

Waipahu Wells IV

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
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March 13, 1997

JEREMY HARRIS, Mayor  
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RAYMOND H. SATO  
Manager and Chief Engineer

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

RECEIVED  
'97 MAR 18 P 3:05  
OFC. OF ENVIRONMENTAL  
QUALITY CONTROL

Dear Mr. Gill:

Subject: Finding of No Significant Impact for the Board of Water Supply's Proposed Waipahu Wells IV, Waipahu, Oahu, TMK: 9-4-07: 42

The Board of Water Supply has reviewed the comments received during the public comment period which began on November 8, 1996. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the final environmental assessment (EA) and are therefore, issuing a finding of no significant impact. We request that our proposed exploratory well project be published as finding of no significant impact in the next Office of Environmental Quality Control Bulletin (OEQC).

Attached are the completed OEQC Bulletin publication form and four copies of the final EA for your review.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

Attachments

cc: George Yuen and Associates, Inc.

1997-04-08-0A-FEA-Waipahu Wells <sup>TV</sup> APR 8 1997  
**FILE COPY**

FINAL ENVIRONMENTAL ASSESSMENT  
PROPOSED EXPLORATORY WELLS--WAIPAHU WELLS IV  
WAIPAHU, OAHU, HAWAII  
T M K 2 - 04 - 02 : 05

PREPARED FOR:  
HONOLULU BOARD OF WATER SUPPLY  
HONOLULU, HAWAII

PREPARED BY:  
GEORGE A.L. YUEN & ASSOCIATES, INC.  
100 NORTH BERETANIA STREET, SUITE 303  
HONOLULU, HAWAII 96817

March, 1997

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## I. AUTHORITY

This environmental impact assessment is for the proposed drilling, casing, and testing of four exploratory potable water wells located in the Waipahu area. Two sites were considered. One site is located within a 23.4 acre parcel (TMK 9-4-07:42) mauka of the H-1 Freeway owned by Schuler Homes, Inc., and AMFAC Property Investment Corporation. The other site is in a 39.6 acre parcel (TMK 9-4-02:05) makai of the H-1 Freeway between Manager's Drive and Waikele Gulch, owned by the City and County of Honolulu. As determined through the Draft Environmental Assessment (DEA) review period which began on November 8, 1996, the site makai of the H-1 Freeway was selected because of land acquisition constraints on the mauka site (TMK 9-4-07:42).

This assessment is prepared in accordance with Chapter 343, Hawaii Revised Statutes (HRS), Act 241, Session Laws of Hawaii (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative Rules.

## II. PROPOSING AGENCY

The proposing agency for this project is the Honolulu Board of Water Supply (BWS), City and County of Honolulu.

## III. DESCRIPTION OF THE PROJECT

The project calls for the drilling of four exploratory water production wells located within TMK 9-4-02:05, owned by the City and County of Honolulu. The site was selected after the DEA review period beginning November 8, 1996 revealed

land acquisition constraints on a site mauka of the H-1 Freeway (TMK 9-4-07:42). Figure 1 shows both sites and Figure 2 shows the entire parcel of TMK 9-4-02:05 and the selected site near the mauka boundary. The site is located makai of the H-1 Freeway and west of Manager's Drive.

The overall diameter of each well is 18 inches with a 14-inch casing and a 2-inch grout-filled annulus. The total depth of each well is about 280 feet with a casing length of about 180 feet. This will leave an uncased bore of about 100 feet. Figure 3 is an approximate cross-sectional drawing of the proposed wells.

The well station is anticipated to yield an average of about 3.0 million gallons per day (mgd) of potable water for distribution to the Waipahu, Ewa and Honolulu areas.

The time required for drilling, installation of the casing and pump testing will be about six months. Estimated cost of the project is \$800,000.00.

A temporary access road off Manager's Drive to the site of the wells must be built. If test pump results are favorable, permanent well facilities will be built. A separate Environmental Assessment will be made after design of the facilities is completed.

#### IV. PERMITS AND APPROVALS REQUIRED

1. Well Construction Permit from the State Commission on Water Resource Management (CWRM).
2. Water Use Permit from CWRM.
3. Pump Installation Permit from CWRM.
4. Noise Permit from the Noise and Radiation Branch, State Department of Health (DOH).
5. Well Completion Report to CWRM.
6. Approval of an 11-20-29 engineering report by the Safe Drinking Branch, State DOH.
7. Discharge of effluent from well test pumping into the municipal storm sewer from the Department of Public Works.

#### V. PURPOSE OF THE PROJECT

The project is part of the County's water use and development plan to meet increasing water needs of the leeward area, particularly in the general vicinity of the project. Designated growth areas such as Central Oahu and Ewa will benefit from this project. Water from this project is part of the low service water system which could be used to support the second city at Kapolei or be transported to Honolulu via the existing transmission mains.

The two major development plan districts to benefit from the Waipahu IV project would be the Central Oahu and Ewa Districts. Projected population growth and water demand in these districts are:

<u>Central Oahu</u>			
<u>District</u>			
	<u>1995</u>	<u>2020</u>	<u>15-Yr % Increase</u>
M-K	Population Served	117,329	132.425
	Water Demand (mgd)	16.64	18.78
			12.9
			12.9
<u>Ewa District</u>			
M-K	Population Served	53,353	120,576
	Water Demand (mgd)	15.00	33.89
			126
			126

The major growth will occur in the Ewa District where the Secondary Urban Center is being planned.

#### VI. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site of the four exploratory wells is located within TMK 9-4-02:05 in an area that was formerly under cane cultivation. A portion of the parcel is presently being used by the City and County of Honolulu as a nursery for large landscaping trees. The remainder of the parcel is unused. The State Land Use Commission classifies the area under the "Urban" category. Figure 4 shows the project site in the State Land Use Map.

Manager's Drive forms the eastern boundary of the parcel. To the west, the parcel overlooks Waikele Gulch. The H-1 Freeway is north of the site. Waikele Stream, located in Waikele Gulch, is about one-thousand feet west of the site. The old sugar mill is south of the site.

Elevation at the site is approximately 130 feet. The ground slopes downward to the south. Physical inspection reveals that the site drains easily as there are no flood retention features within the parcel.

Temperatures in this area range from 65 degrees F to 85

degrees F. Annual rainfall is about 30 inches.

#### VII. ARCHAEOLOGICAL AND HISTORICAL CONSIDERATIONS

The proposed wells will be located in an area which was formerly under cane cultivation. The State Historic Preservation Division records show that there are no known archaeological sites at this location. If construction work should uncover any historical remains, work will cease and an archaeological survey can be conducted. The State will determine when construction can resume.

#### VIII. FLORA-FAUNA

The City and County site of the four wells was formerly under cane cultivation. Physical inspection of the site reveals that vegetation in the area consists mainly of an assortment of grasses and shrubs among which are cane grass, guinea grass, and haole koa. Also, there are some areas that have been scraped down to bare soil. Mr. Clyde Imada, botanist with the Bishop Museum, states that no record of rare species is available but he believes that the existence of endangered species is highly unlikely.

Animals found in the area are common to Hawaii. Typical are field mice, rats, mongooses, geckos and small feral animals. Birds include doves of various kinds, pigeons, finches, mynahs, cardinals, white eyes, bulbuls, and sparrows. Amphibians such as toads and frogs may be found. Dr. Dan Polhemus, biologist with the Bishop Museum-Smithsonian

Institute, believes it is unlikely that any rare or endangered species of animal life is inhabiting the area.

#### IX. FLOOD HAZARDS

The City and County Flood Insurance Rate Map (FIRM) shows the well site to be located in Flood Zone "D", which means that flood hazards in the area are undetermined. Physical inspection of the parcel shows that the flood hazard is very low. The parcel slopes gently toward the south. Within the parcel, there are no features that can cause ponding.

#### X. EARTHQUAKE HAZARDS

Under the Uniform Building Code (UBC), the island of Oahu is designated as Seismic Zone 1, which on a scale of 1 to 4, is the zone with the lowest potential for ground motion created by seismic events. The UBC establishes minimum design criteria for structures to resist the effects of seismic ground motion, in accordance with the standards for the seismic zone in which the structure is to be built. In the interest of public health and safety, the BWS has adopted the standards for Seismic Zone 3 for all of its structures. All structures that will be built as part of this project will be designed and built in accordance with the UBC standards for Seismic Zone 3.

XI. POTENTIAL ENVIRONMENTAL IMPACTS AND  
MITIGATIVE MEASURES

1. Noise and Dust Control

Noise and dust problems are the only nuisances anticipated. These problems are associated with well drilling operations, construction of an access road and test pumping of the wells. They will be intermittent and will last only the duration of the project--about six months. These problems will not be serious because the closest residences are located approximately 200 feet away. The ambient noise level is influenced by the proximity of the H-1 Freeway. The contractor will be required to maintain internal combustion equipment in excellent condition to minimize noise and the emission of noxious fumes. In addition, the contractor is required to comply with Title 11, DOH, Chapters 59 and 60, Air Pollution Control.

2. Drainage and Flooding

Drainage at the site should not pose problems. The parcel slopes gently toward the south. Pump test water will be disposed of in accordance with applicable water pollution control requirements of the State DOH. In addition, the contractor must utilize best management practices including settling basins, sand bags, berms and filters to assure that the drainage of water from the operations will not degrade the receiving water below the standard set by the State DOH.

3. Traffic

Vehicular traffic at this site will be minimal. Manager's Drive presently provides the only vehicular access from Waipahu. Eventually, Lumiaina Street may provide access from Waikele via the Manager's Drive overpass crossing the H-1 Freeway.

4. Hydrologic Considerations

The cessation of sugar cane cultivation in the Pearl Harbor Aquifer Sector has greatly modified ground water use patterns. For nearly one hundred years, sugar cane irrigation was the major user of ground water. In the last few years, the major users are the BWS and the military.

The Pearl Harbor basal aquifer consists of the Waianae aquifer and the Koolau aquifer. The Waimalu and Waiawa-Waipahu subareas are in the Koolau volcanic series. The Ewa and Kunia subareas are in the Waianae volcanic series. In Volume I of the State Water Resources Protection Plan, dated March 1992, the current sustainable yields of these aquifer systems are tabulated as follows:

<u>Aquifer System</u>	<u>Current Sustainable Yield (mgd)</u>
Waimalu-----	45
Waiawa-----	52
Waipahu-----	67
Ewa-Kunia-----	20

The tabulation shows sustainable yields which include agricultural irrigation return in the Waipahu System. Under natural (non-irrigation) conditions, the Waipahu System

sustainable yield is 50 mgd, a reduction 17 mgd or some 25 percent.

Current CWRM Allocations (January 24, 1997) for the combined Waipahu-Waiawa Aquifer System are:

<u>Permittee</u>	<u>Allocation (mgd)</u>
Campbell Estate-----	26.779
Oahu Suguar Co.-----	20.912
BWS-----	41.628
U S Navy-----	14.977
Others-----	6.081
<u>TOTAL -----</u>	<u>110.377</u>

Under the current non-irrigation condition, the permitted use in the combined Waipahu-Waiawa Aquifer System exceeds the sustainable by 8.4 mgd.

The four major permittees account for 104.3 mgd or 94.5 percent of the total allocation in the Waipahu-Waiawa Aquifer System. The table below summarizes the annual draft by each of the four major permittees for three recent calender years:

<u>Permittee</u>	<u>Annual Draft (mgd)</u>			<u>Allocation</u>
	<u>1993</u>	<u>1994</u>	<u>1995</u>	
U S Navy	11.662	16.253	16.599	14.977
Oahu Sugar Co.	20.982	11.889	5.839	20.912
Campbell Estate	27.837	14.509	1.561	26.779
<u>BWS</u>	<u>30.557</u>	<u>30.134</u>	<u>32.234</u>	<u>40.720</u>
<u>TOTAL</u>	<u>91.038</u>	<u>72.785</u>	<u>56.233</u>	<u>103.388</u>

The data in the table show that draft has been below the allocation and sustainable yield for each of the three recent years. In 1995, the combined draft by the four major users was just under 51 percent of the allocation.

Wells in the area include two existing BWS installations and numerous wells in Waikele Gulch to the west. The BWS installations are Waipahu Wells I, consisting of four wells

about 5,200 feet to the northeast; and Waipahu Wells II, a three-well source about 3,500 feet to the north. A fourth well is proposed for Waipahu Wells II.

The wells in Waikele Gulch were once irrigation water sources for Oahu Sugar Company. There are a total of thirty-two wells drilled nearly a century ago. These wells are underground in tunnel systems leading to central pump rooms. Precise locations on the ground surface are not available. Planners and developers of the parcel on which Waipahu Wells IV is located should be aware of this when deciding on the location of the proposed station. The wells are very old and should be properly sealed when abandoned.

The Waipahu IV wells station is anticipated to yield an average of 3.0 mgd of potable water for distribution to the Waipahu, Ewa and Honolulu areas.

The Waipahu IV wells fall within the Waipahu Aquifer System, one of five aquifer systems or subareas forming the Pearl Harbor Aquifer. All of the wells in the Waipahu-Waiawa subarea draw from the basal lens in the Koolau basalt. Aquifer parameters are extremely favorable for pumping. Heads are high and ground water flux is large. Regional hydraulic conductivity averages 1,500 feet per day, effective porosity is 0.05 to 0.10. The regional head is 18 feet. Natural flux in the Koolau portion of the Pearl Harbor Sector totals 206 mgd (see CWRM Report R-78, 1988, Review and Re-Evaluation of Ground Water Conditions in the Pearl Harbor Ground Water Control Area, Oahu, Hawaii).

Hydrologic assessment indicates that pumpage from the proposed wells will have minimal or no measureable effect on other wells in the vicinity except to contribute to overall pumpage to collectively affect the aquifer. The environmental assessment for the proposed fourth well in the Waipahu Wells II facility some 3,500 feet to the north estimated that the drawdown from the additional well on the existing wells would be less than 0.1 foot for sustained operations. The effect on Waipahu Wells IV some 3,500 feet away should not be detectable.

Waikele Stream is about 1,000 feet west of the Waipahu Wells IV site. The stream bed elevation at this location is 60 to 70 feet above sea level and does not intersect the basal lens, in which the local head is 18 feet. This difference of elevation should preclude seepage of the basal lens into the stream channel.

Flow at Waikele Springs, however, is determined by pumpage. The flow from the springs has increased due to reduced pumpage by Oahu Sugar Company. The requested permitted use is only a small fraction of water formerly used for sugar cane irrigation. For this reason, flow from the springs will remain high until the total permitted uses approach the water once used for sugar cane irrigation.

Lower in Waikele Gulch, makai of the H-1 Freeway crossing, springs drain into the stream. Pumping at Waipahu IV may affect these springs but not measureably so. Springs also emerge in the low land plain between Waipio Peninsula

and Waipahu town. Spring flow is the flux remaining down gradient of pumping and other discharge centers.

In the past, pumpage for irrigation water included surface water, spring flow and basal tunnel flow. However, the singular impact of the proposed pumpage from the Waipahu IV wells will be difficult to measure in view of the large discharge from the springs and tunnel flow.

Figure 5 shows some of the existing wells in the area, the location of Waikele Springs and tunnel and West Loch into which surface water flows.

#### XII. ALTERNATIVES TO PROPOSED PROJECT

Alternatives to the proposed project include:

1. Abandoning the proposed project;
2. Seeking other sources;
3. Resorting to alternative methods of water production.

Abandoning the project may force the BWS to limit water service to the surrounding areas and possibly to other areas, directly or indirectly. This is contrary to the Board's long-range program of water development and service wherever possible.

Obtaining water from another source may not be feasible. The siting of exploratory wells is based on hydrologic studies of all available sources and an evaluation of the cost and effectiveness of the distribution system required. Also, recent pumpage data and other studies show that the

sustainable yield of the Waipahu Aquifer System would not be exceeded under the proposed pumping rates.

Desalination and recovery of surface water are possible alternatives but their feasibility is still questionable because of high costs.

Alternatives, such as the treatment of sewage effluent for irrigation and using the potable water now being used for irrigation for municipal use, are on-going projects despite the high cost of treatment and the cost of distributing the treated water to points of use along the coastal caprock areas. However, projected water demand is such that dual water systems must be implemented with sufficient potable water wells to accommodate the anticipated growth of Ewa's second city. These are questions that must be resolved before the use of treated sewage effluent can be used on a more widespread basis.

XIII. FINDINGS AND DETERMINATION

1. There are no known historic or archaeological sites in the area.
2. There are no known endangered species of flora or fauna in the area.
3. There are no significant environmental impacts resulting from the project.
4. Dust, noise, and minimal traffic problems may be expected, but they will be temporary and controllable.
5. Operation of the wells would have no measureable negative impact on Waikele Springs or wells in the general vicinity. To divert water from the springs would, in a large sense, be desirable conservation.

In summary, the proposed project will not affect any endangered species of flora or fauna since none is existent on the site. It will involve no irreversible commitment to loss or destruction of any natural or cultural resource, and it will result in no environmental degradation. There would be no serious or long-term detrimental effects on public health in regard to sanitation, air quality, water quality, ambient noise levels, dust, etc.

In view of the above, it is determined that the proposed project will have no significant effect on the environment and that an Environmental Impact Statement is not required under Chapter 343, Hawaii Revised Statutes.

#### XIV. REFERENCES

1. Stearns, H. T. and Vaksvik, K. N., Geology and Ground-Water Resources of the Island of Oahu, Hawaii, (Honolulu, Hawaii, 1935).
2. Final Environmental Assessment, Waipahu Wells III Station, Board of Water Supply, City and County of Honolulu, 1995.
3. Uniform Building Code, 1988 edition.
4. Review and Re-evaluation of Groundwater Conditions in the Pearl Harbor Groundwater Control Area, Oahu, Hawaii, prepared by George A. L. Yuen and Associates, Inc., February 20, 1988.
5. The State of Hawaii Data Book, A Statistical Abstract, 1991, Department of Business, Economic Development and Tourism, Honolulu, Hawaii.
6. The State of Hawaii Data Book, A Statistical Abstract, 1994, Department of Business, Economic Development and Tourism, Honolulu, Hawaii.

APPENDIX A. INDIVIDUALS AND AGENCIES CONSULTED  
IN PREPARING THIS ASSESSMENT

APPENDIX A. INDIVIDUALS AND AGENCIES CONSULTED  
IN PREPARING THIS ASSESSMENT

The following individuals and agencies were consulted during the preparation of the draft environmental assessment for this project:

1. Toni Hahn - Bishop Museum
2. Clyde Imada - Bishop Museum
3. Elaine Jourdane - Department of Land and Natural Resources, Archaeologist for Oahu (SHPD), (see letter on next page)
4. George Kuo - Honolulu BWS, Long-Range Planning Section.
5. Chester Lao - Honolulu BWS, Geology/Hydrology Section
6. Scot Muraoka - Honolulu BWS, Environmental Section
7. Tracy Runnels - Roscoe-Moss Hawaii, Inc.
8. Staff Member - State Land Use Commission
9. Staff Member - City Department of Land Utilization.
10. Bert Hatton - AMFAC Property Investment Corporation
11. Winona Char - Botanist, Winona Char & Associates.
12. Dr. Dan Polhemus - Biologist, Bishop Museum.
13. Dr. Robert Pyle - Ornithologist, Bishop Museum

APPENDIX B. INDIVIDUALS AND AGENCIES RECEIVING  
COPIES OF THE  
DRAFT ENVIRONMENTAL ASSESSMENT FOR COMMENTS

APPENDIX B. INDIVIDUALS AND AGENCIES RECEIVING

COPIES OF THE

DRAFT ENVIRONMENTAL ASSESSMENT FOR COMMENTS

Eighteen governmental agencies and five other groups or individuals were provided a copy of the draft environmental assessment for this project and were requested to provide comments. The following is a list of those agencies and others that were requested to provide comments.

**Federal Agencies**

- U.S. Department of Agriculture, Soil Conservation Service
- U.S. Army Corps of Engineers, Pacific Ocean Division
- U.S. Fish and Wildlife Service
- U.S. Department of the Interior, U.S. Geological Survey, Water Resources Division

**State of Hawaii Agencies**

- Department of Agriculture
- Department of Business, Economic Development, and Tourism
- Department of Education
- Department of Land and Natural Resources
  - Aquatic Resources Division
  - Forestry and Wildlife Division
  - Historic Preservation Division
  - Commission on Water Resources Management
- Department of Health
  - Environmental Management Division
  - Office of Environmental Quality Control
- University of Hawaii
  - Environmental Center
  - Water Resources Research Center

**City and County of Honolulu Agencies**

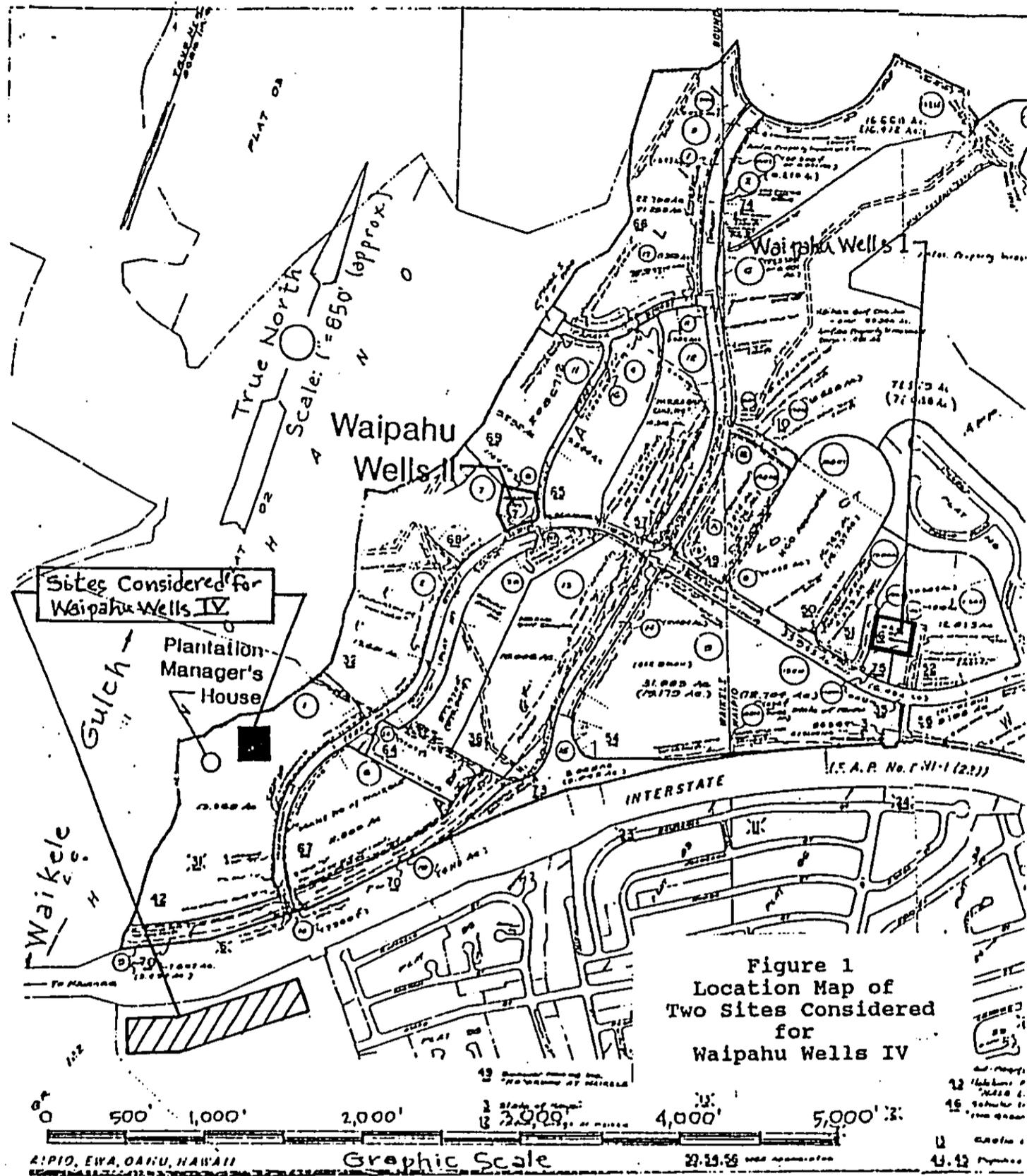
- Planning Department
- Land Utilization Department
- Public Works

**Others**

- Waipahu District City Council
- Waipahu Neighborhood Board No. 20 Chair
- Sierra Club, Hawaii Chapter
- Amfac Property Investment Corp.
- Schuler Homes, Inc.

APPENDIX C. COMMENTS AND RESPONSES TO THE  
DRAFT ENVIRONMENTAL ASSESSMENT

FIGURES 1 THROUGH 5



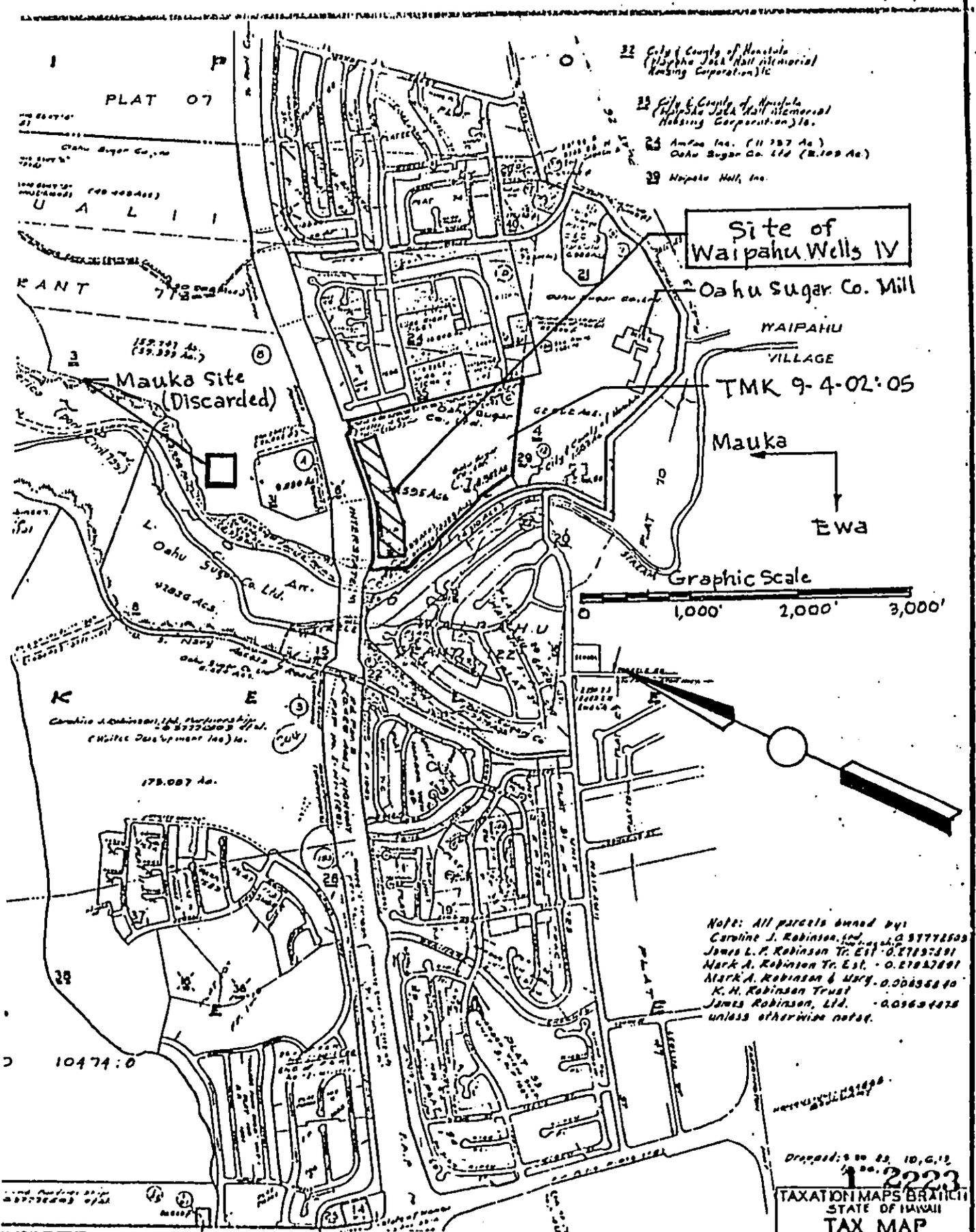


Figure 2  
 Location Map of Selected Site  
 for  
 Waipahu Wells IV

Note: All parcels owned by:  
 Caroline J. Robinson, Ltd. - O. 87772503  
 James L. P. Robinson Tr. Est. - O. 87857891  
 Mark A. Robinson Tr. Est. - O. 87847891  
 Mark A. Robinson & Mary - O. 00435840  
 K. H. Robinson Trust  
 James Robinson, Ltd. - O. 00604478  
 unless otherwise noted.

Drafted: 8 22 10, G. 12  
 1 2223

TAXATION MAPS BRANCH		
STATE OF HAWAII		
TAX MAP		
FIRST DISTRICT		
ZONE	SEC.	PLAT
9	4	02
CONTAINING		PARCELS
SCALE: 1 in. = 500' 1		

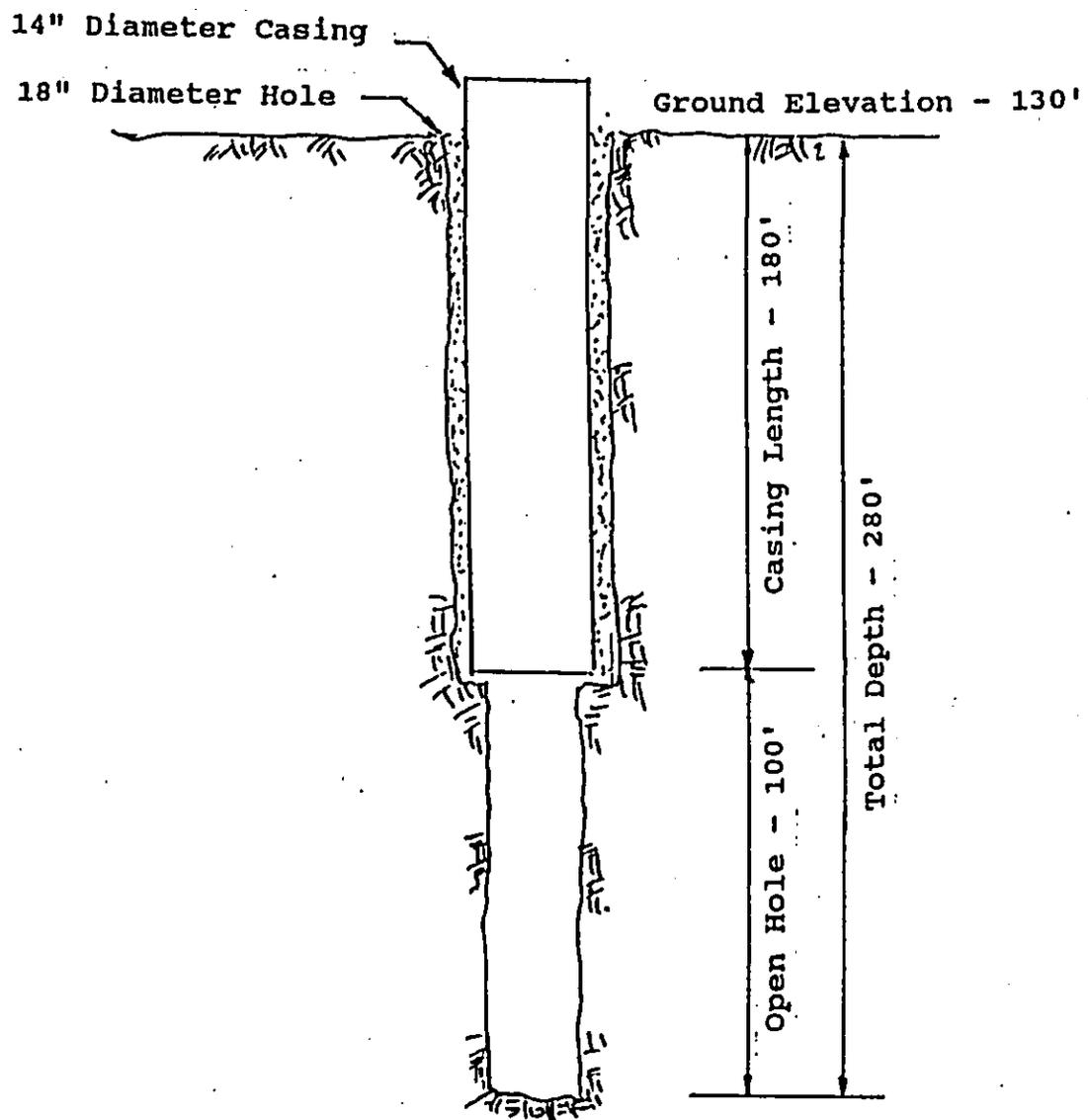


Figure 3  
Well Cross Section  
Waipahu Wells IV  
(Not to Scale)



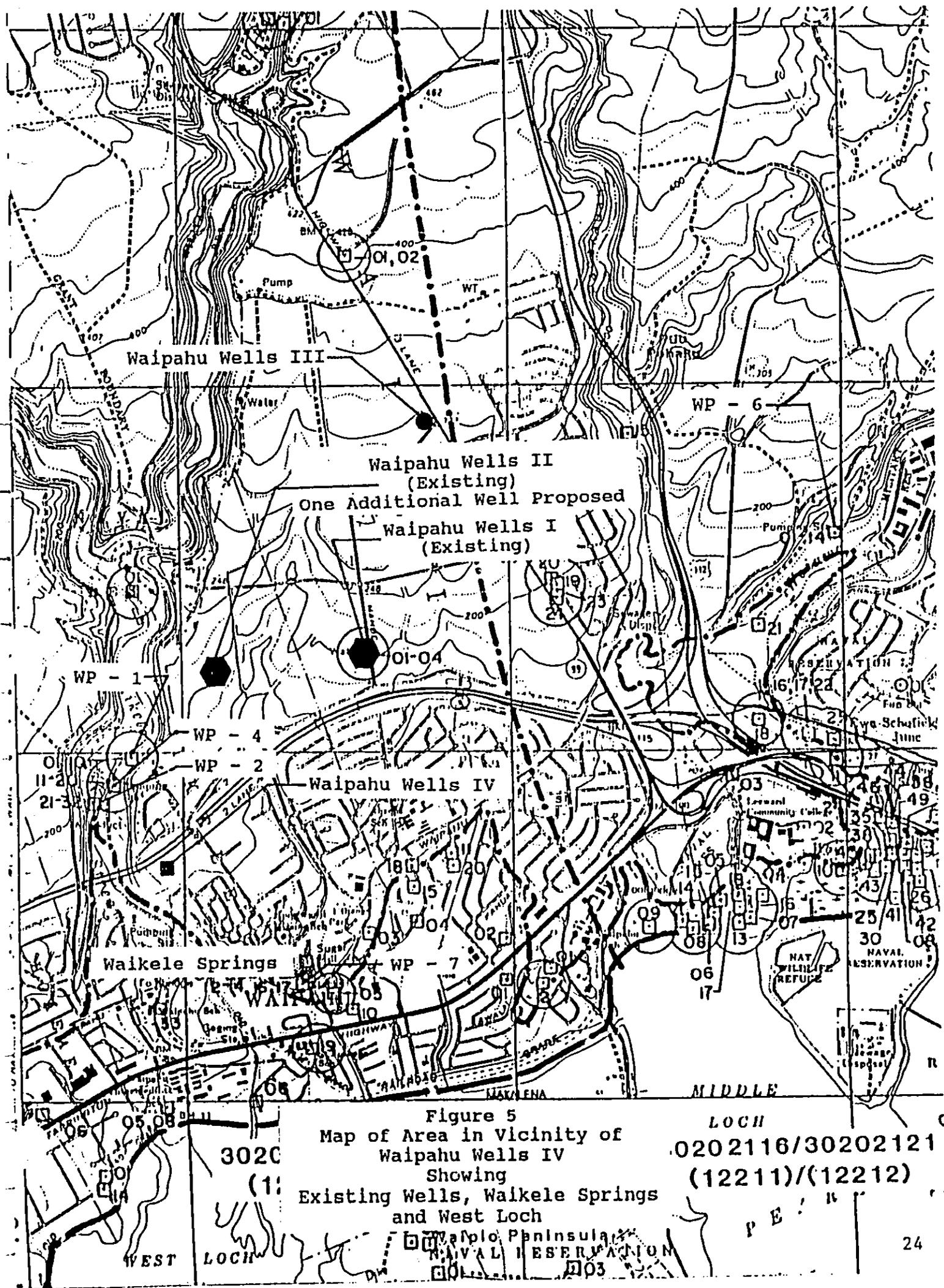


Figure 5  
 Map of Area in Vicinity of  
 Waipahu Wells IV  
 Showing  
 Existing Wells, Waikale Springs  
 and West Loch

LOCH  
 0202116/30202121  
 (12211)/(12212)

3020  
 (1)

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
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PHONE (808) 527-6180  
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February 26, 1997

**COPY**

JEREMY HARRIS, Mayor

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Manager and Chief Engineer

Mr. Brooks Harper  
Fish and Wildlife Service  
Pacific Islands Ecoregion  
United States Department of the Interior  
300 Ala Moana Boulevard, Room 3108  
P. O. Box 50088  
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: Your Letter of December 19, 1996 to George A. L. Yuen and Associates on Draft Environmental Assessments for the Proposed Waipahu Wells II Addition and Waipahu Wells IV, Oahu, Hawaii

Thank you for reviewing the Draft Environmental Assessments for the proposed Waipahu Wells II Addition and Waipahu Wells IV project.

We have the following comments on your concerns:

1. We acknowledge that the U.S. Fish and Wildlife Service does not anticipate direct adverse impacts to fish and wildlife resources because the proposed well projects are within previously disturbed agricultural lands. There will be minimal impacts on the basal aquifer and Pearl Harbor springs from these well projects because the sustainable yield which was based on production from the Waipahu-Waiawa aquifer, will not be exceeded. The 1996 permitted use for the Waipahu-Waiawa aquifer is 106 mgd which is within the current 119 mgd sustainable yield. A significant amount of the permitted use is assigned to the defunct Oahu Sugar Co. (OSCo), of which a portion may become available if not retained in agriculture. We note that the Pearl Harbor aquifer has been historically pumped at higher levels prior to OSCo's close. These wells and stream diversions are located within the Waikele gulch and at the old sugar mill. Historical pumping levels of these sources which amounted to over 22 mgd, will not be exceeded now that OSCo has closed. Therefore, any stream flow impacts associated with pumping levels that are less than previous pumpage, is expected to be less.

C



Mr. Brooks Harper  
Page 2  
February 26, 1997

Perennial stream flow monitoring of Oahu's major streams is an on-going process and responsibility of the U.S. Geological Survey (USGS) and the Commission on Water Resource Management (CWRM) as part of a comprehensive water resource management program. In equity, monitoring the cumulative impact of aquifer wide withdrawal's should involve military, state, county and private users of both groundwater and surface water.

The cumulative benefit is that additional water source capacity will be made available within the same areas that will be absorbing the islands growth; namely the Ewa and Central Oahu areas. Developing a few large capacity sources within the growth areas is one-half the cost of developing many small capacity sources in the windward and north sectors and transporting water to the growth areas. This reduces the economic impact to the water consumers. These directed growth areas in South Oahu relieve the growth pressures in the rural areas of windward and north shore.

2. The Board of Water Supply follows standard test pumping procedures which are a standard condition of the well construction permit. The USGS and the CWRM collaborated on the test pumping protocol.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

cc: George Yuen, George Yuen and Associates

C



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

December 19, 1996

Post-It™ brand fax transmittal memo 7671 # of pages 5	
To SCOT MURAKA	From - Chang
Co. BWS	Co. Miki & Yeh
Dept.	Phone # 536-0881
Fax # 527-6195	Fax # 536-0882

In Reply Refer To: CAW

Mr. John Chang  
George A. L. Yuen and Associates  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Re: Draft Environmental Assessment, Waipahu Wells II Addition, Oahu, Hawaii and Draft Environmental Assessment, Waipahu Wells IV, Oahu, Hawaii.

Dear Mr. Chang:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment (EA) for the proposed Waipahu Wells II Addition, Oahu, Hawaii and the Draft EA for the proposed Waipahu Wells IV, Oahu, Hawaii. The Service has combined our response to these projects because both well proposals will withdraw water from the Pearl Harbor aquifer. The proposing agency for these projects is the Honolulu Board of Water Supply (BWS), City and County of Honolulu.

The proposed projects involve the drilling of a total of five exploratory water production wells. The first proposed well as described in the Draft EA for the Waipahu Wells II Addition is located within the grounds of the BWS's existing Waipahu Wells II facility. The four additional proposed wells described in Draft EA for the Waipahu Wells IV will be located about 2,300 feet southwest of the BWS's existing Waipahu Wells II facility.

General Comments

Because the proposed construction projects are on previously disturbed sites (the first well lies within existing facilities and the additional four wells will be located in an area that was formerly under sugar cane cultivation), the Service does not anticipate direct adverse impacts to fish and wildlife resources. However, the Service is concerned with the potential indirect long-term impacts that the proposed projects may have on the water supply currently available to the wetlands found within the Pearl Harbor Watershed.

The Service has estimated that 31% of the coastal wetlands in Hawaii were lost between 1780 and 1980. The loss of wetland habitat is a primary reason for the decline of Hawaii's four endangered waterbird species: the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), and the Hawaiian duck (*Anas wyvilliana*). Wetlands within the Pearl Harbor Watershed, including those at Waipio Peninsula (jurisdiction of the U.S. Navy), Pouhala Marsh (jurisdiction of the State of Hawaii), and the Pearl Harbor National Wildlife Refuge (jurisdiction of the U.S. Navy and the Service), support all four of these species, as well as large numbers of wintering shorebirds and migratory waterfowl. These wetlands have been identified as important habitat in the Hawaiian Waterbirds Recovery Plan.

#### Specific Comments

On page 14 of the Draft EA for Waipahu Wells II, it states that "pumping at Waipahu II may affect the spring that feeds Waikele Stream and the springs that break out in the lowland plain between Waipio Peninsula and Waipahu Town." On page 12, the Draft EA states that "The entire Koolau basalt region of the Pearl Harbor Sector is actually a single aquifer." Therefore, it is reasonable to assume that springs feeding Waipio Peninsula, Pouhala Marsh, and Pearl Harbor National Wildlife Refuge wetlands could be affected by the water withdrawals proposed for the Waipahu Wells II Addition.

On page 11 of the Draft EA for Waipahu Wells IV, it states that "Pumping at Waipahu IV may affect these springs but not measureable so." The springs referred to in this statement are the same springs that may be affected by the Waipahu Wells II Addition. The Service is concerned that these four additional wells may negatively affect the springs feeding the Waipio Peninsula wetlands.

No.  
Available  
Sustainable  
Yield

#### Summary Comments

The Service does not have the expertise within the Pacific Islands Office to (1) determine if the pump test design is adequate to identify potential long-term effects of water withdrawals from the Pearl Harbor Aquifer on wetlands within the Pearl Harbor Watershed or (2) evaluate subsequent results of the pump test. The Service believes that such evaluations are best accomplished by our sister agency, the U.S. Geological Service (USGS).

The Service recommends that the BWS request that the USGS review the adequacy of the pump test design and evaluate the results of the actual pump test. If the BWS is unable to obtain assurances from the USGS that the proposed water withdrawals will not affect the hydrology of the wetlands within the Pearl Harbor Watershed, we request that the BWS conduct a long-term monitoring program that will provide the Service, the State of Hawaii, and the U.S. Navy with the information necessary to make recommendations to protect the water needs of the wetlands at the Pearl Harbor National Wildlife Refuge, Pouhala Marsh, and Waipio Peninsula.

What did  
USGS comment  
on in their  
response to  
D&E?  
Check w/ yue

Until the above concerns are addressed, the Service can not concur with a Negative Declaration and finding that the proposed activity will not result in any significant adverse environmental impacts. The Service appreciates the opportunity to comment. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,

*Brooks Harper*

Brooks Harper  
Field Supervisor  
Ecological Services

cc: DOFAW, Honolulu  
DAR, Honolulu  
CWB, Honolulu  
USGS, Hawaii  
Refuge Manager, Pearl Harbor NWR  
U.S. Navy, PACDIV

Mr. Brooks Harper, Field Supervisor, Ecological Services  
Fish and Wildlife Service  
Pacific Islands Ecoregion  
300 Ala Moana Boulevard, Room 3108  
Box 50088  
Honolulu, Hawaii, 96850.

Subject: (CAW) Draft Environmental Assessments, Waipahu  
Wells II and Waipahu Wells IV.

Thank you for your comments on the two subject draft  
environmental assessments.

Every well in the Koolau aquifer in Southern Oahu  
theoretically diminishes spring flow. The two proposed well  
projects affect Waikele Springs flow but only minimally.  
Theoretical calculation shows that the effect of the two  
stations operating daily at their rated capacities over a  
period reckoned in decades will reduce the spring flow by two  
to three percent. At the current regional head (18 ft),  
Waikele Springs flow is about 13 mgd. The reduction may  
amount to 0.4 mgd after decades. In the interim, changes in  
land use, the economy, pumpage from other wells in the Pearl  
Harbor aquifer, diversions for other uses and and  
agricultural practices may affect spring flow to a greater  
degree.

The pump test procedures adopted by the BWS have been  
followed for many years. They are standards recognized by  
the State, other counties and the USGS. The procedures were  
designed to yield information on water quality and hydrology  
to permit design and construction of municipal water sources.  
The procedures were not designed to identify potential long-  
term effects on wetlands. In view of the many hydrological

factors and the numerous correlations which must be considered, it is doubtful that a monitoring program would give us data of any reliability. Even if an effective monitoring study could be devised, it would take many years to conduct at very high cost. We feel that a fair determination on the possible effects of pumping on spring flows could be made by a theoretical approach after considering all available data.

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



February 26, 1997

**COPY**

JEREMY HARRIS, Mayor

WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y.J. LUM  
FORREST C. MURPHY

BARBARA KIM STANTON

RAYMOND H. SATO  
Manager and Chief Engineer

Mr. Michael D. Wilson, Chairperson  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Your Letter of November 26, 1996 Regarding the Draft Environmental Assessment for the Proposed Waipahu Wells II Addition, Oahu (TMK: 9-4-7: 37)

Thank you for reviewing the Draft Environmental Assessment for the proposed Waipahu Wells II Addition project.

We have the following comments on your concerns:

Commission on Water Resource Management

1. We acknowledge that a Well Construction Permit, Pump Installation Permit and Water Use Permit are required prior to placing the well in service. The Well Construction Permit was approved in December 1996.
2. The proposed project is relatively new and therefore, is not reflected in county plans prior to 1996. The project has been incorporated into the Board of Water Supply (BWS) 6-year Capital Improvement Program and the County's Water Use and Development Plan. The site is presently designated as a public well site on the central Oahu development plan land use map. We have submitted an amendment to the central Oahu development plan facilities map for the proposed expansion project.
3. There are three wells presently in operation at the Waipahu Wells II facility: 2400-05, 2400-06 and 2400-08. The three wells were constructed by the developer of the Waikele project. The permitted use is 2.1 mgd for the station and the design capacity to provide maximum day demand in 16 hours is based on BWS standards. We understand the state permitted use governs the 12-month moving average pumpage.
4. The effect on the Pearl Harbor springs from the pumpage of Waipahu Wells II addition is expected to be minimal due to location of the sites relative to the Oahu Sugar Company (OSCo) wells and stream diversions located in Waikele gulch and the fact that pumpage has been significantly reduced due to the close of OSCo. As long as future pumpage remains less than previous pumping levels, the springs will not be adversely affected.

C

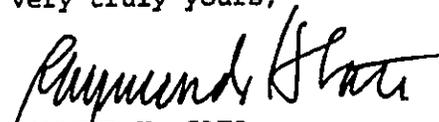


Mr. Michael D. Wilson  
Page 2  
February 26, 1997

5. We note that the Pearl Harbor sustainable yields are presently being evaluated by the Commission on Water Resource Management.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

✓cc: George Yuen, George Yuen and Associates

C

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P.O. BOX 621  
HONOLULU, HAWAII 96809  
NOV 26 1996

MICHAEL D. WILSON  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY  
GILBERT S. COLOMA-AGARAN

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

Ref.:LD-PEM

Mr. John Chang  
George A.L. Yuen and Associates  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

File No. PM-96-027

Dear Mr. Chang:

Subject: Request for Comments - Draft Environmental Assessment, Waipahu Wells II  
Addition, Tax Map Key:9-4-07:37

The following are additional comments regarding the subject Draft Environmental Assessment prepared for the above project:

Commission on Water Resource Management

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

We offer the following comments related to water resources:

1. We recommend coordination with the County Government to incorporate this project into the County's Water Use and Development Plan.
2. 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.
3. 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.
4. In reviewing the Draft Environment Assessment we have noted the following:
  - a. Page 4 of the Draft Environmental Assessment correctly identifies the permits

and approvals required under Chapter 174C: 1) well construction permit, 2) pump installation permit, 3) water use permit (if a change in the existing use granting is proposed), and 4) well completion report.

- b. On October 7, 1995, Honolulu Board of Water Supply submitted an application for exploratory well construction for the Waipahu Wells II addition. The application is still under review for completeness.
- c. Page 5 states that the project is part of the County's water use and development plan. However, the project is not listed under the Six-Year Capital Improvements Program in the December 1995 draft of the water use and development plan.
- d. On Page 12, the water management area is referred to as the Waiawa-Waipahu Aquifer System. The correct name is the Waipahu-Waiawa Aquifer System.
- e. On Page 13 states that 1) there are three existing wells at Waipahu Wells II site, with capacities of 1.5 mgd each and 2) the average daily pumpage for the station will be 2.64 mgd if the BWS's coefficient of 0.44 is applied to the total capacity (6 mgd). Our records shows only two wells in the existing battery (Well Nos. 2400-05 & 06) and at present, the Waipahu Wells II sources is allocated 2.1 mgd. The water use permit must be modified to allow for additional withdrawal above 2.1 mgd (12-month moving average).
- f. On Page 14 paragraph 2 states "pumping at Waipahu II Wells may affect these springs but not measurably so." The EA should clarify what is meant by the term "measurable" and how it was concluded that the springs may be affected. Calculations using theoretical models on specific springs (e.g. Pump 8) might be used as an example.
- h. The statements regarding sustainable yield that begins on page 14 through page 16 are not endorsed by the CWRM. Pearl Harbor sustainable yields are presently under study by the CWRM.

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

Aloha,

*Michael D. Wilson*  
for MICHAEL D. WILSON

c: Oahu Land Board Member  
Member at Large

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
FAX (808) 533-2714



February 26, 1997

**COPY**

JEREMY HARRIS, Mayor  
WALTER O. WATSON, JR., Chairman  
MAURICE H. YAMASATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y. J. LUM  
FORREST C. MIDDLEBURY

BARBARA K. STANTON

RAYMOND H. SATO  
Manager and Chief Engineer

Ms. Martha Ross, Deputy Administrator  
Office of Hawaiian Affairs  
State of Hawaii  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813-5249

Dear Ms. Ross:

Subject: Your Letter of November 14, 1996 on Draft Environmental Assessment for the Board of Water Supply's Proposed Waipahu Wells IV

Thank you for your letter on the Draft Environmental Assessment (EA) for the Board of Water Supply (BWS) proposed Waipahu Wells IV project.

We have the following comments on your concerns:

1. We acknowledge that you have no objections to the proposed well projects since it bears no adverse impacts on nearby existing production wells or to the Waipahu-Waiawa aquifer system. The proposed well site has been intensely cultivated in agriculture.
2. The hydrological assessment was made by Mr. John Mink who has over 40 years of experience as an expert hydrogeologist and was the principal involved in the State's Commission on Water Resource Management's (CWRM) assessment of Oahu's basal sustainable yield. He is currently employed with the engineering consulting firm, George A. L. Yuen and Associates, Inc.
3. Data pertaining to sustainable yield, permitted uses and average source production, were obtained from the State's CWRM and the BWS. Of the current 119 mgd of sustainable yield in the Waipahu-Waiawa water management area, 106 mgd are permitted as of May 1996. The sustainable yield is the safe yield that can be withdrawn without detrimental effects. The water use permit must be approved by the Commission on Water Resource Management after an aquifer-wide assessment of permitted uses and sustainable yield due to the reduction in agricultural recharge from the close of the Oahu Sugar Company.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

cc: G. Yuen and Associates, Inc.

C



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPIOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813-5249  
PHONE (808) 594-1888  
FAX (808) 594-1885

November 14, 1996

Mr. Barry Usagawa  
Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, HI 96843

Dear Mr. Usagawa:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for the Proposed Exploratory Wells- Waipahu Wells IV, Waipahu, Island of Oahu. The Board of Water Supply (BWS) of the City and County of Honolulu proposes to drill four exploratory water production wells to meet water needs of the leeward area.

We have no objections to the proposed well project as it apparently bears no adverse impacts on nearby existing production wells nor upon the Waiawa-Waipahu aquifer system. The data included in the DEA apparently indicate that BWS average water withdrawals from the Waiawa-Waipahu system in the last three years were about 76% of potential allocations. Furthermore, no known archaeological remains exist in the area and the proposed project will neither significantly impact scenic resources nor noise level or air quality.

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Letter to Mr. Usagawa  
Page two

But we are concerned with the overall presentation of the DEA. The DEA appears somewhat casual and superficial in addressing potential impacts of the proposed project. The narrative contains several typographical and grammatical errors. Furthermore, the preparers cite individuals and organizations to support their findings but do not provide with either published references or additional information for independent verification. Two examples illustrate the DEA's casual approach.

"Hydrological assessment\* indicates that pumpage from the proposed wells have no measurable effect on other wells in the vicinity." (page 11)

"...recent pumpage data and other studies show that the sustainable yield of the Waipahu Aquifer System would not be exceeded under the proposed pumping rates." (page 12)

In the first example, the asterisk apparently indicates that the hydrological assessment was made by John Mink (see footnote in page 11) but no additional information is given to determine who John Mink is and what his expertise is on the subject matter. In the second example, the reader is left to wonder what data or studies the preparers are referring to. We urge the preparers to address these and other cases which in our view are impacting the quality and overall presentation of the DEA. Please contact me or Luis A. Manrique (594-1755) should you have any questions on this matter.

Sincerely yours,



Martha Ross  
Deputy Administrator

LM:lm

Benjamin J. Cayetano  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2380  
HONOLULU, HAWAII 96804

HERMAN M. AIZAWA, PH.D.  
SUPERINTENDENT

OFFICE OF THE SUPERINTENDENT

November 6, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

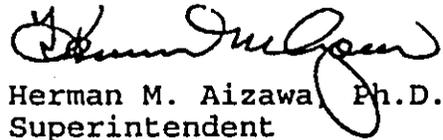
Dear Mr. Chang:

SUBJECT: Draft Environmental Assessment, Waipahu Wells IV  
TMK: 9-4-7: 042

The Department of Education has reviewed the subject assessment. We have no comment on the proposed drilling, casing, and testing of four exploratory wells located within a 23.4 acre subject site.

Thank you for the opportunity to respond.

Sincerely,

  
Herman M. Aizawa, Ph.D.  
Superintendent

HMA:hy

cc: A. Suga, OBS  
W. Staszko, LDO

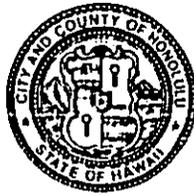
C

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PLANNING DEPARTMENT  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

JEREMY HARRIS  
MAYOR



CHERYL D. SOON  
CHIEF PLANNING OFFICER  
CAROLL TAKAHASHI  
DEPUTY CHIEF PLANNING OFFICER

RH 10/96-2119

November 8, 1996

Mr. John Chang  
George A.L. Yuen & Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Draft Environmental Assessment  
Waipahu Wells IV, Tax Map Key: 9-04-07: 042

We have the following comments regarding the subject Draft Environmental Assessment (EA) regarding the Waipahu Wells IV.

The funding of the conversion from exploratory to production wells would require a well symbol placed on the Central Oahu Development Plan Public Facilities Map. This process takes approximately six months. It would be initiated by a Development Plan Public Facilities Map amendment application by the Board of Water Supply.

Thank you for the opportunity to review and comment on the Draft EA. Should you have any questions, please call Randolph Hara at 523-4483.

Sincerely,

Handwritten signature of Cheryl D. Soon in cursive.

CHERYL D. SOON  
Chief Planning Officer

CDS:lh

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

November 1, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Subject: Draft Environmental Assessment (DEA), Waipahu  
Wells IV, Waipahu, Oahu, Hawaii, TMK 9-4-07: 42

The Department of Business, Economic Development, and Tourism forwarded the subject DEA to our office for review and comment.

We have reviewed the DEA for the subject project and confirm that the Waipahu Wells IV site, as represented on Figures 1 and 3 of the DEA, is located within the State Land Use Urban District.

For your information, the site was a portion of the 577.21-acre petition area reclassified by the Commission from the Agricultural District to the Urban District under LUC Docket No. A85-594/Amfac Property Development Corp. for residential, golf course, commercial, and open spaces uses.

We note that Condition No. 5 of the Commission's Decision and Order dated February 28, 1986, approving the reclassification states the following:

5. Petitioner shall, in coordination with the State Department of Land and Natural Resources and the Honolulu Board of Water Supply, provide an adequate supply of water and the necessary transmission system to the Property. In the event water is not available from existing sources, Petitioner shall develop additional water sources, storage and transmission facilities as required by State and County agencies.

Clarification should be provided as to whether the proposed Waipahu IV project is intended to comply with Condition No. 5 above.

Mr. John Chang  
November 1, 1996  
Page 2

We have no further comments to offer at this time. We appreciate the opportunity to comment on the DEA.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,



ESTHER UEDA  
Executive Officer

EU:th

cc: DBEDT (Referral No. 96-258-0)  
OEQC

**BOARD OF WATER SUPPLY**

CITY AND COUNTY OF HONOLULU  
630 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96843  
PHONE (808) 527-6180  
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February 25, 1997

JEREMY HARRIS, Mayor  
WALTER O WATSON JR, Chairman  
MAURICE H YAMASATO, Vice Chairman  
KAZU HAYASHIDA  
MELISSA Y J LUM  
FORREST C MURPHY

BARBARA KIM STANTON

RAYMOND H SATO  
Manager and Chief Engineer

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

Dear Mr. Gill:

Subject: Your Letter of December 9, 1996 on the Draft Environmental Assessment for the Board of Water Supply's Proposed Waipahu Wells IV

Thank you for your letter on the Draft Environmental Assessment (EA) for the Board of Water Supply (BWS) proposed Waipahu Wells IV project.

We have the following comments on your concerns:

1. The BWS will prepare a new EA if the exploratory wells are productive and will be converted to a production facility. Until the new facility is sited and designed, we cannot adequately describe the full extent of the project. ✓
2. The test pumping effluent will be sampled for certain chemical constituents. Representative water quality data from the adjacent existing Waipahu Wells I and II facilities will be included in the Final EA. Complete organic and inorganic water quality test results can only be sampled after the permanent pump is installed. The water quality and test pumping results will be compiled in the engineering report in compliance with Section 29 of Chapter 11-20, HAR, safe drinking water rules, to certify potability.
3. There are minimal cumulative impacts of the adjacent wells on the basal aquifer. Of the current 119 mgd of sustainable yield in the Waipahu-Waiawa water management area, 106 mgd is permitted as of May 1996. The sustainable yield is the safe yield that can be withdrawn without detrimental effects to the aquifer. Permitted uses will not be allowed to exceed the sustainable yield. The water use permit must be approved by the Commission on Water Resource Management after an aquifer-wide assessment of permitted uses and sustainable yield due to the reduction in agricultural recharge from the close of the Oahu Sugar Company.

C



Mr. Gary Gill  
Page 2  
February 25, 1997

The cumulative benefit is that additional water source capacity will be made available within the same areas that will be absorbing the island's growth; namely the Ewa and Central Oahu areas. Developing a few large capacity sources within the growth areas are one-half the cost of developing many small capacity sources in the Windward and North sectors and pumping water to the growth areas. This reduces the economic impact to the water consumers. These directed growth areas of South Oahu, also relieve the growth pressures in the rural areas of Windward and North Shore.

4. We acknowledge your request to prepare a single Final EA for both the Waipahu Wells II and IV projects. However, we prepared separate Draft EAs for each project because they are separate projects, each with separate timetables and costs. In our opinion, these projects are separate and are not necessary precedents nor phases of a larger project.

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

Very truly yours,

  
RAYMOND H. SATO  
Manager and Chief Engineer

✓cc: G. Yuen and Associates, Inc.

C

P

963796

BENJAMIN J. CAYETANO  
GOVERNOR



PE

GARY GILL  
DIRECTOR

DEC 11 9 53 AM '96

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL DEC 11 1996

cc: Mr  
Dep

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

December 9, 1996

Raymond H. Sato, Manager and Chief Engineer  
City and County of Honolulu, Board of Water Supply  
630 South Beretania Street  
Honolulu, Hawaii 96843

DEC 11 3 47 PM '96

Dear Mr. Sato:

Subject: Draft EA for the Proposed Waipahu Wells IV

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

1. If the exploratory well test results are satisfactory, a new environmental assessment (EA) should be prepared before converting the exploratory well into a production well. The new EA should: 1) include results obtained from the various tests; and 2) disclose the impacts associated with supporting production facilities such as permanent pumps, transmissions lines, and storage tanks.
2. The EA must disclose suspected contaminants (such as EDB, TCP) in the groundwater supply. Potential treatment methods to remove contaminants to meet drinking water standards must also be evaluated.
3. What are the cumulative impacts of this project when added to BWS's Waipahu II Well Addition, DHCD's Kunia II Well, the Ewa Plains Water Development Corporation's water system and other future water projects in the Pearl Harbor Koolau Aquifer.
4. On September 3, 1996, we received a draft environmental assessment for the Waipahu Wells II Addition. The Waipahu II and the Waipahu IV projects have a similar purpose and are located approximately 2,500 feet from each other.

Section 11-200-7, Hawaii Administrative Rules, states that "a group of actions proposed by an agency or applicant shall be treated as a single action when: (1) the component actions are phases or increments of a larger total undertaking; (2) an individual project is a necessary precedent for a larger project; (3) an individual project represents a commitment to

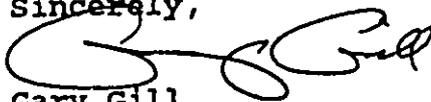
Mr. Sato  
December 9, 1996  
Page 2

a larger project; or (4) the actions in question are essentially identical and a single statement will adequately address the impacts of each individual action and those of the group of actions as a whole."

Accordingly, we recommend that the environmental assessments for the Waipahu Wells II and IV project be combined and a single final EA be prepared for both projects.

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

Sincerely,

  
Gary Gill  
Director

c: George Yuen & Assoc.



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS  
FORT SHAFTER, HAWAII 96858-5440

November 5, 1996

Planning and Operations Division

Mr. John Chang  
George A. L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Waipahu Wells IV Project, Oahu (TMK 9-4-7: 42). The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

a. Based on the information provided, the project will not impact waters of the U.S.; therefore, a DA permit will not be required.

b. The flood hazard information provided on page 5 of the DEA is correct.

Sincerely,

*Lawrence O. Muraoka*

Lawrence O. Muraoka, P.E.  
Acting Chief, Planning  
and Operations Division



SCHULER HOMES, INC.

November 1, 1996

Mr. Ray Sato  
Manager and Chief Engineer  
Board of Water Supply  
630 South Beretania Street  
Honolulu, Hawaii 96843

**RE: Waipahu Wells IV and V**

Dear Ray:

We received on October 25, 1996, a Draft Environmental Assessment on the referenced wells. The indicated location for the wells is on our property known as Parcel 15 at Waikele. I attach a copy of our land plan.

I was surprised to receive the Draft EA since in the past 6 months in several meetings with the BWS Land Department, I had indicated that Parcel 15 was very important to our delivery of affordable units pursuant to the Unilateral Agreement that controlled the development of the master planned community that is known as Waikele. Pursuant to the Unilateral Agreement we must build 270 housing units on Parcel 15. In the meetings I had with the Land Department we tried to see if there was anyplace on the parcel that the well sites would fit but once we learned during the discussions that the BWS also wanted to locate 8 GAC tanks on the site, we indicated that we felt that such a use was not appropriate to be located within a relatively dense residential development. Actually there is simply no room on the site for the wells without the displacement of housing units and as I have stated we must put at least 270 units on the site.

In the Draft EA at page 2, there is a reference to an alternative site that is owned by the City and County of Honolulu and is available. We respectfully request that the BWS consider the Waikele Parcel 15 as not available and that the alternative site be utilized for the well facilities.

Sincerely,

Harvey L. Goth  
Senior Vice President

cc: Mr. John Chang  
George A.L. Yuen and Associates, Inc.

828 FORT STREET MALL • 4TH FLOOR • HONOLULU, HAWAII 96813 • (808) 521-5661 • FAX (808) 538-1476



*is now from give to Scot.  
Incorporate into EA.  
New site should have been  
mentioned in DEA.  
Scot, what your recommendation  
on EA for ~~alternative~~ site.  
Is a change order req'd?*

*1/13/97*

January 9, 1997

Mr. Harvey L. Goth  
Senior Vice President  
Schuler Homes, Inc.  
828 Fort Street Mall, 4th Floor  
Honolulu, Hawaii 96813

Post-It <sup>®</sup> Fax Note	7671	Date	1/8	# of pages	3
To	George Yuen / J. Chong	From	S. Nuraoka		
Co./Dept.		Co.			
Phone #	536 0081	Phone #			
Fax #	536 0082	Fax #			

*Waipahu II DEA comments*

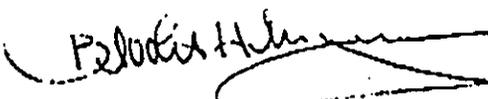
Dear Mr. Goth:

Subject: Your Letter of November 1, 1996 Regarding the Draft Environmental Assessment for the Board of Water Supply's Proposed Waipahu Wells IV

Thank you for your letter regarding the proposed location of the Board of Water Supply's Waipahu Wells IV site within Parcel 15 of the Waikele development. We understand that Parcel 15 is subject to the City Council's Unilateral Agreement on the Waikele development which requires 270 housing units to be constructed. Our recent hydro-geological evaluation indicates that both alternative well sites are suitable for adequate water source development. Therefore, we will pursue the alternative site makai of H-1.

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

Very truly yours,



**RAYMOND H. SATO**  
Manager and Chief Engineer

SM/BU:do  
cc: R. Sato  
Land  
B. Usagawa

96-3435

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

October 31, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang: *John*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, WAIPAHU WELLS IV  
TMK: 09:04:07-042  
WAIPAHU, OAHU

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Waipahu Wells IV. We have completed our review and 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 DEA indicates that the project will include the development of four 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 currently all of the other BWS Waipahu wells require granular activated carbon (GAC) treatment to remove chemical contaminants. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source.
4. In addition, water quality analyses, performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director 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 County of Honolulu, the Honolulu Board of Water Supply will be responsible for the review and approval of the plans.
6. Please correct the typographical error on Page 2, Section IV - Permits and Approvals Required, Item No. 6. The reference "11-200-29" should be replaced with "11-20-29."

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

Sincerely,



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

QK:la



O'AHU GROUP  
SIERRA CLUB, HAWAII CHAPTER  
P.O. Box 2577, Honolulu, Hawaii 96803  
Phone: (808) 538-6616

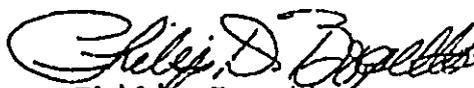
October 31, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania St. #303  
Honolulu, HI 96817

Dear Mr. Chang,

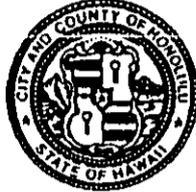
The O'ahu Group of the Sierra Club requests that the final environmental assessment for exploratory wells in Waipahu discuss how much the wells will reduce flow from springs. What is the existing flow from springs? Will this flow be reduced by more than five percent?

Sincerely,

  
Philip Bogetto  
Chair

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813 • (808) 523-4432



JEREMY HARRIS  
MAYOR

PATRICK T. ONISHI  
DIRECTOR

LORETTA K.C. CHEE  
DEPUTY DIRECTOR

96-07636 (ASK)

October 29, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Special Management Area Review

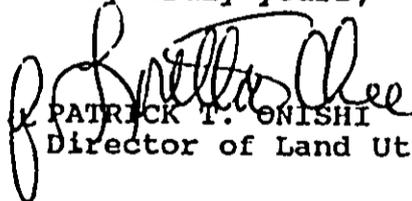
Tax Map Key : 9-4-07: 42  
Type of Project: Development of four exploratory wells

The proposed project on the referenced tax map key has been reviewed. We find that it:

- Is not within the Special Management Area.
- Is within the Special Management Area, but is not defined as "development" and is therefore, exempt (Section 25-1.3 [2][ ], Chapter 25, Revised Ordinances of Honolulu).

Should you have any questions, please contact the Environmental Review Branch at 523-4077.

Very truly yours,

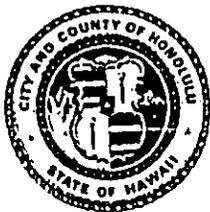
  
PATRICK T. ONISHI  
Director of Land Utilization

PTO:am

g:96-07637.ask

DEPARTMENT OF PUBLIC WORKS  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



JEREMY HARRIS  
MAYOR

KENNETH E. SPRAGUE  
DIRECTOR AND CHIEF ENGINEER

DARWIN J. HAMAMOTO  
DEPUTY DIRECTOR

ENV 96-268

October 28, 1996

Mr. John Chang  
George A. L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Subject: Draft Environmental Assessment (DEA)  
Waipahu Wells IV  
TMK: 09-04-07: 042

We have reviewed the subject DEA and have the following comment:

Effluent discharge permit is required from the Department of Public Works, City and County of Honolulu, if discharge enters into City streets or storm drain system.

Should you have any questions, please call Mr. Alex Ho,  
Environmental Engineer, at 523-4150.

Very truly yours,

A handwritten signature in black ink, appearing to read "Ken Sprague", is written over the typed name.

KENNETH E. SPRAGUE  
Director and Chief Engineer

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

CHAIRPERSON  
MICHAEL D. WILSON  
BOARD OF LAND AND NATURAL RESOURCES  
DEPUTY  
GILBERT S. COLOMA-AGARAN

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

October 28, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Ref: Draft Environmental Assessment, Waipahu Wells IV  
(TMK: 09:04:07-042)

We have reviewed the project in which the applicant, Honolulu Board of Water Supply, proposes to drill four exploratory wells in the Waipahu Area.

The Division of Aquatic Resources has no objection to this request since the proposed project is not expected to have significant adverse impact on aquatic resource values in this area. Nearby Waikele Stream is known to harbor native endangered insects and native aquatic species such as *Awaous stamineus*, etc., but it is believed that the project will be of no major impact to this area. However, construction activities could have short-term impacts on aquatic resources such as temporary turbidity, biota displacement and disturbance. The Division supports the mitigative measures mentioned in the report that addresses these issues. In addition, precautions should be taken to prevent contaminants such as drill cuttings, cutting extraction medium, sediment, pollutants, petroleum products, and debris from possibly entering the aquatic environment. We also suggest that site work be scheduled for periods of minimal rainfall and lands denuded of vegetation be replanted or covered as quickly as possible to control erosion.

Yours truly,

A handwritten signature in cursive script, appearing to read "William S. Devick".

WILLIAM S. DEVICK, Acting Administrator  
Division of Aquatic Resources

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

October 29, 1996

MICHAEL D. WILSON  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES

DEPUTY  
GILBERT S. COLOMA-AGARAN

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

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 N. Beretania St., Ste. 303  
Honolulu, HI 96817

Dear Mr. Chang:

SUBJECT: Draft Environmental Assessment, Waipahu Wells IV, TMK: 09:04:07-042

We have reviewed the subject and have no comments or objections to the proposed request.  
Thank you for the opportunity to comment.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael G. Buck".

Michael G. Buck  
Administrator

cc: Oahu Branch  
Land Division



United States  
Department of  
Agriculture

Our People...Our Islands...In Harmony

Natural  
Resources  
Conservation  
Service

December 10, 1996

P.O. Box 50004  
Honolulu, HI  
96850

Mr. George A. L. Yuen, President  
George A. L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, HI 96817

Dear Mr. Yuen:

Subject: Draft Environmental Assessment (DEA) - Waipahu Wells IV, Waipahu, HI

We have reviewed the above-mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO  
State Conservationist

The Natural Resources Conservation Service works hand-in-hand with  
the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

BENJAMIN J. CAYETANO  
GOVERNOR



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

November 1, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Subject: Draft Environmental Assessment (DEA), Waipahu  
Wells IV, Waipahu, Oahu, Hawaii, TMK 9-4-07: 42

The Department of Business, Economic Development, and Tourism forwarded the subject DEA to our office for review and comment.

We have reviewed the DEA for the subject project and confirm that the Waipahu Wells IV site, as represented on Figures 1 and 3 of the DEA, is located within the State Land Use Urban District.

For your information, the site was a portion of the 577.21-acre petition area reclassified by the Commission from the Agricultural District to the Urban District under LUC Docket No. A85-594/Amfac Property Development Corp. for residential, golf course, commercial, and open spaces uses.

We note that Condition No. 5 of the Commission's Decision and Order dated February 28, 1986, approving the reclassification states the following:

5. Petitioner shall, in coordination with the State Department of Land and Natural Resources and the Honolulu Board of Water Supply, provide an adequate supply of water and the necessary transmission system to the Property. In the event water is not available from existing sources, Petitioner shall develop additional water sources, storage and transmission facilities as required by State and County agencies.

Clarification should be provided as to whether the proposed Waipahu IV project is intended to comply with Condition No. 5 above.

Mr. John Chang  
November 1, 1996  
Page 2

We have no further comments to offer at this time. We appreciate the opportunity to comment on the DEA.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,



ESTHER UEDA  
Executive Officer

EU:th

cc: DBEDT (Referral No. 96-258-0)  
OEQC

April 11, 1997

Ms. Esther Ueda, Executive Officer  
Land Use Commission  
Department of Business, Economic  
Development and Tourism  
State of Hawaii  
P. O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Ms. Ueda:

Subject: Draft Environmental Assessment for the Board of Water Supply's  
Proposed Waipahu Wells IV

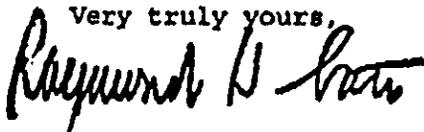
Thank you for your letter on the Draft Environmental Assessment for the Board of Water Supply's proposed Waipahu Wells IV project.

We have the following comments to your concerns:

1. We understand that the Waipahu Wells IV site was a portion of the 577.21 acre petition area reclassified by the Commission from the Agricultural District to the Urban District for residential, golf course, commercial and open space uses.
3. We acknowledge your Condition No. 5 of the Commission's Decision and Order dated February 28, 1986, approving the reclassification. The proposed Waipahu Wells IV project is intended to provide additional water supply for future growth of the Ewa, Central Oahu, and primary urban center areas as identified in the County development plans. Water service to this parcel will be determined when the development plans are formalized.

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

Very truly yours,



RAYMOND H. SATO  
Manager and Chief Engineer

cc: G. Yuen and Associates, Inc.

SM/BU:js

cc: R. Sato  
B. Usagawa

P-196/97

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

October 31, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang: *John*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, WAIPAHU WELLS IV  
TMK: 09:04:07-042  
WAIPAHU, OAHU

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Waipahu Wells IV. We have completed our review and 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 DEA indicates that the project will include the development of four 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 currently all of the other BWS Waipahu wells require granular activated carbon (GAC) treatment to remove chemical contaminants. The engineering report must identify all potential sources of contamination and evaluate alternative control measures which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source.
4. In addition, water quality analyses, performed by a laboratory certified in the State of Hawaii, must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional tests may be required by the Director 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 County of Honolulu, the Honolulu Board of Water Supply will be responsible for the review and approval of the plans.
6. Please correct the typographical error on Page 2, Section IV - Permits and Approvals Required, Item No. 6. The reference "11-200-29" should be replaced with "11-20-29."

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

Sincerely,



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

QK:la

Post-It Fax Note	7871	Date	# of pages
To	Jon Chang	From	
Co./Dept.		Co.	
Phone #		Phone #	
Fax #	536 0082	Fax #	

April 15, 1997

Mr. William Wong, P.E.  
 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 Board of Water Supply's  
 Proposed Waipahu Wells IV

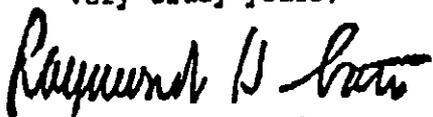
Thank you for your letter on the Draft Environmental Assessment (EA) for the Board of Water Supply's proposed Waipahu Wells IV project.

We have the following comments on your concerns:

1. We will submit an engineering report to the Director of Health if the exploratory wells are productive and will be converted to a production facility.
2. 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 source.
3. The water quality analyses will be performed by a laboratory certified in the State of Hawaii, and be submitted as part of the report to demonstrate compliance with all drinking water standards.
4. The correct administrative rule for the engineering report is 11-20-29. This will be reflected in the Final EA.

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

Very truly yours,



RAYMOND H. SATO  
 Manager and Chief Engineer

cc: G. Yuen and Associates, Inc.

SM:rk

cc: R. Sato  
 B. Usagawa

P-197-97

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF AQUATIC RESOURCES  
1151 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

CHAIRPERSON  
MICHAEL D. WILSON  
BOARD OF LAND AND NATURAL RESOURCES  
DEPUTY  
GILBERT S. COLOMA-AGARAN

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

October 28, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania Street, Suite 303  
Honolulu, Hawaii 96817

Dear Mr. Chang:

Ref: Draft Environmental Assessment, Waipahu Wells IV  
(TMK: 09:04:07-042)

We have reviewed the project in which the applicant, Honolulu Board of Water Supply, proposes to drill four exploratory wells in the Waipahu Area.

The Division of Aquatic Resources has no objection to this request since the proposed project is not expected to have significant adverse impact on aquatic resource values in this area. Nearby Waikele Stream is known to harbor native endangered insects and native aquatic species such as *Awaous stamineus*, etc., but it is believed that the project will be of no major impact to this area. However, construction activities could have short-term impacts on aquatic resources such as temporary turbidity, biota displacement and disturbance. The Division supports the mitigative measures mentioned in the report that addresses these issues. In addition, precautions should be taken to prevent contaminants such as drill cuttings, cutting extraction medium, sediment, pollutants, petroleum products, and debris from possibly entering the aquatic environment. We also suggest that site work be scheduled for periods of minimal rainfall and lands denuded of vegetation be replanted or covered as quickly as possible to control erosion.

Yours truly,

A handwritten signature in cursive script, appearing to read "William S. Devick".

WILLIAM S. DEVICK, Acting Administrator  
Division of Aquatic Resources

April 11, 1997

Mr. William S. Devick, Acting Administrator  
Division of Aquatic Resources  
Department of Land and Natural Resources  
State of Hawaii  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Devick:

Subject: Draft Environmental Assessment for the Board of Water Supply's Proposed Waipahu Wells IV

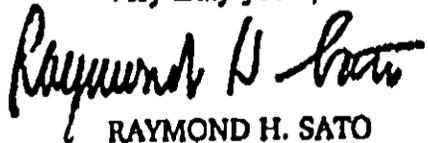
Thank you for your letter on the Draft Environmental Assessment (EA) for the Board of Water Supply's (BWS) proposed Waipahu Wells IV project.

We have the following comments on your concerns:

1. We acknowledge that the proposed project is not expected to have significant adverse impacts on aquatic resource values in the area.
2. During construction and test pumping of the exploratory wells, we shall implement best management practices to minimize potential pollution of receiving waters. Measures include swales, berms and sedimentation basins with oil absorptive material to ensure that sediment and petroleum products will be retained on-site and prevented from entering any receiving waters.
3. We expect that the bulk of the construction work on the site will be completed during periods of minimal rainfall. We shall minimize clearing and grubbing of vegetation and will revegetate cleared areas as soon as practical.

If you have any questions, please contact Barry Usagawa at 527-5135.

Very truly yours,



RAYMOND H. SATO  
Manager and Chief Engineer

cc: G. Yuen and Associates, Inc.

SM/BU:rk

cc: R. Sato, Engineering (Construction), C. Lao, B. Usagawa  
P-195/97



O'AHU GROUP  
SIERRA CLUB, HAWAII CHAPTER  
P.O. Box 2577, Honolulu, Hawaii 96803  
Phone: (808) 538-6616

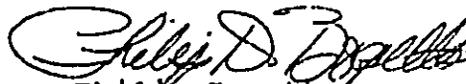
October 31, 1996

Mr. John Chang  
George A.L. Yuen and Associates, Inc.  
100 North Beretania St. #303  
Honolulu, HI 96817

Dear Mr. Chang,

The O'ahu Group of the Sierra Club requests that the final environmental assessment for exploratory wells in Waipahu discuss how much the wells will reduce flow from springs. What is the existing flow from springs? Will this flow be reduced by more than five percent?

Sincerely,

  
Philip Bogetto  
Chair

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April 15, 1997

Mr. Philip Bogetto, Chair  
Oahu Group, Sierra Club Hawaii Chapter  
P. O. Box 2577  
Honolulu, Hawaii 96803

Dear Mr. Bogetto:

Subject: Draft Environmental Assessment for the Board of Water Supply's Proposed Waipahu Wells IV

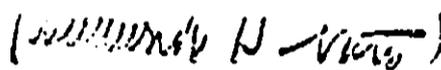
Thank you for your letter on the Draft Environmental Assessment for the Board of Water Supply proposed Waipahu Wells IV project.

The effect on the Pearl Harbor springs from the pumpage of Waipahu Wells IV is expected to be minimal due to the location of the well sites relative to the Oahu Sugar Company (OSCo) wells and stream diversions located within the Waikele Gulch. Pumpage has also been significantly reduced due to the closure of OSCo. As long as future pumpage remains less than previous pumping levels, the springs will not be adversely affected.

The flow of the Waikele Springs averaged between 6 to 7 mgd while OSCo was in operation. Since permitted uses will not exceed the sustainable yield of the aquifer, the spring flows will not decrease below historical levels during plantation operation.

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

Very truly yours,



RAYMOND H. SATO  
Manager and Chief Engineer

cc: G. Yuen and Associates, Inc.

SM/BU:rk

cc: R. Sato, C. Lao, B. Usagawa

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