy Street  
Lihue, Hawaii 96766

Dear Ms. Yoshioka:

Subject: Draft EA for the Water Source Improvements, Waimea-  
Kekaha Water System, Kauai

Thank you for the opportunity to review the subject document. We  
have the following comments.

1. Orientation Maps

Please provide maps with the appropriate scale and coverage  
to analyze the aquifer or hydrologic unit that show the  
following:

- a) Hydrologic information: aquifer or hydrologic unit  
boundary, nearby streams and wetlands, known or assumed  
groundwater flowpaths, and known or assumed water level  
contours.
- b) Contamination information: Points or regions of known  
contamination, points of potential contamination (landfills,  
individual wastewater disposal systems (cesspools, septic  
tanks, aeration units), hazardous waste 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.

**2. Aquifer or Hydrologic Unit Status**

Please include a description of the aquifer or hydrologic unit status including the following:

- \* Sustainable yields or other measures of water availability
- \* Data table presenting the following information as appropriate
  - Current water use totals, including subtotals for individual users
  - Current installed capacity including subtotals for individual wells and/or groups of wells.
  - Pending installed capacity and/or use for the proposed well and subtotals for individual wells and/or groups of wells within the aquifer

**3. Contamination Analysis and Vulnerability Assessment**

Please provide a record of contamination problems in the aquifer or hydrologic unit including but not limited to saltwater intrusion, turbidity, heavy metals, inorganic and organic chemicals, microbiological agents, water quality parameters (such as pH, alkalinity, calcium, conductivity and temperature), and radioactivity. If contamination exists, the sources and duration of the contamination should be listed. Water quality data from nearby wells should be presented as well as any anticipated need for treatment or 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.

Any hazardous materials used and/or produced during drilling and treatment should be described. The method of handling these hazardous materials should also be disclosed.

**4. Hydrologic Impact Analysis**

Please describe 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 the surface waters should be included.

The EA should 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 be described. Any provisions for future use and monitoring of wells not placed into production should also be described.

**5. Financial and Institutional Arrangements**

The EA should include a full discussion of any institutional, financial or land use arrangements or commitments related to developing the well and delivering water to end users.

Please include a copy of the Cooperative Funding Agreement between the Housing Agency and the Department of Water. In particular, we are interested in the relationship between this water development project and the Pakui Housing Program.

**6. Watershed and Land Use Analysis**

Discuss how waters from the well will be used, and an analysis of how the proposed well development may affect land and water uses on the island and in the region. The analysis should include a discussion of the following:

- \* Plans for future water development within the aquifer
- \* Historical water supply and demand figures for the region
- \* How the well may affect existing water sources
- \* Any secondary or cumulative impacts caused by promoting land uses that alter the hydrology of the source and/or end-use area
- \* An assessment of the well's impact on the land owners, water users including farmers and kuleana residents in the region and a declaration if ceded lands are involved.

**7. Alternative Analysis**

A list of alternatives to new groundwater development and discussion of their related costs and benefits. The list should include but not be limited to alternative locations, wastewater reuse, rainfall catchment, existing potable and non-potable water supplies, water conservation and Demand

Ms. Yoshioka  
Page 4

Side Management or Integrated Resources Planning. Show why developing a new source is more cost efficient than water conservation programs (slow-flow and low-flush retrofits, leak detection, etc.).

8. **Impacts of Accessory Facilities**

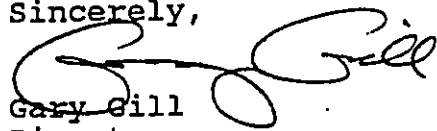
A description of impacts associated with the well's permanent production facilities including pumps, distribution pipelines, control devices, storage facilities, access roads, powerlines and accessory structures.

9. **Community Consultation**

Please consult with nearby groups and individuals who may be affected by the proposed project. Document this consultation in the final environmental assessment.

If you have any questions call Jeyan Thirugnanam at 586-4185.

Sincerely,

  
Gary Gill  
Director





**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil Engineering • Land Planning

250 NORTH BERETANIA STREET, SUITE 300, HONOLULU, HAWAII 96817-4716 • TELEPHONE (808) 536-7721 • FAX (808) 521-2153 • E-mail: [akinaka@aloha.net](mailto:akinaka@aloha.net)

ROBERT Y. AKINAKA, L.P.E.  
HENRY S. MORITA, L.P.E.  
SHELDON T. YAMASATO, L.P.E.  
MICHAEL M. MIYAHIRA, L.P.E.  
BARRY K. MURANAKA, L.P.E.

SALVADOR M. QUINTORIANO, L.P.L.S.  
BENJAMIN M. GANAL, L.P.L.S.  
JOSEPH S. KEANE, J.R.  
MARIAN N. NAKAMA, L.P.E.  
CRAIG K. MATSUMOTO  
STATE A INFANTE

September 14, 1998

Mr. Gary Gill, Director  
Office of Environmental Quality Control  
State Office Building  
Central Pacific Plaza  
235 So. Beretania St., Room 702  
Honolulu, Hawaii 96813

Attention: Mr. Jeyan Thirngnanam (586-4185)

Project: WATER SOURCE IMPROVEMENTS  
WAIMEA-KEKAHA WATER SYSTEM, KAUAI

Subject: Draft Environmental Assessment

Reference: Office of Environmental Quality Control Itr of 8/7/98

Thank you for your comments contained in the reference regarding the subject. Your comments requested specific data on potential future impacts in the event that the well is to be developed as a municipal water source. At present, much of the necessary data are not available for either project planning or environmental assessment of impacts associated with the potential future development of the well.

As you know, the subject is prepared for the construction and testing of an exploratory well in Kapilimao Valley, Kekaha, Kauai. In the event that development of this well as a municipal water source is feasible, the County of Kauai Department of Water (DOW) will proceed with the improvements necessary to develop and integrate the well into the Waimea-Kekaha Water System. The DOW understands that the preparation of an EA will be necessary in association with any well development. In addition, well development must comply with the requirements of the State of Hawaii, Commission on Water Resources Management (CWRM), and the State of Hawaii, Department of Health (DOH).

Mr. Gary Gill, Director  
September 14, 1998  
Page 2

The following information is submitted in response to your comments, which are briefly summarized prior to our response.

**1. Orientation Maps**

This comment requests the submittal of maps that depict aquifer hydrologic and contaminant information. Please refer to Exhibits 1,2,3,5 and 6 of the Draft EA. The Draft EA maps show the hydrologic details (streams, wetlands, etc) included in the U. S. Geological Survey (USGS) 7.5 minute Quadrangle maps, which are believed to be the best available sources for such information for the area. Additional hydrologic data are presented in the references included in the bibliography, particularly the "Water Resources Protection Plan", prepared by George A. L. Yuen and Associates, Inc. (1990), and USGS Water Resources Investigation Reports 93-4180 and 95-4128. The attached aquifer classification map for the Island of Kauai, from the USGS Report 93-4180 is attached.

Currently, only very limited data on contaminant sources exist in the area, and virtually no such data are available for the proposed well site. Other than the potential for contaminants from historic agricultural practices, there are no apparent sources (such as cesspools or landfills) of ground water contaminants at the site. Additional data will be available following the construction and testing of the proposed well.

**2. Aquifer or Hydrologic Unit Status**

This comment requests a description of the aquifer or hydrologic unit, and information about sustainable yield, and existing well capacity. According to the data provided in the Yuen & Associates Report, the Kekaha aquifer (hydrologic unit 20301) has a sustainable yield of 42 million gallons per day (mgd), with current pumpage of about 23 mgd. Based on these data, it appears that the Kekaha aquifer contains adequate water resources for all current and anticipated users. Most of the existing use of the aquifer is for agricultural purposes, although the DOW has 3 wells in the Kekaha area (total capacity of approximately 1 mgd) and 2 wells in the Waimea area (total capacity of approximately 0.5 mgd). The locations of the DOW wells are shown on Exhibit 2 of the Draft EA. Data on other wells in the aquifer are maintained by the CWRM.

**3. Contamination Analysis and Vulnerability Assessment**

This comment requests information regarding known or potential aquifer contamination problems in the area, and requests information on potential vulnerability, likely wellhead protection areas, and the use of hazardous materials during drilling. As indicated above, there are virtually no data concerning groundwater contaminants in the vicinity of the proposed well. The only data presently available for the immediate vicinity of the well are land use patterns, and the general observation that salinity may be a concern in the event that the well is completed at too great a depth, or is pumped at an excessive rate. Agricultural land use in Hawaii has been associated with the presence of nitrates and pesticides in ground water. The presence and extent of such potential contaminants will be evaluated by analysis of samples from the proposed well. It is premature to speculate on the potential wellhead protection areas, because the wellhead protection program is currently undefined for Kauai.

Hazardous materials, other than fuel and lubricants for the construction equipment, will not be present at the drill site, and no hazardous materials will be used during, or generated by the well drilling activities.

**4. Hydrologic Impact Analysis**

This comment requests information on potential hydrologic impacts of the well development on the adjacent watershed. Because this is an exploratory well, and the potential well yield, water quality, and aquifer properties are unknown at present, the requested data are not presently available.

**5. Financial and Institutional Arrangements**

This comment requests that a discussion be provided regarding institutional, financial or land use arrangements associated with the project, and further requests a copy of the Cooperative Funding Agreement between the Housing Department and the DOW. A copy of the agreement between Housing and DOW will be forwarded under separate cover. As indicated on page II-3 of the Draft EA, the project has obtained Federal Funding. The Federal funds are provided as a Community Development Block Grant (CDBG) under the Pakui Housing Program (Contract No. 250-0700-653.90-78 CDBG Disaster A/C), and this program is administered by the County of Kauai Housing Agency.

Mr. Gary Gill, Director  
September 14, 1998  
Page 4

The DOW will provide all necessary additional funding required to complete the well drilling and future well development.

The well site is situated on land owned by the State of Hawaii, Department of Land and Natural Resources (DLNR). The property has been leased to the Kekaha Sugar Company (KSC), and Rights-of-Entry agreements for the project from both the KSC and the DLNR are in progress and will be obtained prior to the start of construction. Should the exploratory well be successful, and development of the well as a municipal water source be pursued, the DOW will acquire the well site parcel and associated easements from the DLNR.

**6. Watershed and Land Use Analysis**

This comment requests that information on how this well may affect land and water uses in the region. Much of the information requested would be more appropriately provided in the well development EA, because the feasibility of development of the well has not been established. At this point, however, it can be stated that the proposed well, if successful, will be used as a municipal water source to serve the communities of Kekaha and Waimea. No specific development projects or changes in land uses are associated with this new well, other than at the well site.

At present, the future status of regional water use is unclear, primarily because of the uncertain future viability of sugar cane cultivation in the region. Based on the data presented in response to comment number 2, it is clear that adequate water resources are available within the aquifer to allow for development of the proposed well. Further discussion of any impacts from this well on the watershed and land use patterns will be provided in the well development EA.

**7. Alternative Analysis**

This comment requests a list and discussions of alternatives to new ground water development. A response to the comment follows:

A. No Project Alternative

One alternative to the proposed project is the "no project" alternative. This would result in no change of existing conditions. The Waimea-Kekaha Water System would remain dependent on the existing sources and thus be vulnerable to water outages and potential source contamination. Currently, the available municipal water sources for the Waimea area are inadequate per the DOW water system standards for current demand, due to the loss of the Waimea Shaft source.

B. Alternative Well Sites

Other well sites were considered for exploratory drilling in the Waimea-Kekaha area. The Kapilimao Valley site was selected since the well would tap into the Waimea-Napali Volcanics which is considered an excellent water source. Anticipated well yield is 500 - 700 gpm based upon performance of adjacent Kekaha-Waipao and Puau Valley wells.

C. Water Conservation

Water conservation programs can be used to meet future water demands, and are typically implemented when a water shortage is likely. Water system conservation is the responsibility of the water purveyor, and entails careful monitoring of all water in the transmission and distribution systems. County water uses such as for street and sewer flushing could be targeted for more efficient use. Additionally, detection and repair of leaks in the transmission and distribution system would be effective in reducing water losses. Conservation is also the responsibility of the consumer. Consumers are encouraged to use water saving practices, detect and repair leaks within their property, and in general, to minimize wasteful water use.

Water conservation is a beneficial practice regardless of the water supply situation. However, Kauai experiences a very wet climate and has an abundant groundwater and surface water supply. Even with further development of well water sources, the water use will be a fraction of the aquifer yield. Although it is a practice that should be observed by all consumers, water conservation alone will not provide the quantity of water required to meet demands.

Mr. Gary Gill, Director  
September 14, 1998  
Page 6

The DOW is initiating a water conservation program to reduce demands; however, the anticipated savings will not affect the need for this project.

D. Wastewater Reuse and Nonpotable Water Supplies

Wastewater reuse and nonpotable water supplies are potentially viable alternative water sources for applications such as irrigation. The relative cost to construct, maintain and operate facilities to properly treat wastewater and nonpotable water is relatively higher than the cost to provide water from a potable groundwater source.

The sewage treatment plant in the area is the Waimea Wastewater Treatment Plant, and it produces about 0.30 mgd of treated effluent which is used by Kikiaola Land Company for seed corn irrigation. Agricultural use of treated effluent was the alternative to an ocean outfall. Use of treated effluent for agriculture does not negate the need for potable groundwater sources.

E. Rainfall Catchment

Rainfall catchment involves the construction of a series of ditches and reservoirs to intercept rainfall runoff from large areas of land, and is an ideal source for agricultural use. According to the Kauai Water Use and Development Plan, February 1992, over 80 percent of the water used on Kauai is by sugarcane plantations which rely on rainfall catchment (surface waters) as the primary water source. However, if surface water is used to supply municipal drinking water systems, it is subject to the DOH Surface Water Treatment Rule which requires costly and cumbersome treatment, monitoring and reporting. Consequently, the immense cost of constructing, operating, and maintaining a water treatment facility renders this alternative infeasible, especially when there is an ample supply of potable groundwater.

Mr. Gary Gill, Director  
September 14, 1998  
Page 7

**8. Impacts of Accessory Facilities**

This comment requests information regarding issues associated with permanent production facilities. Because the current project is for an exploratory well, the plans for the permanent production facilities have not been completed. If the exploratory well is successful, the permanent production facilities will be designed, and any associated impacts will be analyzed in the well development EA.

**9. Community Consultation**

This comment requests that consultation with the community be conducted and documented. A list of organizations and persons contacted during the preparation of the EA is included in the Final EA along with the comments received on the Draft EA, and the responses prepared for those comments. In addition to providing notice to the attached list of individuals and groups, a copy of the Draft EA was provided for public access at the Waimea Public Library, the closest public library to the project site.

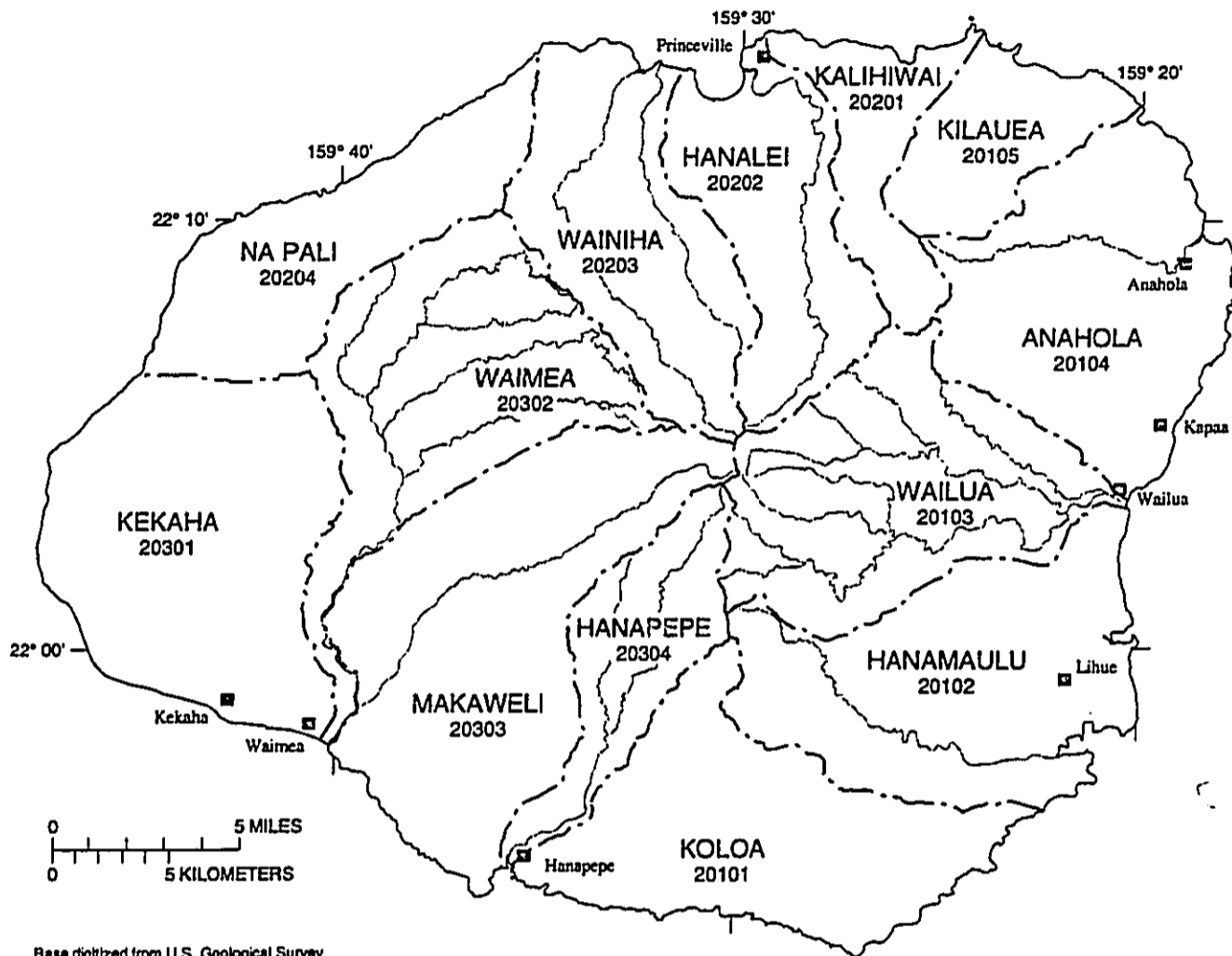
Should you have any questions, please call the undersigned at 536-7721.

Very truly yours,



Henry S. Morita  
Executive Vice President

cc: Mel Matsumura, KDOW, Dennis Alkire, KHA  
HSM:cyk  
OEQCDRWK.WPD



Base digitized from U.S. Geological Survey  
1:24,000 topographic quadrangles for the  
Island of Kauai

**EXPLANATION**

- AQUIFER-SYSTEM BOUNDARY
- KOLOA 20101 AQUIFER-SYSTEM NAME AND NUMBER

**Figure 14.** Aquifer-system areas, Island of Kauai, 1990 (modified from George A. L. Yuen and Assoc., 1990).