EXECUTIVE CHAMBERS
HONOLULU

GEORGE R. ARIYOSHI
GOVERNOR

September 21, 1984

Ms. Letitia N. Uyehara, Director
Office of Environmental Quality Control
550 Halekauwila Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Based on the recommendation of the Office of Environmental Quality Control, I am pleased to accept the environmental impact statement for the Wailua-Hana Water System Improvements on Maui as a satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

This environmental impact statement will be a useful tool in deciding whether this project should be allowed to proceed. My acceptance of the statement is an affirmation of its adequacy under applicable laws and does not constitute an endorsement of the proposal.

When the decision is made regarding this action, I expect the proposing agency to carefully weigh the societal benefits against the environmental impact which will likely occur. This impact is adequately described in the statement and, together with the comments made by reviewers, provides a useful analysis of alternatives to the proposed action.

With warm personal regards, I remain,

Yours very truly,

George R. Ariyoshi

cc: Mr. William S. Haines, Director
Department of Water Supply, County of Maui
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
WAILUA-HANA WATER SYSTEM IMPROVEMENTS

Hana, Island of Maui, Hawaii

Submitted by
Department of Water Supply
County of Maui
Wailuku, Maui, Hawaii

Prepared by
Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Honolulu, Hawaii 96813
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COUNTY OF MAUI
DEPARTMENT OF WATER SUPPLY

ENVIRONMENTAL IMPACT STATEMENT
FOR THE
WAILUA-HANA WATER SYSTEM IMPROVEMENTS
HANA, MAUI, HAWAII

PROPOSING AGENCY AND OFFICIAL CONTACT

Mr. William S. Haines, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui, Hawaii 96793

PREPARED BY
Sam O. Hirota, Inc.
345 Queen Street, Suite 500
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JUNE 1984
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I. SUMMARY

AGENCY ACTION

Department of Water Supply, County of Maui

PROJECT OBJECTIVE

The project objective is to treat the existing surface water sources or to find new sources for the Wailua-Hana Water System in order to comply with the State and Federal drinking water quality standards. Surface water from Wailua Stream must be treated to reduce turbidity, iron content, odor, color, and corrosivity if it is to be used as a source for the Hana Water System. The Wakiw wells have problems with corrosivity, and chloride levels.

PROPOSED ACTION

The engineering study recommends that the County of Maui drill a groundwater well near the 20,000-gallon storage tank at Hamoa, construct a slow sand filter at the Wailua Stream and provide a new interconnecting pipeline between Hamoa and Hana Town. This site/alternative was selected because:

1. it would provide the community with a reliable water source and better quality of water;

2. the studies indicated that there would be high probability of locating an additional groundwater source;

3. the annualized present worth costs were nearly the least expensive amongst all the alternatives. Less expensive alternatives did not provide operational
flexibilities and were not as reliable.

THE AFFECTED ENVIRONMENT

Hana is located along the slopes of Haleakala on the eastern end or the island of Maui. The topography of the area is gently sloping, except for gulches and valleys. The area was created by lava flows; the soil is highly permeable, absorbing a significant amount of the area's average 180 inches of annual rainfall. Groundwater occurs as perched bodies in the higher elevations and as basal water near the shore.

Land in the area is primarily designated Agricultural (A) by the State. The State also designates the Hana Town area Urban (U). County zoning includes residential in the Hana Town, Hamoa, Puuiki, Muolea, and Koali areas. The steeper lands, the forest reserves, river valley, and shoreline are in open space and designated Conservation (C) by the State Land Use Commission.

Hana is an agricultural community wherein cattle ranching and diversified crops are the principal economic activities. There is a hotel and restaurant which caters primarily to out of state visitors. The residential homes and ranch houses are low-rise, single-family structures on large lots or farms. Hana is a relatively isolated area which is accessible through a narrow, winding road; it is a 3-hour
drive from Kahului, the principal city on the island. The area served by the Wailua-Hana Water System has an estimated population of 1,443. It is estimated that by the year 2000, the population will be 2,176.

The present maximum daily demand for potable water is estimated to be 213,500 gallons; by the year 2000, the maximum daily demand will be 309,000 gallons. The estimated average daily consumption per capita is about 108 gallons.

THE EXISTING WATER SYSTEM

The Wailua-Hana Water Distribution System extends from a water source on the Wailua Stream in the Koali District south to Hana Town, to the Wakiu wells, and north to Hana Airport.

Wailua Stream is the main source of water for the system, and water from the wells at Wakiu is used to supplement the water supply to Hana Town. Department of Water Supply personnel estimate that 60 percent of the water for the Hana system is supplied by Wailua intake and 40 percent from Wakiu Well B. Water from the Wailua intake is distributed by gravity flow through a 4-inch pipeline to Hana Town. The distribution system in Hana is made up of 3/4-inch to 4-inch diameter lines with a 12-inch supply line from the Wakiu wells.
Flow in the Wailua Stream is erratic, and projections indicate that the Wailua intake will not likely be able to provide a consistent source of water to the Hana system to meet the future (year 2000) demands.

Seven storage tanks serve the Hana system; one serves Hana Town, while the five, smaller storage tanks are scattered throughout the system, and a large 500,000-gallon concrete storage tank is located near the Wakiu wells. Hana Ranch owns and operates a private water system which serves a portion of the area between Kawai'apapa Gulch and the Hana Hongwanji Church. The Hana Ranch system has four 50,000-gallon redwood tanks located about a quarter mile inland of the Hana Post Office.

PROBABLE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

The total amount of land that will be affected will be less than two acres. The agricultural nature of the surrounding area and the lack of nearby homes will result in minimal construction and site clearing impacts on the human environment. Access to the site is available. Once completed, the wells, pumps, reservoirs, and chlorination system will be sheltered. The small size of the land affected, use, and common flora and fauna make impact on these aspects negligible. The impact of having additional water available to the community is not felt to be a primary catalyst for urban growth. It is felt that Hana will remain
a small, rural community because of the rural nature of the area, the land use and zoning restrictions, and the distance from major employment areas.

ALTERNATIVE ACTIONS/SITES

Twelve alternative actions were considered. The installation of a package water treatment plant (PWTP) or a slow sand filter (SSF) system to treat the existing surface water were evaluated in the engineering report. The drilling of wells at Hamoa to provide a new, more reliable source of better quality groundwater and the construction of the interconnection pipeline were selected as the most efficient solution for water system improvements.
II. PROJECT DESCRIPTION

A. Statement of Objectives

The objective of the proposed action is to upgrade the quality of the Wailua-Hana Drinking Water System. It has been found that the water does not comply in certain quality criteria with some of the State and Federal Drinking Water Regulations.

The principal contaminant found in water from Wailua Stream (one of the two principal sources of the water system) is turbidity. The average turbidity of the water is 3.8 Nephelometric Turbidity Units (NTU), whereas the allowable maximum contaminant level (MCL) is 1 NTU. Samples also indicate that the level of certain other quality criteria covered by the National Interim Primary Drinking Water Regulations (NIPDWR) are less than the specified MCL, except for corrosivity. Water from the Wailua Stream was found to meet the standards for aesthetic elements covered by the National Secondary Drinking Water Regulations (NSDWR), with the exception of odor, iron, and color. Surface water from Wailua Stream must be treated to reduce the primary contaminants if it is to be used as a domestic source for the Hana Water System.
The Waihu wells have exceeded the primary maximum contaminant levels for microbial populations, sodium and corrosivity. Secondary contaminants that exceeded maximum levels are chloride, and total dissolved solids. With the exception or corrosivity and microbial populations treatment processes per se are not believed to be required to reduce the contaminant levels at the wells. Revised management procedures for the sources, such as reduced pumping rates, may reduce these contaminants to acceptable levels.

Subsection D of this Section and Appendix B contain additional details and data on water sample testing.

B. The Affected Area

The Wailua-Hana Water System is located along the slopes of Haleakala on the eastern shore of Maui. (See Figure 1). The topography of the area is gently sloping, except for gulches and valleys. The land was formed from lava flow and consists chiefly of olivine and picritic basalt, basaltic andesite, and andesite. The soil is highly permeable, absorbing a significant amount of the average 180 inches of rainfall per year. Groundwater occurs as perched bodies in the higher altitudes and as basal water near the shore.

Large areas too wet for cultivation or at elevations too high for development make up much of the area. The lower slopes are used mainly for cattle grazing. Land in the area
is primarily zoned for Agricultural (A) use by the State. Some areas along the shoreline in Hana Town and in the Hamoa, Puuiki, Muolea, and Koali Districts are zoned for Residential (R) use, while land in Hana Town is zoned for Urban (U) use (See Figure 2). The area served by the Wailua-Hana Water System has an estimated population of 1,443.

Lands zoned as Conservation (C) areas are located along the shoreline, at high elevations in mountain forest reserves, and in river valleys. Some areas along the shoreline have been designated as Special Management Areas (SMA) and as flood (tsunami) zones (See Figure 3).

C. The Existing Wailua-Hana Water System

The Wailua-Hana Water Distribution System extend from a water source on the Wailua Stream in the Koali District, to Hana Town, to the Wakiu wells, and north to Hana Airport. The service area includes the communities of Koali, Muolea, Puuiki, Hamoa and Hana Town.

Water from the Wailua intake moves by gravity flow through a 4-inch transmission pipeline to the Town of Hana. The distribution system in Hana is made up of 3/4-inch to 4-inch diameter lines with a 12-inch supply line from the Wakiu wells.
County Department of Water Supply personnel estimate that 60 percent of the water for the Wai'ula-Hana System is supplied by Wai'ula intake and 40 percent from Wakiu well.

Based on the County Department of Water Supply records, the average daily demand for the year 2000 is estimated to be 205,800 gallons per day (GPD).

Flow in the Wai'ula Stream is erratic, but the stream seldom runs nearly dry at the water system intake. Since there is no gauge in Wai'ula Stream to measure the total flow in Wai'ula Stream, an estimate was made by comparing the watersheds areas. For this purpose, average monthly flows in Pa'ikea Stream for the past five years and the area of the watershed for this stream were compared to the area of the Wai'ula watershed above the intake. The location of these watersheds is shown on Figure 4 and the estimated average flow of Wai'ula Stream is shown in Figure 5.

A well (Well A) at Wakiu was drilled in 1972 to supplement the water supply from the Wai'ula intake. A second well (Well B) was drilled in 1976 when high salinity was first discovered in the water from Well A. Subsequent improvements have partially resolved this salinity problem in Well A.
ESTIMATED AVERAGE FLOW IN WAILUKU STREAM AT HANA SYSTEM INTAKE
INTAKE ELEVATION 1000 FT.
There are six (6) steel or redwood storage tanks and one (1) concrete storage tank in service in the Wailua-Hana Water Distribution System. One 30,000-gallon and one 20,000-gallon redwood tank serves Hana Town, while four redwood storage and steel storage tanks, ranging in size from 5,000 to 25,000 gallons, are scattered throughout the system. The 500,000-gallon concrete storage tank is located near the Wakiu wells. Disinfection is provided at the 40,000-gallon tank and at the 500,000-gallon concrete storage tank by gas chlorinators whereas manual chlorination is used to disinfect water at the Koali, Puuiki, and Hamoa tanks.

Hana Ranch owns and operates a private water system which serves a portion of the area between Kawaipapa Gulch and the Hana Hongwanji Church which includes Hana Houselots No. 2, Hotel Hana-Maui, Hana Ranch Shopping Center and the Old Camp area. The source of water for this system is a well at Kawaipapa. Storage facilities in the Hana Ranch System consist of four (4), 50,000-gallon redwood tanks which are located about a quarter mile inland of the Hana Post Office. Water is pumped from the well to the storage tanks through 6-inch transmission lines. The Hotel Hana-Maui and the Hana Ranch Houselots No. 2 are supplied by 4-inch and 6-inch transmission lines, respectively, that tap into the main 6-inch transmission line. The Hana Ranch Shopping Center, Old Camp, and Manager's area receive water from the storage
tanks by gravity flow.

No construction work will be done on Wailua Stream, except for repairs on Wailua Stream intake. Any additional water requirements will be provided by the new source of water which will be for the new well at Hamoa. Therefore, no additional effects on the fauna and flora of Wailua Stream is anticipated.

D. Contaminants and Contaminant Levels

The preliminary identification of contaminants and contaminant levels for Wailua-Hana Water System was made from existing and recent water quality test records. Some of these tests were done by the State Department of Health's Laboratory, and the others were performed by Maui County's Department of Water Supply.

Water from the Wailua Stream intake was also sampled in February, and May of 1981 to verify prior test data and to obtain data not found in the available records. Tests were also made on samples taken from Wakiu Well B to check with data from the preliminary well tests conducted in 1977.

Test on the water samples indicates that water from the Wailua Stream has exceeded the primary contaminant levels for microbial populations, turbidity and corrosivity. Water from Wakiu Well B has exceeded the maximum contaminant levels for sodium and corrosivity.
Secondary contaminant levels that are exceeded at the Wailua Stream are odor, iron and color. At the Wakiu wells, chloride and total dissolved solids are the secondary contaminants that exceed recommended levels.

The water from the Wailua Stream can be treated to meet the regulatory standards for microbiology, turbidity, odor, iron and color through filtration and disinfection. The Wakiu wells can meet standards for sodium, chloride and total dissolved solids through improved disinfection and reduced pumping rates.

Sampling results are presented in Appendix B.

E. Description of the Recommended Action

The engineering study recommends that the County of Maui provide the community of Hana with reliable and better quality water sources. It recommends treatment of the Wailua Stream waters, revised operating procedures at the Wakiu wells and new groundwater wells be drilled near the 20,000-gallon storage tank at Hamoa. This site was selected because hydrogeological studies indicated that there would be high probability of groundwater occurrence at this location, and because wells at this site can be economically joined with the existing water system and serve most of the water service area.
F. Alternative Actions Considered

As the hyphenated name suggests, the Wailua-Hana Water System is essentially two separate areas of water demand — Hana Town north to Wainapapa and Hamoa south to Koali. These areas were joined together in the past by their common source of supply, the Wailua Stream. The development of new sources in the system suggested that the Wailua-Hana Water System be evaluated as two separate water systems.

Sources of water that were considered available to treat and/or develop for the water system were: (1) a new groundwater source above Hana, (2) the existing Wailua Stream, (3) the existing Wakiu well field and (4) other additional sources for Hana Town including well sites above Hana Town and at Kawaipapa Gulch and a pipeline to bring water from a Hamoa well.

No additional surface water streams were identified as suitable for development.

The new proposed groundwater source above Hamoa will be exploratory in nature, but the prospects for well(s) in the 100 gallon per minute capacity range required are considered good.
The existing Wailua Stream source was determined to be treatable by slow sand filtration or a package water treatment plant. The estimated low flow of 50 gallons per minute is insufficient to meet the total demands of the water system, and the Wailua Stream source requires supplementary supplies from a well at Hooma.

The existing Wai'iu wells have exceeded the maximum contaminant levels for corrosivity, microbial populations, sodium, chloride and total dissolved solids. Treatment for corrosivity is not recommended at this time. Treatment for microbial levels can be accomplished with the efficient use of the existing gas chlorination disinfection system. Reduction of sodium, chloride and total dissolved solids levels can be accomplished with a revised groundwater management program. The first step in the management program is an ongoing well testing and monitoring program that will give information on the yield capabilities of each of the wells under changing seasonal, tidal and rainfall recharge conditions and at reduced pumping rates. The testing program is estimated to take two to three years and can be accomplished with the existing well pumps. The monitoring program is to be ongoing for as long as groundwater is used as a source.
With reduced pumping rates, the existing Wakiu wells are estimated to have sufficient capacity to serve the Hana Water System until approximately the year 1990. At that time an additional source will have to be developed to provide a system backup supply.

Wailua Water System

Seven water system improvement alternatives were evaluated for the Wailua Water System. Each of the alternatives considered had the primary goal of providing water to the system consumers at a quality that meets all standards while utilizing the existing distribution system to as great an extent as possible and providing service pressures equal to or better than existing.

The first alternative was for groundwater as the only source and abandonment of the Wailua Stream source. This alternative required that the distribution system between Hamoa and Koali be completely rebuilt to service Koali from the proposed wells.

Alternative Two and Two-A considered treating the Wailua Stream water with a package water treatment plant or slow sand filter at a low level site above Koali and new wells at Hamoa for supplemental and back up supplies.
This low level site has the advantage of reduced capital costs to develop the treatment plant because it is closer to the highway. Disadvantages include a loss of flexibility in system operation. The existing four-inch transmission pipeline is not useable at this low level site, and it requires that the portion of distribution pipeline between Hamoa and Puuiki be built at the same time as the treatment facilities to provide service to Puuiki. These alternatives do not allow the low dissolved solids in water from Wailua Stream to be mixed with the groundwater sources which may be high in dissolved solids and reduce the concentrations in dissolved solids. In these alternatives, power costs will be higher as both the Hamoa well and the Wailua Stream source must be operated simultaneously to provide water throughout the distribution system.

Alternative Three and Three-A considered treating the Wailua Stream water with a package water plant or a slow sand filter at a high level site above Koali and developing new wells at Hamoa. The high level site was selected to utilize the existing four-inch transmission pipeline and costs were included to repair this pipeline.

The primary advantage of this high level site is that it can use the existing pipeline. The use of the existing pipeline allows phased improvement of the distribution system and many operational flexibilities that will improve system
reliability.

Alternative Four and Four-A considered the same two treatment alternatives at a site above Hamoa.

The primary advantage of this site is that it centralizes the system components and allows for mixing of water supplies. The disadvantages include the need to build a complete distribution system to service Koali.

The recommended alternative for the Wailua System is Three-A. (Koali high level slow sand filter and Hamoa wells). This alternative has a slightly higher annualized present worth cost (10 percent), but the advantages of operational flexibility, system reliability and ability to phase other system improvements are believed to outweigh the cost difference.

Hana Water System

Five alternative improvement programs were evaluated for the Hana Water System.

The first alternative is for drilling of a third well at the existing Wakiu well field.

The primary advantage of this site is that the waterlines, power, access road and storage tank are existing at this site. The disadvantages at this site are that the distribution system must be completed through Hana Town if
the system is to be served entirely from Wakiu. Water quality from the existing Wakiu wells has been a problem in the past, but an extensive monitoring program at the existing wells may give a good indication of the performance of a third well.

Alternative Two is for a well in Kawaiapapa Gulch. The existing Hana Ranch well gives some preliminary indication that this may be a better drilling site than Wakiu. The disadvantages include the need for the distribution pipeline through Hana, possible problems with right-of-way, and the need to extend access roads, pipelines and power to the site.

Alternative Three is for a drilled well at the Hana Tanks above Hana Town. The advantages of this site is the availability of existing storage tanks, access and pipelines and the placement of the source at the opposite end of the Hana System will reduce the immediate need for the distribution system construction through Hana Town.

The primary disadvantage is that a well at this site will be exploratory in nature as there are no existing wells nearby.

Alternative Four was for the replacement of the existing four-inch transmission pipeline between Hamoa and Hana and the utilization of the Hamoa well as the new source for Hana Town. The primary advantage of this alternative is the low
cost. The use of this alternative is dependent upon the Hamoa well(s) being successfully completed.

Alternative Five is also for a pipeline connecting the two systems but this connection was evaluated using an eight-inch pipeline along the Hana Highway. The advantages of this alternative is that the line could be used for distribution and flow is possible in both directions giving operational flexibilities. The disadvantage is the high cost.

Figure 6 shows the alternative sites of the Wailua and Hana Water Systems.

The recommended action for the Hana Water System is Alternative Four. (The replacement of the existing four-inch transmission pipeline between Hamoa and Hana).

See Tables 1, 2 and 3 for the Economic Comparison Summary.

G. Use of Public Funds or Lands

The recommended alternative, to drill wells at Hamoa and improve the treatment of Wailua Stream waters will cost an estimated $3,605,000, and the total annual cost for the operation and maintenance of the facility is estimated at $60,050.
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<td>$2,858</td>
<td>$210</td>
<td>$9</td>
<td>$53.9</td>
<td>$529.2</td>
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<td>$2,730</td>
<td>$233</td>
<td>$29</td>
<td>$63.0</td>
<td>$618.5</td>
<td>$3,144.5</td>
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<tr>
<td>Koali, Low Level</td>
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<td>$9</td>
<td>$52.3</td>
<td>$542.3</td>
<td>$3,010.3</td>
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<td>Slow Sand Filter</td>
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<tr>
<td>Three</td>
<td>$3,026</td>
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<td>$29</td>
<td>$66.0</td>
<td>$648.0</td>
<td>$3,466.0</td>
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<td>Koali, High Level</td>
<td>$3,005</td>
<td>$262</td>
<td>$9</td>
<td>$55.2</td>
<td>$542.0</td>
<td>$3,294.0</td>
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<tr>
<td>Slow Sand Filter</td>
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<tr>
<td>Four</td>
<td>$3,945</td>
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<td>$75.2</td>
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<td>Hamoa, Package</td>
<td>$3,920</td>
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<td>$9</td>
<td>$64.4</td>
<td>$632.3</td>
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<td>Water Plant</td>
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<td>Four-A</td>
<td></td>
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Notes: (a) Discount rate of 8 percent used
(b) Straight line depreciation assumed
### Table 2
**Present Worth Cost Summary Hana Water System**

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Capital Cost</th>
<th>Salvage Value</th>
<th>Present Worth Salvage</th>
<th>Capital Cost Less P.W. Salvage Value (a)</th>
<th>P.W. Replacement Cost (b)</th>
<th>Annual O&amp;M Cost</th>
<th>P.W. Annual O&amp;M Cost (c)</th>
<th>P.W. of Total Cost (d)</th>
<th>Annualized P.W. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative One</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wakuil Well &quot;C&quot;</td>
<td>$1,790,000</td>
<td>$557,000</td>
<td>$120,000</td>
<td>$1,671,000</td>
<td>$7,000</td>
<td>$20,900</td>
<td>$284,000</td>
<td>$1,962,000</td>
<td>$280,000</td>
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<tr>
<td>Alternative Two</td>
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<tr>
<td>Kawailapa Well</td>
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<td>$658,000</td>
<td>$141,000</td>
<td>$1,823,000</td>
<td>$7,000</td>
<td>$12,100</td>
<td>$315,000</td>
<td>$2,145,000</td>
<td>$219,000</td>
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<tr>
<td>Alternative Three</td>
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<tr>
<td>Hana Tanks Well</td>
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<td>$184,000</td>
<td>$ 40,000</td>
<td>$ 540,000</td>
<td>$7,000</td>
<td>$10,250</td>
<td>$179,000</td>
<td>$ 726,000</td>
<td>$ 74,000</td>
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<tr>
<td>Alternative Four</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Route for Hana to Hana</td>
<td>$ 600,000</td>
<td>$360,000</td>
<td>$ 77,000</td>
<td>$ 523,000</td>
<td>-</td>
<td>$ 4,850</td>
<td>$ 48,000</td>
<td>$ 571,000</td>
<td>$ 58,200</td>
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<tr>
<td>Pipeline</td>
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<td></td>
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<tr>
<td>Alternative Five</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highway Route for Hana to Hana</td>
<td>$1,300,000</td>
<td>$780,000</td>
<td>$167,000</td>
<td>$1,133,000</td>
<td>-</td>
<td>$ 4,850</td>
<td>$ 48,000</td>
<td>$1,181,000</td>
<td>$120,000</td>
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<tr>
<td>Pipeline</td>
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</tr>
</tbody>
</table>

(a) 8 percent, 20 year present worth factor single item = 0.2145  
(b) 8 percent, 10 year present worth factor single item = 0.4362  
(c) 8 percent, 20 year present worth factor series of items = 9.8182  
(d) 8 percent, 20 year capital recovery factor = 0.10185
**TABLE 3**

**COMBINED WAILUA-HANA WATER SYSTEM**

**PRESENT WORTH COST SUMMARY**

<table>
<thead>
<tr>
<th></th>
<th>Annual Capital Cost</th>
<th>Annual Operation and Maintenance Cost</th>
<th>Annualized Present Worth of Total Costs</th>
<th>Cost Per 1000 Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wailua System (Alternative Three-A)</strong></td>
<td>$3,005,000</td>
<td>$55,000</td>
<td>$335,000</td>
<td></td>
</tr>
<tr>
<td><strong>Hana System (Alternative Four)</strong></td>
<td>$600,000</td>
<td>$4,850</td>
<td>$58,200</td>
<td></td>
</tr>
<tr>
<td><strong>Combined System</strong></td>
<td>$3,605,000</td>
<td>$60,050</td>
<td>$393,200</td>
<td>$5.16</td>
</tr>
</tbody>
</table>
The costs of the other alternative action/sites are shown on Table 1. Although the annual cost for the recommended alternative is 10 percent higher than the cost of some other alternatives, the difference in annualized present worth cost $29,000 should be outweighed by considerations of reliability and flexibility. The money to fund the project will come from the State and County. The Maui County Water System's users will pay for a portion of the proposed action in the form of water service and consumption water charges.

H. Phasing/Timing for the Proposed Action

The proposed actions have been planned for phased construction over a period of approximately three years and will be part of a continuing program to improve the entire water distribution system. In 1984, an exploratory well will be scheduled to be drilled in Hamoa by the Department of Land and Natural Resources.
III. DESCRIPTION OF THE ENVIRONMENTAL SETTING

The service area of the Wailua-Hana Water System is located on the eastern end of the island of Maui. (See Figure 1, Location Map, Island of Maui). The area is an agricultural community; cattle ranching and diversified crops are the principal activities. There is a hotel and restaurant which caters primarily to out of state visitors. The homes are low-rise, single-family structures and ranch houses. The area is a relatively isolated area which is accessible through a narrow, winding road; it is a three (3) hour drive from Kahului, the principal city on the island of Maui. The service area has an estimated population of about 1,443. It is estimated that by the year 2000, the population will be 2,176.

The present maximum daily demand for potable water is estimated to be 210,000 gallons; by the year 2000, the maximum daily demand will be 309,000 gallons. The estimated average daily consumption per capita is currently about 108 gallons. By the year 2000 it is expected to be approximately 130 gallons per capita per day.

Further discussions on the service area are found in Section II, subsection B, and Section V.
IV. THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES, AND CONTROLS FOR THE AFFECTED AREA

The County's General Plan for the Hana District shows that the existing uses are likely to continue. That is, Hana District will remain primarily a rural agricultural community with Hana Town being the most populated area in the District.

The proposed water improvement project will:

1. improve the quality of the potable water;
2. increase the amount of potable water and the reliability of the water service which will be available to the Hana community.

Because of the isolated location and inconvenient access, and the State and County land use designation and zoning, it is not anticipated that these proposed benefits will act as a significant catalyst for urban development and/or population growth in Hana District. The population projection calls for a maximum of 2,176 in the year 2000; should the population increase significantly beyond that figure, the water usage may be significantly increased. Therefore, any new developments (that stimulate the population growth) must be responsible for providing their own water to accommodate their respective projects.
V. THE PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

A. Introduction

This section considers the environmental impacts of the recommended proposed action. The proposed action will involve three main features at three separate sites. This report will investigate and report on each of the sites individually.

B. Identification of Alternative Actions and Sites

A total of three (3) sites were reviewed. Site I, located above Koali, was investigated as a site for a slow sand filter. Site II at Hamoa was investigated as a site for a groundwater well and new storage tank. Site III is the interconnecting pipeline alignment from the wells at Hamoa to the existing storage tanks above Hana Town, and improvement of the distribution system to provide the total potable water needed for the existing and projected year 2000 population.

C. Alternative Sites/Actions Considered

It should be noted that the sites indicated on Figure 7 show the approximate location only. The exact location will fall within the approximate area identified by the outline rectangular block next to the site. Below, general
information on each site is provided along with discussion of their impacts should the action be taken at the site.

**SITE I**

**Location:** Above 5,000-gallon redwood storage tank at Koali.

**Tax Map Key:** 1-5-8: 5 (Portion of)

**Owner:** Nanahuli Assn., Ltd. and Others

**General Description:**

1. Site I is located about 2,500 feet from Hana Highway. Access to the site is through pasture lands.

2. The terrain is densely vegetated with bushes and tall grass.

3. The slope of the land is 40 degrees. The estimated elevation is 900 feet.

4. There is no available power or telephone lines within 1,000 feet of the site.

5. The site is isolated and located far from any homes.

**Proposed Action:** Use of the site for slow sand filter system (SSF).

Site development would include the construction of an access road, clearing and grading. Powerlines or a generator would have to be installed. In addition to the installation of the SSF, a 50,000-gallon storage tank would have to be constructed in the Koali area to provide storage capacity for future peak hour use and for the future maximum daily demand.
A slow sand filter is typically a concrete basin, about 9 feet deep, containing a layer of sand about 2.5 to 4 feet thick overlying a layer of gravel two feet thick with pipe underdrains. The filtration rate for slow sand filters range from 0.05 to 0.1 gallons per minute per square foot of surface area. Consequently, a relatively large area is required for treating a significant water flow. Periodically, the residues which build-up on top of the sand in a SSF system must be removed, along with about an inch of sand. This sand can be washed for reuse or disposed of with the residues. The time between successive cleanings depends on the quality of the incoming water.

Three sand filter beds would be provided; two would be in use and the other would serve as a back-up unit.

A slow sand filter treatment facility would require approximately 25,000 square feet of land.

Potential Impacts:

Impact on the Physical Geography. Overall impact of the slow sand filter will be minimal. The land form will be modified due to clearing and grading needed to level the surface. There are no unique geological features on the site. The soil on the site is identified as Hana-Makaalae-Kailua association. This soil is described by the Soil Conservation Service, U.S. Department of
Agriculture as:

"Moderately deep and deep, gentle sloping to steep, well-drained soils that have a moderately fine textured or fine textured subsoil or underlying material; on intermediate uplands."

During construction, some impacts relating to land clearing will occur. The hauling of construction materials, vehicular travel to and from the site on paved and unpaved roads will create dust. Land clearing (of vegetation), grading, etcetera, will create dust and will make the affected area more susceptible to soil erosion (especially during heavy rainfall). Even after the land is cleared, the disturbed portions of the site will likely be more susceptible to erosion until vegetation grows back.

No impact on the microclimate and geology is expected because of the small size of the site.

Impact on Water. The proposed use of the site will be to provide treatment of surface water which is already being withdrawn from an existing source. Although the Wailua Stream seldom runs dry, it is not a stable source of water. Because demands for water will increase due to the population increase, additional water will be provided by a well in the Hamoa area.
Therefore, the downstream biota and other terrestrial flora and fauna dependent on Wailua Stream flow will not be further affected. Below the intake, there are no water users. No impact on other surface (i.e. streams) waters or ocean water is foreseen.

No impact on recharging of groundwater is anticipated. The proposed site will be relatively small and should not create a significant impact on groundwater recharging. (Reference: "Groundwater Development Prospects for Domestic Sources Along South Hana (Wailua System), Maui," Stephen Bowles).

Drinking water quality will increase due to the implementation of the slow sand filter treatment.

**Impact on Air Quality:** During construction dust will be created. Because the site is isolated and surrounded by agricultural and open space, no homes will be affected by the dust. After the site is in use, some dust can be expected from the use of the access to the site by maintenance personnel. The water treatment facilities will require one man to operate the facility, periodic inspection, etc. Because of this, there will be vehicles going to and from the site. Each time a vehicle goes to and
from the site, dust and carbon monoxide will be emitted. However, considering its isolated location, the dust will settle in the immediate area and the carbon monoxide will be dispersed in an agricultural environment that is well within the State's air quality standards.

**Impact on Ambient Noise Levels.** Noise in this type of agricultural area is normally below 45 dB (decibels), compared to a normal suburban residential area range of 53 to 57 dB, and an urban residential area range of 58 to 62 dB.

The construction of the SSF will create higher noise levels (construction equipment) such as tractors, backhoes, graders create noise levels of between 72 to 95 dB at 50 feet. However, because of the site's location, no residential areas will be affected. This also holds true for the vehicular noise which will occur as cars go to and from the SSF. Noise will be negligible.

**Impact on Flood Hazards.** The site is not in an area of flood hazard.

**Impact on Flora.** The area in which this site is located is identified as a closed guava forest with shrubs. The common vegetation includes guava (*Psidium guajava* L.) Hilo grass (*Paspalum conjugatum*), basket grass (*Oplismenus hirtellus*), kukui (*Aleurites moluccana*), Boston fern (*genus Aleurites* moluccana), and...
Nephrolepis), hala (Pandanus odoratissimus), and false staghorn fern (Dicranopteris linearis). Most of these are introduced species and are commonly found throughout the area. There are no known plants which are rare to endangered on the project site or in the vicinity. The clearing of the vegetation for the slow sand filter will not significantly or adversely impact the flora.

Impact on Fauna. Fauna in the area is likely to include mice, rats, mongoose and a variety of birds (see Table 4). These are commonly found in the area and their displacement or possible destruction will not significantly affect the environment. There are no known endangered species of fauna in the site or surrounding areas. It is anticipated that once the treatment facilities are completed and the surrounding vegetation grows back around the facility, the fauna will return to these areas.
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardinal</td>
<td>Cardinalis cardinalis</td>
</tr>
<tr>
<td>Barred Dove</td>
<td>Geopelia striata</td>
</tr>
<tr>
<td>Elepaio</td>
<td>Chasiempis sandwichensis</td>
</tr>
<tr>
<td>I'iwi</td>
<td>Vestiaria coccinea</td>
</tr>
<tr>
<td>Mockingbird</td>
<td>Mimus polyglottos</td>
</tr>
<tr>
<td>Mynah</td>
<td>Acridotheres tristis tristis</td>
</tr>
<tr>
<td>Pueo</td>
<td>Asio flammeus sandwichensis</td>
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<tr>
<td>Ricebird</td>
<td>Lochura punctulata</td>
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<tr>
<td>House Sparrow</td>
<td>Passer domesticus</td>
</tr>
<tr>
<td>White Eye</td>
<td>Zosterops j. japonicus</td>
</tr>
<tr>
<td>Spotted Dove</td>
<td>Streptopelia chinensis</td>
</tr>
</tbody>
</table>


Impact on Land Use. The land is designated Agricultural. The use of this small area for water treatment facilities is considered a public facility and is not anticipated to create a catalyst for population growth or expansion in the surrounding area or community. The development of a water treatment facility is intended to serve the existing and planned projected population.

Impact on Recreation. Presently, there is no recreational use on the site. No future recreational uses are foreseen or planned. Subsequently, the site's development will not affect any recreational uses or resources.

Impact on Views and Aesthetics. The impact on scenic views and aesthetics is expected to be minimal. The site is surrounded by vegetation and is not located within an area which has panoramic or scenic views. The use of the site for the water treatment facilities which are low structures, will not noticeably affect the appearance of the site or the surrounding area.

Impact on Utilities. Power will be provided for the operation of the package water treatment facilities. Electrical power will be provided by extending the powerline to service the site. An alternative is to provide the facility with its own power generators. The initial cost of installing the powerlines is higher than installing a power generator, but the annual cost of power is lower using the
powerlines than the power generator. The slow sand filter will require little electrical power.

Impact on Other Socioeconomic Aspects. Due to the nature of this project, other socioeconomic aspects were not reviewed because they are not relevant. These aspects include: accessibility to commercial areas and medical facilities, transportation networks, cultural patterns, and fire services. The County of Maui Police Department has stated that the proposed water improvements (all alternatives and sites) will not affect their facilities or personnel.

Cost to the Maui County Water Users. The action investigated will result in an expenditure of funds for the improvements. The County must pay for a portion of these improvements; to recover this cost, the County may charge the users of the total County Water System. The need for improving water quality is mandated; thus, any increased water charge is unavoidable. However, the cost of the alternative was a factor in selecting the recommended alternative.

SITE II
Location: In the vicinity of the 20,000 gallon storage tank at Hamos.

Tax Map Key: 1-4-9: 2 (Portion of)
Owner: Hana Ranch, Inc.

General Description: (1) Site II is located about 2,500 feet from Hana Highway.
Access to the site is through pasture lands.

(2) The terrain is open with tall grass and some shrubs.

(3) The slope of the land is about 15 degrees. The estimated elevation is 300 feet above mean sea level.

(4) Power and telephone lines are within 1,500 feet from the site.

(5) The site location is isolated but new developments are being considered in the area; a private well has been drilled in the area.

Proposed Action: Use of the site for groundwater wells, a 150,000 gallon storage reservoir, pumps and piping. The area required is less than 1.00 acre.

A private development is planned in the area and a well has already been drilled to test the water supply. The results of the pumping test are shown in the engineering report. Studies indicate that groundwater obtained from a well at this site should be good quality and ample quantity to supply the water requirements. No adverse effects from the withdrawal of water from the aquifer are anticipated. However, the groundwater potential in the area can only be established by a program of exploratory well drilling.

Should these wells be successfully developed, the use of surface water from Wailua Stream would be supplemented. Water from wells at Hamoa could supply, by gravity, the area
Access to the site is through pasture lands.

(2) The terrain is open with tall grass and some shrubs.

(3) The slope of the land is about 15 degrees. The estimated elevation is 300 feet above mean sea level.

(4) Power and telephone lines are within 1,500 feet from the site.

(5) The site location is isolated but new developments are being considered in the area; a private well has been drilled in the area.

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A private development is planned in the area and a well has already been drilled to test the water supply. The results of the pumping test are shown in the engineering report. Studies indicate that groundwater obtained from a well at this site should be good quality and ample quantity to supply the water requirements. No adverse effects from the withdrawal of water from the aquifer are anticipated. However, the groundwater potential in the area can only be established by a program of exploratory well drilling.

Should these wells be successfully developed, the use of surface water from Wailua Stream would be supplemented. Water from wells at Hamoa could supply, by gravity, the area
from Hana Town to Haou.

Improvement to the distribution system would also be required for efficient distribution.

Potential Impacts:

**Impact on the Physical Geography.** The drilling and operation of wells on Site II, will require less than 5,000 square feet. The storage reservoir would require less than one acre. Site clearing and grading will be required. The land form will be modified due to site clearing and grading. There are no unique geological features on the site. The soil on the site is identified as Hana-Makaalae-Kailua association. The soil is described by the Soil Conservation Service, U.S. Department of Agricultural as:

"Moderately deep and deep, gently sloping to steep, well-drained soils that have a moderately fine textured or fine textured subsoil or underlying material; on intermediate uplands."

During construction, impacts relating to land clearing will, for a temporary period (less than one month), occur. The hauling of drilling equipment, pumps, and other construction material over trails to the project site will create dust and make the affected area more susceptible to soil erosion (especially during heavy rainfall). Even after the project is complete, the disturbed portions of the site and the
access road will be more susceptible to erosion until vegetation is reestablished.

No impact on the microclimatic and geologic conditions is expected because of the small size of the site.

**Impact on Water.** The wells will supplement the present Wailua Surface Water Source. The demand on each well is dependent on the constraints of the existing distribution system and the water available in the Wailua Stream. If this action is implemented the following impacts on water resources will likely occur:

1. The demand for water from surface water source will be reduced. The amount of water flowing downstream from the present intake on Wailua will increase. This may result in higher quantities of water which, in turn, may increase stream biota.

2. The groundwater well source is believed to have sufficient water to meet the present and future potable water demands.

3. Little impact on the aquifer is anticipated. Preliminary study by a hydrogeologist indicates that the well will not adversely affect the aquifer. *(Reference: "Groundwater Development Prospects for Domestic Sources Along South Hana (Wailua System), Maui," Stephen Bowles.)*

**Impact on Air Quality.** During site clearing and grading, dust will be created. In the long-term use of the site periodic maintenance/inspections by personnel from the Department of Water Supply will be required. These periodic visits to the site will also cause dust from vehicles traveling to the site. However, because the site is
surrounded by agricultural uses and open space, the dust caused by site clearing and vehicles would be considered minimal. Also, the carbon monoxide from vehicles will be negligible and will, along with the dust, be dispersed in this agricultural environment.

**Impact on Ambient Noise Levels.** Typical noise levels in this type of agricultural environment are normally below 45 dB. This in comparison to the dB range of a normal suburban residential area and an urban residential area, 53 to 57 dB, and 58 to 62 dB, respectively.

The drilling of the well and its operation are relatively quiet activities. Also, there are no sensitive receptors (i.e. people) who will be disturbed by any construction, drilling, or pumping sounds. Thus, the impact on noise is expected to be minimal.

**Impact on Flood Hazards.** The site is not in an area of flood hazard.

**Impact on Flora.** Based on field observation, the area in which this site is located is a pasture area with tall grasses and some shrubs.

The vegetation consists of introduced species commonly found in the region. There are no known plants which are rare or endangered on the project site or in the vicinity. The clearing of the vegetation for the well will not
significantly or adversely impact the present flora on the site.

Impact on Fauna. Fauna in the area is likely to include mice, rats, mongoose and a variety of birds (see Table 4). These are commonly found in the area and their displacement or possible destruction will not significantly affect the environment. There are no known endangered species of fauna in the site or surrounding area.

Impact on Land Use. The land is designated Agricultural. The well and reservoir are considered public facilities and are not anticipated to create a catalyst for population growth or expansion in the surrounding area or community. The development and storage of the water is for the existing and projected population. Some development may occur in the vicinity of this site in the near future. However, the immediate area of the site will remain in agricultural and open space use. It is anticipated the present and future uses around the site will be compatible with the proposed well and storage reservoir.

Impact on Recreation. Presently, no recreational uses take place on the site. No future recreational uses are foreseen or planned. Subsequently, the site's development will not impact any recreational uses or resources.
Impact on View and Aesthetics. The impact on scenic views and aesthetics is expected to be minimal. The site is surrounded by vegetation and is located in a low-lying area. A well will be slightly noticeable from higher vantage points, but should not adversely impact the view of the total area.

Impact on County Expenditures. The cost of this well and storage reservoir is shown on Table 1.

Impact on Utilities. Power will be needed for the operation of well pumps. Presently, electrical and telephone lines are located within 1,500 feet from the site.

Impact on Other Socioeconomic Aspects. Due to the nature of this project, other socioeconomic aspects were not reviewed because they are not relevant. These aspects include: accessibility to commercial areas and medical facilities, transportation networks, cultural patterns, and fire services.

Cost to the Maui County Water Users. The construction of these facilities will result in the expenditure of public funds. The County must pay for a portion of these improvements; to recover this cost, the County may charge the users of the total County Water System. The need for improving water quality is mandated; thus, the expenditure is unavoidable. However, the cost of the alternatives was a
factor in the selection of this alternative.

**Site III**

**Location:** A pipeline alignment from the new storage reservoir at Hamoa to the existing storage tanks above Hana Town. The alignment generally follows the elevation contours between 350 and 250 feet.

**Tax Map Key:**
- 1-4-02: 4, 7, 8, 10
- 1-4-03: 9, 5, 6
- 1-4-07: 3, 4
- 1-4-09: 2

**Owner:** Hana Ranch, Inc.

**General Description:**

1. Site III is a pipeline alignment that generally follows an existing water pipeline through pasture land between the proposed new Hamoa reservoir and the existing water tanks above Hana Town.

2. A new pipeline will replace the existing deteriorated pipeline and provide an interconnection between Hamoa and Hana. The new pipeline will allow water from the Wailua Stream and the new Hamoa wells to reach Hana Town. Flow is one way only.

Access for pipeline construction and maintenance will be from both ends. Some clearing and grading will be required for the construction. Because the ground will be disturbed and temporary cleared of vegetation, the erosion hazard will be greater until vegetation is restored.
The soil type is similar to that described for Site I and II.

The microclimate and geology of the site will not be modified. There are no unique geological features on the site.

Impact on Water. This is not a water source. There will be no direct impact on water, except as the improvement to quality and increase in quantity.

Impact on Air Quality. Dust will be created during site clearing and grading. This is temporary and may constitute a nuisance. Homes are not immediately adjacent to the site, it is anticipated that the dust will not be a significant problem.

Impact on Ambient Noise Levels. This impact is similar to that of Site II.

Impact on Flood Hazards. The site is not in an area of flood hazard.

Impact on Flora and Fauna. Impact on flora and fauna will not be significant. The flora and fauna found at the site are common, exotic species which also inhabit surrounding areas.
Impact on Land Use. The land is designated Agricultural. The improvements will not interfere with residential or farming activities. These improvements will benefit the community because good quality potable water will be available. The improvements are not expected to stimulate growth in this area because the water provided will meet the existing and projected demand. The water demand was determined based on the population growth over the past ten years, using the 208 Plan.

Impact on Recreation. The site is not used for recreation. There are no future plans or proposals for the site to be used for recreational activities. There is no public right-of-way or easement through the site.

Impact on Views and Aesthetics. The pipeline will not impact the view of the surrounding area. The site may be seen from lower vantage points along the Hana Highway, however, it is expected that after the vegetation has been reestablished the pipe alignment will be nearly invisible.

Impact on County Expenditures. The cost of this facility is shown as Alternative Four on Table 2.

Impact on Utilities. No power or other utilities are required.
Impact on Other Socioeconomic Aspects. Due to the nature of this project, other socioeconomic aspects were not reviewed because they are not relevant. These aspects include: accessibility to commercial areas and medical facilities, transportation networks, cultural patterns, and fire services.

Archaeological and/or Historical Sites. No sites of archaeological or historical importance are known to exist in the site. Therefore no impact on this area is foreseen.
VI. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS
WHICH CANNOT BE AVOIDED

The recommended alternatives to drill groundwater wells at Hamoa, to construct a slow sand filter at Koali and to construct the pipeline to Hana Town, will not have significant long-term environmental impacts. Some temporary impacts such as fugitive dust, potential soil erosion, and noise will occur during the construction period. After construction no further adverse impacts are anticipated. Agricultural land (pasture) will be affected; however, the total amount of land affected will be small and its withdrawal from agricultural use will have a negligible impact.
VII. ALTERNATIVES TO THE PROPOSED ACTION

Alternative treatments for surface water, alternative sites and alternative actions for improving the distribution system were investigated and evaluated from an economic standpoint in the engineering report. The twelve alternatives reported herein for the most part utilized the same sites in varying combinations and with different treatment processes. It was determined that additional water source(s) had to be developed and that groundwater was the most viable source available.

A no action alternative cannot be considered because compliance with the drinking water standards is mandatory by State and Federal laws.

Should non-compliance occur, the State and Federal authorities could bring a civil suit against the water supplier to force compliance and impose a fine on the water supplier.
VIII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed project is believed to be beneficial to the human population in the Hana area. The new groundwater wells and treated water from Wailua Stream will provide good quality potable water and a consistent source of water. Based on the review of the objective of the proposed action the environmental and socioeconomic impacts, it was found that the proposed action should enhance the short- and long-term uses of man's environment with little physical, socioeconomic, and land use impacts.
IX. MITIGATION MEASURES PROPOSED TO MINIMIZE ADVERSE IMPACTS

For the recommended action, only short-term construction related impacts are anticipated. Subsequently, if construction adheres to the County’s grading regulations and good construction practices, no other mitigation measures are required.
X. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS
OF RESOURCES THAT WOULD BE INVOLVED
IN THE PROPOSED ACTIONS

The proposed action will result in the commitment of land, groundwater, and labor. The land committed would be less than two acres. The groundwater is felt to be a renewable resource, approximately 100,000 gallons per day would be utilized by the year 2000. Based on the hydrogeologist report, the quality and quantity of groundwater in this area should satisfy the present and future demands for Hana. Finally, labor in form of construction workers and periodic inspection by the County water personnel will occur. Personnel from the Hana Department of Water Supply can be used; labor utilized will be compensated.

These resources will be committed and/or used for the proposed action. This consumption of resources are normal; no other significant or unique impacts are foreseen.
XI. AN INDICATION OF WHAT OTHER INTERESTS AND
CONSIDERATIONS OF GOVERNMENTAL POLICIES ARE THOUGHT
TO OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS OF THE
PROPOSED ACTION

Table 5 on the following page identifies the Governmental
laws and regulations which must be complied with prior or
during the implementation of the proposed action.

It is felt that should the proposed action take place, the
impacts will be minimized by following these laws and/or
regulations.
<table>
<thead>
<tr>
<th>LAWS STATUTES ORDNANCES</th>
<th>FEDERAL</th>
<th>STATE</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REGULATIONS</strong></td>
<td>PL 95-523: Safe Drinking Water Act</td>
<td>Chapter 340 E: HRS, Safe Drinking Water Act</td>
<td>None</td>
</tr>
<tr>
<td>The Clean Water Act; The National Interim Primary Drinking Water Regulations (with Amendments)</td>
<td>Chapter 20 Potable Water Systems, Title 11, Administration Rules, Department of Health</td>
<td>Rules and Regulations of the Dept. of Water Supply</td>
<td></td>
</tr>
<tr>
<td><strong>STANDARDS</strong></td>
<td>National Secondary Drinking Water Regulations</td>
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</tbody>
</table>
XII. ORGANIZATIONS AND PERSONS CONSULTED DURING
THE EIS CONSULTATION PERIOD

Table 6 identifies the agencies and individuals receiving a copy of the EIS Preparation Notice. A total of 39 government agencies and community groups were contacted. Additionally, three (3) agencies/individuals requested status as "consulting parties". Fourteen (14) responses were received on the EIS Preparation Notice, of these seven (7) had substantial comments to provide. Those letters (having substantial comments) were responded to, and copies are included in Section XIII.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Date Notice Mailed</th>
<th>Date of Comment</th>
<th>Date of Response</th>
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</thead>
<tbody>
<tr>
<td>City and County of Honolulu</td>
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<tr>
<td>Department of Land Utilization</td>
<td>3/06/81</td>
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<tr>
<td>State of Hawaii</td>
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<tr>
<td>Office of Environmental Quality Control, Department of Health</td>
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<tr>
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<td>3/24/81</td>
<td>4/10/81</td>
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<tr>
<td>Department of Accounting and General Services</td>
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<td>3/19/81 **</td>
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<tr>
<td>Department of Land and Natural Resources</td>
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<tr>
<td>State Historic Preservation Officer, DLNR</td>
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<tr>
<td>Department of Health</td>
<td>3/06/81</td>
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<tr>
<td>Department of Planning and Economic Development</td>
<td>3/06/81</td>
<td>4/02/81 **</td>
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<tr>
<td>Department of Transportation</td>
<td>3/06/81</td>
<td>4/02/81</td>
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<td>Environmental Center, UH at Manoa</td>
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<tr>
<td>Water Resources Research Center, UH at Manoa</td>
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<tr>
<td>Senator Gerald K. Machida</td>
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<td>Senator Mamoru Yamashaki</td>
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<tr>
<td>State Representative William W. Nomahan</td>
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<td>State Representative Anthony T. Takitani</td>
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<td>State Representative Mark J. Andrews</td>
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<tr>
<td>Federal</td>
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<td>U.S. Environmental Protection Agency</td>
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<td>3/17/81</td>
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<td>U.S. Army Corps of Engineers, DOA</td>
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<td>3/31/81</td>
<td>4/10/81</td>
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<tr>
<td>Geological Survey, Water Resources Division</td>
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<tr>
<td>U.S. Department of Agriculture, Soil Conservation Service</td>
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<tr>
<td>Fish and Wildlife Service, Division of Ecological Services</td>
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<tr>
<td><strong>County of Maui</strong></td>
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<tr>
<td>Hana Soil Conservation Service</td>
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<tr>
<td>Office of the Mayor</td>
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<td>County Council</td>
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<td>3/11/81 **</td>
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<tr>
<td>County Clerk</td>
<td>3/06/81</td>
<td>3/20/81 **</td>
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<tr>
<td>Department of Parks and Recreation</td>
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<tr>
<td>Department of Public Works</td>
<td>3/06/81</td>
<td>3/18/81 **</td>
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<tr>
<td>Office of Economic Development Agency</td>
<td>3/06/81</td>
<td>3/16/81 **</td>
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<tr>
<td>Planning Department</td>
<td>3/06/81</td>
<td>3/12/81 **</td>
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<tr>
<td>County Fire Department</td>
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<tr>
<td>Police Department</td>
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<td>3/23/81</td>
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<td><strong>Utilities</strong></td>
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<tr>
<td>Maui Electric Company, Ltd.</td>
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<tr>
<td>Hawaiian Telephone Company-Maui</td>
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<td><strong>Other Organizations</strong></td>
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<tr>
<td>Hana Community Association</td>
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<tr>
<td>The Sierra Club *</td>
<td>3/18/81</td>
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<tr>
<td>Brock and Associates *</td>
<td>3/24/81</td>
<td>4/01/81</td>
<td>4/10/81</td>
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<tr>
<td>EDAW *</td>
<td>3/30/81</td>
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</tr>
</tbody>
</table>

* Request Consulting Party status.

** No Comment Response
XIII. REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE CONSULTATION PROCESS

The written letters commenting on the EIS Preparation Notice and the written responses provided back to the reviewers (on substantial comments) are included in this section. These copies were reduced to half-size from the actual copies and are provided in chronological order as shown on Table 7.
TABLE 7

REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE CONSULTATION PROCESS

Pages 66 to 78 contain reduced size copies of the comments and responses to the comments during the EIS Consultation Period. Where a substantial comment was received, the written response immediately follows the letter. The comments/responses are provided in the following order:

<table>
<thead>
<tr>
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<tr>
<td><strong>Agencies with No Comment/Response:</strong></td>
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</tr>
<tr>
<td>County Council, County of Maui (3/11/81)</td>
<td>66</td>
</tr>
<tr>
<td>Planning Department, County of Maui (3/12/81)</td>
<td>66</td>
</tr>
<tr>
<td>Department of Economic Development, County of Maui (3/16/81)</td>
<td>67</td>
</tr>
<tr>
<td>Department of Public Works, County of Maui (3/18/81)</td>
<td>67</td>
</tr>
<tr>
<td>Division of Public Works, Department of Accounting and General Services, State (3/19/81)</td>
<td>68</td>
</tr>
<tr>
<td>Office of County Clerk, County of Maui (3/20/81)</td>
<td>68</td>
</tr>
<tr>
<td>State Department Planning and Economic Development (4/02/81)</td>
<td>69</td>
</tr>
<tr>
<td><strong>Agencies Requesting to be Consulting Parties:</strong></td>
<td></td>
</tr>
<tr>
<td>Sierra Club, Maui Group (3/12/81)</td>
<td>70</td>
</tr>
<tr>
<td>Brock and Associates (3/16/81)</td>
<td>71</td>
</tr>
<tr>
<td>EDAW (3/30/81 – Verbal Request)</td>
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</tbody>
</table>

64
CORRECTION

THE PRECEDING DOCUMENT(S) HAS BEEN REPHOTOGRAPHED TO ASSURE LEGIBILITY
SEE FRAME(S) IMMEDIATELY FOLLOWING
TABLE 7

REPRODUCTION OF COMMENTS AND RESPONSES MADE DURING THE CONSULTATION PROCESS

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<tr>
<td>Department of Economic Development, County of Maui (3/16/81)</td>
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</tr>
<tr>
<td>Department of Public Works, County of Maui (3/18/81)</td>
<td>67</td>
</tr>
<tr>
<td>Division of Public Works, Department of Accounting and General Services, State (3/19/81)</td>
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<td>Office of County Clerk, County of Maui (3/20/81)</td>
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<td>Sierra Club, Maui Group (3/12/81)</td>
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<tr>
<td>Brock and Associates (3/16/81)</td>
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</table>
**TABLE 7 (continued)**

<table>
<thead>
<tr>
<th>Copy of Comment/Letter</th>
<th>Page No.</th>
</tr>
</thead>
</table>

**Agencies Having Comments and Receiving Written Responses:**

- U.S Environmental Protection Agency (3/17/81) 73
- Police Department, County of Maui (3/23/81) 74
- State Department of Agriculture (3/24/81) 75
- U.S. Army Engineer District (3/31/81) 76
- Brock and Associates (4/01/81) 77
- State Department of Transportation (4/02/81) 78
March 11, 1981

Mr. Dennis I. Hirota, Ph.D., P.E.
Vice President
Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Hilo, Island of Hawaii, Hawaii 96720

Dear Mr. Hirota:

Your notice regarding Environmental Assessment/EIS Preparation Notice for (1) Hana Water System Improvements; (2) Keanae Water System Improvements; and (3) Kaupo Water System Improvements has been received.

Your notice will be placed on the Council's March 20th Agenda, and referred to the appropriate committee for review and discussion.

Should you have any comments or questions, please let me know.

Yours sincerely,

Bob Nakamura
Chairman

March 12, 1981

Mr. Dennis I. Hirota, Ph.D., P.E.
Vice President
Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Hilo, Island of Hawaii, Hawaii 96720

Dear Mr. Hirota:

RE: ENVIRONMENTAL ASSESSMENT/EIS PREPARATION NOTICE FOR (1) HANA WATER SYSTEM IMPROVEMENTS (2) KEANAE WATER SYSTEM IMPROVEMENTS (3) KAUKO WATER SYSTEM IMPROVEMENTS

This acknowledges receipt of your communication dated March 6, 1981, with attachments pertaining to the environmental assessment preparation notices for the various proposed projects as referenced.

Please be advised that we will reserve the right to comment on the final Environmental Impact Statement.

Please call my office should you have any questions.

Yours very truly,

Tosh Ishikawa
Planning Director

APR 9 1981

MAR 20 1981
Mr. Dennis I. Hirota, Ph.D., P.E.
Vice President
Sam O Hirota, Inc./Incorporated
315 Queen Street, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Hirota:

Subject: Environmental Assessment/EIS Preparation Notice for the Hana, Keanae, and Kaupo Water System Improvements.

The Department of Economic Development have reviewed the subject Environmental Assessment and Impact Statement and find that, in general, it has adequately identified and assessed the major environmental impacts which can be anticipated to result from the proposed project.

We have no other comments to offer at this time, however, we thank you for the opportunity to review the Environmental Assessment/EIS Preparation Notice.

Sincerely,

FRED MATSUMOTO
Economic Development Coordinator

cc: Mr. Bill Haines

Dr. Dennis I. Hirota
Vice President
Sam O. Hirota, Inc.
345 Queen St., Suite 500
Honolulu, HI 96813

Dear Dr. Hirota:

SUBJECT: ENVIRONMENTAL ASSESSMENT/EIS PREPARATION NOTICE TO

1) Hana Water System Improvements
2) Keanae Water System Improvements
3) Kaupo Water System Improvements

Thank you for the opportunity to comment on the above subject matter.

We have reviewed your submittal and have no comments to offer.

Very truly yours,

Ralph Hayashi
Director of Public Works

MAR 24 19
Dr. Dennis I. Hirota
Hirota, Inc.
Suite 500
345 Queen Street
Honolulu, Hawaii 96813

Dear Dr. Hirota:

Subject: Environmental Assessment/EIS Preparation Notice for
1. Hana Water System Improvements;
2. Keanae Water System Improvements; and
3. Kipu Water System Improvements

We have reviewed the subject documents and do not have any comments on the subject improvements.

Very truly yours,

[Signature]
Hirota, State Public Works Engineer

MAR 19 1981

Dr. Dennis I. Hirota
Vice President
Hirota, Inc.
345 Queen Street - Suite 500
Honolulu, Hawaii 96813

Dear Dr. Hirota:

Your memorandum dated March 6, 1981, concerning the EIS preparation notice for the Hana, Keanae, and Kipu water system improvements, was presented to the Council of the County of Maui on March 20, 1981, and referred to its Planning Committee for attention.

Very truly yours,

[Signature]
Hirota
[Signature]
County Clerk

MAR 24 1981
Dr. Dennis I. Hirono
Vice-President
Sam O. Hirono, Inc.
345 Queen Street, Suite 500
Honolulu, Hawaii 96813

Dear Dr. Hirono:

SUBJECT: Environmental Assessment/EIS Preparation Notice for:
(1) Hana Water System Improvements
(2) Kahakuloa Water System Improvements
(3) Kaupo Water System Improvements

We have reviewed the above documents and find that they have adequately assessed the major environmental impacts which can be anticipated from the implementation of these projects.

Thank you for the opportunity to review and comment on this matter.

Sincerely,

Hililani Kana

cc: Office of Environmental Quality Control
Department of Water Supply, County of Maui
Mr. Ralph Morita
Mr. John Bose, II
Chairman
The Sierra Club
Hawaiian Chapter
P. O. Box 516
Haiku, Maui, Hawaii 96708

March 12, 1981

Mr. John Bose, II
Chairman
The Sierra Club
Hawaiian Chapter
P. O. Box 516
Haiku, Maui, Hawaii 96708

Subject: Environmental Assessment/EIS Preparation Notice for Kaneohe Water System Improvements

We have received your letter of March 12, 1981, requesting copies of the Preparation Notices, Draft EIS's, and other relevant documents regarding the aforementioned subject.

Enclosed please find copies of the Environmental Assessment/EIS Preparation Notice for the Proposed Kaneohe Water System Improvements. Your comments on the EIS Preparation Notices are requested on or before April 18, 1981. Comments should be sent to:

Mr. Ralph Morita
Sam O. Hirata, Inc.
335 Queen Street, Suite 500
Honolulu, Hawaii 96813

We appreciate your interest in these EIS Preparation Notices.

Sincerely yours,

P. J. Rodrigues

For Sam O. Hirata, Inc. — Ralph Morita

Enclosures

MAR 18 1981
Mr. Ralph Norits
Sam O. Hirota, Inc.
365 Queen Street, Suite #500
Honolulu, Oahu, Hawaii
96813

Dear Mr. Norits:

According to the Environmental Quality Commission Bulletin of March 8, 1981, your firm will be preparing Environmental Impact Statements for the following projects:

- Kaupo Water System Improvements, Kaupo, Maui
- Keanoe Water System Improvements, Keanae, Maui
- Maluia-Ahina Water System Improvements, Hana, Maui

We wish to be granted "consulted party" status during your preparation of the Environmental Impact Statements, with all three water systems and will comment on all drafts sent to us.

Thank you in advance for your cooperation.

Very truly yours,
BROCK AND ASSOCIATES

Julie R. Abramson
Planner

MAR 24 1981
March 30, 1981

Ms. Wendy Hee
EPA
130 Union Mall, Suite 201
Honolulu, Hawaii 96813

Dear Ms. Hee,


As requested, via your telephone conversation with Ralph Morita of Sam O. Hirato, Inc., we are providing you with copies of the aforementioned organization's comment on the EIS Preparation Notice. It is our understanding that should your organization comment on the EIS Preparation Notice, the response will be provided on or before April 7, 1981. Your response should be sent to:

Mr. Ralph Morita
Sam O. Hirato, Inc.
345 Queen Street, Suite 500
Honolulu, Hawaii 96813

Thank you for your concern in this matter. Your expeditious response would be most appreciated.

Very truly yours,

F. J. Rodrigues

Enclosures

cc: Department of Water Supply, County of Maui
Environmental Quality Commission
Sam O. Hirato, Inc.
Mr. Ralph Morita
560 Hirota, Inc.
343 Queen Street, Suite 500
Honolulu, HI 96813

Dear Mr. Morita:

The Environmental Protection Agency's (EPA) Region IX office has received your letter requesting comments on proposed water treatment plants for Hona, Lano, and Ainao. The Hawaii State Department of Health has primary enforcement responsibilities (primary) of the Safe Drinking Water Act (SDWA) and the National Pollutant Discharge Elimination System (NPDES) Program. Thus, any questions or comments regarding water or wastewater treatment plants and their associated public health impact are directed to the State Department of Health. By copy of this letter I have taken the liberty of forwarding your request to:

Thomas Aritani, Chief
Drinking Water Program
Hawaii State Department of Health
P.O. Box 2114
Honolulu, HI 96803
Phone: (808) 548-4667

Sincerely yours,

William W. Thurston
Chief, Water Supply Section
Water Division

cc: Thomas Aritani, Chief, Drinking Water Program, Hawaii State Department of Health

APR 9 1981

April 10, 1981

Mr. William W. Thurston
Chief, Water Supply Section
Water Division
U.S. Environmental Protection Agency
Region IX Office
343 Queen Street
San Francisco, California 94105

Dear Mr. Thurston:

Subject: Environmental Assessments/SEP Preparation Notices for Water Supply and Waste Water System Improvements

Thank you for your letter of March 17, 1981, informing us of the transfer of the SEP Preparation Notices to the Hawaii State Department of Health. Please note that we have sent copies of the SEP Preparation Notices to that same department.

We appreciate your interest in this matter.

Very truly yours,

SAM O. HIROTA, INC.

Daniel T. Hirota, Ph. D.
Vice President

cc: Department of Water Supply,
County of Maui

Nakamura Engineering Consultants
Attention: T. A. Hana

Environmental Consultants, Inc.
Attention: T. J. Rodriguez

Engineering - Computer Graphics - Ocean Sciences
343 Queen Street, Suite 500 - Honolulu, Hawaii 96813 - Telephone (808) 527-4771
Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Honolulu, Hawaii 96813
Attention: Dennis T. Hirota
Vice President

Dear Mr. Hirota:

Please be informed there is no apparent adverse impact on police services relative to the proposed improvements to the Hana, Kaupo, and Keanae water systems.

Very truly yours,

JOHN S. SAN DIEGO, SR.
Chief of Police

cc: Board of Water Supply
County of Maui

RECEIVED
MARCH 8, 1981
Sam O. Hirota, Inc./Fax

APRIL 9, 1981

Chief John E. San Diego, Sr.
Chief of Police
Police Department
County of Maui
Waikiki, Maui, Hawaii 96793

Dear Chief San Diego:

Subject: Environmental Assessments/EIS Preparation Notice for Hana, Kaupo, and Keanae Water System Improvements

Thank you for your letter of March 23, 1981, on the aforementioned EIS Preparation Notice.

The information provided regarding police services will be included in the respective Environmental Impact Statements.

We appreciate your concern in this matter.

Very truly yours,

JOHN S. SAN DIEGO, SR.
Chief of Police

cc: Department of Water Supply, County of Maui
Norman Sato Engineering Consultants
Attention: Tom Suda
Environmental Consultants, Inc.
Attention: T. J. Rodriguez

Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Honolulu, Hawaii 96813
Telephone (808) 837-0772
March 24, 1981

MR. DENNIS I. HIROTA, VICE PRES.
SAKAI HIROTA, INC.

SUBJECT: Environmental Assessment/EIS Preparation Notice

The Department of Agriculture has reviewed the subject assessments and offers the following comments.

We agree with the assessment that there is a need for additional information on potential agriculture uses of the sites in order to fully determine the impacts of the proposed projects. We believe that the treatment plans for sedimentation basins should then be located on sites with the least agricultural potential.

With the number of alternatives available for the Kauai Water System, we believe site 1 should not be chosen due to its impact on taro. The 1979 taro harvest decreased 14 percent from 1978 and acreage to taro decreased from 450 acres to 405 acres. (Statistics of Hawaii Agriculture, 1979). The acreage involved in the Kauai Site 1 may be involved in relocation for the farmer. The impact may be greater than it would first appear.

Thank you for the opportunity to comment.

DENNIS 1. HIROTA, JR.
Chairman, Board of Agriculture

cc: Dept. of Water Supply, County of Kauai

April 10, 1981

Mr. John Park, Jr.
Chairman, Board of Agriculture
Department of Agriculture
State of Hawaii
1428 South King Street
Honolulu, Hawaii 96814

Dear Mr. Park:

SUBJECT: Environmental Assessment/EIS Preparation Notice for Kauai and Kauai Water System Improvements

Thank you for your comments of March 24, 1981, regarding the above mentioned EIS Preparation Notice.

We note that the site alternatives selected for each of the water system improvements have minimal impact on agricultural lands of importance. We will be sending you Department copies of the Draft EIS for each project so that you may comment on their impact on agriculture lands.

We appreciate your concern in this matter.

Very truly yours,

DENNIS 1. HIROTA, JR.
Chairman, Board of Agriculture

cc: Department of Water Supply, County of Kauai
Norman Sakai Engineering Consultants
Attention: Taro Lands
Environmental Communications, Inc.
Attention: J. J. Rodriguez

Surveying - Engineering - Computer Graphics - Ocean Science
348 Queen Street, Suite 202, Honolulu, Hawaii 96813
Telephone (808) 522-7777
DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU

DEPT: PV

31 March 1981

Mr. Dennis I. Hiram, Vice President
Sam O. Hirotas, Inc.
345 Queen Street, Suite 500
Honolulu, HI 96813

Dear Mr. Hirotas:

We have reviewed your Environmental Assessment (EA)/EIS Preparation Notice for Kana, Kamau, and Kapua Water System improvements sent to us on 6 March 1981. We provide the following comments:

4. Any work which requires the deposit of fill materials in streams may require a Department of the Army permit under Section 404 of the Clean Water Act.

5. All three parcels indicated in the EIS are not within a designated floodway area and are areas of minimal flooding as indicated by a Zone C designation on the Federal Flood Insurance Map (FCMF). None of the proposed sites would be subject to any regulatory practices with regard to flood hazard mitigation under the Zone C designation.

Thank you for the opportunity to review the subject EIS.

Sincerely,

[Signature]

John Cheung
Chief, Engineering Division

---

RECEIVED

APR-1981

Sam O. Hirotas, Inc./Dear

APR-9 1981

---

April 10, 1981

Mr. Keoki Cheung
Chief, Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Honolulu 96850

Dear Mr. Cheung:

Subject: Environmental Assessment/EIS Preparation Notice for Kana, Kamau, and Kapua Water System Improvements

We are receipt of your letter of March 31, 1981, commenting on the abovementioned EIS preparation Notice. We will include your comments in the Draft EIS now being prepared.

Thank you for providing the information to us. We appreciate your concern in this matter.

Very truly yours,

Sam O. Hirotas, Inc.

[Signature]

Dennis I. Hirotas, Ph.D.
Vice President

---

Department of Water Supply,
County of Maui

Norman Bates Engineering Consultants
Attention: Tom Nishio

Environmental Consultants, Inc.
Attention: R. B. Rodgers

Juringer-Engineering-Computer Graphics-Ocean Sciences
341 Queen Street, Suite 600. Honolulu, HI 96813. Telephone (808) 523-5971
BROCK AND ASSOCIATES

PO BOX 1450
WAILEA, MAUI, HAWAII 96793

FULL: 7000
April 1st, 1981
Reply to Wailuku office

Mr. Ralph Morita
Sam O. Hirota, Inc.
345 Queen Street, Suite 300
Honolulu, Oahu, Hawaii 96723

Dear Mr. Morita:

We have reviewed the Environmental Assessment/ES Preparation Notice for the proposed Kaupo Water System Improvements.

The notice is well prepared and adequately covers all of our concerns.

We would appreciate receiving a draft of the EIS when it is prepared and will probably comment on the alternative selected when that information is known.

Very truly yours,

BROCK AND ASSOCIATES

June 10, 1981

Mr. James Holmuth Brock
Senior Principal
Brock and Associates
48 Market Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Brock:

Subject: Environmental Assessment/EIS Preparation Notice for Water, Sewer, and Farmer Water System Improvements

We appreciate your letter of April 1, 1981 on the above mentioned EIS Preparation Notice.

Please be assured that your name will be retained on the Distribution List of the Draft EIS for all these projects.

We appreciate your concern on these matters.

Very truly yours,

SAM O. HIROTA, INC.

Donald A. Hirota, Ph. D.
Vice President

cc:
Department of Water Supply,
County of Maui

Norman Sands Engineering Consultants
Attention: Mike Iida

Environmental Communications, Inc.
Attention: F. J. Rodriguez

APR - 9 1981

Surveying - Engineering - Computer Services - Ocean Sciences
345 OLOWI STREET - SUITE 200 - HONOLULU, HAWAII 96813 - TELEPHONE 541-4670
Dr. Dennis Hirota, Ph.D., P.E.
Vice President
Sam O. Hirota, Inc.
365 Queen Street, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Hirota:

Environmental Assessment/EIS Preparation Notice
(1) Hana Water System Improvements
(2) Kaunae Water System Improvements
(3) Kepo Water System Improvements

Thank you for the opportunity to express our concerns on the subject proposals.

We support the following points to be added to the assessments:

1. Any work within the State highway right-of-way shall be subject to review and approved by the Highway Division, State Department of Transportation.

2. Any heavy equipment needed for construction shall be moved only during non-peak traffic hours to minimize interference with traffic on Hana Highway.

Very truly yours,

[Signature]

Ryokichi Higashihonna
Director of Transportation

cc:
Department of Water Supply,
County of Maui
Norman Feltz Engineering Consultants
Attention: Tate Iida
Environmental Communications, Inc.
Attention: F. J. Rodrigues

Surveying · Engineering · Computer Graphics · Film Services
365 Queen Street, Suite 500 · Honolulu, Hawaii 96813 · Telephone (808) 522-8771
XIV. SUMMARY OF UNRESOLVED ISSUES

At this time, there are no unresolved issues from the standpoint of potential environmental impacts.
XV. LIST OF NECESSARY APPROVALS

Table 8 identifies the necessary approvals and/or permits that may be required for the proposed action prior to its construction.
TABLE 8

PERMIT AND APPROVAL REQUIREMENTS
FOR HANA WATER SYSTEM IMPROVEMENTS

ENVIRONMENTAL IMPACT STATEMENT

An Environmental Impact Statement is required for all public projects.

STATE LAND USE

State Land Use Commission regulations (Part III, Section III) permit the location of water treatment facilities and accessory buildings in Agricultural Districts. The State Department of Land and Natural Resources (DLNR) must, however, be notified of the proposed construction by a letter describing the facility.

Conservation Districts are governed by Regulation No. 4 of the DLNR. The location of a water treatment facility in a Conservation District will require the establishment of a General (G) type subzone for which applications must be submitted to the DLNR.
WELL DRILLING

None of the alternatives under current consideration provide for well drilling in a Designated Groundwater Control Area, however, a Well Drilling Permit must still be obtained from the DLNR. Information to be included in the application must include a description of the well, usage and amount of the water proposed to be withdrawn and the name of the drilling contractor.

HISTORIC SITES

The Historic Sites Branch of the DLNR says permits are not required for construction near heiaus or other historic Hawaiian sites. It is recommended, however, that an archaeological survey be made prior to construction to ascertain the exact location of any historic site and the degree of historic significance. Although there are no laws regulating this, it is considered prudent to stay at least 200 feet away from any archaeological structure of site of significance.

FLOOD ZONE

Flood hazard ratings have been determined for all sites under consideration.

Flood Zone C describes an area of minimal flooding.
Flood Zone B describes an area between the limits of a 100 and 500-year flood, or certain areas subject to 100-year flooding with average depths less than 1 foot, or where the contributing drainage area is less than one square mile.

SPECIAL MANAGEMENT AREA (SMA)

A Special Management Area Use Permit is required for projects in the designated area which cost over $25,000, or which have significant adverse environmental or ecological effects. Application for a permit to construct in a SMA is processed by the Maui County Planning Department.

OTHER PERMITS AND LICENSES

In addition to the above, there are other agencies to be notified and other permits to be obtained before construction or well drilling may commence.

The Department of Health must be notified of the type, nature and scope of any proposed development of a new water source or of a treatment plant.

Maui County Department of Public Works must issue a grubbing permit and grading permit before construction can start. Title, leases and easements for the land to be used must be obtained for the project.
XVI. DRAFT EIS COMMENTS

Comments from reviews of the Draft EIS and responses are included in Appendix C.
APPENDIX A

POPULATION PROJECTION FOR HANA DISTRICT
APPENDIX A - POPULATION PROJECTION FOR HANA DISTRICT

The purpose of this population study is to provide a basis for estimating future water demands for the County Water Systems in the Hana District which includes the communities of Hana, Keanae, Kaupo, Nahiku, and Kipahulu (see Figure A-1). In turn, the future water demands will be the basis of determining the capacity of the proposed treatment facility.

The State Department of Health makes periodic field surveys to estimate the resident population served by the County Water Systems. The Department of Health estimates the number of people being serviced by the County Water System in 1980 are shown below in Table A-1.

TABLE A-1
DEPARTMENT OF HEALTH RESIDENT POPULATION SURVEY FOR THE
HANA DISTRICT (REFERENCES 1 and 2)

<table>
<thead>
<tr>
<th>Community</th>
<th>County Water System</th>
<th>Private Water System</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hana</td>
<td>891</td>
<td>260</td>
<td>1151</td>
</tr>
<tr>
<td>Keanae</td>
<td>241</td>
<td>-</td>
<td>241</td>
</tr>
<tr>
<td>Kaupo*</td>
<td>22</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Nahiku</td>
<td>68</td>
<td>-</td>
<td>68</td>
</tr>
<tr>
<td>Kipahulu</td>
<td>-</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1222</strong></td>
<td><strong>336</strong></td>
<td><strong>1558</strong></td>
</tr>
</tbody>
</table>

(*State Department of Health shows that Kaupo has 65 people using the County's Water System based on 3.4 people/meter (19 meters). However, from an interview with Mr. Carl Bredhoff, Kaupo Ranch Manager, on 2 February, 1981, there appears to be approximately 22 people on the County's
Water System and 21 people using the Kaupo Ranch System. The County Department of Water Supply indicated that in 1978 there were 19 people and 19 meters on record, of which eight meters were connected to cattle troughs and two were serving vacant houses (Reference 5). Based on the above information the estimated population for Kaupo was adopted as being 43 people.

Kaupo Ranch's system serves about 21 people and 2,000 head of cattle. Therefore, the resident population estimate for the Hana District using the Department of Health figures is 1,558 people.

The Department of Health estimate of 1,558 people is higher than the 1980 census data for the Hana District of 1,423 people (Reference 2). The resident population distribution of the Hana District as estimated by the Department of Health will be used for this report.

The Department of Health estimate includes only those individuals residing in the Hana District. The estimated population would be more representative to consider the total population of the Hana District. The total population was determined by adding the estimated number of overnight visitors to the estimated resident population of the Hana District.

The commercial accommodations for visitors are mainly in Hana Town and it was assumed that an insignificant number of visitors stayed overnight at the communities of Keanae, Kaupo, Nahiku, and Kipahulu. According to the Hawaii Visitor's Bureau, the representative commercial accommodations in Hana Town are the Hotel Hana-Maui, the Hotel Hana-Kai Resort, the Heavenly Hana Inn, and the Kanakea Kottages (Purdy Ranch). Wainapanapa State Park with its cabins is a popular vacation place for local people and was included in this study. All accommodations except Hotel Hana-Maui receive water from the County's Water System. Hotel Hana-Maui is served by the privately owned Hana Ranch Water System. Table A-2 below shows the estimated number of visitors who stay overnight at Hana Town. The occupancy rates were based on average occupancy rates during peak visitor periods.
TABLE A-2

ESTIMATED NUMBER OF VISITORS STAYING OVERNIGHT IN HANA

A. Served by County Water System

<table>
<thead>
<tr>
<th>Hotel/Apt/Cabin</th>
<th>Source of Information</th>
<th>Number of Rooms</th>
<th>Ave Number of People Per Room</th>
<th>Occupancy Rate</th>
<th>Ave Number of People Per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel Hana-Kai Resort</td>
<td>Manager (Ref. 7)</td>
<td>19 units</td>
<td>8-studios=2, 11-singles=4</td>
<td>95%</td>
<td>57</td>
</tr>
<tr>
<td>Heavenly Hana Inn</td>
<td>Manager (Ref. 8)</td>
<td>4 units</td>
<td>4</td>
<td>95%</td>
<td>15</td>
</tr>
<tr>
<td>Kanakea Kottages (Purdy Ranch)</td>
<td>Manager (Ref. 9)</td>
<td>3 cabins</td>
<td>1-cabin=4, 1-cabin=6, 1-cabin=8</td>
<td>95%</td>
<td>17</td>
</tr>
<tr>
<td>Wainapanapa State Park</td>
<td>DLNR (Ref. 10)</td>
<td>12 cabins</td>
<td>6</td>
<td>100%</td>
<td>72</td>
</tr>
</tbody>
</table>

B. Served by Private Water System

| Hotel Hana-Mau           | Manager (Ref. 11)     | 61 units        | 53-singles=2, 8-cottages=4    | 95%            | 131                          |

| TOTAL                   |                       |                 |                               |                | 292                          |

The total population of the Hana District is estimated at 1,850 people (1,558 + 292 = 1,850 people).

According to the 208 Water Quality Management Plan for the County of Maui, three State documents were used to estimate population growth. The 208 Plan divides the island of Maui into five Hydrographic Areas. The Hana District is closely represented by Hydrographic Areas IV and V (see Figure A-2). The 208 Plan population projection and distribution for Hydrographic Area IV and V from the year 1980 to 2000 is shown in Table A-3.
TABLE A-3
208 PLAN POPULATION ESTIMATE OF THE HANA DISTRICT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrographic Area IV</td>
<td>1,150</td>
<td>1,323</td>
<td>1,484</td>
<td>1,676</td>
<td>1,938</td>
</tr>
<tr>
<td>(Keanae to Nahiku to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hana Town)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrographic Area V</td>
<td>550</td>
<td>610</td>
<td>665</td>
<td>734</td>
<td>861</td>
</tr>
<tr>
<td>(Portion of Hana to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cape Hanamanica)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hana District (TOTAL)</td>
<td>1,700</td>
<td>1,933</td>
<td>2,149</td>
<td>2,410</td>
<td>2,799</td>
</tr>
</tbody>
</table>

The 208 Plan population projection for the 1980 resident population in the Hana District is 1,700 (Reference 4). This number is within ten percent of the total population estimated from the Department of Health data for the Hana District. It is assumed that the basic growth pattern of the Hana District would be the 208 Plan population projection and the population distribution throughout the Hana District is assumed to remain the same during the period. Therefore the estimated populations projected for each community within the Hana District was based on the growth rate of the Hydrographic Areas of the 208 Plan. Table A-4 shows the relative population distribution in the Hana area based on the 1980 population. These factors were applied to the 208 Plan population projections resulting in Table A-5 which shows the projected total population for Hana District Communities from the year 1980 to year 2000.
<table>
<thead>
<tr>
<th>Hydrographic Area</th>
<th>1980 Population</th>
<th>Relative Dist. %</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (IV)</td>
<td>1,251</td>
<td></td>
<td>$\frac{1150}{1700} \times 1850 = 1251$</td>
</tr>
<tr>
<td>Hana (Portion)</td>
<td>942</td>
<td>75.3</td>
<td>Calculated $942 = 1251 - (241 - 68)$</td>
</tr>
<tr>
<td>Keanae</td>
<td>241</td>
<td>19.3</td>
<td></td>
</tr>
<tr>
<td>Nahiku</td>
<td>68</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>Total (VI)</td>
<td>599</td>
<td></td>
<td>$\frac{550}{1700} \times 1850 = 599$</td>
</tr>
<tr>
<td>Hana (Portion)</td>
<td>501</td>
<td>83.6</td>
<td>Calculated $501 = 599 - (55 + 43)$</td>
</tr>
<tr>
<td>Kipahulu</td>
<td>55</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Kaupo</td>
<td>43</td>
<td>7.2</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Hana (IV+V)</td>
<td>1,443</td>
<td>1,506</td>
<td>1,673</td>
</tr>
<tr>
<td>Keanae (IV)</td>
<td>241</td>
<td>255</td>
<td>286</td>
</tr>
<tr>
<td>Kaupo (V)</td>
<td>43</td>
<td>44</td>
<td>48</td>
</tr>
<tr>
<td>Nahiku (IV)</td>
<td>68</td>
<td>72</td>
<td>81</td>
</tr>
<tr>
<td>Kipahulu (V)</td>
<td>55</td>
<td>56</td>
<td>61</td>
</tr>
<tr>
<td>Hana District</td>
<td>1,850*</td>
<td>1,933</td>
<td>2,149</td>
</tr>
</tbody>
</table>

*1980 total population derived from Department of Health figures and the estimated visitor count.

For the study areas of Hana, Keanae and Kaupo, there are two private water systems, one in Hana and the other in Kaupo. The distribution of the population being served by the County Water System and private water system was assumed to be the same as the 1980 distribution throughout the study period. Table A-6 shows the percent distribution of the total population being served between County and private water systems and Table A-7 shows the projected population being served by County and private water systems, respectively.
<table>
<thead>
<tr>
<th>Community</th>
<th>County Water System Population Distribution (%)</th>
<th>Private Water System Population Distribution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hana</td>
<td>$\frac{1052}{1443} = 72.90$</td>
<td>$\frac{391}{1443} = 27.10$</td>
</tr>
<tr>
<td>Keanae</td>
<td>$\frac{241}{241} = 100.00$</td>
<td>0 = 0.0</td>
</tr>
<tr>
<td>Kaupo*</td>
<td>$\frac{22}{43} = 51.16$</td>
<td>$\frac{21}{43} = 48.84$</td>
</tr>
<tr>
<td>Nahiku</td>
<td>$\frac{68}{68} = 100.00$</td>
<td>0 = 0.0</td>
</tr>
<tr>
<td>Kipahulu</td>
<td>0 = 0.0</td>
<td>$\frac{55}{55} = 100.00$</td>
</tr>
</tbody>
</table>
# Table A-7

Population Projection for Study Areas Served by County Water Systems and Private Water Systems

Year 1980 to Year 2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>P</td>
<td>C</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Hana</td>
<td>1052</td>
<td>391</td>
<td>1098</td>
<td>408</td>
<td>1220</td>
</tr>
<tr>
<td>Keanae</td>
<td>241</td>
<td>0</td>
<td>255</td>
<td>0</td>
<td>286</td>
</tr>
<tr>
<td>Kaupo</td>
<td>22</td>
<td>21</td>
<td>23</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>

C = County Water System
P = Private Water System
APPENDIX A - REFERENCES


8. Telephone interview by Ralph Morita, SOH, Inc., with Ms. Mary Purdy, manager of Kanakea Rottages on 10 August 1981.


10. Telephone interview by Ralph Morita, SOH, Inc., with Mr. Gil Moss, manager of Hotel Hana-Maui on 10 August 1981.
APPENDIX B

Sampling Results for Primary and Secondary Contaminants
<table>
<thead>
<tr>
<th>CONTAMINANTS</th>
<th>INORGANIC CHEMICALS</th>
<th>ORGANIC CHEMICALS</th>
</tr>
</thead>
<tbody>
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NOTES:
1. MAXIMUM CONTAMINANT LEVEL
2. LAB BREWER CHEMICAL
3. SEL PACIFIC ENVIRONMENTAL LABORATORY
4. S. HD. STATE OF HAWAII DEPARTMENT OF HEALTH
5. DLWH BUREAU OF WATER QUALITY
6. FLUORIDE: BASED ON ANNUAL AVERAGE TEMPERATURE OF 86-1 DEGREES FAHRENHEIT
7. TDS DETECTED IN SIGNIFICANT AMOUNTS
8. ADDS "EXCEEDS STANDARD CONTAMINANT LEVEL"
9. ADJUSTED TO THE NATIONAL INTERIM TEMPORARY DRINKING WATER REGULATIONS.
10. NOT SPECIFIED FOR POPULATIONS LESS THAN 10,000
# RADIONUCLIDES

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<td>e. MAN MADE RADIONUCLIDES APPLICABLE TO COMMUNITY SYSTEM SERVING A POPULATION OF 10,000 OR MORE. THEREFORE THIS REQUIREMENT IS NOT APPLICABLE TO THE HANA WATER SYSTEM.</td>
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**WAILUA-HANA WATER SYSTEM**

**HANA DISTRICT — MAUI HAWAII**

**SAMPLING RESULTS PRIMARY CONTAMINANTS**

**TABLE B-2**
## TURBIDITY AT KOALI

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<th>Month</th>
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<th>Low</th>
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Ref: Samples and tests by County of Maui Department of Water Supply. Samples taken at tap in community of Koali.

**WAILUA-HANA WATER SYSTEM**

**HANA DISTRICT MAUI HAWAI**

**SAMPLING RESULTS**

**PRIMARY CONTAMINANTS**

Table B-3.
## MICROBIOLOGY RESULTS

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**WAILUA-HANA WATER SYSTEM**

**HANA DISTRICT**

**MAUI**

**HAWAII**

**SAMPLING RESULTS**

**PRIMARY CONTAMINANTS**

**TABLE B-4**
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NOTES:

a. MAXIMUM CONTAMINANT LEVEL
b. LAB
   BR BREWER CHEMICAL
   PEL PACIFIC ENVIRONMENTAL LABORATORY
   DOH STATE OF HAWAII DEPARTMENT OF HEALTH
   DLNR REPORTED BY DEPARTMENT OF LAND AND NATURAL RESOURCES
c. EXCEEDS MAXIMUM CONTAMINANT LEVEL
d. TOTAL DISSOLVED SOLIDS
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<th>MANGANESE (mg/l)</th>
<th>ODOR (TON)</th>
<th>SULFATE (mg/l)</th>
<th>T.D.S. (mg/l)</th>
<th>ZINC (mg/l)</th>
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APPENDIX C

COMMENTS AND RESPONSES TO

DRAFT EIS
Mr. William S. Nahms, Director
County of Maui
P. O. Box 1109
Wailuku, Maui 96793

8 November 1983

Dear Mr. Nahms:


We have reviewed the subject EIS and offer the following comments:

1. P. 7, the indicated 180 inches of annual rainfall is too high. The area above on Fig. 1 (p. 5) has a normal annual rainfall of about 75 inches. Hana town gets about 70 inches annually. The 180 inches figure is also given on p. 7.

2. P. 16, paragraph 1, regarding effects of water diversions. What, if any, measures will be taken to mitigate the adverse effects of the diversion?

Thank you for the opportunity to comment. This material was reviewed by WRC and affiliate personnel.

Sincerely,

Edwin T. Murabayashi
EIS Coordinator

cc: Leititia Dykes
Mayor Hannibal Tavares
Sam O. Hirots, Inc.

AN EQUAL OPPORTUNITY EMPLOYER
Mr. William R. Kramer
Acting Project Leader
Office of Environmental Services

Subject: Environmental Impact Statement (EIS) for Wailua-Waiola Water System Improvements, Hana, Maui.

Reference is made to your letter dated 2 November, 1983, commenting on the subject draft Environmental Impact Statement. Your concerns regarding the description and evaluation of impacts of fauna and flora of Wailua Stream by the new project construction are addressed as follows.

On page 16, the Environmental Impact Statement text has been revised to reflect that except for repairs on Wailua stream intake, no other construction work will be done on Wailua Stream. Any additional water requirements will be provided by the new source of water which will be the new well at Hana. Therefore, no additional effects on the fauna and flora of Wailua stream is anticipated.

Thank you for reviewing our Environmental Impact Statement for the Wailua-Waiola Water System Improvements.

Yours very truly,

William R. Kramer
Acting Project Leader
Office of Environmental Services

cc: USS, Pape
Sam J. Hicks, Inc.
Hana
Kauai
EHP, San Francisco

Hannibal Tavares
Mayor
HONORABLE HANNIBAL TAVARES
MAYOR
COUNTY OF MAUI
299 SOUTH MAIN STREET
WAILUKU, MAUI 96793

DEAR MAYOR TAVARES:

Thank you for the opportunity to comment on the environmental impact statement (EIS) for improvements to the Wailua-Maui water system.

The EIS omits all discussion of fauna and flora of Wailua Stream, and contains no evaluation of the impact of the project on these life forms.

There is also no provision for monitoring the effect of reduced stream flow on sites below the proposed intake.

Sincerely,

HENRY ONO
CHAIRPERSON

CC: DEPT. OF WATER SUPPLY,
COUNTY OF MAUI
S. O. HINEMA, INC.

OFFICE OF THE MAYOR
MAUI COUNTY ADMINISTRATION BUILDING
APRIL 24, 1984

MR. HENRY ONO
CHAIRPERSON
DEPARTMENT OF LAND AND NATURAL RESOURCES
1151 PUNCHBOWL STREET
HONOLULU, OAHU 96813

DEAR MR. ONO:

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR HANA-WAILUA WATER SYSTEM IMPROVEMENTS

REFERENCE is made to your letter dated 21 November, 1983, concern ing the subject draft Environmental Impact Statement. Your concerns regarding the description and evaluation of impact of fauna and flora of Wailua Stream by the new project construction are addressed as follows:

On page 16, the Environmental Impact Statement text has been revised to reflect that except for repairs on Wailua Stream, no other construction work will be done on Wailua Stream. Any additional water requirements will be provided by the new source of water which will be the new well at Hana. Therefore, no additional effects on the fauna and flora of Wailua Stream is anticipated.

Thank you for reviewing our Environmental Impact Statement for the Hana-Wailua Water System Improvements.

Yours very truly,

HANNIBAL TAVARES
MAYOR
The Department supports the project objectives to bring the Batha/Hana drinking water system into compliance with the State and Federal drinking water regulations.

We realize that the statements are general in nature due to preliminary plans being the sole source of discussion. We, therefore, reserve the right to impose future environmental restrictions on the project at the time final plans are submitted to this office for review.
Mr. Charles G. Clark
Director of Health
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Clark:

Subject: Environmental Impact Statement (EIS) for Hana-Mailuwa Water System Improvements, Hana, Maui.

Reference is made to your letter dated 29 November, 1983, commenting on the subject draft Environmental Impact Statement. Your concerns on the proposed ground water well and the compliance with Section 11-20-29, Title 11, Administrative Rules, are addressed in the preliminary engineering report which will be completed with well pumping and water quality data for submission to the Dept of Health prior to well operation.

Thank you for reviewing our Environmental Impact Statement for the Hana-Mailuwa Water System Improvements.

Yours very truly,

Hannibal Tavares
Mayor
Mayor Hannibal Tavares
County of Maui
200 S. High Street
Wailuku, Maui, Hawaii 96793

Dear Mayor Tavares:

Re: Environmental Impact Statements for:
1) Wailuku-Hana Water System Improvements
2) Kaupo Water System Improvements
3) Kaele Water System Improvements

Thank you for the opportunity to review the referenced environmental impact statements.

We find the statements to be adequate in identifying and assessing the impacts which can be anticipated in the proposed projects. Please note, however, that Special Management Area Permits are processed and approved by the Planning Department and Commission respectively. The E.I.S.'s indicate that this is a function of the Department of Public Works.

Should there be any questions, please contact me at any time.

Very truly yours,

Tosh Ishikawa
Planning Director

cc: William Haines
Sam O. Sirola

Mr. Tosh Ishikawa
Director of Planning
County of Maui
200 South Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Ishikawa:

Subject: Environmental Impact Statement (EIS) for Hana-Wailua Water System Improvements, Hana, Maui.

Reference is made to your letter dated 9 November, 1983, commenting on the subject draft Environmental Impact Statement. Your concern that processing and approval of Special Management Area Permits by the Planning Department and Commission rather than by the Public Works Department has been corrected in the final Environmental Impact Statement.

Thank you for reviewing our Environmental Impact Statement for the Hana-Wailua Water System Improvements.

Yours very truly,

Hannibal Tavares
Mayor
November 28, 1983

Ms. Letitia W. Uyehara, Interim Director
Office of Environmental Quality Control
550 Kamehameha Street, Room 301
Honolulu, HI 96813

Dear Ms. Uyehara:

Subject: EIS for Wailua-Hana Water System Improvements, Hana, Maui, Hawaii

We have reviewed the subject EIS and offer the following comments:

1. A subdivision of the tank site and access road is required.
2. A variance is required for a standard lot.
3. A building permit is required for the tank.
4. Page 81 - SWA permit is required unless project is exempted. SWA permit may be issued if valuation is $65,000 or less.

Thank you for the opportunity to review and comment.

Very truly yours,

Ralph Hasuike
Director of Public Works

Mayor Hannibal Tavares
William S. Heine
Director of Water Supply
Kam C. Hirota, Inc.

Mr. Ralph Kayashi
Director of Public Works
County of Maui
200 South Street
Wailuku, Maui, Hawaii 96793

Dear Mr. Kayashi:

Subject: Environmental Impact Statement (EIS) for Hana-Wailua Water System Improvements, Hana, Maui.

Reference is made to your letter dated 28 November, 1983, commenting on the subject draft Environmental Impact Statement. Your concerns regarding the tank site and access road have been addressed by sending the Department of Water Supply the required information and subdivision map. Submission of variance application and building permit will be made prior to the construction by the Department of Water Supply, Maui County.

Thank you for reviewing our Environmental Impact Statement for the Hana-Wailua Water System Improvements.

Yours very truly,

Hannibal Tavares
Mayor
April 20, 1984

Mr. Gordon Okazaki
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui, Hawaii 96793

Dear Mr. Okazaki:

Subject: Environmental Impact Statement (EIS) for Hana-Wailua Water System Improvements, Hana, Maui.

The following letters require no response:

a. Federal

U.S. Department of Interior
(Geological Survey)
U.S. Department of Agriculture
(Soil Conservation Service)
U.S. Coast Guard
U.S. Navy
U.S. Air Force

b. State of Hawaii

Office of Environmental Quality Control
Department of Agriculture
Department of Planning and Economic Development
Department of Accounting and General Services
Department of Defense (Adjutant General)

c. Non-Governmental Agencies

Maui Electric Company

Yours very truly,

[Signature]

Dennis I. Hirota, PhD, P.E.
Vice President
Mr. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Kuleana Street, Room 301
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

RE: Wallua-Nana Water System Improvements

The U.S. Geological Survey, Water Resources Division, Hawaii District,
has no comments at this time regarding the above subject matter.

We appreciate the opportunity allowed to us to review the above
environmental impact statement.

Sincerely,

[Signature]
Stanley F. Hapuka
Assistant Chief

Enclosure

Cc: Mayor Norman N. Tavares, Wailuku, Maui
Mr. William E. Nomia, Wailuku, Maui
Mr. Sam O. Hirota, Honolulu, Hawaii

Ms. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Kuleana Street, Room 301
Honolulu, Hawaii 96813

November 16, 1988

Dear Ms. Uyehara:

Subject: Environmental Impact Statement for the Wailua-Nana Water
System Improvements, Hana, Maui, HI

We have reviewed the subject environmental impact statement and have
no comments to make.

Thank you for the opportunity to review the document.

Sincerely,

[Signature]
FRANCIS C.R. IUM
State Conservationist

cc:
Honorable Norman N. Tavares
Mayor, County of Maui
200 South High Street
Wailuku, Maui, HI 96793

Mr. William E. Nomia, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, HI 96793

Sam O. Hirota, Inc.
345 Queen Street, Suite 500
Honolulu, HI 96813
Ms. Letitia N. Uyehara, Interim Director
Office of Environmental Quality Control
550 Heleakalau Street, Room 301
Honolulu, Hawaii  96813

Dear Ms. Uyehara:

The Fourteenth Coast Guard District has reviewed the EIS for the Mānāla-Waipio Water System Improvements and has no objection or constructive comments to offer at the present time.

Sincerely,

[Signature]

J. E. Eckhardt
Commander, U. S. Coast Guard
District Planning Officer

By direction of
Commander, Fourteenth Coast Guard District

Copies to:
(1) Mayor, County of Maui
(2) Department of Water Supply, Maui
(3) Sam O. Hirota, Inc., Honolulu

HEADQUARTERS
NAVAL BASE PEARL HARBOR
P.O. BOX 110
PEAK HARBOR, HAWAII 96848

Mayor Hamilah H. Tavares
County of Maui
200 South High Street
Wailuku, Maui  96793

Dear Mayor Tavares:

Environmental Impact Statement
Mānāla-Waipio Water System Improvements

The EIS for the Mānāla-Waipio Water System Improvements has been reviewed and the Navy has no comments to offer. As this command has no further use for the EIS, the EIS is being returned to the Environmental Quality Commission, by copy of this letter.

Thank you for the opportunity to review the EIS.

Sincerely,

[Signature]

M. M. Dallam
Captain, CIC, U. S. Navy

Enclosure

Copy to:
Department of Water Supply, Maui
Sam O. Hirota, Inc.
Environmental Quality Commission
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 305TH AIR BASE Wing (Hawaii)
HICKAM AIR FORCE BASE, HAWAII 96764

OCEY (Mr. Yamada, 449-1821)

3 OCT 83

SUBJECT: Environmental Impact Statements for the Kaupo, Wailua-Hana and Keanoe Water Systems Improvements

TO: G. H. Harris

FROM: Ms. Letitia H. Uyehara, INTERIM DIRECTOR
Office of Environmental Quality Control
550 Kalakaua Avenue, Room 301
Honolulu, HI 96813

This office reviewed the following EISs and has no comment relative to the proposed projects:

a. Kaupo Water System Improvements
b. Wailua-Hana Water System Improvements
c. Keanoe Water System Improvements

We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your projects and thank you for the opportunity to review the documents. The EISs are returned for your file.

Sincerely,

RICHARD M. CRACKER
Chief, Office of Environmental Quality Control

1. EIS on Kaupo Water System Improvement
2. EIS on Wailua-Hana Water System Improvement
3. EIS on Keanoe Water System Improvement

cc: Ms. Letitia H. Uyehara, INTERIM DIRECTOR

November 28, 1983

Mr. William S. Haines, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui, Hawaii 96793

Dear Mr. Haines:

Subject: Draft Environmental Impact Statement for the Wailua-Hana Water System Improvements

We have reviewed this EIS and have no objections to this project. Thank you for providing us the opportunity to comment.

Sincerely,

Letitia H. Uyehara

cc: Sam O. Hirota, Inc.
MEMORANDUM

TO: Honorable Manuel H. Tavares
   Mayor, County of Maui

SUBJECT: Environmental Impact Statement (EIS) for Waikalema Water System Improvements

The Department of Agriculture has reviewed the subject EIS and does not foresee any significant adverse impacts upon agricultural activities as a result of the development of the proposed improvements.

Thank you for the opportunity to comment.

Jack K. Sliwa, Director
Board of Agriculture

cc: Maui County Department of Water Supply
    Sam O. Hirota, Inc.
    Mrs. Letitia N. Uyehara, Interim Director
    Office of Environmental Quality Control

"Support Hawaiian Agricultural Products"
Honorable Hannibal M. Tavares  
Mayor  
County of Maui  
200 South High Street  
Maui, Maui 96793

Dear Mayor Tavares:

Subject: Environmental Impact Statements for  
(1) Wallace-Hana Water System Improvements  
(2) Kaupo Water System Improvements  
(3) Hana Water System Improvements

We have reviewed the subject environmental impact statements and have no comments to offer.

Thank you for the opportunity to review the environmental impact statements.

Very truly yours,

KIMU MUHAMMAD  
State Controller

Cc: Ms. L. Uyehara  
Mr. N. Kainoa  
Sam O. Hirotsu, Inc.

Ms. L. Uyehara  
Interim Director  
Office of Environmental Quality Control  
250 Kaleiha St., Room 301  
Hana, Maui 96713

Dear Ms. Uyehara:

Kaupo Water System Improvements  
Hana Water System Improvements  
Wallace-Hana Water System Improvements

Thank you for providing us the opportunity to review the above subject Environmental Impact Statements.

We have completed our review and have no comments to offer at this time.

Yours truly,

JERRY H. MATUSHA  
Major, HANS  
Cont & Engr Officer

Hon Hannibal M. Tavares/Mayor, County of Maui  
Mr. N. Kainoa/Dept. of Water Supply  
County of Maui  
Sam O. Hirotsu, Inc  
Env Quality Commission v/EES's
November 8, 1983

STATE OF HAWAII
Office of Environmental Quality Control
550 Keeaumoku Street, Room 301
Honolulu, Hawaii 96813

ATTENTION: Ms. Letitia N. Uyehara
     Interim Director

SUBJECT: Haliimaile-Hana Water System Improvements (EIS)
     Hana, Maui

We are in receipt of subject project’s Environmental Impact Statement (EIS)
submitted with your October 21, 1983 transmittal letter.

We have reviewed the EIS and concur with the Department of Water Supply, County
of Maui, regarding statements contained therein regarding power availability,
if applicable, for this project.

Attached is the EIS, since we have no further use for it.

Donald Chai
DONALD CHAI
Customer Engineering Supervisor

cc: County of Maui
    Dept. of Water Supply, Maui
    Sam O. Hirota, Inc.