BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

February 9, 2000

'00 FEB -9 P1:38

OFC. OF ENV. QUALITY CON.

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

Dear Ms. Salmonson:

Subject: Final Environmental Assessment for the Waialua Wells II Exploratory Well Project, Waialua, Oahu, Hawaii TMK: 6-5-01: Por. 02

The Board of Water Supply has reviewed the comments received during the public comment period which ended on September 7, 1999. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the Final Environmental Assessment (FEA) and are therefore issuing a "Finding of No Significant Impact." We request that the proposed project be published as such in the next Office of Environmental Quality Control (OEQC) Bulletin.

Attached are the completed OEQC Bulletin Publication Form and four (4) copies of the FEA for your use.

If you have any questions, please contact Rian Adachi at 527-5245.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

Attachment

cc: Earl Matsukawa, Wilson Okamoto & Associates, Inc.

2000-02-23-OA-FEA-

Final Environmental Assessment
and
Finding of No Significant Impact (FONSI)

(WAIALUA WELL II EXPLORATORY WELL SITE)

Waialua, Oahu, Hawaii

Prepared for

City and County of Honolulu
Board of Water Supply

Prepared by

Wilson Okamoto & Associates, Inc.
Engineers and Planners

February 2000

Final Environmental Assessment
and
Finding of No Significant Impact (FONSI)

WAIALUA WELL II
EXPLORATORY WELL SITE

Waialua, Oahu, Hawaii

Prepared for:

City and County of Honolulu
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

Prepared by:

Wilson Okamoto & Associates, Inc.
Engineers and Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

February 2000

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

PREFACE

PREFACE

This Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) has been prepared pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and Title 11, Chapter 200, Administrative Rules, Department of Health, State of Hawaii. Proposed is an agency action involving the expenditure of City and County of Honolulu funds by the Board of Water Supply (BWS). The BWS proposes to drill, case and test a single exploratory well at the Waialua Well II site in the Kaheeka, Kemoo area of the district of Waialua, Oahu.

This EA will be processed as a Finding of No Significant Impact (FONSI) by the BWS, determining that the impacts of this project are not sufficient to require the preparation of an environmental impact statement and, thus, satisfying the requirements of Chapter 343, HRS.

SUMMARY

SUMMARY

Proposing Agency:	City and County of Honolulu Board of Water Supply 630 South Beretania Street Honolulu, Hawaii 96843 Contact: Barry Usagawa Phone: (808) 527-5235 Fax: (808) 527-5703
EA Preparer:	Wilson Okamoto & Associates, Inc. 1907 South Beretania Street, Suite 400 Honolulu, Hawaii 96826 Contact: Earl Matsukawa, AICP Project Manager Phone: (808) 946-2277 Fax: (808) 946-2253
Approving Agency:	City and County of Honolulu Board of Water Supply 630 South Beretania Street Honolulu, Hawaii 96843 Contact: Clifford S. Jamile, Manager and Chief Engineer Phone: (808) 527-6180 Fax: (808) 533-2714
Project Location:	Kaheeka, Kemoo, Waialua, Oahu
Tax Map Key:	6-5-01: 02 (por.)
Area:	.75 acres
Recorded Fee Owner:	Dole Food Company, Inc.

Existing Land Use:	Diversified Agriculture
State Land Use Classification:	Agricultural District
Development Plan Land Use Map:	Agriculture
Development Plan Public Facilities Map:	No symbols in the vicinity
Zoning:	AG-1 Restricted Agricultural District
Proposed Action:	The City and County of Honolulu Board of Water Supply proposes to drill, case and test a single exploratory well on approximately .75-acres of land. The proposed action also includes the temporary installation of a test pump and equipment to collect data on productivity and water quality.
Impacts:	No significant impacts are anticipated from construction or testing at the exploratory well site. Construction work, primarily drilling, is anticipated to have insignificant short-term noise and air quality impacts in the surrounding area. All government rules and regulations will be followed during construction to minimize impacts.
Permits Required:	<u>State of Hawaii</u> Department of Health Noise, Radiation and Indoor Air Quality Branch • Community Noise Permit Department of Land and Natural Resources Commission on Water Resource Management • Well Construction Permit

Agencies Consulted in Pre-Assessment Process:

Federal

U.S. Department of Agriculture
Natural Resources Conservation Service
U.S. Department of the Interior
Geological Survey, Water Resources Division
Fish and Wildlife Service, Ecological Services

State of Hawaii

Department of Agriculture
Department of Business Economic Development and Tourism
Office of Planning
Department of Health
Safe Drinking Water Branch
Office of Environmental Quality Control
Department of Land and Natural Resources
Water Resource Management Division
State Historic Preservation Division
Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply
Department of Land Utilization
Planning Department

Other

Dole Food Company, Inc.
North Shore Neighborhood Board No. 27
University of Hawaii, Environmental Center

Agencies Consulted in Draft EA Process:

Federal

U.S. Army Corps of Engineers
U.S. Department of Agriculture
    Natural Resources Conservation Service
U.S. Department of the Interior
    Geological Survey, Water Resources Division
    Fish and Wildlife Service, Ecological Services

State of Hawaii

Department of Agriculture
Department of Business Economic Development and Tourism
    Office of Planning
Department of Health
    Safe Drinking Water Branch
    Office of Environmental Quality Control
Department of Land and Natural Resources
    Aquatic Resources Division
    Water Resource Management Division
    State Historic Preservation Division
Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply
Department of Planning and Permitting
Department of Transportation Services

Other

District I City Councilmember Rene Mansho
Dole Food Company, Inc.
North Shore Neighborhood Board No. 27
University of Hawaii, Environmental Center

Chapter 1

INTRODUCTION AND PROJECT DESCRIPTION

1. INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

The BWS is responsible for the management, control and operation of Oahu's municipal water system. As part of this responsibility, the BWS first identifies potential well sites based on a hydrogeologic assessment of the area. If the site appears promising as a groundwater source, the BWS then conducts exploratory drilling and productivity and quality tests to determine the suitability of a well for eventual production of potable water. The Waialua Well II exploratory well site has been identified as a potential groundwater source. In accordance with its mandated responsibilities, the BWS proposes to drill, case and test a single exploratory well at the project site in the Kaheeka, Kemoo area of Waialua, Oahu.

1.2 Project Location

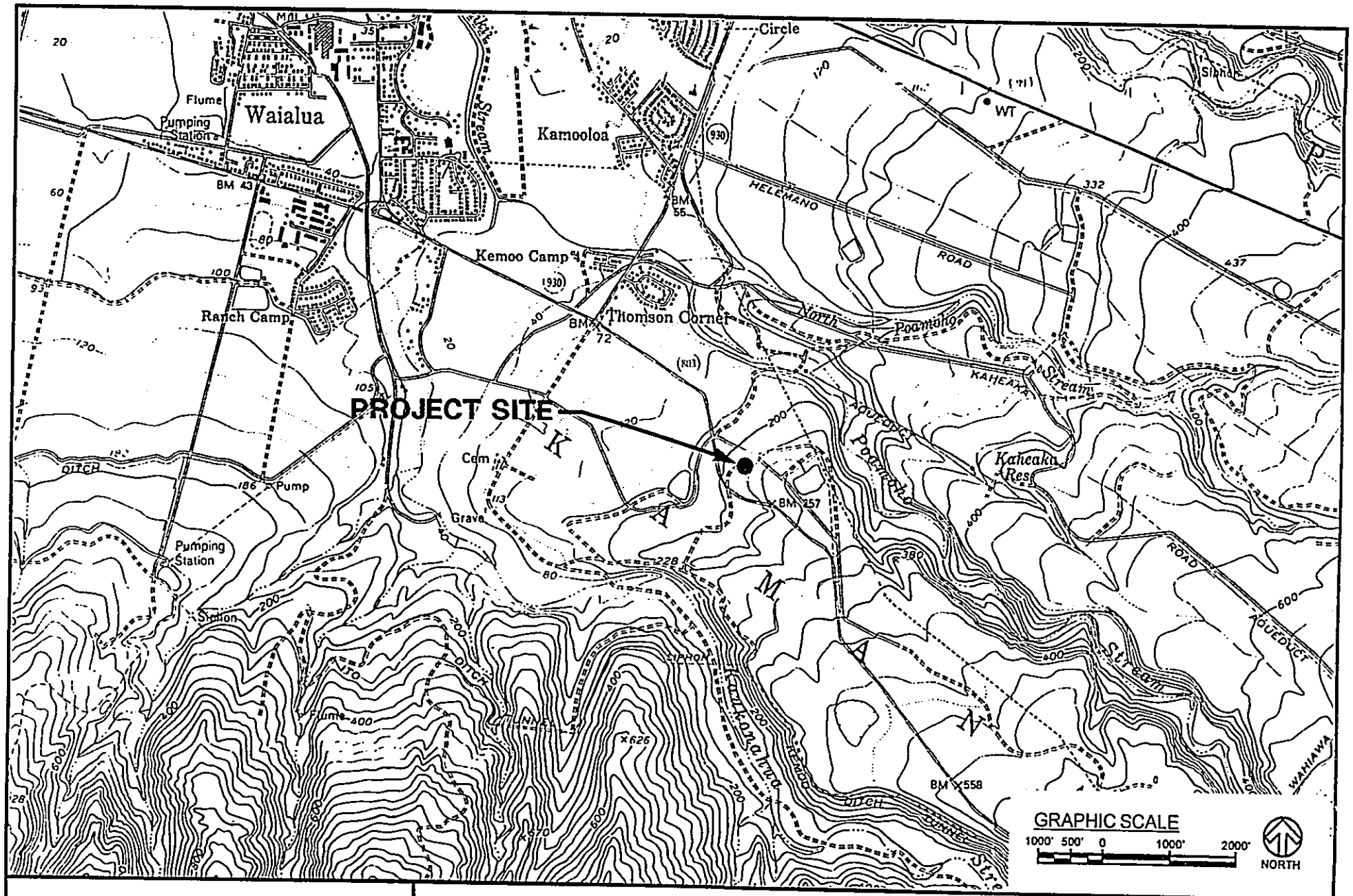
The Waialua Well II exploratory well site is located in the Waialua area of the Waialua district on the North Shore of Oahu, about 0.6 miles southeast of Kemoo Camp 4 residential area (see Figure 1). The project site will occupy approximately a .75-acre portion of Tax Map Key (TMK): 6-5-01: 02 (see Figure 2), owned by the Dole Food Company, Inc. The project site is located at an elevation of approximately 220 feet above mean sea level (msl), about 500 feet north of Kaukonahua Road. Vehicular access to the project site will be via a cane haul road extending from Kaukonahua Road.

1.3 Existing and Surrounding Uses

Formerly in sugar cane cultivation, the project site is currently uncultivated for diversified agriculture.

1.4 Project Need

In addition to its responsibility to manage, control and operate Oahu's municipal water system, the BWS is also mandated by law to provide potable water sources to meet growing consumer demand to the extent of available water resources. The BWS utilizes population data to project future consumer demands on the water system, thereby allowing for timely decisions regarding the financing and development of source, storage, and transmission facilities to meet those demands.



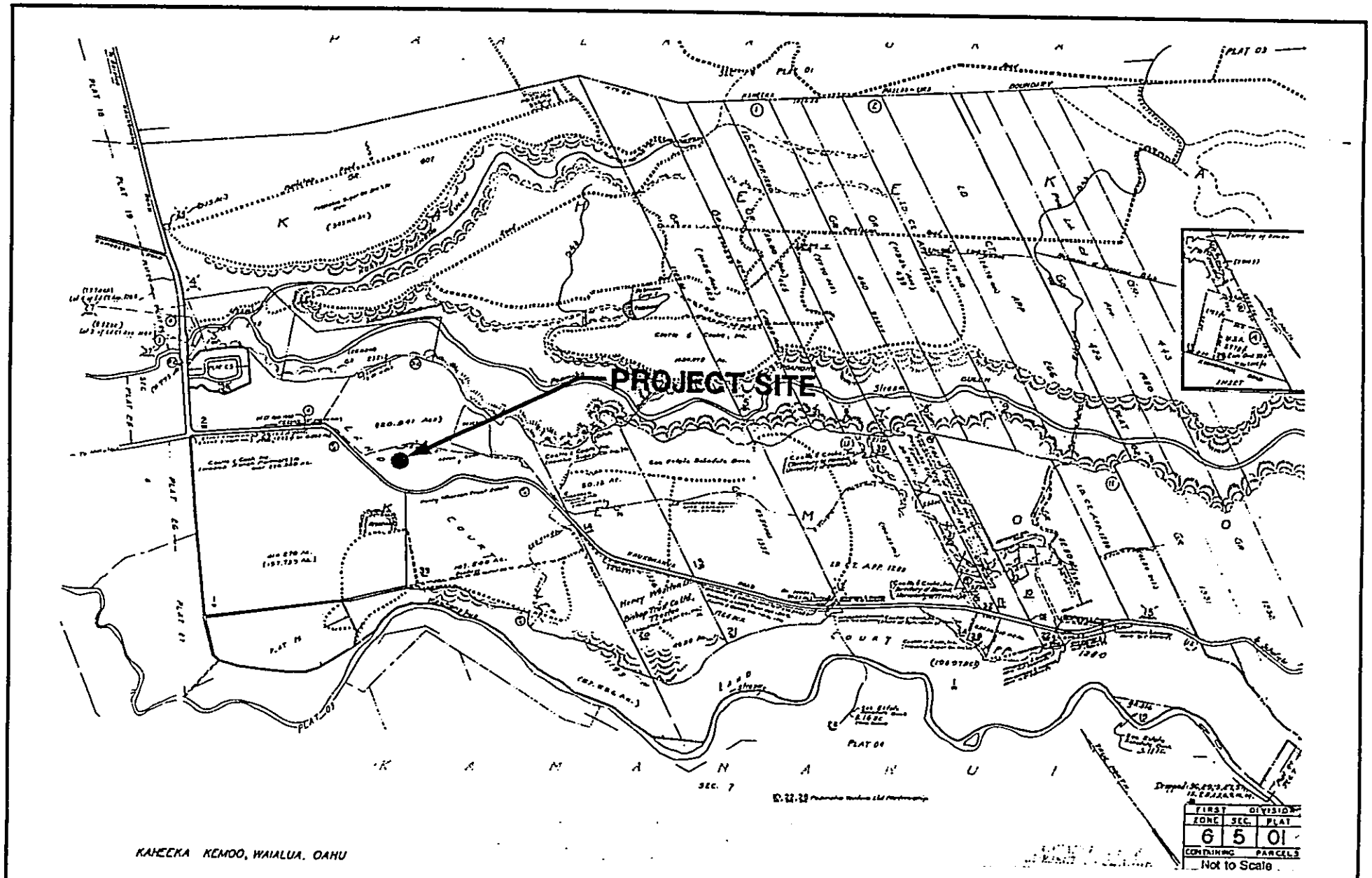
WAIALUA WELL II
EXPLORATORY WELL SITE

LOCATION MAP

Fig. 1

Prepared for:
CITY AND COUNTY OF HONOLULU
BOARD OF WATER SUPPLY

Prepared by:
WILSON OKAMOTO & ASSOCIATES, INC.



WAIALUA WELL II EXPLORATORY WELL SITE	**Fig. 2**
Prepared for: CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY	**TAX MAP KEY 6-5-01: 02 (por.)**
	Prepared by: WILSON OKAMOTO & ASSOCIATES, INC.

The BWS's ***Oahu Water Plan*** includes the following water use planning objectives:

- *Investigate, prepare for, and timely develop additional potable groundwater sources and alternative sources requiring treatment, to provide for anticipated consumer demands.*

- *Attempt to insure that growth in consumer demand will be compatible with available water supply.*

In order to accomplish the BWS's responsibilities and these objectives, long-term water demand estimates are projected and commensurate water system facilities are planned to meet the projected demand. BWS's water demand projections are based on the City and County of Honolulu Department of Planning and Permitting population distribution projections for the Development Plan areas.

It is anticipated that most of the water from future production wells at this site will be used to meet demands outside of the watershed, which is designated as the Waialua Water Management Area (WMA) by the State Commission on Water Resource Management (CWRM). Although pipeline routes to transport the water and the areas to be served have yet to be determined, future pipeline connections to the Waianae Coast, Central Oahu and Windward Oahu are being considered. It is BWS's policy, however, to meet the demands within the watershed before transmitting excess supply to other areas. Any transmission of water outside of a watershed would need the approval of the State CWRM through the Water Use Permit (Section 174C-49(c) of the State Water Code) which is required before the well can be put into production.

With regard to water demand in the North Shore DP Area, the current water demand in the North Shore area is approximately 2.7 mgd. It is projected that demands for the area will increase to about 3.7 mgd by 2020. The demand projections are based on the City and County estimates that the North Shore population will increase to 19,560 by 2020.

The exploratory well site is one of three currently proposed in the Waialua-Haleiwa area. The estimated production capacity of each is 1.5 mgd, for a total of 4.5 mgd. Assuming that no alternative water sources are used or developed, 1.0 mgd would be needed to meet the projected demand on the North Shore through the year 2020. Thus, the amount of water

available for transmission to other areas would be approximately 3.5 mgd in 2020, if no alternative water sources for the North Shore DP area are used.

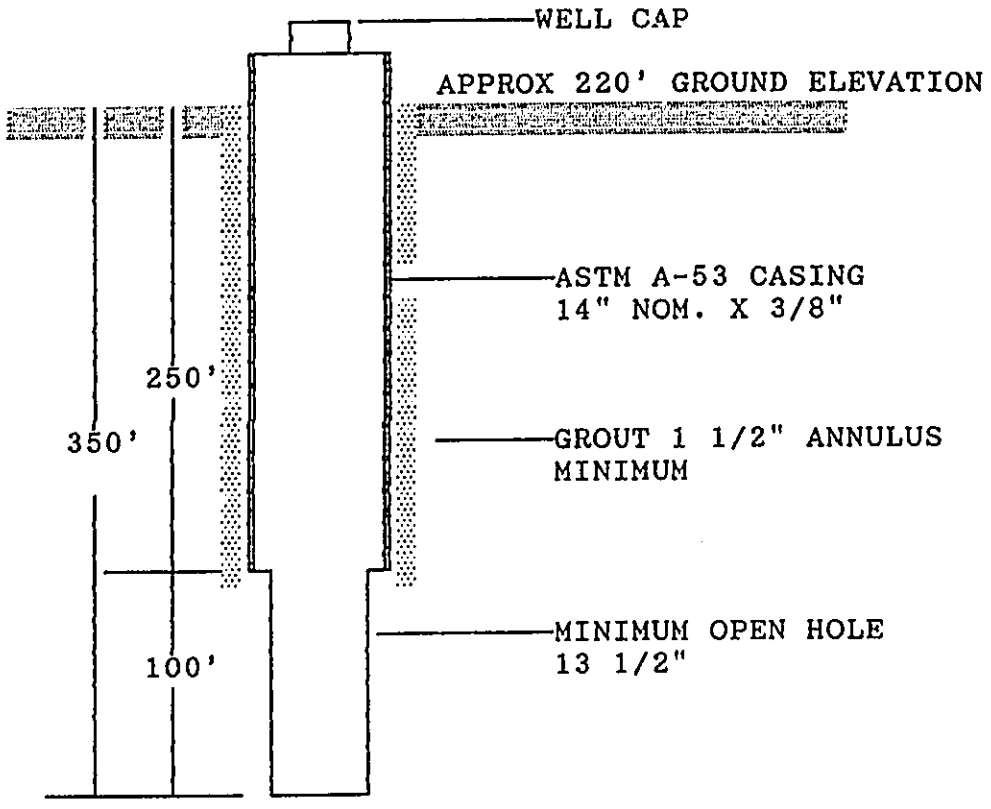
In the past, heavy water usage by the sugar industry resulted in increasing saline content when withdrawals exceeded 40 mgd from the Waialua aquifer, which is the aquifer that the BWS's three planned wells are expected to tap. The data from the sugar industry's past practices was used as the basis for establishing the current maximum sustainable yield at 40 mgd for the Waialua aquifer. According to the most recent data from the CWRM, withdrawals from the aquifer averaged 11.867 mgd between July, 1996 and July, 1997, indicating that 28.133 mgd is unused. The three planned BWS wells would utilize approximately 4.5 mgd of that unused capacity if the exploratory phase proves successful and they are put into production.

Currently, there are Water Use Permits allocating up to 39.941 mgd of water from the Waialua aquifer; mostly for sugar cane irrigation. Since sugar is no longer being cultivated and water withdrawals have declined as a result, the CWRM is planning to revoke some of those allocations. Revocation of those allocations would be required before the CWRM could reallocate the water to the planned BWS wells through the Water Use Permit. As mentioned previously, the Water Use Permit would be required before a well could be put into production; not at the presently proposed exploratory stage.

1.5 Project Description

An area of approximately .75-acre will be cleared at the project site to accommodate the well drilling, support equipment and necessary supplies. Once the area has been cleared, a single test well will be drilled at the site. The diameter of the bore will be approximately 20 inches and the estimated depth is 350 feet. The method of drilling will be determined by the contractor submitting the winning bid but either a cable tool or rotary drill will likely be used. The amount of time required to achieve the required depth would vary, from approximately one month for the rotary drill to up to three months for the cable tool. Spoils from the boring operation will be disposed of on-site. A 14-inch diameter steel casing approximately 250 feet long will be grouted in place within the bore hole (see Figure 3).

WAIALUA II EXPLORATORY WELL



NOT TO SCALE

WAIALUA WELL II EXPLORATORY WELL SITE	**Fig. 3** **WELL CROSS SECTION** Prepared for: CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY Prepared by: WILSON OKAMOTO & ASSOCIATES, INC.

1.6 Test Pumping

Following construction of the exploratory well, tests will be conducted to determine the quantity and quality of water that can be produced. Quantity testing will include yield drawdown tests spanning approximately five hours at one hour for each rate and a sustained pumping test spanning 120 hours. Power for the pump will be supplied by the contractor using a diesel powered electric generator. Water withdrawn from these tests will be disposed of on-site in the surrounding agricultural fields and/or irrigation ditches; no water will be disposed of into streams or other natural drainage courses.

Water quality testing will include those for detecting chlorides (salts) as well as pesticides, heavy metals and organics. The tests for contaminants will determine if treatment processes will be required if the well is put into production. Due to potential contamination associated with past agricultural practices, a Granular Activated Charcoal (GAC) treatment facility may be required. If required, the facility would be constructed at the well site if it is developed for production, or at an additional site area. A separate EA will be required if the well is put into production, at which time the specific site requirements for the facility and its impacts will be addressed.

Following testing, the wells will be capped and all equipment removed. If development of the well for production is deemed feasible, a subsequent environmental assessment will be prepared for that activity as a separate action.

1.7 Project Schedule and Cost

At present, exploratory well drilling at the Waialua Well II exploratory well site is not scheduled. Upon approval of the required permits the expected duration of the testing process from drilling to capping will be approximately 180 calendar days at an estimated cost of $200,000.00.

Chapter 2

DESCRIPTION OF THE EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

2. DESCRIPTION OF THE EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

2.1 Climate

The climate of the North Shore area of Oahu is characteristically mild with persistent northeast trade winds. Average temperatures range from a low of approximately 70 degrees in the coolest month, to a high of approximately 80 degrees in the warmest month. Average annual rainfall is about 35 inches. Light northeasterly tradewinds of about 14 to 16 knots are present most of the year.

Impacts and Mitigation Measures

The proposed project will not impact the area's general climate.

2.2 Geology and Topography

The island of Oahu is a volcanic doublet formed by the Waianae Range to the west and the younger Koolau Range to the east. Both are the remnants of great shield volcanoes, but the term "range" indicates that they have lost most of the original shield outlines and are now long narrow ridges shaped largely by erosion.

Basaltic lava from the Waianae shield volcano underlies the site at depth. At the surface, the site is underlain by residual soils developed on Koolau lava. The Waialua-Mokuleia coastal plain is underlain by interbedded marine and terrestrial sediments deposited when various glacial stages caused fluctuations in sea level. These sediments confine the basal groundwater that occurs within the basaltic lava flows.

Impacts and Mitigation Measures

Construction of the proposed well will require a bore hole to be placed into the subsurface basalt rock. No significant impacts on the geology and topography of the project site are anticipated during the construction and operation of the proposed project.

2.3 Soils

Soils at the site are classified by the U.S. Department of Agriculture Soil Conservation Service as Lahaina silty clay, 7 to 15 percent slopes (LaC). These are well-drained soils found in the uplands of the islands of Lanai, Maui, Molokai and Oahu. These soils developed in material weathered from basic igneous rock. Runoff is medium and the erosion hazard is moderate. Soils of this nature are commonly used for sugarcane and pineapple cultivation (see Figure 4).

Impacts and Mitigation Measures

No significant impacts on the soils at the project site are anticipated with the construction and operation of the proposed project.

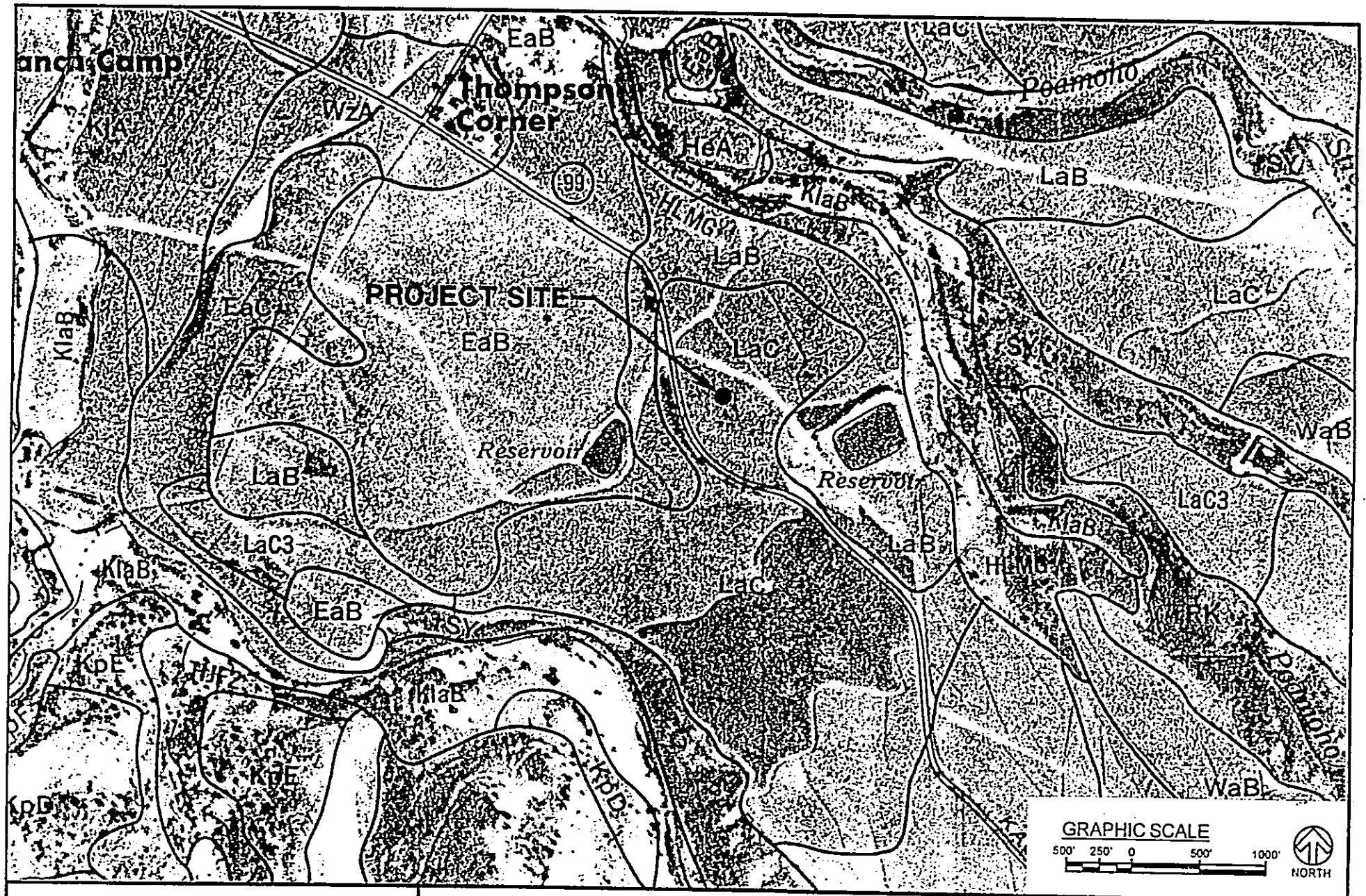
2.4 Hydrology

2.4.1 Surface Water

There are no natural surface water bodies on the project site. The Poamoho Stream is located approximately 1,500 feet northeast of the project site. The Poamoho Stream is a tributary of the perennial Kiikii stream system with stream flows to the sea year round.

The Commission on Water Resource Management's (CWRM) *Hawaii Stream Assessment* represents Hawaii's first step in an attempt to identify streams and rivers with significant natural and cultural qualities that may be appropriate for protection. One purpose of the study was to identify streams with high value stream-related "beneficial uses." These uses or "resources" were categorized into four units.

- Aquatic Resources
- Riparian Resources
- Cultural Resources
- Recreational Resources



WAIALUA WELL II
EXPLORATORY WELL SITE

SOILS MAP

Fig. 4

Prepared for:
CITY AND COUNTY OF HONOLULU
BOARD OF WATER SUPPLY

Prepared by:
WILSON OKAMOTO & ASSOCIATES, INC.

Elements of these resource categories were identified and ranked as Outstanding, Substantial, Moderate, Limited and Unknown. The Kiikii stream system was ranked as one of the seven streams on the island of Oahu with outstanding recreational resources and opportunities. It was not ranked, however, as having outstanding aquatic, riparian or cultural resources.

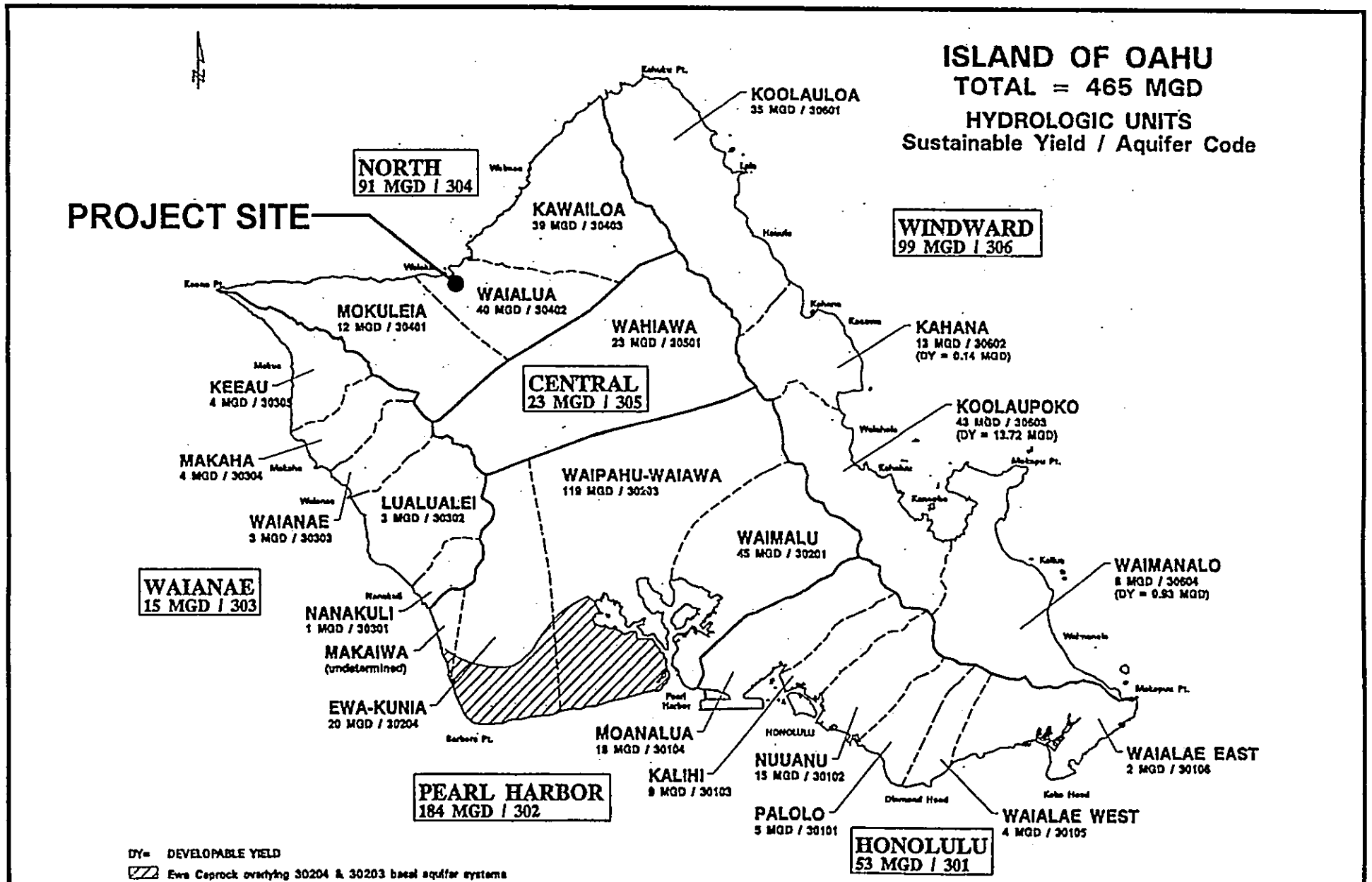
Impacts and Mitigation Measures

There are no surface water sources on the project site. The closest stream, the Poamoho Stream is more than one-quarter mile from the project site. The proposed withdrawals from the project site are not anticipated to affect stream flows. If test pumping reveals that stream flows are affected, an instream flow standard amendment may be required.

2.4.2 Ground Water

Most of Oahu, including the North Shore area, is underlain with permeable volcanic rock which stores and transmits water readily. As a result, the portion of the island below sea level is saturated with saline water from the ocean, except where significant infiltration of fresh water accumulates and forms a fresh water "lens" in a condition known as basal groundwater. This type of groundwater occurs below the project site.

The project area overlies the Waialua aquifer, which is one of three within the North aquifer sector (see Figure 5). In the Waialua aquifer, a thick wedge of sedimentary caprock causes a thick basal lens to exist, creating an extensive freshwater body located in dike-free Koolau lava flows. Recharge from rainfall in the Koolau Range maintains this lens. The movement of groundwater in the Waialua-Haleiwa area occurs in a seaward direction, and is confined by a thick caprock sequence of marine and terrestrial sediments. Westward movement is prevented by the Koolau-Waianae unconformable contact. Anahulu alluvium confines groundwater movement to the east.



WAIALUA WELL II EXPLORATORY WELL SITE

Fig. 5

OAHU GROUNDWATER MAP

Prepared for:
CITY AND COUNTY OF HONOLULU
BOARD OF WATER SUPPLY

Prepared by:
WILSON OKAMOTO & ASSOCIATES, INC.

Water Management Areas

Under the State Water Code, Water Management Areas may be designated by the CWRM when it can be reasonably determined that the water resources in an area may be threatened by existing or proposed withdrawals or diversions. Specifically, the designations are based on a determination that an aquifer, or contiguous groups of aquifers, is being exploited to and beyond the limits of sustainable yield. Sustainable yield refers to the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source.

The basal aquifer underlying the Waialua Water Management Area (WMA) had been affected by heavy draft for sugar plantation irrigation, resulting in increasing salinity. Estimates of sustainable yields are based on water balances computed within aquifer boundaries. In 1988, the Waialua aquifer showed a large deficit of withdrawals over sustainable yield. The sustainable yield was determined at 5.0 mgd and 1988 groundwater withdrawn was 32.1 mgd, creating a 27.1 mgd deficit. It was subsequently determined that the sustainable yield estimate for the Waialua aquifer was understated because spillage from the Wahiawa High Level System was not included. Presently, the sustainable yield for the Waialua aquifer is 40 mgd.

Currently, there are Water Use Permits allocating up to 39.941 mgd of water from the Waialua aquifer; mostly for sugar cane irrigation. Since sugar is no longer being cultivated and water withdrawals have declined as a result, the CWRM is planning to revoke some of those allocations. Revocation of those allocations would be required before the CWRM could reallocate the water to the planned BWS wells through the Water Use Permit. As mentioned previously, the Water Use Permit would be required before a well could be put into production; not at the presently proposed exploratory stage. Of the 39.941 mgd allocated for use in 1997, actual basal use was 11.867 mgd. This substantially adds to the total developable resource in the Waialua aquifer (see Table 1).

TABLE 1
WAIALUA AQUIFER SYSTEM
GROUNDWATER USE AND SUSTAINABLE YIELD (mgd)

Aquifer System	Sustainable Yield	1997 Permitted Use	1997 Actual Use	Available Sustainable Yield
Waialua	40	39.941	11.867	28.133

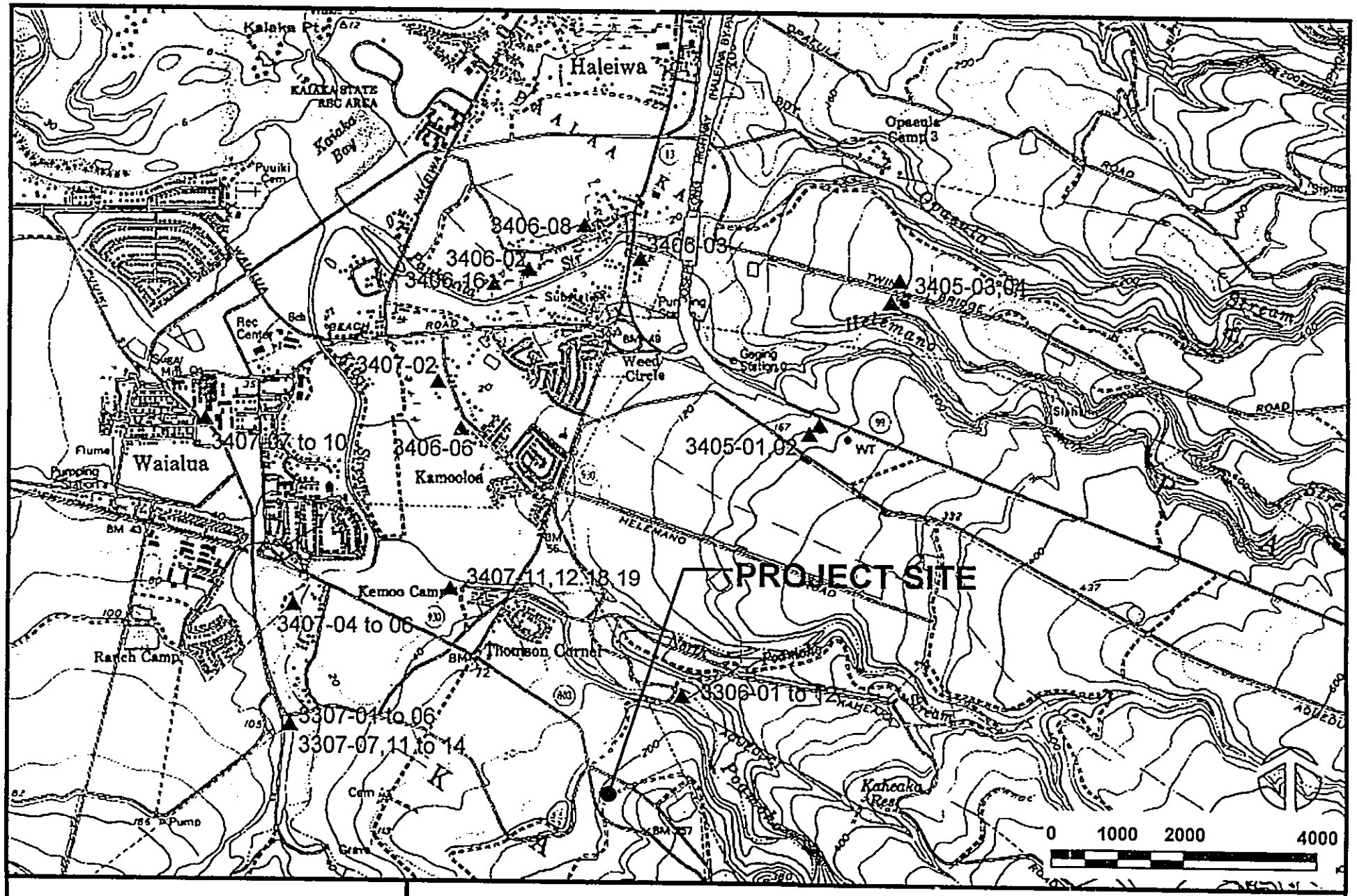
Source: Department of Land and Natural Resources Water Resource Management Division

Existing Water Sources

Of the 19 active water sources in the Waialua aquifer, the BWS maintains two well sites; the Haleiwa Wells No. 3405-03, 04 and the Waialua Wells No. 3405-01,02 (see Figure 6). 1997 records for the Waialua aquifer indicate that of the 39.941 mgd permitted use, the BWS average actual use for the two well sites was 2.035 mgd of its 2.730 mgd allocation. Of the 35.892 mgd allocated for use by the Waialua Sugar Company, only an average 8.867 mgd were actually used. The remaining 1.319 mgd is allocated for use by 7 private sources.

Impacts and Mitigation Measures

Future development of the proposed project is not anticipated to adversely impact the quality of the basal aquifer. The increased yield in the Waialua aquifer would be within the DLNR sustainable yield for basal water sources in the water management area and aquifer system. Development of the proposed well site is not expected to affect groundwater recharge. Due to the project's location in a designated water management area, a CWRM Water Use Permit will be required prior to use of this source. As previously stated, most of the 39.941 mgd allocated under Water Use Permits are for sugar cane irrigation. Since sugar is no longer being cultivated and water withdrawals have declined, the CWRM is planning to revoke some of those allocations. Revocation of those allocations would be required before the CWRM could reallocate the water if the planned BWS wells are put into production.



WAIALUA WELL II EXPLORATORY WELL SITE	**EXISTING WELL SITES**	Fig. 6
	Prepared for: CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY	Prepared by: WILSON OKAMOTO & ASSOCIATES, INC.

2.5 Flood Hazard

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 150001 0040 B (revised September 4, 1987), the project site is designated Zone D, areas in which flood hazards are undetermined (see Figure 7).

Impacts and Mitigation Measures

Due to its location on a gently sloping site, it is unlikely that construction and operation of the proposed project would result in flooding of the project site or lower elevation properties.

2.6 Drainage

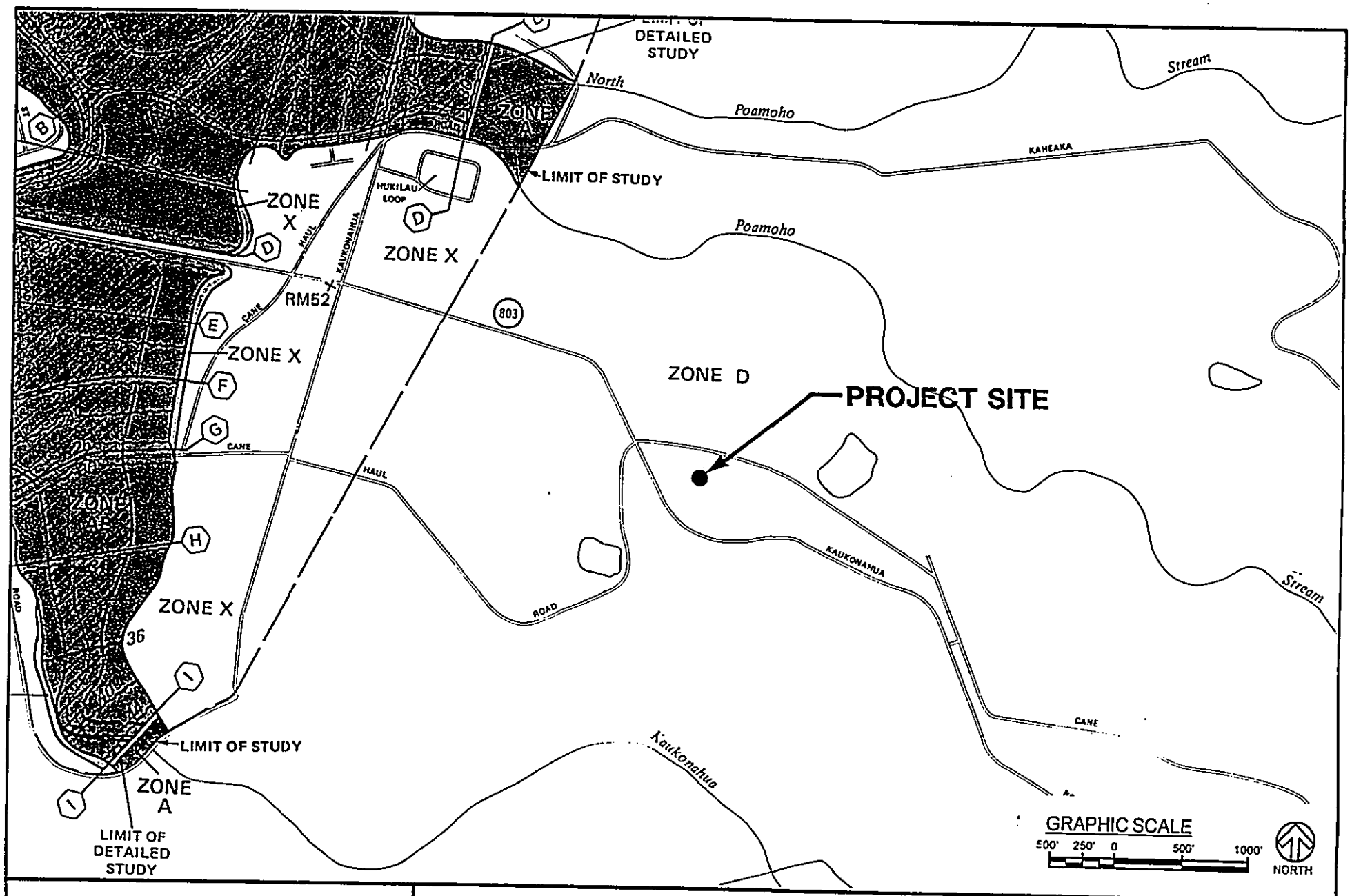
Runoff from the project area sheetflows through former sugar cane fields into existing drainage ditches.

Impacts and Mitigation Measures

Water generated during test pumping will be discharged onto open fields and irrigation ditches. Water will not be discharged into streams. Since streams will not be used for water disposal, the discharge of water generated during test pumping is anticipated to have no affect on water quality. The development of the well site will not significantly reduce the area of open land available for rainfall infiltration.

2.7 Flora and Fauna

A botanical survey for the project site was conducted by Evangeline Funk, Ph.D. on September 18, 1997. The purpose of the survey was to characterize the vegetation, and to note the presence of any rare or endangered flora species. Portions of the survey report are discussed below, while the report in its entirety is included as Appendix A.



WAIALUA WELL II EXPLORATORY WELL SITE	FLOOD MAP	Fig. 7
	Prepared for: CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY	Prepared by: WILSON OKAMOTO & ASSOCIATES, INC.

The dominant vegetation at the project site is Guinea grass (*Pancium maximum* Jacq.) which is especially dense along an unused cane haul road that runs through the site. It is along this road that the greatest variety of herbaceous ruderals were found. No candidate, proposed, or listed threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C 1531-1543), are known from this site.

In response to the pre-assessment consultation for this EA, the U.S. Fish and Wildlife Service indicated that there were no federally endangered, threatened, or candidate species directly within the project site. Excerpts from the October 16, 1997 consultation letter are discussed below, while their letter in its entirety is included in Appendix B. Because the proposed project will be located within a previously disturbed site, the Service does not anticipate adverse impacts to fish and wildlife resources.

Impacts and Mitigation Measures

There are no known endangered or threatened species inhabiting the project site. While some loss of habitat will occur as a result of construction activities, none of the species affected are known to be threatened or endangered. The proposed project will be located within a previously disturbed site that was in sugarcane cultivation, therefore no significant impacts on flora and fauna species are anticipated.

2.8 Noise

Noise in the vicinity of the project site is predominantly attributable to vehicular traffic along Kaukonahua Road. The well site is located approximately 500 feet from Kaukonahua Road, distant enough to be unaffected by noise generated from automobile and truck traffic along the road. The cane haul road along the well site, may occasionally be used by trucks associated with agricultural activities. The nearest residential community is located near Kemoo Camp 4, approximately 0.6 miles northwest of the project site.

Impacts and Mitigation Measures

Noise from drilling and construction activities will likely be unavoidable during the entire drilling and construction phase however, there are no noise sensitive land uses in the vicinity that could be adversely affected. Unavoidable construction noise impacts will be mitigated to some degree by the contractor's compliance with

provisions of the State Department of Health (DOH) Administrative Rules, Chapter 11-46, "Community Noise Control." These rules require a permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the Chapter 46 rules. Construction equipment and on-site vehicles requiring an exhaust for gas and air must be equipped with mufflers. Also, the guidelines for the hours of heavy equipment operation and noise curfew times as set forth by the DOH noise control regulation must be adhered to.

No significant noise impacts from the test pumping are anticipated. Ambient noise levels in the vicinity of the project site may increase slightly as a result of the pumping and associated increase in vehicular activity. No noise impacts upon the nearest residential community are anticipated due to the distance from the project site.

2.9 Traffic

Vehicular access to the project site is gained from northwest and southeast-bound Kaukonahua Road via a former cane haul road. Due to the absence of any significant traffic generating land uses in the vicinity, traffic along the cane haul road is generally very light at all times of the day.

Impacts and Mitigation Measures

During the construction and drilling phase, any temporary increase in traffic congestion that could result from the movement of construction related vehicles is unlikely to inconvenience motorists in the immediate vicinity of the project site. The cane haul road provides vehicular access to surrounding agricultural lands. If necessary to mitigate potential traffic congestion and delays on Kaukonahua Road, the movement of construction vehicles can be restricted during the morning and afternoon peak traffic hours. Such restrictions will probably be unnecessary, however, since peak-hour traffic is in the opposite direction of traffic going from Kaukonahua Road to the project site. It is anticipated that all construction-related vehicles will park within the project site and, thus, will not affect street parking or traffic flow in the vicinity.

2.10 Air Quality

Within the immediate vicinity, air quality is primarily affected by vehicular-related emissions generated from traffic traveling along Kaukonahua Road. However, as traffic operates generally well along these roadways throughout the day, and due to the distance of the project site from major roads, the associated vehicular emissions do not significantly affect ambient air quality in the area. While the area is currently uncultivated, future agricultural activities such as diversified crop farming could occasionally generate dust within the immediate vicinity of the project site.

Impacts and Mitigation Measures

Potential air quality impacts during the construction and drilling phase of the proposed project will be mitigated by complying with the State of Hawaii DOH *Administrative Rules*, Tile 11, Chapter 60.1, Air Pollution Control. During the construction phase, two potential types of air pollution emissions will likely occur: 1) fugitive dust from vehicle movement and soil excavation; and 2) carbon monoxide and nitrogen oxide emissions from on-site construction equipment and from construction workers' vehicles and equipment traveling to and from the project site. Compliance with State regulations will require adequate measures to control fugitive dust by methods such as water spraying and sprinkling of loose or exposed soil and dust-generating equipment during construction. As may be deemed appropriate, paving and/or re-establishment of vegetated areas early in the construction schedule will also help control dust. Exhaust emissions from construction vehicles are anticipated to have negligible impacts on air quality in the project vicinity as emissions would be relatively small and readily dissipated.

Once construction is completed, there will be no long-term air quality impacts. The test pumping phase of the project is not anticipated to significantly increase vehicular traffic to the project site and will have no significant impact on air quality in the vicinity.

2.11 Archaeological/Historic Resources

In response to the pre-assessment consultation for this EA the State Historic Preservation Division indicated that a review of their records shows there are no known historic sites at the

project location. Excerpts from their October 24, 1997 consultation letter are discussed below, while the letter in its entirety is included in Appendix B. These lands were commercially cultivated with sugar cane which altered the land for many years. The depth of cane cultivation exceeded the expected depth of historic sites in the area, based on site patterns in similar environmental contexts. Thus, it is unlikely that significant historic sites will be found in the project area.

Impacts and Mitigation Measures

Due to previous sugar cane cultivation operations on the project site, it is unlikely that the construction and drilling phase of the project will have any impact on archaeological, cultural or historic sites. Should any archaeological, cultural or historic sites be uncovered during construction or drilling activities, all work in the vicinity will cease and the State of Hawaii Department of Land and Natural Resources Historic Preservation Officer will be notified immediately.

2.12 Aesthetics

Due to its relative isolation, the project site is not visible from Kaukonahua Road and is not within a significant view plane.

Impacts and Mitigation Measures

The project site is approximately 500 feet from Kaukonahua Road and is generally not visible to residential communities or passing commuters. Although the well rig, necessary in the drilling phase, may be visible from Kaukonahua Road, it will not be a permanent structure and will not block any views. The exploratory well will not have a significant vertical profile and will have no significant visual impact to the North Shore area.

2.13 Socio-Economic

Population

According to City and County of Honolulu, Department of Planning and Permitting (DPP) staff communication, the North Shore Development Plan (DP) area had a resident population of 15,749 in 1990. Using market conditions, historical development trends, and current land

use policies, the DPP projected a 1995 population of 15,913 for the North Shore DP area out of an islandwide projection of 882,509, and it is likely to have a population of 19,560 out of an islandwide 1,071,200 by the year 2020. For both 1995 and 2020, the North Shore population projections represent 1.8% of Oahu's population.

Impacts and Mitigation Measures

During well construction and testing construction workers and others, including BWS staff, will commute to the site. Following construction and testing, there will be no need for persons to be at the site until a decision is made to put the well into production. Thus, there will be no significant impacts to the population of the North Shore from the project.

Public Services

Police Protection: The exploratory well site is within the area served by the Honolulu Police Department, District 2, Wahiawa Station located approximately 7 miles from the project site at 330 N. Cane Street.

Fire Protection: Fire protection service for the project site is provided by the Honolulu Fire Department, Station 14, the Waialua/Haleiwa Station located approximately 1.5 miles from the project site at 66-420 Haleiwa Road.

Health Care Facilities: The health care facility nearest to the project site is the Wahiawa General Hospital located at 128 Lehua Street. Located approximately 7 miles away, Wahiawa General is a full service hospital providing emergency care and medivac transport capabilities.

Impacts and Mitigation Measures

There will not be any significant impacts on the provision of public services during the construction and testing phases of the proposed project.

Chapter 3

RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

3. RELATIONSHIP TO PLANS POLICIES AND CONTROLS

3.1 Sate Land Use District

The Hawaii Land Use Law of Chapter 205, Hawaii Revised Statutes (HRS), classifies all lands in the State into four land use districts: Urban, Agricultural, Conservation and Rural. The project site is designated within the Agricultural District. Section 205-4.5, HRS identifies permissible uses within the State Agricultural District. For uses not identified in Section 205-4.5 and encumbering less than 15 acres of land, a petition for a special permit from the City and County of Honolulu Department of Planning and Permitting (DPP) and the Planning Commission is required. According to staff communication with DPP, exploratory wells are considered temporary, and therefore, a Special Permit in the State Land Use Agricultural District will not be required. If the well is developed for full production, a petition to DPP and the Planning Commission for a Special Permit, or a determination to be covered as a permissible use will be required.

3.2 City and County of Honolulu General Plan

The General Plan for the City and County of Honolulu (adopted 1977) was amended by the City Council in 1992. The plan is a statement of long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of Oahu. The plan is also a statement of broad policies which facilitate the attainment of the objectives of the plan. Eleven subject areas provide the framework for the City's expression of public policy concerning the needs of the people and the functions of government. These areas include population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and government operations and fiscal management. The relationship of the proposed project to the relevant objectives and policies of the General Plan are as follows:

V. Transportation and Utilities

Objective B: To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal.

Policy 1: Develop and maintain an adequate supply of water for both residents and visitors.

Policy 2: *Develop and maintain an adequate supply of water for agricultural and industrial needs.*

Objective C: *To maintain a high level of service for all utilities.*

Policy 3: *Plan for the timely and orderly expansion of utility systems.*

3.3 City and County of Honolulu Development Plan

The City and County of Honolulu's Development Plan (DP) program provides a relatively detailed framework for implementing the objectives and policies of the General Plan on an areawide basis. Eight DPs have been adopted covering the entire island. Each DP Ordinance consists of Common Provisions applicable to all DP areas, Special Provisions for each area, a Land Use Map, and a Public Facilities Map. The DP Land Use Maps depict land use patterns which are consistent with objectives and policies of the General Plan.

The project site is located within the North Shore DP area which encompasses the area extending from Waialee Gulch near Kawela Bay west to Kaena Point. The North Shore DP Land Use Map designates the project site as "Agricultural." The DP Common Provisions identifies Agricultural lands as areas "suitable for crop growing, grazing and the raising of livestock, flower gardening, nurseries or orchards, aquaculture, or similar activities." Since exploratory wells are allowed in any land use district, the Waialua Well II exploratory well site is permissible within the DP Agricultural land use category.

DP Special Provisions for North Shore

Section 24-8.3 of the DP Special Provisions for North Shore states various development priorities and projects to be supported by public plans and programs. The relationship of the proposed project to the relevant development priorities of the Special Provision for the North Shore DP area is as follows:

(d) *The improvement of water resources to agricultural, aquacultural, and needed urban uses.*

Section 24-8.2(a) covers various urban design principles and controls for the North Shore area including; open space, public views, height controls, density controls, and existing built-

up and single-family residential areas. The proposed project is consistent with the North Shore DP Special Provisions Section 24-8.2(a). Section 24-8.2(b) further identifies urban design principles and controls specifically applicable to the Haleiwa Town Special Area. The proposed project is not located within the Haleiwa Town Special Area.

North Shore DP Public Facilities Map

The DP Public Facilities Map identifies public and private proposals for parks, streets and highways, major public buildings, utilities, terminals, and drainage. The North Shore DP Public Facilities Map does not show any symbols in the project vicinity. Section 24-1.8 of the DP Common Provisions clarifies the identification of features shown on DP Land Use and Public Facilities Maps including public buildings, public or private utilities, terminals and drainage structures. Section 24-1.8(b)(2)(C) further states "exploratory wells are not depicted and may be allowed in any land use district." Should the exploratory well site be converted into a production well, an amendment to the North Shore DP Public Facilities Map would be required identifying the well site.

3.4 City and County of Honolulu Land Use Ordinance and Zoning

The project is zoned AG-1 Restricted Agricultural District. The intent of the AG-1 restricted agricultural district is to conserve and protect important agricultural lands for the performance of agricultural functions by permitting only those uses which perpetuate the retention of those lands in the production of food, feed, forage, fiber crops and horticultural plants. Within the AG-1 district, public uses and structures are permitted. Public uses and structures are defined as uses conducted by or structures owned or managed by the federal government, the State of Hawaii or city to fulfill a governmental function, activity or service for public benefit and in accordance with public policy. As a public use and structure the exploratory well is permissible within the AG-1 district.

3.5 City and County of Honolulu Special Management Area

The Coastal Zone Management Act contains the general objectives and policies upon which all counties within the State have structured specific legislation which created Special Management Areas (SMA). Any development within the SMA requires a SMA Use Permit, which is administered by the City and County of Honolulu, Department of Planning and Permitting pursuant to Ordinance No. 84-4.

While a portion of the parcel in which the project site is located is within the SMA, the project site itself is located outside the boundaries of the City and County's SMA. Therefore, development of the proposed project is not subject to the provisions of the SMA Use Permit.

Chapter 4

ALTERNATIVES TO THE PROPOSED ACTION

4. ALTERNATIVES TO THE PROPOSED ACTION

4.1 No Action

The proposed project is part of the overall groundwater development program intended to meet anticipated consumer demands for potable water and fulfill the BWS's legal mandate to provide for the water needs of a growing population. The objective of the exploratory well is to determine the potential of the Waialua Well II as a future source of potable water. Under the no action alternative, the BWS would not be able to provide adequately for increasing water needs which may result in regional water shortages and restrictions in new developments. The no action alternative is not considered a feasible option to the proposed project.

4.2 Delayed Action

Although the proposed project is not currently scheduled, delay of the project once budgeted could increase the cost when construction ultimately begins. The delay would increase the risk that consumer water demands may exceed available water supplies. Delaying the project would not rule out its necessity in the near future. The delayed action alternative is not considered a feasible option to the proposed project.

4.3 Alternative Location

The BWS is responsible for management, control and operation of the municipal water system for certain areas of Oahu. As part of this responsibility, the BWS must identify well sites for exploratory drilling and eventual production of water. A number of factors are considered by the BWS in the selection of potential alternative exploratory well sites, including subsurface geologic and groundwater characteristics, depth of drilling to the water resource, nearby surface water system, ease of access, surrounding terrain, natural and cultural resources, and environmental impacts. The Waialua Well II exploratory well site was selected after consideration of all these factors. Thus, there are no alternative sites which meet the determining factors established by the BWS at this site.

4.4 Alternative Sources

Alternatives to potable groundwater analyzed and investigated in the BWS *1995, Final Draft, Oahu Water Plan* included; desalination, surface and brackish groundwater development,

reclaimed water use and conservation of existing resources. With the exception of conservation, these alternatives share high development costs and technological challenges.

Treatment plants for desalination, treatment of brackish and surface water, and reuse of effluent wastewater share high capital and operation and maintenance costs. In addition to high costs, the use of these alternative sources is not without potential environmental concerns. Wastewater reuse, is additionally plagued with concerns of potential health implications and possible soil contamination. The use of surface water sources could affect stream flows resulting in potential impacts to aquatic, riparian, cultural and recreational resources.

Desalination

The desalination of brackish water and sea water could satisfy a portion of future demand and also provide for the maintenance and recovery of water quality in basal aquifers. Desalination plants could produce a local supply within areas of demand, thereby minimizing the need to transport water over long distances. The main disadvantage is the cost of production, which will increase water rates. Desalination will become increasingly feasible as the capital costs of developing marginal potable ground water sources from remote service areas approach the cost of constructing a desalination plant. However, the operation and maintenance costs of producing and distributing desalinated water are at least 10 times more than the cost of pumping groundwater. It would be preferred if desalination could be deferred until new technology reduces operating and maintenance costs or existing operating costs rise closer to desalination.

Surface Water

A surface water study of Kahana, Punaluu and Waikele streams was funded by the BWS to explore the feasibility of potable development and infrastructure requirements. Findings indicate that the potable development of streams is not feasible due to environmental constraints and safe drinking water treatment and monitoring requirements.

Reclaimed Water Use

Reclaimed water is produced through the treatment of raw wastewater to a quality that is suitable for nonpotable water use. Public health concerns and high costs for dual water system infrastructure limit the extent of reuse. Ongoing studies and discussions are required to review the costs, appropriate treatment level, quality of reclaimed water produced, and potential health implications of reclaimed water on various agricultural crops and potable aquifer sources.

Conservation

Water conservation has significant potential to reduce demand and defer the need to develop potable supplies. The BWS has initiated an ambitious conservation program, including public education, inverted residential water rates, leak detection, low-flow plumbing fixtures, audits, drought tolerant plants, dual water systems, and water use restriction plans. In 1990, the conservation objectives of the BWS was to reduce per capita water use by 10 percent over five years. A separate water conservation unit in the BWS was established in April 1991 to monitor and help implement water conservation efforts. A reduction of approximately 7 percent was achieved by 1995. However, water conservation should not be construed as a substitute solution for the timely development of high quality ground water resources or other alternatives.

As existing aquifer resources approach the sustainable yield limits for the island of Oahu, a combination of strategies are needed in order to provide the required water supply to support future growth. Until such time that alternative source development can reliably and economically supplement existing resources, conservation in conjunction with the development of potable groundwater will remain the preferred BWS management strategy.

Chapter 5

DETERMINATION

5. DETERMINATION

This Final Environmental Assessment (EA), prepared in accordance with Chapter 343, Hawaii Revised Statutes, constitutes a Finding of No Significant Impact (FONSI). Based on the significance criteria set forth in Section 11-200-12 of Title 11 Chapter 200, Administrative Rules, Department of Health, State of Hawaii, it is concluded that the proposed project will not have a significant effect on the environment, and that the preparation of an environmental impact statement is not required.

Due to the short duration of the testing process from drilling to capping, the proposed project will not substantially degrade environmental quality; affect ambient noise levels; curtail uses of the environment; affect air or water quality; or require substantial energy consumption. The project site is located within previously disturbed lands that were in sugarcane cultivation. As such, there will be no loss or destruction of any natural or cultural resource, and no affects to a rare, threatened, or endangered species or its habitat.

The proposed project is consistent with State of Hawaii and City and County of Honolulu plans and policies, and does not conflict with State's long-term environmental goals and guidelines expressed in Chapter 343, HRS. The proposed site is not located in an environmentally sensitive area, and due to its low vertical profile, will not affect scenic vistas or viewplanes identified in State or City plans and policies.

The short duration and exploratory purpose of the testing process will not substantially affect public health, cause secondary impacts such as population changes or effects on public facilities, or substantially affect the economic or social welfare of the community or State. There are no commitments for larger actions associated with the proposed project. While the development of the exploratory well is individually limited, it will not cumulatively have a considerable effect upon the environment.

This determination is based on the short duration of the project and the absence of significant impacts anticipated from construction or testing at the exploratory well site. Short-term impacts resulting from construction activities, primarily drilling, will be minimized through the recommended mitigation measures, and adherence to all government rules and regulations.

Chapter 6

PERMITS REQUIRED

6. PERMITS REQUIRED

The following is a list of permits and approvals which may be required prior to construction of the proposed project:

State of Hawaii

Department of Health
Noise, Radiation and Indoor Air Quality Branch

- Community Noise Permit

Department of Land and Natural Resources
Commission on Water Resource Management

- Well Construction Permit

A Community Noise Permit may be required if the noise levels from construction activities are expected to exceed the allowable levels stated in State DOH Administrative Rules Section 11-46-4.

Should the exploratory well be converted to full production, a permanent Pump Installation Permit and Water Use Permit will be required from the State Commission on Water Resource Management.

Exploratory wells are considered a minor action and are not required to be shown on the Development Plan Public Facilities Map. If the well is developed for full production, the Development Plan Public Facilities Map will be amended to include the potable well facility.

According to staff communication with DPP, exploratory wells are considered temporary, and therefore, a Special Permit in the State Land Use Agricultural District will not be required. If the well is developed for full production, a petition to DPP and the Planning Commission for a Special Permit, or a determination to be covered as a permissible use will be required.

Water withdrawn from these tests will be disposed of on-site in the surrounding agricultural fields and/or irrigation ditches; no water will be disposed of into streams or other natural drainage courses. A National Pollutant Discharge Elimination System (NPDES) Permit will not be required, as water withdrawn during test pumping will not be discharged into any surface streams or coastal waters.

Should the exploratory phase prove successful, future development of the well for production will comply with Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems." An engineering report addressing the requirements of Section 11-20-29 of Chapter 20 will be submitted to the Director of Health for approval.

Chapter 7

REFERENCES

7. REFERENCES

Central Oahu/North Shore Regional Plan Task Force. *Central Oahu/North Shore Regional Plan.* Established by the Honolulu City Council. July 1993.

City and County of Honolulu. *General Plan.* 1992.

City and County of Honolulu. *Interim Report No. 1: Regional Profile North Shore Development Plan Revision.* February 1997.

City and County of Honolulu. *Oahu Water Plan.* July 1982.

Hawaii Cooperative Park Service Unit. *Hawaii Stream Assessment: A Preliminary Appraisal of Hawaii's Stream Resources, Report R84.* Prepared for the State of Hawaii Department of Land and Natural Resources Commission on Water Resource Management. December 1990.

University of Hawaii at Manoa Water Resources Research Center and Department of Meteorology. *Rainfall Atlas of Hawaii, Report R76.* Prepared for the State of Hawaii Department of Land and Natural Resources Division of Water and Land Development. June 1986.

University of Hawaii, Department of Geography. *Atlas of Hawaii.* The University Press of Hawaii. Honolulu. 1973.

United States Department of Agriculture Soil Conservation Service. *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii.* U.S. Government Printing Office. 1972.

Wilson Okamoto & Associates, Inc. *Oahu Water Management Plan.* Prepared for the City and County of Honolulu Department of General Planning. March 1990.

Wilson Okamoto & Associates, Inc. *Waialua-Kahuku Regional Water System Improvements Final Environmental Impact Statement.* Prepared for the City and County of Honolulu Board of Water Supply. September 1988.

APPENDIX A

BOTANICAL SURVEY

BOTANICAL SURVEY REPORT FOR THE WAIALUA WELL II EXPLORATORY WELL SITE

INTRODUCTION

The Waialua Well II Exploratory Well Site is located at approximately 225 feet elevation on the mauka side of Kaukonahua Drive not far from Waialua, Oahu, Hawaii. A botanical survey of the approximately one acre site was conducted on September 18, 1997. The entire site was covered.

RESULTS

The Waialua Well II site is in an area that was formerly used for growing sugar cane (*Saccharium officinarum* L.). In 1841, William Brackenridge, a botanist with the Wilkes Expedition described the country around Wailua as "rocky and unprofitable" (Funk 1988). In 1942 Ripperton and Hosaka classified this area as "low elevation scrub".

The dominant vegetation of this site is Guinea grass (*Panicum maximum* Jacq.) which is especially dense along an unused cane haul road that runs through the site. Along this road is where the greatest variety of herbaceous ruderals were found. All are listed below.

SPECIES LIST

SCIENTIFIC NAME	COMMON NAME	ABUNDANCE
POACEAE - Grass Family		
**Chloris divaricata* R. Br.	Stargrass	Occasional
**Chloris virgata* Sw.	Feather fingergrass	Uncommon
**Eleusine indica* (L.) Gaertn.	Wiregrass	Locally abundant
**Panicum maximum* Jacq.	Guinea grass	Common
ASTERACEAE - Sunflower Family		
**Bidens alba* (L.) DC	Spanish needle	Occasional
**Conyza bonariensis* (L.) Cronq.	Hairy horseweed	Occasional
**Emilia coccinea* (Sims) G. Don	Flora's paint brush	Locally abundant
**Emilia sonchifolia* (L.)DC	Floras paintbrush	Locally abundant
**Erechtites hieracifolia* (L.) Raf. ex DC		Occasional
**Sonchus oleraceus* L.	Sow thistle	Occasional

SCIENTIFIC NAME	COMMON NAME	ABUNDANCE
CUCURBITACEAE - Gourd Family		
**Coccinia grandis* (L.) Voigt	Ivy gourd	Occasional
**Momordica charantia* L.	Balsam pear	Occasional
EUPHORBIACEAE - Spurge Family		
**Chamaesyce hirta* (L.) Millsp.	Hairy spurge	Occasional
**Chamaesyce hypericifolia* (L.) Millsp.	Graceful spurge	Occasional
**Chamaesyce prostrata* (Aiton) Small	Prostrate spurge	Occasional
FABACEAE - Bean Family		
**Desmodium incanum* DC	Spanish clover	Locally abundant
SOLANUM - Nightshade Family		
**Solanum americanum* Mill	Popolo	Uncommon
STERCULIACEAE - Cacao Family		
Waltheria indica L.	'Uhaloa	Occasional

* A star before the name of the plant indicates a species introduced into Hawaii after the arrival of Capt. James Cook.

ENDANGERED SPECIES

No candidate, proposed, or listed threatened or endangered species as set forth in the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543), are known from this site.

BIBLIOGRAPHY

Funk, E. J. 1988. The notes of William Brackenridge made during his Sandwich Island sojourn 1840-1841. Hawaiian Botanical Society Newsletter. Vol.27 (1).

Neal, M. C. 1965. In Gardens of Hawaii. 2nd. ed. Special Pub. Bis. Mus. 50.

Ripperton, J. C. & E. Y. Hosaka. 1942. Vegetation Zones of Hawaii. Bull. 89 University of Hawaii.

St. John, H. 1973. List and Summary of the Flowering Plants of the Hawaiian Islands. PTBG. Lawai, Kauai, Hawaii.

USFWS. 1993. Endangered and Threatened Wildlife and Plants. 50 CFR 17.11 & 17.12

Wagner, W. L., D. R. Herbst and S. H. Sohmer. 1990. Manual of the Flowering Plants of Hawaii. Bishop Museum Special Publication #83. Univer. Hawaii Press. Vols. 1 & 2.

APPENDIX B

PRE-ASSESSMENT CONSULTATION LIST AND CORRESPONDENCE

PRE-ASSESSMENT CONSULTATION

The following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment. Each agency was sent a copy of a project summary and a request for their written comments on the project. The agencies which transmitted comment letters are indicated with a ✓. All written comments and responses are reproduced herein.

Federal

U.S. Department of Agriculture
Natural Resources Conservation Service
U.S. Department of the Interior
Geological Survey, Water Resources Division
✓ Fish and Wildlife Service, Ecological Services

State of Hawaii

Department of Agriculture
Department of Business Economic Development and Tourism
✓ Office of Planning
Department of Health
✓ Safe Drinking Water Branch
✓ Office of Environmental Quality Control
Department of Land and Natural Resources
✓ Water Resource Management Division
✓ State Historic Preservation Division
✓ Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply
✓ Department of Land Utilization
✓ Planning Department

Other

Dole Food Company, Inc.
North Shore Neighborhood Board No. 27
University of Hawaii, Environmental Center

Em

United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

In Reply Refer To: JJS

RECEIVED
OCT 17 1997
WILSON OKAMOTO & ASSOC. INC.

OCT 16 1997

Earl Matsukawa, AICP
Project Manager
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Re: Draft Environmental Assessment; Pre-Assessment Consultation for Haleiwa II, Waialua II, and Thomson Corner Exploratory Well Sites, Waialua, Hawaii

Dear Mr. Matsukawa:

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your three letters of October 3, 1997. The proposed project by Wilson Okamoto and Associates, Inc. involves the preparation of draft environmental assessments for the proposed drilling, casing and testing of three wells in Waialua, HI; Haleiwa Well II, Waialua Well II, and Thomson Corner Well. The exploratory wells will provide data on the potential for new groundwater resources. The project sponsor is the City and County of Honolulu Board of Water Supply.

The Service has reviewed the provided information as well as other information contained in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program. To the best of our knowledge, there are no federally endangered, threatened, or candidate species directly within the project site. Because the project will be located within a previously disturbed site, the Service does not anticipate significant adverse impacts to fish and wildlife resources. However, the Service should be informed if any endangered, threatened or candidate species are identified during the botanical surveys.

If you have any questions or comments please contact Fish and Wildlife Biologist John Schmerfeld at (808) 541-3441.

Sincerely,
Brooks Harper
Brooks Harper
Field Supervisor
Ecological Services

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. Robert Smith
Pacific Islands Manager
Fish and Wildlife Service
U.S. Department of the Interior
300 Ala Moana Boulevard, Room 3108
Box 50088
Honolulu, Hawaii 96850

Dear Mr. Smith:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter (Ref: JJS) expressing your belief that "there are no federally endangered, threatened, or candidate species directly within the project site," and that "because the project will be located within a previously disturbed site, the Service does not anticipate significant adverse impacts to fish and wildlife resources."

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,
Earl Matsukawa
Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

EM

DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING
235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Tel.: (808) 587-2846
Fax: (808) 587-2824

BENJAMIN J. CAYETANO
GOVERNOR
SELJI F. NAYA
DIRECTOR
BRADLEY J. MOSSMAN
DEPUTY DIRECTOR
RICK EGGED
DIRECTOR, OFFICE OF PLANNING

Ref. No. P-6996

October 14, 1997

RECEIVED
OCT 23 1997
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa
Project Manager
Wilson Okamoto and Associates, Inc.
P.O. Box 3530
Honolulu, Hawaii 96811

Dear Mr. Matsukawa:

Subject: Pre-Assessment Consultation for Proposed Exploratory Well Sites:
Waialua Well II, Haleiwa Well II, and Thomson Corner Well,
Waialua, Oahu

This is in response to your letters of October 3, 1997, requesting review and comment on the proposed well sites. We do not have any comments or concerns to offer at this time relative to the plans and programs of the Office of Planning and Department of Business, Economic Development and Tourism.

If there are any questions, please contact Charles Carole of our Coastal Zone Management Program at 587-2804.

Sincerely,

Rick Egged
Director
Office of Planning

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. David W. Blane, Director
Office of Planning
Department of Business, Economic
Development & Tourism
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Blane:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter expressing that you have no comments to offer at this time on the subject project.

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIKE
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / SDWB

EM

October 9, 1997

RECEIVED
OCT 14 1997
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
PRE-ASSESSMENT CONSULTATION
HALEIWA WELL II, THOMSON CORNER WELL, AND WAIALUA
WELL II PROJECTS

Thank you for the opportunity to review and comment on the project summaries and location maps of the three project sites. We have the following comments to offer:

1. Federal and state regulations define a public water system as a system that serves 25 or more individuals at least 60 days per year or has at least 15 service connections. All public water system owners and operators are required to comply with Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems."

2. The three projects will include the development of new potable water sources. Section 11-20-29 of Chapter 20 requires that all new sources of potable water serving a public water system be approved by the Director of Health prior to its use. Such an approval is based primarily upon the submission of a satisfactory engineering report which addresses the requirements set in Section 11-20-29.

3. Please note that the proposed Haleiwa Well II, Thomson Corner Well and Waialua Well II are situated in areas that formerly were used for sugar cane cultivation. The engineering reports must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water sources.

4. In addition, water quality analyses for each well, performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director of Health upon his review of the information submitted.

5. Section 11-20-30 requires that new or substantially modified distribution systems for public water systems be approved by the Director. However, if the water system is under the jurisdiction of the City and County of Honolulu, the Honolulu Board of Water Supply will be responsible for the review and approval of the plans.

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

Sincerely,

For Chauncey Hew

WILLIAM WONG, P.E., Chief
Safe Drinking Water Branch
Environmental Management Division

QK:la

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. William Wong, P.E., Chief
Safe Drinking Water Branch
Environmental Management Division
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Wong:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter commenting on the subject project. We offer the following responses in the respective order of the comments:

1. The draft EA will indicate that future development of the exploratory well will comply with Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems."

2. Should any of the three projects be developed as new potable water sources serving a public water system, an engineering report addressing the requirements of Section 11-20-29 of Chapter 20 will be submitted to the Director of Health for approval.

3. The engineering report will identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water sources. The draft EA will indicate that a Granular Activated Charcoal water treatment facility may be required at the well site.

4. Water quality analyses for each well, performed by a State of Hawaii certified laboratory, will be submitted to demonstrate compliance with all drinking water standards.

5. Since the water system will be under the jurisdiction of the City and County of Honolulu Board of Water Supply, they will be responsible for the review and approval of the new or substantially modified distribution systems plans.

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the EA pre-assessment consultation process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

OEQC FAX

BENJAMIN J. CAYETANO
Governor
GARY GILL
Director

OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 So. Beretania St., Ste. 702
Honolulu, Hawaii 96813

Telephone (808) 586-4185
FAX (808) 586-4186

Date: 10-23-97

To: Earl Matsukawa

Agency or Organization Name: WOA

Facsimile Number: 946-2253 Phone Number:

Total number of pages, including this page: Letter 10

IF YOU DO NOT RECEIVE ALL OF THE PAGES OR THE TRANSMISSION IS UNCLEAR, PLEASE CALL OEQC AT 586-4185

From: Jeyan Thirugnanam

Re: Pre-Assessment Consultation for Well Projects

Remarks: Please refer to the attached guidelines in preparing EA for the projects.

Date FAX received: Time:

DRAFT GUIDELINES FOR ASSESSING WATER WELL DEVELOPMENT PROJECTS.

In addition to the content requirements for environmental assessments and impact statements, which are set out in the EIS rules, any well development project should include, where applicable, the following information.

The purpose of these guidelines is to provide preparers and reviewers a general standard of completeness to apply for any EA or EIS relating to well development.

NOTE: Pursuant to HAR §11-200-8(a)(5), basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource may be exempt from preparing an environmental assessment. Accordingly, drilling of monitor wells as defined by the CWRM (provided the well shall not be capable of being used or intended to be used to withdraw groundwater for the purposes of exploring or developing ground water) may be exempt.

Environmental assessments for exploratory wells should not need to comply with all the information requirements below because some of the information will not be available until the well is tested. Should the exploratory well yield positive results and demonstrate production capability, a second environmental assessment for the production well should be prepared to comply with all the information requirements.

1. Orientation Maps

Maps with the appropriate scale and coverage (to analyze the aquifer or hydrologic unit) that show the following:

a) General information: location of proposed well, TMK or land ownership maps, location of existing and future wells in the affected aquifer or hydrologic unit, and general references such as roads, schools, etc.

b) Hydrologic information: aquifer or hydrologic unit boundary, nearby streams and wetlands, known or assumed groundwater flowpaths, known or assumed water level contours.

c) Contamination information: Points or regions of known contamination, points of potential contamination (landfills, individual wastewater disposal systems (cesspools, septic tanks, aeration units), hazardous waste sites, dry wells and injection wells), known or assumed chloride levels at specified depths in relation to nearest or adjacent wells, likely wellhead protection area for the proposed well.

NOTE: New injection wells and dry wells are prohibited from within 1/4 mile of a drinking water well. New water wells should not be situated in areas that have a significant need for

injection wells, drywells or on-site individual wastewater disposal systems.

2. Aquifer or Hydrologic Unit Status

A description of the aquifer or hydrologic unit status including the following:

* Sustainable yields or other measures of water availability
* Authorized water use by the Commission on Water Resource Management (for Water Management Areas only)
* Data table presenting the following information as appropriate
  - Current water use totals, including subtotals for individual users
  - Current installed capacity including subtotals for individual wells and/or groups of wells.
  - Pending installed capacity and/or use for the proposed well and subtotals for individual wells and/or groups of wells within the aquifer

NOTE: Format suggestions and sample data tables for aquifer status data are contained in appendix #1)

3. Contamination Analysis

A record of contamination problems in the aquifer or hydrologic unit including but not limited to saltwater intrusion, turbidity, heavy metals, inorganic and organic chemicals, microbiological agents, water quality parameters (such as pH, alkalinity, calcium, conductivity and temperature), and radioactivity. If contamination exists, the sources and duration of the contamination should be listed. Water quality data from nearby wells should be presented as well as any anticipated need for treatment or filtering systems. Discuss past and existing land uses within the likely wellhead protection area and the potential for future contamination from those uses.

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

4. Hydrologic Impact Analysis

A discussion of the potential effects the well development may have on affiliated groundwater and surface water (e.g., streams and wetlands). Relevant hydrologic, physical, chemical, and biological data for potentially affected waters should be included. If potential impacts exist, a monitoring program for the surface waters should be included. A description of the affected sector within the watershed and groundwater recharge area should also be provided.

NOTE: See appendix #2 for sample description.

The EA should include pump test data on water level, extraction rates, and water quality. Similar data from nearby wells should also be included. The precise criteria used to determine if the well should be converted to production should be described. Any provisions for future use and monitoring of wells not placed into production should also be described.

5. Biological Assessment

A floral and faunal survey for sites in biologically sensitive areas.

6. Archaeological and Cultural Impact Assessment

A description of the archaeological and cultural significance of the region, including an on-site survey as well as consultations with Native Hawaiian groups such as DHHL, OHA and local community associations. (The Environmental Council is developing a Cultural Impact Assessment Protocol that when completed, could be used for this purpose.)

7. Financial and Institutional Arrangements

In some instances, a well is developed by private financing, the transfer of public lands to government or private developers, or in return for a water allocation credit to supply an urban development. The EA should include a full discussion of any institutional, financial or land use arrangements or commitments related to developing the well and delivering water to end users.

These arrangements may include the formation of public utility companies and subsequent rate-setting, the establishment of county water commitments, the co-funding of state or county water system development, an executive order or other set-aside of state lands, and purchase of land or easements by public entities.

All permits or governmental approvals required to fulfill these commitments should be listed.

8. **Watershed and Land Use Analysis**

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

* Hawaii State Water Plan and its component parts
* County General, Development, and/or Community Plans
* Plans for future water development within the aquifer
* Any related water, wastewater, drainage or erosion control plans
* Soil and Water Conservation Plans for related agricultural lands
* Historical water supply and demand figures for the region
* How the well may affect existing water sources
* Any secondary or cumulative impacts caused by promoting land uses that alter the hydrology of the source and/or end-use area
* An assessment of the well's impact on the major land owners in the region and a declaration if ceded lands are involved.
* An assessment of any impact the well development may have on small landowners or water users including farmers and kuleana residents.

9. **Alternative Analysis**

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

10. **Impacts of Accessory Facilities**

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

Appendix #1

FORMAT SUGGESTIONS AND SAMPLE TABLES AND CHARTS TO DISPLAY SUSTAINABLE YIELD DATA.

Sustainable Yield

Sustainable yield policies for basal aquifers involve trade-offs between groundwater extraction rates and aquifer water levels. The selected extraction rate implies acceptance of the affiliated equilibrium head (h_e), the water level at which the aquifer stabilizes under pumping at sustainable yield levels.

Equilibrium head is usually less than pre-development water levels or initial head (h_i). For comparative purposes, it is helpful to attach values of h_e and h_i to sustainable yield figures. Groundwater extraction can then be discussed in terms of its relationships with sustainable yields and water levels.

Data Subtotals and Grouping

To assure the clarity of information presented in the EA, tables for the following categories of data should be grouped by user/operator and landowner.

Categories for Data Tables in the EA

* Current water use totals
* Current installed capacity
* Pending installed capacity
* Authorized water use

To assist in spatial analysis, subtotals should also be grouped for aquifer sub areas and/or water quality regimes (such as zones of varying recharge of extraction intensity or chloride concentration).

A sample table for the display of this data is presented in the next page.

Aquifer or Hydrologic Unit Status Data

Sustainable Yield = 40 mgd
Initial head = 20 feet
Equilibrium head = 18 feet

Authorized Water Use (for water management areas only) = 36 mgd

Table 1: Overall Aquifer or Hydrologic Unit Status Data in million gallons per day

Land Owner	Authorized Water Use (Permitted by CWRM)	Existing (E)		Planned/Pending (P)		Potential Future (E + P)	
		Pump Capacity *	Average Use **	Pump Capacity	Proposed Use	Pump Capacity	Proposed Use
A	4	5	4	+5	+4	10	8
B	7	10	7	+3	+2	13	9
C	25	25	15	-10	-5	15	10
Total	36	40	26	-2	+1	38	27

Table 2: Aquifer or Hydrologic Unit Status Data for Landowner C in million gallons per day

Well Site	Authorized Water Use (Permitted by CWRM)	Existing (E)		Planned/Pending (P)		Potential Future (E + P)	
		Pump Capacity *	Average Use	Pump Capacity	Proposed Use	Pump Capacity	Proposed Use
Mauka	10	10	8	0	0	10	8
Makai	5	5	0	-5	0	0	0
Central	10	10	7	-5	-5	5	2
Total	25	25	15	-10	-5	15	10

Notes:
* Total amount of water a well pump is capable of removing from the ground under ideal conditions in a 24-hour period. This number should be the same as the "rated pump capacity or installed pump capacity" as reported by the well owner to the CWRM.
** Average water use based upon water meter readings as reported by the well owner to the CWRM. The average should be based on the appropriate number of years of data.

Appendix #2

SAMPLE DESCRIPTION LIST FOR THE AFFECTED SECTOR WITHIN A WATERSHED AND GROUNDWATER RECHARGE AREA

Below you will find a list of characteristics that should be discussed in the description of affected sector within a watershed and groundwater recharge area.

Watershed:
1. Drainage area boundaries
2. Drainage networks and patterns
3. Groundwater discharges as sources of surface water flows
4. Surface water flow and habitat characteristics
   a. timing, magnitude, duration, frequency of groundwater-source baseflows
   b. relationships between baseflows and aquatic and riparian habitats and communities,
   c. water quality
   d. water uses (e.g., ditch or 'auwai systems)

Recharge Area:
1. Boundaries
2. Geologic structure
3. Groundwater flow patterns
4. Overlying land and water uses, and runoff patterns.
5. Relationships between recharge rates and patterns, and climatic variations
6. Relationships between proposed groundwater extraction and associated activities, and aquifer water levels
7. Storage volumes, other wells, discharges to surface and coastal waters, and water quality parameters

APPENDIX #3

SOURCES OF INFORMATION

1) Hydrologic information may be obtained from the Commission on Water Resources Management. These include:

a) location of existing wells;
b) CWRM aquifer boundary;
c) information on nearby streams;
d) sustainable yield for aquifer;
e) authorized water use by CWRM (for water management areas only);
f) current water use within aquifer;
g) current installed capacity within aquifer;
h) pending installed capacity and water use within aquifer;
i) Hawaii State Water Plan and its component parts;
j) water levels of nearby wells; and
k) salinity levels of nearby wells.

2) Contamination information may be obtained from the Department of Health. These include:

Safe Drinking Water Branch
a) results of water quality tests of nearby wells;
b) records of contamination problems in the aquifer; and
c) locations of drywell and injection wells.

Wastewater Branch
a) locations of individual wastewater systems.

Solid and Hazardous Waste Branch
a) location of hazardous waste sites; and
b) location of landfills.

3) Information about the well head protection area may be obtained from the Groundwater Protection Program, Environmental Planning Office, Department of Health.

4) Information about wetlands may be obtained from the U.S. Army Corps of Engineers.

5) County general, development and community plans may be obtained from the respective planning departments.

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. Gary Gill, Director
Office of Environmental Quality Control
Department of Health
State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your facsimile transmitting the "Draft Guidelines for Assessing Water Well Development Projects." We will refer to these draft guidelines in preparing the draft EA.

Your facsimile, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

EM

MICHAEL D. WILSON
CHAIRPERSON

ROBERT G. GIFALDI
DAVID A. NOBRIGA
LAWRENCE H. MIKE
RICHARD H. COX
HERBERT M. RICHARDS, JR.

RAE M. LOUI, P.E.
DEPUTY

October 8, 1997

RECEIVED
OCT 16 1997
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa
Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation
Haleiwa Well II, Wailua Well II, and Thomson Corner Well
Proposed Exploratory Well Sites
Waialua, Oahu, Hawaii

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

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

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

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[x] A Well Construction Permit and a Pump Installation Permit from the CWRM would be required before ground water is developed as a source of supply for the project.

[x] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the CWRM would be required prior to use of this source.

[x] Groundwater withdrawals from this project may affect streamflows. This may require an instream flow standard amendment.

[ ] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[ ] If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and petition to amend the interim instream flow standard for the affected stream(s).

[ ] Based on the information provided, it appears that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] Based on the information provided, it does not appear that a Stream Channel Alteration Permit pursuant to Section 13-169-50, HAR will be required before the project can be implemented.

[ ] An amendment to the instream flow standard from the CWRM would be required before any streamwater is diverted.

[ ] OTHER:

If there are any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ss

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. Edwin Sakoda, Acting Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Sakoda:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter commenting on the environmental assessment (EA) pre-consultation for the subject project. We offer the following responses in respective order of your comments:

1. Should any of the exploratory wells prove to be suitable for production, they will be incorporated into the county Water Use and Development Plan.

2. A Well Construction Permit will be obtained prior to the drilling of the exploratory well. Pump Installation and Water Use Permits will be applied for should the exploratory well prove successful and the decision made for the conversion to a production facility.

3. The draft EA will indicate this project is not anticipated to affect streamflows. An instream flow standard amendment will be obtained if streamflows are affected by groundwater withdrawals.

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the EA pre-assessment consultation process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

RECEIVED
OCT 27 1997
WILSON OKAMOTO & ASSOC., INC.

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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

DEPUTIES
GILBERT COLOMA AGARAN

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND DIVISION
STATE PARKS
WATER AND LAND DEVELOPMENT

October 24, 1997

Earl Matsukawa, Project Manager
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

LOG NO: 20364
DOC NO: 9710EJ18

Dear Mr. Matsukawa:

SUBJECT: Preservation Review -- Draft Environmental Assessment, Pre-Assessment Consultation Waialua Well II Proposed Exploratory Well Site
Kamananui, Waialua, O'ahu
TMK: 6-5-01:02

Thank you for the opportunity to comment during the pre-assessment consultation phase of the Waialua Well II proposed Exploratory Well Site. A review of our records shows that there are no known historic sites at the project location. These lands were commercially cultivated with sugar cane which altered the land for many years. The depth of cane cultivation exceeded the expected depth of historic sites in the area, based on site patterns in similar environmental contexts. Thus, it is unlikely that significant historic sites will be found in the project area. Therefore, we believe that this project will have "no effect" on such sites.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

WILSON OKAMOTO & ASSOCIATES, INC.
ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

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

Dear Mr. Hibbard:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter expressing your belief that based on a review of your records, and the known effects of prolonged sugar cane cultivation, "it is unlikely that significant historic sites will be found in the project area," and that "this project will have 'no effect' on such sites."

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

EVM
UW

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPIOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813-5249
PHONE (808) 594-1888
FAX (808) 594-1865

October 07, 1997

Mr. Earl Matsukawa
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street
Honolulu, HI 96826

Subject: Pre-consultation, Draft Environmental Assessment (DEA) for three exploratory (Waialua Well II, Haleiwa Well II, and Thomson Corner Well) wells in the Waialua-Haleiwa area, Island of Oahu.

Dear Mr. Matsukawa:

Thank you for the opportunity to include the Office of Hawaiian Affairs (OHA) in the pre-assessment consultation process for three wells (Waialua II, Haleiwa II, and Thomson Corner Well) in the Waialua-Haleiwa area, Island of Oahu. The Board of Water Supply proposes to drill, case, and test these exploratory wells as part of its overall effort of developing new underground sources of drinking water.

The Office of Hawaiian Affairs (OHA) has no objections at this time to the proposed exploratory wells. But OHA intends to fully review the DEAs once they are available for public scrutiny.

Overall, OHA's major areas of concern for developments triggering an DEA include, but are not limited to, potential adverse impacts to ecosystems and associated wildlife habitats, archaeological resources, air and water quality, and public health and safety.

Please contact Lynn Lee, Acting Officer of the Land and Natural Resources Division, or Luis A. Manrique, should you have any questions on this matter.

Sincerely yours,

Randall Ogata
Administrator

Lynn Lee
Acting Officer,
Land and Natural
Resources Division

LM:lm
cc Trustee Clayton Hee, Board Chair
Trustee Abraham Aiona, Board Vice-Chair
Trustee Rowena Akana, Land & Sovereignty Chair
Trustee Haunani Apoliona
Trustee Frenchy DeSoto
Trustee Moses Keale
Trustee Colette Machado
Trustee Hannah Springer

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX: (808) 946-2253

6126-01
June 8, 1999

Mr. Randall Ogata, Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813-5249

Dear Mr. Ogata:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter expressing that you have no objections at this time to the proposed project. Your agency will be included in the list of parties to be consulted for the draft environmental assessment (EA).

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

EM

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 523-4414 • FAX: (808) 547-6743

JEREMY HARRIS
MAYOR

JAN NAOE SULLIVAN
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

97-07365(DT)
'97 EA Comments Zone 6

October 16, 1997

RECEIVED
OCT 17 1997
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Preliminary Review For Three Exploratory Well Sites
Tax Map Keys: 6-5-01: por. 02, 6-2-10: por. 01

Thank you for the opportunity to review the proposals for three exploratory well sites at the Thomson Corner Well, Waialua Well II, and Haleiwa Well II. The proposals are within the Special Management Area. We will review the Draft Environmental Assessment when it becomes available.

Should you have any questions, please contact Dana Teramoto of our Environmental Review Branch at 523-4648.

Very truly yours,

JAN NAOE SULLIVAN
Director of Land Utilization

JNS:am

q:ppd\9707366.djt

EM

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813-3017
PHONE: (808) 523-4711 • FAX: (808) 523-4950

JEREMY HARRIS
MAYOR

PATRICK T. ONISHI
CHIEF PLANNING OFFICER

DONA L. HANAIRE
DEPUTY CHIEF PLANNING OFFICER

RR 10/97-1979

October 28, 1997

RECEIVED
OCT 29 1997
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Draft Environmental Assessment (EA)
for Proposed Drilling-Waialua Well II,
Tax Map Key (TMK) 6-5-01:02

In response to your company's request of October 3, 1997 on behalf of the City and County of Honolulu Board of Water Supply (BWS), an amendment to the North Shore Development Plan Public Facilities Map would be required when the proposed exploratory well is converted into production well.

Should you have any questions please contact Rob Reed of our staff at 523-4402.

Yours very truly,

PATRICK T. ONISHI
Chief Planning Officer

PTO:lh

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA STREET
HONOLULU, HAWAII 96826
PH: (808) 946-2277
FAX (808) 946-2253

6126-01
June 8, 1999

Ms. Jan Naoe Sullivan, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Ms. Sullivan:

Subject: Draft Environmental Assessment
Pre-Assessment Consultation
Waialua Well II
Proposed Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for your letter expressing your initial finding that the subject proposal is within the Special Management Area (SMA).

Based on our telephone conversation with Dana Teramoto of your staff we understand that while a portion of the parcel where the project site is located is within the SMA, the project site itself is located outside the SMA.

Furthermore, we understand that an amendment to the North Shore Development Plan Public Facilities Map would be required if the proposed exploratory well is converted into a production well. This requirement will be included in the DEA.

Your letter, along with this response will be reproduced in the forthcoming draft environmental assessment. We appreciate your interest and participation in the pre-assessment consultation phase of the environmental review process.

Sincerely,

Earl Matsukawa, AICP
Project Manager

cc: Mr. Barry Usagawa, BWS
Attn: Rian Adachi

APPENDIX C

DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION LIST AND CORRESPONDENCE

DRAFT ENVIRONMENTAL ASSESSMENT CONSULTATION

The following agencies were consulted during the Draft EA 30-day review period. Each agency was sent a copy of the Draft EA and a request for their written comments on the project. The agencies which transmitted comment letters are indicated with a ✓. All written comments and responses are reproduced herein.

Federal

✓ U.S. Army Corps of Engineers
U.S. Department of Agriculture
Natural Resources Conservation Service
U.S. Department of the Interior
Geological Survey, Water Resources Division
Fish and Wildlife Service, Ecological Services

State of Hawaii

✓ Department of Agriculture
Department of Business Economic Development and Tourism
Office of Planning
Department of Health
✓ Safe Drinking Water Branch
✓ Office of Environmental Quality Control
Department of Land and Natural Resources
Aquatic Resources Division
✓ Water Resource Management Division
✓ State Historic Preservation Division
✓ Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply
Department of Planning and Permitting
✓ Department of Transportation Services

Other

District I City Councilmember Rene Mansho
Dole Food Company, Inc.
✓ North Shore Neighborhood Board No. 27
University of Hawaii, Environmental Center

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

Civil Works Technical Branch

August 19, 1999

RECEIVED
AUG 23 1999
WILSON OKAMOTO & ASSOC., INC.

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Waialua Well II Exploratory Well Site, Waialua, Oahu (TMK 6-5-1:2). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project.

b. The flood hazard information provided on page 2-9 of the DEA is correct.

Sincerely,

James K. Hatashima
Acting Chief, Civil Works
Technical Branch

Copy Furnished:

Mr. Earl Matsukawa
Wilson Okamoto and Associates
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

COPY

JEREMY HARRIS, Mayor
EDOE FLORES, Ex-Officio
CHARLES A. STED, Vice Chairman
JAN M. L. Y. AHN
HERBERT S. K. KAOPUA, SR.
BARBARA KIM STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

December 7, 1999

RECEIVED
DEC 13 1999
WILSON OKAMOTO & ASSOC., INC.

Mr. James K. Hatashima, Acting Chief
Civil Works Technical Branch
U.S. Army Engineer District, Honolulu
Corps of Engineers
Department of the Army
Fort Shafter, Hawaii 96858-5440

Dear Mr. Hatashima:

Subject: Draft Environmental Assessment for the Waialua Well II Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We acknowledge that a Department of the Army permit will not be required for the project and that the flood hazard information is correct.

If you have any questions, please contact Scot Muraoka at 527-5221.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

BENJAMIN J. CAYETANO
Governor

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

JAMES J. NAKATANI
Chairperson, Board of Agriculture

LETITIA N. UYEHARA
Deputy to the Chairperson

Mailing Address:
P.O. Box 22159
Honolulu, Hawaii 96823-2159

Fax: (808) 973-9613

August 9, 1999

RECEIVED
AUG 12 1999
WILSON OKAMOTO & ASSOC., INC.

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

Subject: Draft Environmental Assessment
Waialua Well II Exploratory Well Site
Waialua, Oahu, Hawaii

Thank you for allowing the Department of Agriculture to review the Draft Environmental Assessment for the Waialua Well II, Exploratory Well Site. Due to the scale and temporary nature of this project, we do not foresee any impact to our programs at this time.

If you have any questions, please contact Mr. Paul T. Matsuo, P.E., Administrator Chief Engineer of the Agricultural Resource Management Division, at 973-9473.

Sincerely,

JAMES J. NAKATANI
Chairperson, Board of Agriculture

c: E. Matsukawa, Wilson Okamoto and Associates

C:\My Documents\word\misc\BWS Waialua Well II

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

JEREMY HARRIS, Mayor
EDDIE FLORES, JR., Chairman
CHARLES A. STED, Vice Chairman
JANICE Y. ALM
HERBERT S.K. KAOPUA, SR.
BARBARA KAI STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

December 7, 1999

COPY

Mr. James J. Nakatani, Chairperson
Board of Agriculture
State of Hawaii
P. O. Box 22159
Honolulu, Hawaii 96823-2159

Dear Mr. Nakatani:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We note that you do not foresee any impact to your programs.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / SDWB

August 19, 1999

RECEIVED
AUG 27 1999
WILSON OKAMOTO & ASSOC., INC.

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
WAIALUA WELL II EXPLORATORY WELL SITE
WAIALUA, OAHU

We have reviewed the subject Draft Environmental Assessment and have no further comments to offer at this time. Thank you for the opportunity to review the proposed project.

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

Sincerely,

William Wong

WILLIAM WONG, P.E., Chief
Safe Drinking Water Branch
Environmental Management Division

QK:la

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

December 7, 1999

COPY

JEREMY HARRIS, Mayor
EDDIE FLORES, JR., Chairman
CHARLES A. STEC, Vice Chairman
JANICE Y. AMI
HERBERT S.K. KAOPUA, Sr.
BARBARA KIM STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

Mr. William Wong, Chief
Safe Drinking Water Branch
Environmental Management Division
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Wong:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We acknowledge that you have no comments to offer at this time.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

EIS

BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

JUL 21 1999

July 20, 1999

Mr. Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

Subject: Draft Environmental Assessment for the Waialua Exploratory Well II, Oahu

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

1. **Financial and Institutional Arrangements**

   In some instances, a well is developed by private financing, the transfer of public lands to government or private developers, or in return for a water allocation credit to supply an urban development. The EA should include a full discussion of any institutional, financial or land use arrangements or commitments related to developing the well and delivering water to end users.

   These arrangements may include the formation of public utility companies and subsequent rate-setting, the establishment of county water commitments, the co-funding of state or county water system development, an executive order or other set-aside of state lands, and purchase of land or easements by public entities.

   Any or all of these arrangements and all permits or governmental approvals required to fulfill these commitments should be listed.

2. **Determination**

   Please discuss the findings and reasons for supporting the determination based on the significant criteria listed in

§11-200-12 of the EIS rules. Please see the enclosed example.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Director

c: Wilson Okamoto and Associates

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

COPY

December 21, 1999

EM

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

Dear Ms. Salmonson:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We have the following responses to your comments:

1. The Board of Water Supply will be solely responsible for funding and developing this well project. Presently, there are no private or other government arrangements related to developing this well.

2. We will expand our discussion of the findings and reasons supporting our determination in conjunction with the significance criteria.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Wilson Okamoto and Associates

PLN-64/99

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

TIMOTHY E. JOHNS
CHAIRPERSON

BRUCE S. ANDERSON
ROBERT G. GIRALD
BRIAN C. NISHIDA
DAVID A. NOBRIGA
HERBERT M. RICHARDS, JR.

LINNELL T. NISHIOKA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

August 16, 1999

AUG 19 11 39 AM '99

TO: Mr. Clifford S. Jamile, Manager and Chief Engineer
City and County of Honolulu, Board of Water Supply

FROM: Linnel Nishioka, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment, Waialua Well II Exploratory Well Site, Waialua, Oahu, Hawaii

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

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

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

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[X] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[X] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[X] Groundwater withdrawals from this project may affect streamflows which may require an instream flow standard amendment.

[ ] We recommend that no development take place affecting highly erodible slopes which drain into streams within or adjacent to the project.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

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

[ ] OTHER:

If there are any questions, please contact Lenore Nakama at 587-0218.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

December 7, 1999

COPY

EDDIE FLORES, JR., Chairman
CHARLES A. STED, Vice Chairman
JAN M. L. Y. AHN
HERBERT S. K. KAOPUA, SR.
BARBARA KIM STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

Mr. Linnell Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Nishioka:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We have the following response to your comments:

1. The project will be coordinated with the County's Water Use and Development Plan should the exploratory well be converted to a production well.

2. We understand that a Well Construction Permit is required before construction of the exploratory well and that Pump Installation and Water Use Permits are required prior to the use of the well as a source.

3. We acknowledge that an amendment to the instream flow standard may be required if there is an impact to stream flow; however, from our experience, we do not anticipate stream flow impacts.

If you have any questions, please contact Scot Muraoka at 527-5221.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

BEN. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JAMES E. KAMELO

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

EM

August 17, 1999

RECEIVED
AUG 27 1999
WILSON OKAMOTO & ASSOC., INC.

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 S. Beretania Street
Honolulu, Hawaii 96813

LOG NO: 23963
DOC NO: 9908EJ07

Dear Mr. Jamile:

SUBJECT: Chapter 6E-8 Historic Preservation Review -- Draft Environmental Assessment for the Waialua Well II Exploratory Well Site
Waialua, Walalua, O'ahu
TMK: 6-5-01:02

Thank you for the opportunity to review the DEA for this project. The DEA includes in section 2.11 and in Appendix B our earlier comments that it is unlikely that historic sites remain in the project area and that we believe that this project will have "no effect" on historic sites.

If you have any questions please call Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

c: Mr. Earl Matsukawa, Wilson Okamoto and Associates, Inc., 1907 S. Beretania Street, Suite 400, Honolulu, Hawaii 96826

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

COPY

JEREMY H[illegible]
EDDIE FLORES, JR., Secretary
CHARLES A. STED, Vice Chairman
JAMES Y. AIM
HERBERT S.K. KAOPUA, SR.
BARBARA KIM STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

December 7, 1999

Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Mr. Hibbard:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We acknowledge that the proposed project is anticipated to have "no effect" on historic sites.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

Pure Water [illegible]

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

EM
AV

August 11, 1999

Mr. Clifford S. Jamile, Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawai'i 96843

EIS #333

Re: Draft Environmental Assessment
Waialua Well II Exploratory Well Site
Waialua, O'ahu, Hawai'i

Dear Mr. Jamile,

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA) for the proposed drilling, casing and testing of a single exploratory well at Waialua.

According to the Draft EA, there are no rare, threatened, or endangered flora or fauna species found directly within the project site. In addition, the State Historic Preservation Division (SHPD) has no record of any historic or cultural sites at the project location. However, we caution that the SHPD should be contacted if any human burials, artifacts, or other cultural remains or deposits are encountered within the project vicinity.

At this time the Office of Hawaiian Affairs (OHA) has no objection to the project. If you have any questions, please contact Mark A. Mararagan, Policy Analyst at 594-1945.

Sincerely,

C. Sebastian Aloot
Hawaiian Rights Division Director

Colin Kippen
Deputy Administrator

cc: Board of Trustees
Mr. Earl Matsukawa, Wilson Okamoto and Associates, Inc.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

December 7, 1999

Mr. C. Sebastian Aloot
Hawaiian Rights Division Director
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Aloot:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Portion 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We acknowledge that the State Historic Preservation Division will be contacted if any human burials, artifacts or other cultural remains are encountered within the project vicinity. We note that you have no objections to the project.

If you have any questions, please contact Scot Muraoka at 527-5221.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Earl Matsukawa, Wilson Okamoto and Associates

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4529 • FAX (808) 523-4730

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

September 7, 1999

TPD8/99-03829R

MEMORANDUM

TO: CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: CHERYL D. SOON, DIRECTOR

SUBJECT: WAIALUA WELL II EXPLORATORY WELL SITE

In response to the August 4, 1999 letter from Wilson Okamoto & Associates, Inc., the draft environmental assessment (EA) for the subject project was reviewed. Although the document states that it is anticipated that all construction-related vehicles will park within the project site, we are concerned about the provision of adequate parking because Kaukonahua Road is a heavily travelled roadway with no legal on-street parking. In order to provide a better understanding of the amount of parking that would be required during the construction phase, the draft EA should include an estimate of the number of construction workers and vehicles that would be anticipated per day. The document should further discuss the adequacy of the parking area that would be provided to accommodate those needs.

Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at Local 6976.

CHERYL D. SOON

cc: Mr. Earl Matsukawa
Wilson Okamoto & Associates, Inc.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

COPY

EDDIE FLORES JR., Secretary
CHARLES A. STED, Vice Chairman
JAN M. L. Y. AHN
HERBERT S. K. KAOPUA, Sr.
BARBARA KIM STANTON

KAZU HAYASHIDA, Ex-Officio
ROSS S. SASAMURA, Ex-Officio

CLIFFORD S. JAMILE
Manager and Chief Engineer

December 21, 1999

TO: MS. CHERYL D. SOON, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: CLIFFORD S. JAMILE

DEC 23 1999

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE WAIALUA WELL II EXPLORATORY WELL, WAIALUA, OAHU, HAWAII, TMK: 6-5-01: PORTION 02

Thank you for reviewing the Draft Environmental Assessment for the subject project.

We have the following responses to your comments:

1. The daily number of well drillers will depend on the individual contractor's operational procedures. Previous experience has shown an average crew size of three with a corresponding number of vehicles.

2. We do not anticipate any adverse impacts due to vehicular traffic or parking in conjunction with the project. Kaukonahua Road will only be used to access the general area and should be able to accommodate a daily increase of about three vehicles. The actual ingress/egress to the drilling site will be via a cane haul road which has minimal if any traffic. There will be no direct access from Kaukonahua Road.

   The project site consists of a .75 acre (32,670 square feet (s.f.)) area within a 120-acre fallow sugar cane field. The drilling rig and parking for approximately three full size pick up trucks will take up about 1,700 s.f. There should be adequate space within the site for the rig and vehicles so as not to impact parking along Kaukonahua Road.

If you have any questions, please contact Barry Usagawa at 527-5235.

cc: Earl Matsukawa, Wilson Okamoto and Associates, Inc.

P-1423/99

NORTH SHORE NEIGHBORHOOD BOARD NO. 27

c/o NEIGHBORHOOD COMMISSION • CITY HALL, ROOM 400 • HONOLULU, HAWAII 96813

P.O. BOX 577
HALEIWA, HAWAII 96712

SEP 24 3 15 PM '99
SEP 13 4 10 PM '99
RECEIVED
BD OF WATER SUPPLY

August 09, 1999

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

RE: DRAFT E.A. WAIALUA WELL II EXPLORATORY WELL

Mahalo nui loa for the opportunity to submit comments relating to the Draft Environmental Assessment of Waialua Well II. Our appreciation to Mr. Barry Usagawa for his understanding and cooperation to allow the use of the board's late comments.

The North Shore Neighborhood Board No. 27 has serious concerns on the possible depletion of potable water from the Waialua Aquifer, one of the largest sources of water on Oahu, potential contamination of the aquifer, potential adverse impact to present and future agricultural operations, and other related concerns that will be addressed in subsequent paragraphs.

Chapter 1, para. 1.4 (Project Need):

1. The BWS is mandated by law to provide potable water sources to meet growing consumer demand. The BWS utilizes population data to project future consumer demands on the water system.

COMMENTS:

a. The board understands the intent of the BWS mandate to provide potable water. However, there is a point of diminishing return for potable water. Population growth in the Leeward and Central areas should be based on availability of existing potable water resources. It is suggested that a water resource master plan be developed first to determine if population growth be controlled or restricted because of availability of water. The master plan should consider the total requirements for water, not only population growth, but agricultural demands, industrial use, and quality of life needs.

b. The assumption that if no alternative water sources are used or developed, approximately 3.5 mgd in 2020 would be available for transmission to other areas is seriously flawed. Historically, the Waialua District was heavily used for farming of banana, lotus root (hasu), water cress, and diversified agriculture. Much of this industry has been substantially decreased because of inadequate water sources and interest in farming. Fresh water springs were abundant throughout the district for farming. Many of these springs have dried out because of overuse of water by the plantation over the years. The board needs some assurance that overuse of the Waialua Aquifer will not continue because of population growth in the other areas.

c. Para. 1.5 (Project Description) indicated that the diameter of the bore will be approximately 20 inches and the estimated depth is 350 feet with a 14 inch diameter steel casing approximately 250 feet long will be grouted in place within the bore hole. Is there an inconsistency with the diameter of the bore (20") and the diameter of the 14" steel casing? As stated in the draft EA there is a possibility of contaminants in the soil due to past agricultural uses by the plantation. We are concerned that a danger exists that contaminants in the soil would slip through the well bore and/or the steel casing. If this were to happen, would this cause damage to the Waialua Aquifer? Presently, below the soil level, there is a formation of "Blue Rocks" of about 250 feet that serves as a lens to prevent the percolation of contaminants into the aquifer. If the "Blue Rocks" are punctured, we must be assured that this does not exists.

MR. JAMILE LTR
AUGUST 09, 1999
PAGE THREE

d. Para. 1.6 (Test Pumping) stated that "water withdrawn from these tests will be disposed of on-site...." Also, because of contamination associated with past agricultural practices, a "Granular Activated Charcoal (GAC) treatment facility may be required". The board is concerned that because of the elevation and past history of flooding in the area, the disposal of water from the well will not affect the surrounding area and residences. What is the rate of water disposal and the period involved. Also, the GAC treatment facility, if required, will it be a permanent facility? What size? Environmental impact? Will it impact on the view plane?

Chapter 2. Para 2.8 (Noise). The draft EA stated that "noise from drilling and construction activities will likely be unavoidable".

COMMENTS:

The comment that "DOH noise control regulations must be adhered to" is unacceptable. The board requests that experience data, including decibel readings at the site and at various distances be stated in the EA. The nearest residences are located at Hukilau Loop, about one half mile away. Because of the elevation, wind direction, and short distance noise impacts could be factors to be considered to mitigate noises in the site.

Again, the board is appreciative for this opportunity to express our concerns on a most valuable asset, which must be forever protected from mis-use or from contamination. Since the board does not meet until September 28, 1999 for the formal acceptance of these comments, please use it as our interim response to your letter of August 04, 1999. If there are additional or significant changes to our comments, we will forward them to your office. Our point of contact is Mr. Jake Ng, phone no. 637-5814.

Sincerely yours,

Michael Magaoay
Chair

cc:
Wilson Okamoto and Asso.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

January 27, 2000

Mr. Michael Magaoay, Chair
North shore Neighborhood Board No. 27
P. O. Box 577
Haleiwa, Hawaii 96712

EM

Dear Mr. Magaoay:

Subject: Draft Environmental Assessment for the Waialua Well II
Exploratory Well, Waialua, Oahu, Hawaii, TMK: 6-5-01: Por. 02

Thank you for reviewing the Draft Environmental Assessment (EA) for the subject project.

We have the following response to your comments:

1. Project Need:

   a. We acknowledge your concern over population growth and the sustainability of the North Shore's potable water resources. Current City development and sustainable community plans in this regard, are predicated on concurrent land use and water planning. We are required to follow these community based plans which accommodate managed growth in South Oahu while preserving the rural areas of Oahu. Understanding and managing Oahu's water resources are important first steps in planning for Oahu's future.

      The Board of Water Supply (BWS) is presently updating the Oahu Water Management Plan utilizing the Integrated Resources Planning (IRP) process. A fundamental task of the IRP is to relate the current State Water Resources Protection Plan as amended, with the existing and projected urban and agricultural water needs, while protecting the environmental values of Oahu's watersheds, stream systems and their associated water rights. The State Water Resources Protection Plan, which was adopted in 1990, evaluates and sets the sustainable yields for Oahu's water resources. So there is a fairly good assessment of our groundwater resources and this information is an important consideration in the land use planning process. The IRP will provide more specific information on Oahu's water resources, and the economic and environmental impacts of various strategies for the land use planners. With each five-year iteration of the land use and water plans, the decision makers

will have comprehensive information to make more informed decisions on Oahu's future.

b. We understand your concerns on the Waialua aquifer. The State Commission on Water Resource Management (CWRM) has designated the North Sector as a water management area and they are responsible for evaluating and adopting the sustainable yields and groundwater withdrawals from the Waialua Aquifer. Any Water Use Permit for groundwater withdrawals must be approved by the CWRM and they do not allow the aquifer to be over used. The adopted sustainable yield for the North Sector is 91 mgd where Waialua is 40 mgd, Mokuleia is 12 mgd and Kawailoa is 39 mgd. The current pumpage for the North Sector wells is approximately 20 percent of the sustainable yield. In addition, the Wahiawa Reservoir/Kaukonahua Stream irrigation system produces approximately 25 mgd of surface and reclaimed water. These resources and the ultimate urban and agricultural water needs of the North Sector, in accordance with the North Shore Sustainable Community Plan, will be evaluated to determine any excess water supply available for regional transport.

c. The difference in diameter between the bore hole and steel casing is to allow for cement grouting the casing in place. The cement grout will prevent contaminants in the soil from reaching the groundwater through the bore hole or blue rock layers.

d. We do not anticipate any impacts from the discharge from the test pumping operation. The contractor will be required to dispose of all discharges in an appropriate manner. The well site is surrounded by fields and irrigation ditches which should preclude any impacts to the makai area. The contractor will be required to obtain a National Pollutant Discharge Elimination System Permit for exploratory well testing which will require standard best management practices to minimize water pollution impacts to State receiving waters. Based on an anticipated yield of 1.5 mgd, the maximum pumping rate and duration during the sustained test will be 1,050 gpm over a five (5) day period.

   Impacts associated with the production facility including a granular activated carbon filtration plant, will be addressed in a separate EA, if the test pumping results support the project's feasibility.

2. Noise:

   The State Department of Health noise regulations are the applicable rules that must be adhered to and include community noise requirements. Construction activities which will generate the most noise will occur during the daylight hours and should be within allowable levels set by law, especially at a distance of over a half mile to the nearest residences.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

CLIFFORD S. JAMILE
Manager and Chief Engineer

cc: Wilson Okamoto and Associates