Dear Water Use Permittee:

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6
Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5
Department of Parks and Recreation, Well No. 2001-03, WUP No. 167, 0.030 mgd, TMK 9-1-61:35
Palm Court Association, Well No. 2002-12, WUP No. 169, 0.040 mgd, TMK 9-1-61:22
Palm Villa II Association, Well No. 2001-08, WUP No. 168, 0.048 mgd, TMK 9-1-61:27
Arbors Association, Well No. 2001-07, WUP No. 171, 0.063 mgd, TMK 9-1-61:32
U.S. Fish & Wildlife, Well No. 2101-14, WUP No. 247, 0.216 mgd, TMK 9-1-17:12
Gentry Development Co., Well No. 2001-04, WUP No. 302, 0.040 mgd, TMK 9-1-61:7
Gentry Development Co., Well No. 2001-09, WUP No. 344, 0.023 mgd, TMK 9-1-61:2
Ewa by Gentry Community Association, Well No. 2001-05, WUP No. 450, 0.066 mgd, TMK 9-1-70:132
Gentry Homes, Ltd., Well No. 2001-12, WUP No. 504, 0.249 mgd, TMK 9-1-102:31
Gentry Homes, Ltd., Well No. 1901-05, WUP No. 505, 0.056 mgd, TMK 9-1-69:8
U.S. DOC/NOAA/NWS, Well No. 1900-23, WUP No. 501, 0.023 mgd, TMK 9-1-1:1
Coral Creek Golf, Inc., Well No. 2002-17, WUP No. 577, 0.498 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well No. 2001-13, WUP No. 578, 0.800 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well Nos. 2001-14, 2002-15,17,19,
WUP No. 579, 0.892 mgd, TMK 9-1-69:10&11, 9-1-61:54
AOAO Suncrest/The Shores/Lombard Way/Avalon, Well No. 2001-10,
WUP No. 629, 0.022 mgd, TMK 9-1-10:17
State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-04,07, WUP No. 432, 0.494 mgd, TMK 9-1-16:25
State Housing Community Development Corporation of Hawaii,
Well Nos. 2003-08, WUP No. 520, 0.237 mgd, TMK 9-1-16:108
Kapolei People’s Inc., Well Nos. 2003-01,02,05, WUP No. 438, 1.000 mgd, TMK 9-1-16:25
Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

Conversion of Interim Water Use Permits for
New Irrigation Uses to Permanent Water Use Permits
Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the subject water use permits.
By a unanimous vote at their meeting on July 12, 2006, the Commission corrected the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted.

The Commission ruled that permittees shall be notified by letter of the Commission's action to convert these water use permits from interim to permanent and the deletion of Special Condition d. The Commission further ruled that re-issuance of these water use permits is not necessary.

Please be advised that a compliance review will be initiated shortly as required under §174C-56 Hawaii Revised Statutes. We recommend that you carefully review the conditions of your permit and ensure that you are in compliance with all Standard and Special Conditions.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

LYN:ss
Minutes

July 12, 2006

4. **The permittee shall submit a detailed agriculture plan to support any future water use permit application for increased agricultural use at this parcel.**

MOTION: (Ching/Frazier)
To approve submittal as amended by staff
UNANIMOUSLY APPROVED

C. **GROUND WATER REGULATION**


CONVERSION OF INTERIM WATER USE PERMITS, FOR NEW IRRIGATION USES TO PERMANENT WATER USE PERMITS, Puuoloa and Kapolei Ground Water Management Areas, Oahu

Presentation of submittal: Lenore Nakama
RECOMMENDATION:

Staff recommends that the Commission correct the error of approving and issuing interim permits for new irrigation uses in the Pauloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted. The permittees shall be notified by letter of the Commission's action to convert these water use permits from interim to permanent and the deletion of Special Condition d. Re-issuance of these water use permits is not necessary.

DISCUSSION:

Ms. Nakama stated that these interim permits expired on July 1, 2006 and staff is recommending that the Commission correct the error that was made in issuing the permits as interim, rather than permanent, water use permits. Action is also requested to inform these users that they may continue to pump their wells in accordance with their allocations and the chloride limit placed on irrigation wells in the Ewa Caprock Aquifer Sector Area.

Commissioner Ching inquired whether the subject permits covered all the users in the Ewa Caprock Aquifer Sector Area. She was concerned that giving certain permits a permanent status may give them a higher priority or status over other interim permits.

Ms. Nakama stated that the submittal covered all the new irrigation users which had a duration of July 1, 2006 attached to their interim permits. There are other interim permits that have been issued for industrial and other non-irrigation uses in the Ewa Caprock Aquifer Sector Area, there are also other interim permits that have been issued for other new and existing uses elsewhere in the State. Staff will address the rest of the interim permits as part of the 20-year compliance review that is mandated by the Water Code. Staff does not feel that the type of permit (i.e., interim or permanent) under which the water is being used will have a bearing on water use priorities should a future competition situation arise.

MOTION:  (Ching/Frazier)
Approval of staff recommendation
UNANIMOUSLY APPROVED

G. NON-ACTION ITEMS

1. Rainfall Index Update Presentation by Dr. Pao Shin Chu, State Climatologist, University of Hawaii, Department of Meteorology

Presentor of non-action item: Neal Fujii
Minutes

Graduate student, Ms. Cindy Ditner presented an update of rainfall throughout the state through a PowerPoint presentation. She stated that it has been 33 years since the last update was done. In preparing this index they gathered rainfall data throughout the State through temperature, elevation and rain gages. If a station did not submit information for 4 months within a calendar year then it was deleted.

H. NEXT COMMISSION MEETING (TENTATIVE)

1. August 16, 2006
2. September 20, 2006

The meeting was adjourned at 12:00 p.m.

Respectfully submitted,

PAULYNE K. ANAKALEA
Secretary

Approved as submitted:

DEAN A. NAKANO
Acting Deputy Director
Ref: ewa caprock interim wup conversion.sub

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 12, 2006
Honolulu, Oahu

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
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CONVERSION OF INTERIM WATER USE PERMITS
FOR NEW IRRIGATION USES TO PERMANENT WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

ITEM C-2
PERMITTEES: See Exhibit 1  

LANDOWNERS: See Exhibit 1

SUMMARY OF REQUEST:

Staff recommends that the Commission correct past water use permit approval errors in the Puuloa and Kapolei Aquifer Systems Areas of the Ewa Caprock Ground Water Management Area and convert the interim water use permits for new irrigation uses to permanent water use permits.

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaïwa Aquifer System Areas. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. All permitted Ewa Caprock irrigation uses prior to 1993 were operating under permanent water use permits.

Designation of the Ewa Caprock and its Aquifer System Areas as water management areas was precipitated by the City and County of Honolulu’s (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock Aquifer Sector Area and reclaimed sewage effluent from the Honolulu Wastewater Reclamation Facility. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole Aquifer System Areas (Yuen & Associates, Inc., 1989; Exhibit 2).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

On July 5, 1995, the Commission extended the permits, which were now called interim (instead of temporary) permits.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a formal sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer Sector Area:
It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for each individual irrigation well at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuoloa, Kapolei, and Malakole Aquifer System Areas in the Ewa Caprock Aquifer Sector Area and approved pending applications for new and continued irrigation uses. The interim water use permits were to expire on October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999. (Note: Wastewater reuse was anticipated due to the 309 Consent Decree settlement between the City and DOHEPA in 1994, which required the City to implement a reuse program with agreed-upon time schedule and associated volumes: 2.0 mgd by 7/1/98, 5 mgd by 6/30/99 and 10 mgd by 7/1/01. The City requested and received extensions to the implementation schedule.)

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions. The interim permits specified a duration to July, 2001, or 1) until treated wastewater is available and acceptable for use, or 2) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS' purchase of the Honolulu Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell Industrial Park.

On July 18, 2001, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibits 3 and 4). Special Condition 3 specifies that the duration of the interim permits is to July 1, 2006, or 1) until treated wastewater is available and acceptable for use, or 2) until such time that a significant change in permitted, actual, or projected uses of water supply occurs.
ANALYSIS/ISSUES:

All of the subject permits are for new irrigation uses that have a July 1, 2006 expiration date. Under the Water Code and Administrative Rules, interim permits are only mentioned in the sections dealing with existing uses. Section §174C-50 HRS contains the provisions for existing uses. Subsection (e) provides for the issuance of interim permits for existing uses:

“§174C-50 Existing uses. ... (e) The commission shall issue an interim permit; provided that the existing use meets the conditions of subsection (b). The commission shall also issue an interim permit for an estimated, initial allocation of water if the quantity of water consumed under the existing use is not immediately verifiable, but the existing use otherwise meets the conditions of subsection (b) for a permit of an interim permit. An interim permit is valid for such time period specified therein. The commission may issue successive interim permits of limited duration. Interim permits are subject to revocation under section 174C-58. Whenever interim permits are to be issued, the time periods specified in subsection (d) apply to the issuance or nonissuance of interim permits.” §174C-50(e) HRS

Staff believes the intent of the provision is to bring existing users in newly-designated areas under regulation in a timely manner by issuing interim permits pending verification of the quantity of the existing use. Subsection (f) provides for the installation of metering or gauging devices, and if so prescribed, “...such metering or gauging devices shall be in place and operational for at least one year before a determination is made as to the quantity of water being consumed in an existing use and a final permit is issued.” §174C-50(f) HRS

Because the Water Code gives preference to existing uses over new uses and water reservations, it is important that permitted existing use quantities be verified. In the event of future competition, existing uses may have a higher priority than new uses.

In issuing permits for new uses, the applicable statute, §174C-53 HRS, does not mention interim permits.

The recommended action is to correct the error that was made in issuing interim permits for new uses and to let users know that they can continue their use beyond July 1, 2006, subject to the Standard and Special Conditions that have been attached to these permits (Exhibits 3 and 4), with the exception of Special Condition d., which limits the duration of these new use permits. Special Condition d. is not necessary because the Water Code provides for review of water use permits (§174C-56 HRS), modification of water use permits (§174C-57 HRS), and revocation of water use permits (§174C-58 HRS); therefore, permanent permits are still subject to review, modification, and revocation.

The Deputies Attorney General have concurred that the awarding of interim permit for new uses is an error. The erroneous practice of approving and issuing interim permits for new uses was corrected beginning in about 2003. The current practice of the Commission is to approve permanent permits for new uses, which are always subject to standard and special conditions that define limitations of these permits.

There are other instances in which the Commission has issued interim permits for new uses in the Ewa Caprock and other water management areas. However, the Commission did not attach specific expiration dates to other interim permits for new uses. Therefore, the staff is planning to address the status of other interim permits, as well as all permanent water use permits, including the subject permits, as part of the 20-year compliance review that is required under §174C-56 HRS. This compliance review will be initiated in 2007 and completed in 2008.
RECOMMENDATION:

Staff recommends that the Commission correct the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted. The permittees shall be notified by letter of the Commission’s action to convert these water use permits from interim to permanent and the deletion of Special Condition d. Re-issuance of these water use permits is not necessary.

Respectfully submitted,

DEAN A. NAKANO
Acting Deputy Director

Exhibit(s):
1 (Interim Water Use Permittees)
2 (Location Map)
3 (Standard Water Use Permit Conditions)
4 (Special Water Use Permit Conditions)

APPROVED FOR SUBMITTAL:

PETER T. YOUNG
Chairperson
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<td>650</td>
<td>1901-06,</td>
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Exhibit 1
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</table>
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;

EXHIBIT 3
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the [Puuloa or Kapolei] Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the [Puuloa or Kapolei] Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.
16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the [Puuloa or Kapolei] Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
SPECIAL CONDITIONS

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
  a) to July 1, 2006, or
  b) until treated wastewater is available and acceptable for use, or
  c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuola Aquifer System shall comply with the Puuola Water Shortage Plan adopted by the Commission.
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection
   
   - Sampling Schedule
     
     The sampling schedule depends upon your pump capacity:
     
     | Pump Capacity (gpm) | Sampling Schedule |
     |---------------------|-------------------|
     | Less than or equal to 50 | Once a month |
     | Greater than 50       | Once a week       |

   - When to Sample
     
     Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   - Sample Bottle
     
     Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   - Labeling
     
     On the sample bottle, affix a label that contains the following information:
     
     Well No.
     Date
     Time Sampled
     Elapsed Time after pump on
     Sampler's Name
     Water Temperature (if available)
     Pumping Rate (prior to sampling)

Attachment B
2. Determination of Chloride Concentration

- Private Laboratories

If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

Private laboratories will use methods that are more accurate than field methods described below.

- Hach Kit (Drop Count Titrator)

Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- Hach Kit (Digital Titrator)

A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

Note: Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- Other Methods

An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis: ______________

3. Total elapsed time before sampling: ______________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:

      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:

      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

Attachment C
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. Box 621
Honolulu, Hawaii 96809

Attn: Lenore
U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage $  83
Certified Fee - 2.30
Return Receipt Fee (Endorsement Required) - 1.75
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $  4.88

Sent To
Certified Management Inc.
3179 Koapaka Street
Honolulu, HI 96819-1927

Postmark Here
AUG 28 2002

See Reverse for Instructions
Certified Mail Provides:
- A unique identifier for your mailpiece
- A signature upon delivery
- A record of delivery kept by the Postal Service for two years

Important Reminders:
- Certified Mail can ONLY be combined with First-Class Mail or Priority Mail.
- Certified Mail is not available for any class of international mail.
- NO INSURANCE COVERAGE IS PROVIDED with Certified Mail. For valuables, please consider insured or Registered Mail.

For an additional fee, a Return Receipt may be requested to provide proof of delivery. To obtain Return Receipt service, please complete and attach a Return Receipt (PS Form 3811) to the article and add applicable postage to cover the fee. Endorse mailpiece “Return Receipt Requested”. To receive a fee waiver for a duplicate return receipt, a USPS postmark on your Certified Mail receipt is required.

Useful Note: Delivery may be restricted to the addressee or the sender. Advise the clerk or mark the mailpiece with the restriction, if a postmark on the Certified Mail receipt is desired, please present the article to the Postmaster for postmarking. If a postmark on the Certified Mail receipt is desired, please attach a Certified Mail sticker to the article and present it when making an inquiry.

IMPORTANT: Save this receipt and present it when making an inquiry.

102595-01-M-10
August 28, 2002

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Certified Management, Inc.
Agent for AOAO Suncrest/
The Shores/Lombard Way/Avalon
3179 Koapaka Street
Honolulu, HI 96819-1927

Dear Mr. Molina:

Transfer of Water Use Permit for Well No. 2001-10
Puuloa Ground-Water Management Area, Oahu

This is in response to a July 30, 2002 letter from Gentry Homes, Ltd., notifying us that the water use permit for Well No. 2001-10 (WUP No. 355) has been transferred to AOAO Suncrest/The Shores/Lombard Way/Avalon, effective August 1, 2002.

This letter transmits your water use permit for Area 24 Well (Well No. 2001-10) for use of 0.22 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on July 18, 2001. This water use permit, WUP No. 629, supersedes WUP No. 355. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

Require adherence to the Conservation Conditions shown in Attachment C.

In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of weekly salinity and monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular weekly (for salinity) or monthly (for total pumpage, water level, and water temperature) basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission’s overall Water Shortage Plan.

If you have any questions, please call Lenore Nakama of the Commission staff at 587-0218.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Attachments
PERMITTEE

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
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</thead>
<tbody>
<tr>
<td>Address</td>
<td>Address</td>
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<tr>
<td>Certified Management, Inc.</td>
<td>Certified Management, Inc.</td>
</tr>
<tr>
<td>Agent for AOAO Suncrest/</td>
<td>Agent for AOAO Suncrest/</td>
</tr>
<tr>
<td>The Shores/Lombard Way/Avalon</td>
<td>The Shores/Lombard Way/Avalon</td>
</tr>
<tr>
<td>3179 Koapaka Street</td>
<td>3179 Koapaka Street</td>
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<tr>
<td>Honolulu, HI 96819-1927</td>
<td>Honolulu, HI 96819-1927</td>
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PERMITTED SOURCE INFORMATION

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<tr>
<th>Island</th>
<th>Water Management Area</th>
<th>Aquifer Sector</th>
<th>Aquifer System</th>
<th>System Sustainable Yield</th>
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<th>State Well No.</th>
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<td>Oahu</td>
<td>Ewa Caprock</td>
<td>Puuloa</td>
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<td>Area 24 Well</td>
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PERMITTED USE INFORMATION

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<tr>
<th>Reasonable beneficial use</th>
<th>Landscape and Roadway Irrigation</th>
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<td>Chloride Cap</td>
<td>1,000 mg/l</td>
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<td>Address</td>
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<tr>
<td>State land use classification</td>
<td>Urban</td>
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<td>County zoning classification</td>
<td>A-1</td>
</tr>
</tbody>
</table>
Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or

g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:

a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.
15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management

Attachment
July 30, 2002

Mr. Gilbert S. Coloma-Agaran  
Chairperson  
Commission on Water Resource Management  
Department of Land & Natural Resources  
State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Coloma-Agaran:

Subject: Area 24 Well – State Well No. 2001-10;  
Ground Water Use Permit No. 355

Pursuant to the terms of the above-referenced Ground Water Use Permit, I am writing to notify you that effective August 1, 2002, ownership and control of the Area 24 well system will transfer from Gentry Homes, Ltd. to the Association of Apartment Owners of Suncrest/The Shores/Lombard Way/Avalon. The Association will assume responsibility for operating and maintaining the system and all associated costs, including but not limited to, compliance with the terms and conditions of the Ground Water Use Permit and future requirements that may be imposed by the Commission on Water Resource Management.

Please forward correspondence to the Association at the following address:

Certified Management, Inc.  
Agent for AOAO Suncrest/The Shores/Lombard Way/Avalon  
Attention: Brian Molina  
3179 Koapaka Street  
Honolulu, Hawaii 96819-1927

Should you have any questions, please call me at 599-8345.

Very truly yours,

GENTRY HOMES, LTD.

Patrice Tottori Liu  
Project Director

Cc: Certified Management, Inc.  
Agent for AOAO Suncrest/The Shores/Lombard Way/Avalon  
Attention: Brian Molina
Mr. Randolph Ouye  
Gentry Development Co.  
Gentry Homes, Ltd.  
P.O. Box 295  
Honolulu, HI 96809  

Dear Mr. Ouye:

Notice of Action
Extension of Interim Water Use Permits  
Puuloa Ground Water Management Area, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on July 18, 2001, to extend your interim water use permits (WUP Nos. 302, 344, 355, 504, & 505; Well Nos. 2001-04, 2001-09, 2001-12, & 1901-05), subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace former special conditions):

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Pualoa Aquifer System shall comply with the Pualoa Water Shortage Plan adopted by the Commission.

The Commission will suspend the four-year period of nonuse for permittees that convert to reclaimed water service, beginning from the first date of reclaimed water service delivery under an agreement with the Board of Water Supply. The suspension will be for the duration of the interim permit or until the agreement with Board of Water Supply for reclaimed water service delivery ends, whichever comes first.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ky
Attachments
Is your RETURN ADDRESS completed on the reverse side?

1. Complete Items 1 and/or 2 for additional services. Follow Items 1 and 2 to complete your name and address on the reverse side of this form so that we can return this mail to you.

2. Complete Item 1 and/or 2 for additional services. Follow Items 1 and 2 to complete your name and address on the reverse side of this form so that we can return this mail to you.

3. Attach this form to the front of the mailpiece or on the back if space does not permit.

4. Return Receipt Requested on the mailpiece below the article number.

5. Restricted Delivery Fee

6. The Return Receipt will show to whom the article was delivered and the date delivered.

7. Consult postmaster for fee.

8. Return Receipt for Merchandise

9. Addressee's Address (Only if requested and fee is paid)

10. Postmark or Date

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TESTIMONY BY APPLICANT:

Mrs. Harms stated that according to the Hawaii County Department of Water Supply (DWS), she would need 2 hookups per unit and a total of 16 units that require water. She stated that the units are located approximately 100 feet from where the County system terminates at the entrance to Vacationland. Mrs. Harms stated that DWS informed her that only 50 hookups were allowable to the Association meter, and that the association meter was filled to the maximum. At the present, Mrs. Harms stated that she has a temporary hookup of 10 lines with DWS.

MOTION: (RICHARDS/NOBRIGA)
To approve the submittal as amended in Alternate Recommendation #1.
UNANIMOUSLY APPROVED AS AMENDED.

4. Extension Of Interim Water Use Permits, Puuloa and Kapolei Ground Water Management Areas, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

AMENDED RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

   b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.

   d. The duration of the interim permit shall be

      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirements is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Exhibit 9.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and The Estate of James Campbell (Well Nos. 1905-08, 10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barbers Point Kapolei Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

TESTIMONY BY APPLICANT:

Ms. Terry Kondo of Watanabe Ing & Kawashima representing Hawaii Prince Golf Course expressed concerns on staff recommendations #2, and 1g.

Mr. Tom Nance stated that when the golf course switches over to the effluent, the wells will not be run weekly. They will be run on occasion to keep them viable for use when effluent is not available. They will not be used on a weekly basis so providing a weekly data will become difficult. In the case of Hawaii Prince, samples that were obtained at one-half to
one-hour intervals were misleading. An internal sample protocol was developed so that all wells have to be run continuously for 24 hours before samples can be obtained. For that reason, Mr. Nance asked if condition 1 g could be modified that reporting be done on a monthly basis. He stated that trends are better noticed on a monthly data report.

Ms. Nakama stated that an administrative waiver was granted for Kapolei Golf Course because the long-term data was so stable. No significant movements were indicated in the water levels. Hawaii Prince and Coral Creek could request an administrative waiver from the weekly chloride-sampling requirement from the Chairperson.

Mr. Glenn Bauer stated that records showed that there were no major differences for Hawaii Prince’s chlorides in the weekly and monthly data. He felt that monthly data reporting would be sufficient.

MOTION: (NOBRIGA/GIRALD)
To approve the submittal as amended.
UNANIMOUSLY APPROVED AS AMENDED.

5. County of Hawaii, Department of Public Works, Application for a Stream Channel Alteration Permit (SCAP-HA-325), Install Three Concrete Culverts and Replace Bridge Structures, Waiakea Stream, Hilo, Hawaii (TMK 2-4-01:007, 010, 122)

PRESENTATION OF SUBMITTAL: Mr. Edwin Sakoda

RECOMMENDATION:
That the Commission:

Approve a stream channel alteration permit for the construction of culverts at Puainako Street and bridge modifications at Komohana Street, Waiakea Stream, Hilo, Hawaii (TMK: 2-4-01:007, 010, 122). The permit shall be valid for two years subject to the standard stream channel alteration permit conditions in Exhibit 5.

MOTION: (NOBRIGA/RICHARDS)
To approve the submittal.
UNANIMOUSLY APPROVED.


PRESENTATION OF SUBMITTAL: Mr. Ryan Imata
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

July 18, 2001
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITTEE(S): See Exhibit 1

LANDOWNER(S): See Exhibit 1

LOCATION MAP: See Exhibit 2

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock’s sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock. Then-current uses were operating under permanent water use permits.

Designation of the Ewa Caprock as a water management area was precipitated by the City and County of Honolulu’s (City) urbanization plans for the Ewa area and a City ordinance requiring dual water systems for all new developments. Potable water was to be provided through the municipal system. Possible sources of non-potable water were brackish ground water from the Ewa Caprock aquifer and reclaimed sewage effluent. The estimated non-potable demand of 25 mgd after full buildout (Kumagai, 1996) far exceeded the estimated natural recharge to the caprock aquifer of less than 16 mgd (Bauer, 1996).

Because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture, in 1993, the Commission began awarding temporary one-year permits for new uses of caprock ground water. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).
On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.

At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

Also on March 13, 1996, the Commission adopted the following policy statement, clearing the way for application of reclaimed water on lands overlying the Ewa Caprock Aquifer:

"It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses."

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The rationale behind the chloride cap was to limit pumpage in those wells approaching the limit, to prevent a build-up of sodium in the clay soils, and to protect other users adjacent to those pumping higher chloride water. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits was to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincided with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provided a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

On October 22, 1998, the Commission extended the interim water use permits, subject to the Standard Conditions of a water use permit and new special conditions (Exhibit 3). The interim permits specified a duration to: 1) July, 2001, or 2) until treated wastewater is available and acceptable for use, or 3) until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The list of interim permits due to expire in July, 2001 is shown in Exhibit 4. The graphs of reported pumpage and chlorides are shown in Exhibit 5.

On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter for BWS' purchase of the Honouliuli Wastewater Reclamation Facility. The agreement includes BWS becoming the purveyor of reuse water, with the task of securing customers for 10 mgd by July 1, 2001. U.S. Filter will operate the facility for BWS under a 20-year service agreement. The City will provide secondary effluent to the facility and will take back 4 mgd of the R-1 water for City reuse applications. Some of the reclaimed water will supply industrial uses at Campbell
Industrial Park. (A briefing by the BWS on their reclamation program is scheduled as a separate item on this agenda.)

ANALYSIS/ISSUES:

A significant change in the water supply picture has been the acquisition of the Honouliuli Wastewater Reclamation Facility by the BWS and BWS' new role as purveyor of reclaimed water. Since their recent acquisition of the plant, BWS has been actively promoting the use of reclaimed water for non-potable needs over the Ewa Caprock Aquifer. Negotiations have been finalized for some City projects (West Loch and Ewa Villages developments) and for some of the golf courses that have interim caprock permits. Currently, we understand that a memorandum of understanding for golf course irrigation has been negotiated with Coral Creek, Hawaii Prince, and Barber's Point. The agreement provides for a set rate to July 1, 2006. The staff feels that this would be a good time to revisit these permits and the progress of the reclaimed water effort.

Even with reclaimed water as the primary irrigation source, ground water would still be used for the golf course water features, to maintain the pumps, and to mitigate potential reclaimed water quality or odor issues that may arise. The long-term goal of the golf courses is to blend reclaimed water with caprock ground water. Until reclaimed water is actually delivered and has been shown to be a reliable and acceptable source, the golf courses have requested that their interim permits be renewed for the same quantities. They have also requested that the Commission suspend the four-year nonuse clause for permit revocation. Section 174C-58 Haw. Rev. Stat. provides for the Commission and permittee to enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year revocation period. The staff feels that the promotion of alternative non-potable sources to meet non-potable needs is a satisfactory reason to suspend the four-year revocation period, given the uncertainties associated with this new source conversion, provided that other users and the resource are adequately protected.

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer. Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan. The staff feels that this management approach has been effective and is not recommending that the strategy be changed at this time.

MAXIMIZING THE UTILITY OF THE RESOURCE

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Of the projected total 13 mgd of R-1 water from the Honouliuli Wastewater Reclamation Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.
Given the City’s current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations for the Puuloa Aquifer System should not exceed 15 mgd. Current allocations in the Puuloa Aquifer System total 14.817.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) that can predict chloride response to pumpage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to fully implement its reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumpage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees have been put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition f. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff has been sending all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed Water Use Permit). Further, the staff has been analyzing the weekly water data reports, and we are continuing to work on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff’s analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

At this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit
classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission.

For the Puuloa Aquifer System, the Commission established the highest priority of nonpotable use as agriculture because the State’s policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter that transmits the permit and is also stated in Standard Condition 17. The staff will continue to work with users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

CHLORIDE CONCENTRATION TRENDS

The Commission staff established a caprock well monitoring network in 1993. Each month, the staff collects water level and chloride data at selected caprock wells. The staff’s analysis of the chloride trends at the individual wells and regionally is attached (Exhibit 7). The data show that the chloride concentration in the caprock water varies significantly from place-to-place and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule. Many of the sources have not exceeded the 1,000 mg/l chloride limit. The baseline data suggest that those wells that have exceeded the limit will continue to pump water exceeding 1,000 mg/l of chloride unless there is an influx of less saline water or a complete cessation of pumpage. The staff recommends that those operators with wells and/or batteries having >1,000 mg/l of chloride should apply for a variance from the established limit. Once reclaimed water is available, these wells should only be used for back-up purposes or for blending with reclaimed water to a quality of 1,000 mg/l of chloride or less.

Currently, variances from the chloride cap have been granted to Hawaii Prince Golf Club (Well Nos. 1900-02, 1901-17 to 20, 1901-03) and Pacific Tsunami Warning Center (Well No. 1900-23). In a letter dated August 7, 2000, The Estate of James Campbell (Campbell) requested that the Commission waive the salinity limit for its two nonpotable wells (Well Nos. 1905-08, 10). The Commission denied the request on November 16, 2000 because Campbell was in the process of transferring the nonpotable system to the BWS and an alternative source (reclaimed water) would soon be in place. Negotiations are still ongoing for the transfer of the nonpotable water system. Chloride levels at the Campbell wells are now about 1,200 ppm. The staff is recommending that the Commission approve temporary variances from the chloride limit pending the implementation of the reclaimed water system for those users that have requested variances. Other users whose wells are close to the chloride cap may also request variances. Unless a variance is requested and approved, wells exceeding the chloride limit
must shut down. The staff's recommendation on a variance request would be made with consideration to the well's proximity to the ocean and to other wells, its history of chloride and pumpage, the availability of alternative sources of water and possibility for conversion. The staff is recommending that future variance requests be delegated to the Chairperson for disposition.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 4, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):
   a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.
   b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.
   c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted.
   d. The duration of the interim permit shall be
      a) to July 1, 2006, or
      b) until treated wastewater is available and acceptable for use, or
      c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
   e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).
   f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.
   g. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.
   h. Require adherence to the Conservation Conditions shown in Exhibit 9.
   i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. Grant variances from the 1,000 mg/l chloride limit to Hawaii Prince Golf Club (Well Nos. 1900-02, 1900-17 to 20, 1901-03), Pacific Tsunami Warning Center (Well No. 1900-23), and
The Estate of James Campbell (Well Nos. 1905-08,10). The variances shall expire six (6) months after the first date of reclaimed water service delivery.

3. Delegate the authority to the Chairperson to approve future variance requests.

4. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issuance of new interim water use permits for these extended permits is unnecessary.

5. Suspend the four-year period of nonuse for the Hawaii Prince Golf Club, Coral Creek Golf Course and Barber Point Golf Course, beginning from the first date of reclaimed water service delivery under their agreement with the Board of Water Supply. The suspension will be for the duration of these interim permits or until the agreement with Honolulu Board of Water Supply for reclaimed water service delivery ends whichever comes first. This condition shall apply to any other interim permittee that converts to reclaimed water service.

Respectfully submitted,

LINNEL T. NISHIOKA
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)

Exhibit(s):
1 (Interim Permittees and Landowners at the Source Location)
2 (Well Location Map)
3 (Standard and Special Conditions, approved October 28, 1998)
4 (Interim Permitted Uses, Puuola and Kapolei Aquifer Systems)
5 (Graphs of Reported Pumpage and Chlorides)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Chloride Concentration Trends)
8 (Chloride Sampling Protocol)
9 (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 20, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

ATTACHMENT A
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the applicable aquifer system's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the applicable aquifer system, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage

ATTACHMENT A
pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the applicable Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
<table>
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<tr>
<th>PERMITTEE</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>ZIP</th>
<th>LANDOWNER</th>
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<td>U.S. NAVY</td>
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EWA CAPROCK INTERIM PERMITS
Special Conditions
(approved on October 22, 1998)

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;

EXHIBIT 3
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance.
of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

EXHIBIT 3
### Aquifer System Water Use Permit Index

**ISLAND OF OAHU**

<table>
<thead>
<tr>
<th>WUP No.</th>
<th>Approved Date</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAV (mgd)</th>
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</table>

Summary for 'SYSTEM' = KAPOLEI (8 detail records)

Totalling 2.033

<p>| <strong>WMA Aquifer System: PUULOA</strong> | | | | | | |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1900-02 | EP 22 | 0.301 | 0.160 |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1900-17 | WELL 2 | 0.352 | |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1900-18 | WELL 3 | 0.120 | |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1900-19 | WELL 4 | 0.053 | |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1900-20 | WELL 5 | 0.055 | |
| 501     | 8/26/98       | U.S. DOC/NOAA/NWS | 1900-23 | PACIFIC TSUNAMI | 0.023 | N/R |
| 469     | 1/14/98       | HAWAII PRINCE GOLF CLUB | 1901-03 | WELL 1 | 0.269 | |
| 505     | 10/22/98      | GENTRY HOMES, LTD. | 1901-05 | GENTRY AREA 13 | 0.056 | N/R |
| 347     | 5/14/97       | HASEKO (EWA), INC. | 1902-01 | HASEKO WELL NO. | 1.5 | 0.955 |
| 167     | 5/14/97       | C&amp;C DEPT. OF PARKS &amp; REC | 2001-03 | GEIGER PARK | 0.03 | N/R |
| 302     | 5/14/97       | GENTRY DEVELOPMENT CO. | 2001-04 | SUNRISE APT. | 0.04 | 0.013 (12/00) |
| 450     | 5/14/97       | EWA BY GENTRY COMM ASSQ | 2001-06 | SODA CREEK III | 0.066 | 0.037 |
| 171     | 5/14/97       | ARBORS ASSOCIATION | 2001-07 | ARBORS | 0.063 | |
| 168     | 3/13/96       | PALM VILLA II ASSOCIATION | 2001-08 | PALM VILLA 2 | 0.048 | 0.045 |
| 344     | 5/14/97       | GENTRY DEVELOPMENT CO. | 2001-09 | FORT WEAVER AP | 0.023 | 0.023 (12/00) |
| 355     | 5/14/97       | GENTRY DEVELOPMENT COR | 2001-10 | GENTRY AREA 24 | 0.022 | N/R |
| 504     | 11/18/98      | GENTRY HOMES, LTD. | 2001-12 | KEAUNUI (AREA 30 | 0.249 | N/R |
| 578     | 5/14/97       | CORAL CREEK GOLF, INC. | 2001-13 | CORAL CREEK NO | 0.8 | 0.479 |
| 579     | 5/14/97       | CORAL CREEK GOLF, INC. | 2001-14 | CORAL CREEK NO | 0.892 | |
| 169     | 5/14/97       | PALM COURT ASSOCIATION | 2002-12 | PALM COURT 3 | 0.04 | N/R |
| 579     | 5/14/97       | CORAL CREEK GOLF, INC. | 2002-15 | CORAL CREEK NO | 0.183 | |
| 577     | 5/14/97       | CORAL CREEK GOLF, INC. | 2002-17 | CORAL CREEK NO | 0.498 | 0.150 |
| 579     | 5/14/97       | CORAL CREEK GOLF, INC. | 2002-17 | CORAL CREEK NO | | |</p>
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Summary for 'SYSTEM' = PUULOA (25 detail records)

Totalling 4.867 3.468
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

- 12-MAV
- WUP
- Combined monthly withdrawal
Haseko (Ewa) Inc. Pumpage (EP27)
Well No. 1902-01

EXHIBIT 5

Date (latest data 4/01)

Pumpage (mgd)

--- monthly pumpage --- 12-MAV --- WUP --- Max Cl-
Campbell Estate Caprock Pumpage
Kapolei Irr. Wells 1&2 (1905-08,10)

EXHIBIT 5

Combined Monthly Pumpage  12-MAV  WUP  1905-08 Chloride
Gentry Pacific, Ltd. Pumpage
Sunrise Apt. Well (Well No. 2001-04)

Date (latest data 11/00)

pumpage (mgd)

0.080
0.065
0.050

0.035

0.020

0.015

0.005

95
96
97
98
99
00

monthly values
requested amount
12-MAV
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

[Graph showing pumpage and chloride levels from 1995 to 2001]

- Monthly values
- WUP
- 12-MAV
- Cl⁻ (mg/l)
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 5

---

monthly values  WUP  12-MAV

---

date (latest data 04/01)
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

EXHIBIT 5
Coral Creek Golf Course Withdrawals
Well 4 (2001-13)

EXHIBIT 5

pumpage (mgd)  12-MAV  max chloride level

date (latest data 4/01)
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)

Date (latest data 4/01)

pumpage (mgd)  12-MAV  max chloride level
Coral Creek Golf Course Withdrawals
Well 2 (2002-17)

EXHIBIT 5
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Average Yearly pumpage (mgd)

Year

EP-20
EP-21
EP-22
EP-23
EP-24
Gentry Palm Villa 1
Kapolei Golf B

Ref: CWRM, BWS files, & R-79
June 5, 2001

MEMORANDUM FOR THE RECORD

FROM: Glenn Bauer

SUBJECT: Chloride Concentration Trends in the Ewa Caprock Aquifer

Background

Commission staff has been collecting water samples from various wells and well batteries within the caprock aquifer from Puuloa to Malakole since 1993. Our baseline sampling effort began before the demise of Oahu Sugar Company in 1994, and was augmented by the required reporting of weekly chlorides by caprock water users.

The end of sugar cultivation on the Ewa Plain brought with it an end to the importation of low to moderate salinity basal ground water for irrigation. Prior to 1994, when drip irrigation practices were employed, the estimated return irrigation component from basal ground water was 16 mgd (Mink, 1989) with 8 mgd going to the Puuloa area and 8 mgd going to the Kapolei-Malakole area. At the same time, the plantation pumped an average of 14 mgd (Bauer, 1996) from their shallow wells. After 1994, ground-water input to the caprock included natural inflow from the basal aquifer into the caprock and direct recharge from rainfall and storm runoff. Various authors report a range of natural inflow into the caprock from the basalt. Most of these numbers were derived by numerical models or by salinity mixing model equations and are small when considered on a flux/mile basis. Estimates range from <1 mgd to 3± mgd/mile (Bauer, 1996). Long-term annual average rainfall input over the Ewa Plain has been estimated to be about 5± mgd (summary of results in Bauer, 1996). In addition, long-term annual average for storm runoff recharge over the caprock from Kaloil and Makakilo Gulches was estimated to be between 1 and 2 mgd (Mink, 1989).

In 1997 the Commission adopted a 1,000 mg/l chloride cap for individual wells developing caprock water. The reasoning behind this cap was to limit pumpage in those wells approaching the limit and to prevent a sodium build-up in the clay soils which would adversely affect the growth of certain grasses for golf courses, and to protect other users adjacent to those using higher chloride water.

Chloride Trends Since 1994 East of Fort Weaver Road

The chloride concentration in the caprock water varies significantly from place-to-place, and from well to well. Some of the reasons for these disparities include the subsurface geology, distance from the coast, well construction, pump capacity, and pumping schedule.

Generally, those pumping batteries that have long-term records, are east and south of Fort Weaver Road and Iroquois Point Road respectively, show a rising trend in

EXHIBIT 7
chlorides over time. This trend is partly due to irrigation practices and partly due to the lack of recharge of fresher water into the aquifer and proximity to the shoreline.

Ewa Beach International Golf Club

For Ewa Beach International, chlorides have risen from a low of 1,000 mg/l in late 1996 (due to recharge from a large storm on Election night) to 1,800± mg/l at the present time. CWRM staff samples Well No. 1900-21 at a 1-acre pond (Pond E). Evaporation from the pond undoubtedly affects chloride concentration. Pumpage from this source is less than 1 mgd.

Hawaii Prince Golf Club

Hawaii Prince Golf Club pumps water from 6 wells. Total average pumpage is slightly greater than 1 mgd. CWRM staff typically samples the wells after they have been running for several hours. Hawaii Prince Irrigation Wells 1-5 (1901-03, 1900-17-20) and EP-22 (1900-02). Chloride concentration in Hawaii Prince Wells 1 and 2 have remained relatively stable over the period of record. Well 1 remains about 1,000 mg/l, while Well 2 changed from about 1,000 mg/l in 1994 to 1,200± mg/l at the present time. Wells east of Well 2 are much more saline. The magnitude of the increase in salinity has ranged from 300 mg/l (Well 3) to 500 mg/l (Well 5 and EP-22) over the period of record.

U. S. Fish and Wildlife Well 2101-14

This well is north of Iroquois Point Road. Average pumpage is less than 0.5 mgd. The chloride concentration has shown an improvement since 1996 and remains stable at 1,000± mg/l.

Chloride Trends Since 1994 West of Fort Weaver Road

Gentry Wells

CWRM staff has monitored 5 of the 9 wells developed by Gentry. These wells are low capacity and are used exclusively for irrigation of the common areas within each development. Total Gentry pumpage is less than 0.5 mgd. Since 1997, chloride concentration has remained consistently between 400 and 800 mg/l, well below the 1,000 mg/l cap. The wells monitored are Palm Villa I (2001-06), Palm Villa II (2001-08), Palm Court III (2002-12, monitoring discontinued in 1997), Sunrise (2001-04), and Sun Terra (2001-05). Pump capacities for these wells range from 100-110 gpm.

Haseko EP-27 Well (1902-01)

CWRM staff began monitoring this source in 1994 just after the closing of Oahu Sugar. Static (non-pumping) samples were collected from the open pit near the pump house. Chlorides ranged from 800 to 900 mg/l. In 1997, Haseko began to pump this source at rates approaching 2 mgd. The average rate is about 1 mgd. Chloride
concentration remains stable at 900± mg/l. The stable nature could be that the pumping source skims the top water from the pit.

**Coral Creek Golf Course**

In 1998, several large pits were excavated and noted north and south of Geiger Road just east of the Honouliuli STP. These pits and drilled wells became part of the Coral Creek battery. Water from the pits is used for water features and for a back-up source (Lake Well 1, 2002-19). Coral Creek Golf Club irrigates using water from Coral Creek Well 1 (2002-15), Coral Creek Well 2 (2002-17), and Coral Creek Well 4 (2001-13). Pumpage is slightly greater than 1 mgd; however, the chloride concentration from the sources ranges between 1,000 mg/l to almost 4,000 mg/l at Well 2. According to golf course personnel, Well 4 pumps the least amount and is the most stable in terms of chloride concentration. It was also noted by golf course personnel that the longer Well 1 and 2 pumps, the saltier the water becomes. Pump capacities for these wells are high. Coral Creek 1 and 2 have 800 gpm pumps, while Coral Creek 4 has a 1,000 gpm pump.

High evaporation rate (close to 90 inches/year) in the Ewa Plain could cause the salinization of the lakes, which, in turn, could be the reason for the high chlorides localized at Well 1 and 2. However, the chloride samples taken from the Lake Well 1 show concentrations ranging from 1,000 to 1,200 mg/l. At the present time, Coral Creek’s saline water does not seem to affect the Gentry sources to the east.

**Chloride Trends Since 1994 in the Kapolei Region**

**HFDCH Kapolei Golf Course**

The Kapolei Golf Course utilizes Kapolei Irrigation Wells A, B, C, D, E, and C-1 (well nos. 2003-01-05, 07). Well C-1 is a replacement well for Well C. Chlorides have been remarkably stable, hovering between 200± mg/l to 600 mg/l, with little variation or trends. It is thought that basal ground-water inflow from the Waianae aquifer in conjunction with a thin caprock is responsible for the stability of the water chemistry in this area. Variations in pumpage are seasonal, but average about 1 mgd.

**Kapolei City Wells**

Campbell Estates’ Kapolei City Wells (1905-08, 10) supply irrigation water for Kapolei. Average daily pumpage is less than 0.5 mgd. Since 1995 chloride concentrations in both wells have been rising from 600 mg/l to 1,200-1,400 mg/l at the present time. Well 1905-08 (east well) water quality is slightly better than 1905-10. Duration of pumpage prior to sample collection probably influences the chloride concentration. However, it is evident that the overall trend is upwards.

**Conclusions**
Since the cessation of sugar irrigation the common chloride trend is generally a linear increase for wells that exceed the 1,000 mg/l cap. The long-term prognosis for these wells will be a continued increase in salinity. However, there are several well batteries and wells that do not fit this trend (e.g. U.S. Fish and Wildlife, Gentry, Haseko, HFDCH Kapolei), and exhibit remarkable chloride stability. The scatter of chloride data associated with Coral Creek cannot be easily explained. Bottom hole elevations are not as great as some of the Gentry Wells, yet the chlorides are much greater and the sensitivity of chloride concentration to pumpage suggest that localized upconing, in conjunction with the high pump capacities, is taking place. Moreover, the relationship of the large lakes (surface evaporation) to the wells is not clearly understood and could play a role in contributing to the pool of high chloride ground water.

As stated above, many of the sources have not exceeded the 1,000 mg/l cap. Those that have, the baseline data suggest that these wells will never pump ≥1,000 mg/l again unless there is an influx of less saline water (e.g. reuse, an increase of recharge from storms i.e. a more normal weather pattern) or a complete cessation of pumpage. In the meantime, those operators with wells and/or batteries >1,000 mg/l chloride should apply for a variance from the 1,000 mg/l cap. It should be implicitly stipulated that once reuse is available, then these wells will only be used as back-up sources or blended with reuse water to a quality of 1,000 mg/l or less.

References:


Ewa Beach International Golf Club
Pumpage and Chlorides

Average Monthly Pumpage (mgd) vs. Monthly Chloride (mg/l)

- 1,000 Cl Cap
- Well 1900-21 (Pond E)
Hawaii Prince Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

1,000 Cl Cap
EP22
HP Well 1
HP Well 2
HP Well 3
HP Well 4
HP Well 5
U. S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

1,000 Cl Cap • EP27 Pit ■ EP 27 Pipe
Coral Creek Golf Course
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap  • Lake Well 1  □ Well 2  ▼ Well 1  • Well 4

Monthly Chloride (mg/l)
HFDC Kapolei Golf Course
Pumpage and Chlorides

Month/Year

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

1,000 Cl Cap  •  Irr. Well A  □  Irr. Well B  ▼  Irr. Well C

x  Irr. Well C-1  ▲  Irr. Well D  +  Irr. Well E
Kapolei City Wells (Campbell Estate)
Pumpage and Chlorides

Graph showing average monthly pumpage and monthly chlorides over time, with data points for Well 1905-10 (West Well) and Well 1905-08 (East Well).
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

   • Sampling Schedule

     The sampling schedule depends upon your pump capacity:

     | Pump Capacity (gpm) | Sampling Schedule          |
     |--------------------|---------------------------|
     | Less than or equal to 50 | Once a month         |
     | Greater than 50    | Once a week              |

   • When to Sample

     Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   • Sample Bottle

     Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   • Labeling

     On the sample bottle, affix a label that contains the following information:

     Well No.
     Date
     Time Sampled
     Elapsed Time after pump on
     Sampler's Name
     Water Temperature (if available)
     Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. *Be consistent with the end-point color change.*

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** *Be consistent with the end-point color.* Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.

**EXHIBIT 8**
3. **Reporting Results**

   - **How to Report**

   The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

   1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   Under "Notes" Section of the Monthly Water Use Report:

   2. Method used for chloride analysis:

   3. Total elapsed time before sampling:

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
<table>
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<th>CASING DIAMETER (in.)</th>
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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:
   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.
   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.
   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
Mr. Randolph Ouye
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Ouye:

Notice Of Action
Extension of Interim Water Use Permits
Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on October 22, 1998, to extend your interim water use permit, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.
f. Require adherence to the chloride sampling protocol (Attachment C) and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions (Attachment D).

Although specific action was not taken, the Commission did note that variances approved through the May 14, 1997 action are also extended.

The Commission decided that interim permittees shall be notified by letter of the Commission action and extended permit duration and that re-issuance of new interim water use permits for these extended permits is unnecessary. Attachment B shows the list of extended interim permits.

Please be advised that the Commission directed staff to strictly enforce the weekly water data reporting requirement and the requirement to submit a water shortage plan. (If you have not done so already, please submit your water shortage plan, as required under Standard Condition 17.) In addition, all interim permittees will be sent the monthly bulletin which shows all pending permit applications. Permittees are encouraged to review new applications and water data from nearby wells to proactively protect their sources.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s): A (Standard Conditions for a Water Use Permit)
                 B (Extended Interim Water Use Permits)
                 C (Chloride Sampling Protocol)
                 D (Conservation Conditions)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

ATTACHMENT A
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the Puuloa or Kapolei Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
## Extended Interim Water Use Permits

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<th>Permittee</th>
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<td>State of Hawaii, Housing Finance &amp; Development Corp.</td>
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<td>Hawaii Prince Golf Club</td>
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<td>City and County of Honolulu Department of Parks and Recreation</td>
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<td>Gentry Development Co.</td>
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<td>Ewa by Gentry Community Association</td>
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<td>Palm Villas II Association</td>
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<td>Palm Court Association</td>
<td>2002-12</td>
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<td>Coral Creek Golf, Inc.</td>
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<td>U.S. DOC/NOAA/National Weather Service</td>
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</table>

ATTACHMENT B
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

   • Sampling Schedule

     The sampling schedule depends upon your pump capacity:

     | Pump Capacity (gpm) | Sampling Schedule |
     |---------------------|-------------------|
     | Less than or equal to 50 | Once a month |
     | Greater than 50 | Once a week |

   • When to Sample

     Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   • Sample Bottle

     Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   • Labeling

     On the sample bottle, affix a label that contains the following information:

     Well No.
     Date
     Time Sampled
     Elapsed Time after pump on
     Sampler's Name
     Water Temperature (if available)
     Pumping Rate (prior to sampling)

Attachment C
2. Determination of Chloride Concentration

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. Be consistent with the end-point color change.

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** Be consistent with the end-point color. Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. **Reporting Results**

- **How to Report**

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

   **Under "Notes" Section of the Monthly Water Use Report:**

2. Method used for chloride analysis: ________________

3. Total elapsed time before sampling: ________________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants;
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for water wastage;
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

Attachment D
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 82
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

October 22, 1998
Honolulu, Oahu

EXTENSION OF INTERIM WATER USE PERMITS
Puuloa and Kapolei Ground Water Management Areas, Oahu

PERMITEE(S):

(Well Nos. 1905-08, 10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04, 07)
The State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 2003-01, 02, 05)
Kapolei People's Inc.
91-701 Farrington Hwy.
Kapolei, HI 96707

(Well Nos. 1900-02, 17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well No. 2001-03)
The City and County of Honolulu
Department of Parks and Recreation
650 South King Street
Honolulu, HI 96813

(Well Nos. 2001-04, 09, 10)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

LANDOWNER(S):

Same

Same

Same

Same

Same

Same

Item 12
LOCATION MAP: See Exhibit 1

BACKGROUND:

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer overlying the existing designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Makaiwa Aquifer Systems. Due to uncertainties regarding the caprock's sustainable yield and nonpotable utility, the Commission did not adopt a sustainable yield estimate for the caprock.

On April 28, 1993, the Commission awarded temporary one-year permits for new irrigation uses of ground water in the Ewa Caprock because there were concerns regarding the future viability of the caprock as a dependable source of brackish water due to the significant loss of return irrigation recharge from sugarcane agriculture. In analyzing water availability, the Commission used guidelines for sustainable yields for the Puuloa, Kapolei, and Malakole areas (Yuen & Associates, Inc., 1989).

On July 13, 1994, the Commission extended temporary one-year permits. The duration of the extended permits was to July 12, 1995.
At the July 5, 1995 Commission meeting in Honokaa, Hawaii, the Commission extended the permits, which were now called interim permits, until such time that a formal decision could be made on Oahu.

On March 13, 1996, the Commission deferred action on existing interim permits and new applications pending a decision on the establishment of a sustainable yield for the caprock.

On May 14, 1997, the Commission adopted a sustainable yield based on a sustainable capacity for individual irrigation wells at 1,000 milligrams per liter (mg/l) of chloride as an interim management plan, subject to review within two (2) years. The Commission also adopted the Puuloa, Kapolei, and Malakole Aquifer Systems in the Ewa Caprock Sector and approved pending applications for new and continued irrigation uses. The specified duration of the interim water use permits is to October, 1998 or until such time that a significant change in permitted, actual, or projected uses or water supply occurs. The October, 1998 date coincides with the possible revocation of unused (former Oahu Sugar Company) agricultural permits and also provides a milestone date to check on the progress of wastewater reuse for private caprock well owners, the availability of which was then scheduled for July, 1999.

ANALYSIS/ISSUES:

There has been no significant change in permitted, actual, or projected uses or water supply. Current interim water use permits and 12-month moving average withdrawals are shown in Exhibit 2. (Standard and Special Conditions of the interim permits are shown in Attachments A and B.) Exhibit 3 contains a complete listing of all permitted uses in the Puuloa and Kapolei Aquifer Systems. (Please note that the October 22, 1998 agenda includes three items that, if approved, will reduce the total permitted uses in Puuloa.)

PROTECTION OF THE RESOURCE

The current sustainable yield for the caprock aquifers is defined by a sustainable capacity at all irrigation wells in the Puuloa and Kapolei Aquifer Systems which prohibits individual pumpages that cause the specific well to exceed a 1,000 mg/l chloride cap. Enforcement of the chloride cap provides adequate protection for the aquifer.

The chloride cap is tied to anticipated wastewater reuse, which was planned to occur via a percolation trench to recharge the caprock aquifer with up to 13 million gallons per day (mgd) of treated effluent (Kumagai, 1996. Final Report. Recommendation for Water Reclamation, Nonpotable Water Plan for Oahu, Prepared for: Commission on Water Resource Management, State of Hawaii, and Department of Wastewater Management, City and County of Honolulu). However, the City now plans to deliver R-1 water directly to individual users. In either reuse application, the current sustainable yield method is and has been an effective means to protect the aquifer.

MAXIMIZING THE UTILITY OF THE RESOURCE(S)

Maximizing the utility of the caprock is intimately tied to wastewater reuse. As wastewater reuse comes on line, the sustainable yield of the caprock will increase, meaning more pumpage may be sustained under the 1,000 mg/l chloride limit. However, the distribution of reclaimed wastewater is uncertain, which will affect chloride distributions and total nonpotable supply. Although the City has not yet made reclaimed water available for nonpotable uses that will support their plans for urbanization of the Ewa area and the City-required dual water systems for new urban
developments, the City has indicated that private irrigation uses over the caprock may be served by reclaimed water by July, 2001. Of the projected total 13 mgd R-1 water from the Honouliuli Wastewater Treatment Plant, 1 mgd is needed for in-plant process water, and 2 mgd is planned for industrial uses at James Campbell Industrial Park. This leaves about 10 mgd available for irrigation needs in the region.

The City is in the process of finalizing a contract with U.S. Filters for the construction, operation, and marketing for a reclamation system. Until the contract is finalized, the City will not enter into any agreements with individual users for the purchase of the R-1 water. As such, Special Condition D (Attachment B) could not be met by the users, and these users should not be penalized for this noncompliance.

Given the City's current plans, the staff estimates that the potential future supply of nonpotable water for irrigation uses on lands overlying the Puuloa Aquifer System, where the competition for nonpotable irrigation water is most severe, could be up to about 15 mgd: 10 mgd reclaimed water plus approximately 5 mgd natural sustainable yield (Bauer, 1996). This assumes that 100% of the treated effluent will be available for reuse in Puuloa, which is improbable. But the availability of reclaimed water will present permittees with a possible alternative should their wells exceed the 1,000 mg/l chloride limit. Likewise, should the 1,000 mg/l limit not be exceeded, the permittees may continue to pump and may even work out a management plan which would allow for alternating between caprock and wastewater reuse to maximize the economical use of both resources. But ultimately, based on current reclaimed water plans, total allocations should not exceed 15 mgd.

Management of the resource via a chloride cap was adopted on May 14, 1997 as an interim management plan, subject to review in two (2) years. By May, 1999 or as total allocations begin to approach the total nonpotable supply in Puuloa, the Commission may consider establishing a regional sustainable yield, which would be something less than 15 mgd for the Puuloa area, unless additional water supply (e.g., expansion of the wastewater reclamation plant) becomes available. It is uncertain whether the chloride cap would be supplanted by a regional sustainable yield number.

WELL INTERFERENCE

Since there are no ground-water models (solute-transport) which can predict chloride response to pumage at individual well sites, close monitoring of the resource and enforcement of the chloride cap is critical to protect the resource in this interim period while the City finalizes plans to implement a reclamation program. Exhibit 6 shows that the caprock aquifer was significantly influenced by sugarcane irrigation practices and is still in a state of flux. Currently, all interim permittees are required to submit weekly reports of pumage, water levels, chlorides, and water temperature (unless a variance from this requirement has been approved). All permittees are put on notice that the reporting requirement will be strictly enforced.

Although enforcement of the 1,000 mg/l chloride cap at each well site will provide adequate protection for the resource, it may not be sufficient to preclude well interference. However, not only will wastewater reuse further protect the resource, it will also help to reduce the effects of well interference that may cause individual wells to exceed the 1,000 mg/l chloride cap. Special Condition e. has been added to the existing interim permits recommended for extension and will be added to all future caprock permits to put the permittees on notice of the risk of reliance on caprock ground water and its uncertain sustainable yield.

The staff proposes to send all interim permittees in Puuloa the monthly bulletin which shows all pending permit applications, which should provide the permittees sufficient notice of new proposed uses of Puuloa Caprock ground water. Permittees should review new applications and water data from other nearby wells to proactively protect their sources. Permittees are encouraged to submit comments or objections in accordance with Administrative Rule 13-171-18 (Objection to Proposed
Staff Submittal

October 22, 1998

Water Use Permit. Further, the staff has been analyzing the weekly water data reports, and we are currently working on triggers to implement a water shortage plan. These triggers may be related to some modification of Exhibit 6. Should valid claims of well interference be raised, either by permittees or as a result of the staff's analysis, the Commission may consider implementing a water shortage plan to address the well interference issue.

However, at this time, only an informal and incomplete water shortage plan exists. On May 14, 1997, the Commission approved a permit classification system for a water shortage plan for the Puuloa Aquifer System as provided under Administrative Rule 13-171-42:

"(a) The commission shall formulate a plan for implementation during periods of water shortage. As a part of the plan, the commission shall adopt a reasonable system of permit classification according to source of water supply, method of extraction or diversion, use of water, or a combination thereof.

(b) In accordance with this chapter, the commission may impose such restrictions on one or more classes of permits as may be necessary to protect the water resources of the area from serious harm and to restore them to their previous condition.

(c) All permittees, unless exempted by the commission, shall submit a water shortage plan outlining how it will reduce its own water use in case of a shortage. Every water shortage plan shall be subject to approval or modification by the commission."

The highest priority of nonpotable use is agriculture because the State's policy is to promote agriculture, and also because agricultural correlative uses are assured through the 1978 Constitutional Amendment. The second priority in water use is golf course irrigation because of the economic impacts that may result from inadequate water supply. The lowest priority in water use is landscape irrigation and dust control.

The priorities assigned to each permitted use and the maximum reductions indicated in the individual users' water shortage plans are shown in the last two columns of Exhibit 7. Individual water shortage plans outline smaller initial cutbacks (i.e., 10% to 30%), however under the most severe shortage situations, Exhibit 7 shows the maximum reduction in Puuloa Aquifer System pumpage would have been at least 3.718 mgd. However, this 3.718 mgd amount is subject to change following proposed revocation actions for unused agricultural allocations and formulation and adoption of a regional shortage plan.

Water shortage plans were requested from all of the users in Puuloa, with the exception of United States Fish and Wildlife Service. The requirement to submit individual water shortage plans is highlighted in the cover letter which transmits the permit and is also stated in Standard Condition 17. Not all users have submitted water shortage plans nor returned signed permits (see Exhibit 8). The staff will continue to work with these users to develop their individual plans. As part of the May 14, 1997 action, the Commission has also delegated the authority to the Chairperson to approve individual water shortage plans and the regional water shortage plan for the Puuloa Aquifer System.

RECOMMENDATIONS:

That the Commission:

1. Extend the interim permits shown in Exhibit 2, subject to the Standard Conditions of a Water Use Permit (Attachment A) and the following Special Conditions (which replace the former special conditions):

   a. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride.

d. The duration of the interim permit shall be to
   a) to July, 2001, or
   b) until treated wastewater is available, acceptable, and affordable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

f. Require adherence to the chloride sampling protocol shown in Exhibit 4 and the submittal of weekly chloride data.

g. Require adherence to the Conservation Conditions shown in Exhibit 5.

h. In the event a water shortage is declared by the Commission, permittees shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

2. The permittees shall be notified by letter of the Commission action and extended permit duration. Re-issue of new interim water use permits for these extended permits is unnecessary.

Respectfully submitted,

TIMOTHY E. JOHNS
Deputy Director

Attachment(s):
A (Standard Conditions for a Water Use Permit)
B (Special Interim Water Use Permit Conditions)

Exhibit(s):
1 (Location Map)
2 (Current Interim Permitted Uses, Puuloa and Kapolei Aquifer Systems)
3 (Current Permitted Uses, Puuloa and Kapolei Aquifer Systems)
4 (Chloride Sampling Protocol)
5 (Conservation Conditions)
6 (Chloride and Pumpage of Ewa Plantation Shallow Wells)
7 (Partial Water Shortage Plan)
8 (Summary of Unsigned Permits and No Water Shortage Plan)
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described
   and used for the reasonable beneficial use described at the location described above.
   Reasonable beneficial uses means "the use of water in such a quantity as is necessary for
   economic and efficient utilization which is both reasonable and consistent with State and
   County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which
   means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as
      provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-
      101(a).

4. The ground water use here must not interfere with surface or other ground water rights or
   reservations.

5. The ground water use here must not interfere with interim or permanent instream flow
   standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is
      also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes
   Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at
   its October 22, 1998 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express
   written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to
   the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June,
      1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the
      Commission's police powers under law as may be required.

ATTACHMENT A
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission’s periodic review of the Puuloa or Kapolei Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa or Kapolei Aquifer System, or relevant modified aquifer(s), is reduced.

13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa or Kapolei Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

ATTACHMENT A
SPECIAL INTERIM WATER USE PERMIT CONDITIONS

a. The duration of the interim permits shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use or water supply occurs.

b. Require adherence to the chloride sampling protocol shown in Exhibit 8 and the submittal of weekly chloride data.

c. Require adherence to the Conservation Conditions shown in Exhibit 12.

d. Require the following PCUG members to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy reclaimed water by July 1, 1999 for the cumulative amounts specified in Exhibit 7 (Pro-Rata Share):

1) Gentry Investment Co. - Commitment to use a total of 0.430 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 2002-15 and Well No. 2001-10.

2) Haseko (Ewa), Inc. - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well No. 1902-01.

3) Hawaii Prince Golf Club - Commitment to use a total of 0.40 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20 & 1901-03.

4) Ewa Beach International Golf Club - Commitment to use a total of 0.27 mgd of R-1 by July, 1999 for a corresponding reduction in allocation for Well Nos. 1900-21, 22 & 1959-08.
## Current Active Water Use Permits

(Excluding salt water use permits)

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7 Permits Totaling
Available SY 1.796 1.050

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**EXHIBIT 2**

(f:\work\database\reports\wup-wma.rpt)
Current Active Water Use Permits (Excluding salt water use permits) October 7, 1998

**ISLAND OF OAHU**
WMA Aquifer System: **PUULOA**
Sustainable Yield = mgd

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21 Permits Totalling Available SY 4.826 1.907

**EXHIBIT 2**

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38 Permits Totalling 17.198
Available SY
## Current Active Water Use Permits

*Excluding salt water use permits (7)...*  
**October 7, 1998**

**ISLAND OF OAHU**  
WMA Aquifer System: **KAPOLEI**  
Sustainable Yield = **mgd**

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9 Permits Totalling 2.946 Available SY

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**EXHIBIT 3**

(*\work\database\reports\wup-wma.rpt*)
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection
   • Sampling Schedule

   The sampling schedule depends upon your pump capacity:

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<th>Pump Capacity (gpm)</th>
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<td>Less than or equal to 50</td>
<td>Once a month</td>
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<tr>
<td>Greater than 50</td>
<td>Once a week</td>
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   • When to Sample

   Before taking a sample, allow a minimum length of time to elapse after turning on the pump. This minimum time can be read off the attached table for your well casing diameter and your pump capacity. If you sample 20 minutes after the minimum time, you should consistently sample 20 minutes after the minimum time each time you take samples.

   • Sample Bottle

   Use a plastic container and cap that holds a volume of about a pint. Rinse the container three times with the water to be sampled before taking the sample. Also rinse the cap with sample water.

   • Labeling

   On the sample bottle, affix a label that contains the following information:

   Well No.
   Date
   Time Sampled
   Elapsed Time after pump on
   Sampler's Name
   Water Temperature (if available)
   Pumping Rate (prior to sampling)
2. **Determination of Chloride Concentration**

- **Private Laboratories**

  If the sample is sent to a private laboratory, then prepare the water sample and label the bottle in the manner described above.

  Private laboratories will use methods that are more accurate than field methods described below.

- **Hach Kit (Drop Count Titrator)**

  Be aware of the approximate chloride concentration range in your well. Use the appropriate sample bottle for titration. **Be consistent with the end-point color change.**

  For low chloride concentrations (5-100 mg/l) each drop will equal 5 mg/l. For higher concentrations (20-400 mg/l) each drop equals 20 mg/l. Other kits for concentrations greater than 400 mg/l (500-10,000 mg/l) each drop is equal to 500 mg/l. Obviously, for water greater than 400 mg/l, a "drop-count" Hach Kit is not appropriate, and a digital titrator, described below, should be used.

- **Hach Kit (Digital Titrator)**

  A digital titrator is the appropriate method for water with greater than 400 mg/l chloride. A digital titrator using silver nitrate is accurate to within 10 mg/l for a chloride range from 10-10,000 mg/l, and for a titrator using mercuric nitrate accuracy varies from 0.1-20 mg/l for a chloride range of 10-8,000 mg/l.

  **Note:** **Be consistent with the end-point color.**
  Silver nitrate ages and needs to be replenished within the recommended guidelines of the Hach Company.

- **Other Methods**

  An ion-selective probe for chloride is available, and can measure concentration from 1.8-35,500 mg/l.
3. Reporting Results

• How to Report

The following information should be entered on the "Monthly Ground Water Use Report" form provided by the Commission on Water Resource Management:

1. Chloride concentration (mg/l) and temperature (°F) in the columns provided.

Under "Notes" Section of the Monthly Water Use Report:

2. Method used for chloride analysis:________________

3. Total elapsed time before sampling:________________

If there are any questions, please call the Commission on Water Resource Management staff at 587-0265 on Oahu or toll free from the neighbor islands 1-800-468-4644 ext. 70265.
### FIVE WELL VOLUMES PLUS 60 MINUTES
**MINIMUM TIME BEFORE CHLORIDE SAMPLING**

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1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and Improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

FIGURE 7

Ref: CWRd, BWS Res., R-79, & Stearns (1935, 1940)
<table>
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<th>Use</th>
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<th>Recommended Allocation</th>
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<td>Pre-1978 Permanent Permits</td>
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<td>Campbell</td>
<td>EP 21/2000-01</td>
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<td>EP 22,Wells 1 to 5/1900-02,17 to 20/1901-03</td>
<td>G.Course</td>
<td>0.900</td>
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<td>Interim Permits (5-yr)</td>
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<td>USFWS</td>
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<td>0.151</td>
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<td>0.066</td>
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<td>Palm Court Assoc.</td>
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1. **Highest priority (Ag)**
2. **Intermediate priority (G. Course)**
3. **Lowest priority (Landscape Irr. dust control)**

1. Maximum reduction indicated in water shortage plan
<table>
<thead>
<tr>
<th>Well No</th>
<th>Well Name</th>
<th>Signed</th>
<th>WUP (mgd)</th>
<th>Shortage Plan</th>
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<tr>
<td>152</td>
<td>HAWAII PRINCE GOLF CLUB</td>
<td>1900-02</td>
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<td>WELL 3</td>
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<td>170</td>
<td>HONOLULU KOSAIJO, INC.</td>
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<td>367</td>
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<td>492</td>
<td>R.H.S. LEE, INC.</td>
<td>1901-04</td>
<td>CORAL CREEK TEMP</td>
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<td>347</td>
<td>HASEKO (EWA), INC.</td>
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<td>HASEKO WELL NO.1</td>
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<td>156</td>
<td>C&amp;C DWWMM</td>
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<td>498</td>
<td>7/15/98</td>
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<td>60</td>
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<td>2001-02</td>
<td>EWA GENTRY</td>
<td>7/28/97</td>
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<td>167</td>
<td>C&amp;C DEPT. OF PARKS &amp; REC</td>
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<td>GEGER PARK</td>
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<td>SODA CREEK III</td>
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<td>PALM VILLA I ASSOCIATION</td>
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<td>GENTRY PACIFIC, LTD.</td>
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<td>437</td>
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<td>GENTRY G.C. IRR</td>
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<td>494</td>
<td>GOODFELLOWS BROS., INC.</td>
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<td>496</td>
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<td>U.S. FISH &amp; WILDLIFE</td>
<td>2101-14</td>
<td>HONOLULU UNIT</td>
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38 Permits Totalling 17.196
Available SY
## Current Active Water Use Permits

(Excluding salt water use per (f:/..wup-wma.rpt)

**ISLAND OF OAHU**

**WMA Aquifer System:** KAPOLEI

**Sustainable Yield:** mgd

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>Signed</th>
<th>WUP (mgd)</th>
<th>Shortage Plan</th>
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<td>162</td>
<td>PUU MAKAKILO INC.</td>
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9 Permits Totalling Available SY: 2.946
Gentry Homes, Ltd. Pumpage
Suncrest Well (Well No. 2001-10)

JAN 98 date (latest data 8/98)

pumpage (mgd) 0.000 0.020 0.040 0.060 0.080 0.100 0.120

chloride (mg/l) 360 380 400 420 440 460

MGD chloride

[Graph showing water pumpage and chloride levels over time]
August 10, 1998

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

Dear Mr. Johns:

Re: Ewa by Gentry - Area 24; Non-Potable Well No. 2001-10

With reference to the above well, please be advised that as of the first of the year, Gentry Homes’ has been pumping an average daily rate of approximately 0.046 mgd. This is higher than the 0.022 mgd that was previously authorized by the CWRM. The average daily rate has increased during the past quarter.

The over pumpage is due to the irrigation of the roadway landscaping that has been installed prior to the completion of Well No. 2001-12 in Area 30. We received a well drilling and construction permit for this well, and are in the process of submitting an application to CWRM for a water use permit.

We respectfully request that Well No 2001-10 be allowed to continue pumping at the higher daily rate until the water use permit for Well No. 2001-12 is received, and the well is put into operation. Please note that the chloride level has remained steady at approximately 400 mg/l during the past quarter.

Thank you for your consideration of our request.

Very truly yours

GENTRY HOMES, LTD.

Randolph K. Ouye  
Senior Vice President and  
Chief Operating Officer

RKO:sacm

cc: J. Young  
T. Nance, TNWRE

/usr/sm/cwrm24well.ewa
Ms. Rae M. Loui  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, HI 96809

Re: Ewa by Gentry - Water Use Permits

Dear Ms. Loui:

Enclosed are the executed copies of Ground Water Use Permits for the following wells:

<table>
<thead>
<tr>
<th>Name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ewa by Gentry</td>
<td>2001-02</td>
</tr>
<tr>
<td>SunRise Apartments</td>
<td>2001-04</td>
</tr>
<tr>
<td>Sun Terra Tot Lot</td>
<td>2001-05</td>
</tr>
<tr>
<td>Ft. Weaver Apartments</td>
<td>2001-09</td>
</tr>
<tr>
<td>Area 24</td>
<td>2001-10</td>
</tr>
</tbody>
</table>

We would also like to request a waiver from the weekly reporting required. The above wells all pump below .1 mgd, and their impact on the caprock aquifer is minimal. We will continue to report on a monthly basis as we have in the past. The weekly reporting also imposes a financial hardship on the associations since they are all non-profit entities.

If you have any questions, please give me a call at 599-8222.

Sincerely,

GENTRY HOMES, LTD.

Jeffrey C. Dinsmore  
Vice President, Land Development

cc: Tom Nance, TNWRE
GROUND WATER USE PERMIT
WUP NO. 355

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Address</td>
</tr>
<tr>
<td>GENTRY DEVELOPMENT CO.</td>
<td>GENTRY DEVELOPMENT CO.</td>
</tr>
<tr>
<td>P.O. BOX 295</td>
<td>P.O. BOX 295</td>
</tr>
<tr>
<td>HONOLULU, HI 96809</td>
<td>HONOLULU, HI 96809</td>
</tr>
</tbody>
</table>

PERMITTED SOURCE INFORMATION

| Island          | OAHU             |
| Water Management Area | PUULOA         |
| Aquifer Sector   | EWA CAPROCK     |
| Aquifer System   | PUULOA          |
| System Sustainable Yield | NA             |
| Well Name        | AREA 24         |
| State Well No.   | 2001-10         |

PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>LANDSCAPE &amp; ROADWAY IRRIGATION</th>
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<td>0.022 mgd</td>
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<td>Chloride Cap</td>
<td>1,000 mg/l</td>
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<td>Location of water use</td>
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<td>TMK #</td>
<td>9-1-10:17</td>
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<td>Address</td>
<td>EWA BY GENTRY PROJECT</td>
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<td>State land use classification</td>
<td>URBAN</td>
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<td>County zoning classification</td>
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</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following:
GROUND WATER USE PERMIT
GENTRY DEVELOPMENT CO., Well No. 2001-10, WUP No. 355

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUUOAO Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and condition of right to proceed.

Applicant’s Signature: ____________________________ Date: ________________

Printed Name: ____________________________ Firm or Title: ____________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
Mr. Randolph Ouye  
Gentry Development Co.  
P.O. Box 295  
Honolulu, HI 96809  

Dear Mr. Ouye:

Approval of Water Use Permit for Well No. 2001-10  
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Area 24 Well (Well No. 2001-10) for use of 0.022 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. This water use permit supersedes the water use permit that was issued to you on April 13, 1995.

As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use a total of 0.430 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 2002-15 and 2001-10.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson  
Chairperson

Attachments
GROUN D WATER USE PERMIT
WUP NO. 355

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
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<tbody>
<tr>
<td>GENTRY DEVELOPMENT CO.</td>
<td>GENTRY DEVELOPMENT CO.</td>
</tr>
<tr>
<td>P.O. BOX 295</td>
<td>P.O. BOX 295</td>
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<tr>
<td>HONOLULU, HI 96809</td>
<td>HONOLULU, HI 96809</td>
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PERMITTED SOURCE INFORMATION

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<tr>
<th>Island</th>
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<tr>
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<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>PUULOA</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
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<tr>
<td>Well Name</td>
<td>AREA 24</td>
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<tr>
<td>State Well No.</td>
<td>2001-10</td>
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PERMITTED USE INFORMATION

<table>
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<tr>
<th>Reasonable beneficial use</th>
<th>LANDSCAPE &amp; ROADWAY IRRIGATION (1,374 ac)</th>
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</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>0.022 mgd</td>
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<tr>
<td>Chloride Cap</td>
<td>1,000 mg/L</td>
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Location of water use

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<tbody>
<tr>
<td>Address</td>
<td>EWA BY GENTRY PROJECT</td>
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<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>A-1</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

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16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUALOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

Applicant's Signature: ___________________________ Date: ___________________________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.

Attachment
SEE EW A CAPROCK WMA

FOLDER #2 - #4
TESTIMONIES:

Mr. Jim Anthony, a party in the Hawaii Reserves, Inc. contested case hearing, testified against the staff's recommendation to delete Well No. 3554-02 and to reinstate Well No. 3654-03.

MOTION: (COX/MIIKE)

To approve staff's recommendation.

UNANIMOUSLY APPROVED.

ITEM 2.

APPLICATIONS FOR WATER USE PERMITS, REQUESTS FOR NEW AND CONTINUED NONPOTABLE URBAN USES, ALLOCATION PLAN FOR WATER USE PERMITS IN RESPONSE TO LOWER SUSTAINABLE YIELD ESTIMATE FOR THE PUULOA AREA, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

The Estate of James Campbell, (Well Nos. 1905-08,10)
State of Hawaii, Housing Finance & Development Corp. (Well Nos. 2003-04,07)
Kapolei People's Inc., (Well Nos. 2003-01,02,05)
Hawaii Prince Golf Club, (Well Nos. 1900-02,17 to 20 & 1901-03)
Gentry Development Co., (Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
The Arbors Association, (Well No. 2001-07)
Palm Villas II Association, (Well No. 2001-08)
Palm Court Association, (Well No. 2002-12)
Haseko (Ewa), Inc., (Well No. 1902-01)

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui

Correction on Page 4, Section B:

The current schedule for the demonstration recharge trench (5 mgd) and full application (10 mgd) is:

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli Secondary Treatment Operational</td>
<td>9/1996</td>
</tr>
<tr>
<td>Demonstration Recharge Trench Operational (5 mgd)</td>
<td>12/1998</td>
</tr>
<tr>
<td>Testing Complete</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational (10 mgd)</td>
<td>12/2001</td>
</tr>
</tbody>
</table>

STAFF RECOMMENDATION:

The staff requested that the recommendation be amended as follows:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuoloa Caprock Users Group's draft nonpotable master plan for the Puuoloa area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (e.g. annual
projections of all nonpotable supply requirements detailed by project and TMK area, encompass the entire Puuloa area and all users in Puuloa, and include a scenario complying with the proposed 5 mgd sustainable yield. The Plan shall also address the current overpumpage at Well Nos. 1902-03 & 04 and Well Nos. 2001-05 & 2001-08.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

TESTIMONY BY APPLICANT:

Mr. Jeff Dinsmore, Vice President of Gentry Homes, Ltd., submitted a written and oral testimony on behalf of the Puuloa Caprock Users Group. He stated that they were in agreement with the staff submittal, however, requested that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Mr. Douglas Ing, attorney for Hawaii Prince Golf Club, stated his objections to the staff's recommendation of a 5mgd ceiling. (Note: Subsequent to Mr. Ing's testimony, the staff's submittal was amended to specify that the draft plan shall include a scenario complying with the 5 mgd sustainable yield estimate.)

TESTIMONIES:

Mr. Tim Steinberger, of the City and County Department of Wastewater Management was available for questions from the Commission.

MOTION: (MIKE/NOBRIGA)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

The Chairperson adjourned the meeting at 3:32 p.m.

Respectfully submitted,

JANIS F. UWAIN
Secretary

APPROVED AS SUBMITTED:

RAE M. LOUI
Deputy Director
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

September 11, 1996
Honolulu, Oahu

APPLICATIONS FOR WATER USE PERMITS
Requests for New and Continued Nonpotable Urban Uses

ALLOCATION PLAN FOR WATER USE PERMITS
In Response to Lower Sustainable Yield Estimate for the Puuloa Area
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04,07)
The State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 2003-01,02,05)
Kapolei People's Inc.
91-701 Farrington Hwy.
Kapolei, HI 96707

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

LANDOWNER(S):

Same

Same

Same

Same

AGENDA 2
Item 2
BACKGROUND:

On September 28, 1979, the Board of Land and Natural Resources (BLNR) designated the Pearl Harbor Ground Water Control Area (Pearl Harbor GWCA; Judicial Boundaries of Ewa and Wahiawa Districts) pursuant to Chapter 177, HRS, Ground Water Use Act.

On March 22, 1985, the BLNR established subareas for the Pearl Harbor GWCA, including the Coastal Caprock Subarea.

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resource...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit.

In the 1988-1992 timeframe, water use permits totalling 19.524 million gallons per day (mgd) were awarded in the Ewa Caprock Aquifer mainly to existing irrigation uses (e.g., Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and brackish to saline water uses (chlorides > 1,000 MG/L).

On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer as a separate aquifer within the existing designated ground water management area. Due to uncertainties regarding the aquifer's sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

Since March 1993, the Commission has been awarding one-year interim permits for new uses for the Ewa Caprock Aquifer.

In May 1996, the staff completed a re-evaluation of the Ewa Caprock Aquifer sustainable yield. Based on the staff's analysis of historic data, the staff proposed the establishment of three (3) aquifer systems within the Ewa Caprock Aquifer: Puuloa, Kapolei, and Malakole (see Exhibit...
1), with sustainable yields of 5 mgd, 3 mgd, and 1 mgd, respectively, for chloride concentrations less than 1,000 MG/L.

On August 14, 1996, a public hearing was held on the proposed establishment of aquifer systems and sustainable yields for the caprock aquifer. Before the close of the public hearing, Hawaii Prince Golf Club (HPGC) submitted a written request for a contested case hearing on the proposed establishment of a 5 mgd sustainable yield for the Pupuina area. The written petition was received on August 23, 1996.

ANALYSIS/ISSUES:

Normally, the staff lists and analyzes the criteria set forth in §13-171-13 HAR which must be established by the applicant. However, there are larger issues which must be addressed before this analysis can occur. These are discussed as follows:

A. Nonpotable Water Demand Expected to Increase

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 2). This growth will result in an increase in water needs, both potable and nonpotable.

Although the water demand for Ewa was not available, City and County planners have testified that the 2020 demand for water for the projected growth of the Ewa, Central, Waianae, and Honolulu districts will be about another 90 mgd. This increased demand consists of 56.5 mgd for potable water needs and 33.5 mgd for nonpotable water needs. This is exclusive of agricultural water demand, which is specified in the City's plans to provide an open space buffer for the proposed urban growth in Central Oahu. Thus, the 90 mgd water demand exceeds the remaining water resources on the island (75 mgd). It is critical that alternative nonpotable sources of water be a part of Oahu's water planning in order to reduce the competition for potable water as an irrigation source. Further, these figures underscore the important role of the brackish Ewa Caprock Aquifer and of the reclaimed sewage effluent in future growth plans.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management retained a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The February, 1996 plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. The staff has participated in a group consisting of representatives from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply to champion the use of reclaimed water and a water reclamation project for the Ewa Plain. The major issues include identification of a purveyor for the reclaimed water resource and rates/cost of the resource.

In further support of the plan for reuse on the Ewa Plain, the Commission adopted the following reclaimed water policy on March 13, 1996:

It is the policy of the Commission on Water Resource Management (Commission)
to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

B. Current Allocations Exceed Sustainable Yield in Puuloa

The staff's recommendation of a sustainable yield for the Ewa Caprock Aquifer is based on historical data reflecting the aquifer's response to natural sugarcane irrigation and current urban conditions. The lack of imported basal water by Oahu Sugar Company (OSCo) augmenting the natural sustainable yield of the caprock will affect water availability.

If the Commission were to approve the staff's recommendation to establish three aquifer systems within the Ewa Caprock Aquifer with sustainable yields of 5 mgd for Puuloa, 3 mgd for Kapolei, and 1 mgd for Malakole, only the Puuloa area would be over-allocated. Exhibit 3 (column 5) shows the current allocations in the Puuloa area of the caprock, totalling 15.177 mgd.

However, the over-allocation problem may be only temporary because the City Department of Wastewater Management is moving forward with their plans for a demonstration recharge trench that will recharge the Puuloa area of the Ewa Caprock Aquifer with 5 mgd of R-2 effluent from the Honouliuli Wastewater Treatment Plant. This would replace some of the lost imported basal irrigation recharge from OSCo. It is expected that the demonstration recharge trench will be online by 1999. If the pilot project is successful, additional trenches will be installed to recharge the Kapolei as well as Puuloa area.

The current schedule for the demonstration recharge trench (5 mgd) and full application (13 mgd) is:

<table>
<thead>
<tr>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli Secondary Treatment Operational</td>
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<tr>
<td>Demonstration Recharge Trench Operational (5 mgd)</td>
<td>12/1998</td>
</tr>
<tr>
<td>Testing Complete</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational (13 mgd)</td>
<td>12/2000</td>
</tr>
</tbody>
</table>

The current design also allows for direct use of the R-2 effluent in addition to recharging the aquifer. The City is evaluating the feasibility of constructing an R-1 treatment facility to enable less restricted uses.

C. New Water Use Permit Applications

Pending applications for the Puuloa area, shown in Exhibit 4, total 3.174 mgd. For the Kapolei area, requests total 1.796 mgd (Exhibit 5). All pending requests are for various nonpotable non-agricultural uses. On March 13, 1996, the Commission deferred action on all pending requests in the Ewa Caprock until a decision is made on the proposed establishment of a sustainable yield estimate in the Water Resources Protection Plan.
Also shown as a pending request shown in Exhibit 4 is an application for Haseko (Ewa), Inc.'s (Haseko) proposed Ewa Marina project in the Puuloa area, which is the subject of a contested case hearing. The "quantity of the use" for the marina excavation has not been established. The State Department of Transportation also has a pending water use permit application for the Barbers Point Harbor expansion in the Malakole area; action on this application has been deferred pending written notification of the reclassification of the lands from the Agricultural to Urban designation. There are no other pending requests in Malakole.

One condition that new water use permit applications must meet is that the use: "can be accommodated with the available water source..." §174C-49(a) HRS. There has been a request for a contested case hearing on the proposed sustainable yield for Puuloa. The staff does not believe that there is a right to a contested case hearing on this matter and is planning to submit the proposed Hawaii Water Plan update to the Commission for action at the Commission meeting of December 18, 1996.

D. Step-Down of Allocations to Match Sustainable Yield

The staff will submit for Commission action a proposal to step-down current allocations to match sustainable yield as well as a recommendation regarding pending new water use permit requests. We have discussed several alternatives with a self-elected Steering Committee of the users and with the Reclaimed Water Champions (Department of Health, City Department of Wastewater Management, City Planning Department, Honolulu Board of Water Supply, Commission on Water Resource Management). In response, on August 29, 1996, a written proposal (Exhibit 6) was received from the Puuloa Caprock Users Group (Group), which includes HPGC, Sogo Hawaii, Inc., Haseko, Gentry Homes, Ltd., and the Navy. The Group does not include Honolulu Board of Water Supply, City Department of Wastewater Management (DWWM), Campbell Estate, and the U.S. Fish and Wildlife Service, the latter three of which are permitted water users in the Puuloa area and are necessary partners in any usable plan.

The Group has requested 90 days to prepare and submit a draft nonpotable master plan (Plan) to the Commission, which will include a recommended plan to manage water use over a proposed two-year interim period. The proposal is very general and does not address issues important to this effort such as the current overpumpage by DWWM (Well Nos. 1902-03 & 04) and Gentry (Well No. 2001-05). Further, the Group implies that it is in possession of data not previously submitted that would be helpful to the Commission in setting the sustainable yield. Although the deadline for testimonies has passed, staff recommends allowing additional time for submittal of the information.

RECOMMENDATIONS:

The staff recommends that the Commission:

1. Defer action on the sustainable yield for the Ewa Caprock Aquifer to the December 18, 1996 Commission meeting in order to consider the Puuloa Caprock Users Group's draft nonpotable master plan for the Puuloa area.

2. Require that the draft nonpotable master plan include each of the elements outlined in the Group's proposal, be as specific as possible (eg. annual projections of all nonpotable supply requirements detailed by project and TMK area), and encompass the entire Puuloa area and all users in Puuloa. The Plan shall also address the current overpumpage at

It include a scenario complying with the proposal 5mgd estimate
Staff Submittal

Well Nos. 1902-03 & 04 and Well Nos. 2001-05.

3. Extend the deadline to September 30, 1996 for the submittal of any additional data or evidence (related to ground water modelling, hydrologic data, or other) which a party wishes to have considered in setting the sustainable yield of the Ewa Caprock Aquifer.

Respectfully submitted,

W. Noguchi
RAE M. LOUI
Deputy Director

Attachments
Exhibit 1 - Location Map
Exhibit 2 - Scenario Comparisons
Exhibit 3 - Ewa Caprock Permittees - Puuloa Area
Exhibit 4 - Puuloa Aquifer System
Exhibit 5 - Kapolei Aquifer System
Exhibit 6 - Puuloa Caprock Users Group Proposal

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson

1. Dinsmore: have raw data that has not previously been submitted. Request additional time to present and analyze data, may have affect on SY estimate.

2. Campbell: call me, can't be in again.

3. P. Wilson: request that amendment to rescission be reconsidered (5 mgd compliance), already in effect, be extended to 15 mgd. Was hoping to manage aquifer and ceiling.

4. Mike: do scenarios 1 w/5 mgd, 1 w/o water.


Washdown, polymer, enhanced, nitrification.
Long-range projection: 2 mgd (to come out of ve we adopt)
mgd for Barber Pt. was 13, decrease to 10 mgd,
## Scenario Comparisons

### Central Oahu Development Plan Area

<table>
<thead>
<tr>
<th>Development Scenarios</th>
<th>Central Oahu Projected Increase in Population</th>
<th>Central Oahu Projected Increase in Housing Units</th>
<th>Central Oahu Projected Increase in Civilian Non-Construction Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive Ewa</td>
<td>130,529</td>
<td>168,050</td>
<td>37,521</td>
</tr>
<tr>
<td>Dispersed Development</td>
<td>130,529</td>
<td>164,444</td>
<td>33,915</td>
</tr>
<tr>
<td>Ewa Employment Dispersed Residential</td>
<td>130,529</td>
<td>165,081</td>
<td>34,552</td>
</tr>
<tr>
<td>Ewa &amp; Central Oahu Urban Centers</td>
<td>130,529</td>
<td>213,802</td>
<td>83,273</td>
</tr>
<tr>
<td>Current Trend</td>
<td>130,529</td>
<td>177,729</td>
<td>47,212</td>
</tr>
</tbody>
</table>

**NOTE:** Baseline forecast for 1990-2020 islandwide increase is 29%.

![Change in Resident Population](image)

**Change in Non-Construction Jobs**

![Change in Non-Construction Jobs](image)

**NOTE:** Baseline forecast for 1990-2020 islandwide increase is 8.9%.

City and County of Honolulu Planning Department, August 1994
## EW A CAPROCK PERMIT T ES—PUULOA AREA

<table>
<thead>
<tr>
<th>(1) PERMITTEE</th>
<th>(2) WELL NAME (WELL NO.)</th>
<th>(3) DATE OF APPROVAL</th>
<th>(4) TYPE OF USE</th>
<th>(5) ALLOCATION</th>
<th>(6) LATEST 12-MONTH USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haselto</td>
<td>EP 27A, 27B, 28, 29 (1902-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
<td>2.660</td>
<td>0.000</td>
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<tr>
<td>Campbell Estate</td>
<td>EP 21 (2000-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
<td>2.080</td>
<td>0.000</td>
</tr>
<tr>
<td>U.S. Navy</td>
<td>EP 23 (2001-01)</td>
<td>12/16/92</td>
<td>Irrigation (Agric.)</td>
<td>5.890</td>
<td>0.000</td>
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<tr>
<td>Hawaii Prince</td>
<td>EP 22 (1900-02)</td>
<td>10/19/88</td>
<td>Irrigation (G. Course)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>EP 22 &amp; Wells 1 to 5 (1900-02, 1900-17 to 20, 1901-02)</td>
<td>7/13/94</td>
<td>Irrigation (G. Course)</td>
<td>0.129</td>
<td>1.049</td>
</tr>
<tr>
<td>Sogo Hawaii</td>
<td>Beautiful G.C. 1 (1900-21)</td>
<td>2/13/91</td>
<td>Irrigation (G. Course)</td>
<td>0.100</td>
<td>0.000</td>
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<tr>
<td>Palos Homes</td>
<td>Palos Wells A &amp; B (1900-22 &amp; 1959-08)</td>
<td>2/26/88</td>
<td>Irrigation (G. Course)</td>
<td>0.600</td>
<td>0.512</td>
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<tr>
<td>Haselto</td>
<td>Haselto No. 1 (1902-01)</td>
<td>7/13/94</td>
<td>Irrigation (G. Course, Landscape, Dust Control)</td>
<td>1.500</td>
<td>0.000</td>
</tr>
<tr>
<td>C&amp;C DWWN</td>
<td>Honoluauli STP 1 &amp; 2 (1902-03 &amp; 04)</td>
<td>3/15/90</td>
<td>Industrial</td>
<td>0.500</td>
<td>0.992</td>
</tr>
<tr>
<td>Gentry</td>
<td>Ewa Gentry (2001-02)</td>
<td>9/27/85</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Gentry</td>
<td>Geiger Park (2001-03)</td>
<td>7/13/94</td>
<td>Irrigation (Park)</td>
<td>0.000</td>
<td>0.014</td>
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<tr>
<td>Gentry</td>
<td>Sunrise Apt (2001-04)</td>
<td>7/13/94</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.040</td>
<td>0.024</td>
</tr>
<tr>
<td>Gentry</td>
<td>Soda Creek III (2001-05)</td>
<td>7/13/94</td>
<td>Irrigation (Park, Landscape)</td>
<td>0.020</td>
<td>0.064</td>
</tr>
<tr>
<td>Palm Villa I Homeowners</td>
<td>Palm Villa I (2001-06)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.080</td>
<td>0.016</td>
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<td>Arbors Homeowners</td>
<td>Arbors (2001-07)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.063</td>
<td>0.048</td>
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<tr>
<td>Palm Villa II Homeowners</td>
<td>Palm Villa II (2001-08)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
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<td>0.071</td>
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<tr>
<td>Gentry</td>
<td>Pt. Weaver Apt (2001-09)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.023</td>
<td>0.020</td>
</tr>
<tr>
<td>Gentry</td>
<td>Gentry Area 24 (2001-10)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.022</td>
<td>UNUSABLE</td>
</tr>
<tr>
<td>Palm Court Homeowners</td>
<td>Palm Court 3 (2002-12)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.066</td>
<td>0.026</td>
</tr>
<tr>
<td>Gentry</td>
<td>Gentry O.C. (2002-15)</td>
<td>7/13/94</td>
<td>Irrigation (Landscape)</td>
<td>0.130</td>
<td>UNUSABLE</td>
</tr>
<tr>
<td>U.S. Fish &amp; Wildlife</td>
<td>Honolulu Unit (2101-14)</td>
<td>10/27/93</td>
<td>Habitat Maintenance</td>
<td>0.216</td>
<td>?</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td>15.177</td>
<td>2.836</td>
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EXHIBIT 3
## PUUOA AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUUOA AQUIFER SYSTEM (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>15,000</td>
</tr>
<tr>
<td>Less: Other Existing Permits (shown in Exhibit 3)</td>
<td></td>
</tr>
<tr>
<td>Current Available Allocation</td>
<td>-2.170</td>
</tr>
<tr>
<td>Less: Requests for New Interim Permits</td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club</td>
<td></td>
</tr>
<tr>
<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.129</td>
</tr>
<tr>
<td>Gentry Co.</td>
<td></td>
</tr>
<tr>
<td>(2001-03)</td>
<td>0.030</td>
</tr>
<tr>
<td>(2001-04)</td>
<td>0.040</td>
</tr>
<tr>
<td>(2001-05)</td>
<td>0.020</td>
</tr>
<tr>
<td>(2001-09)</td>
<td>0.023</td>
</tr>
<tr>
<td>(2001-10)</td>
<td>0.022</td>
</tr>
<tr>
<td>(2002-15)</td>
<td>0.130</td>
</tr>
<tr>
<td>Haseko (Ewa), Inc. (1902-01)</td>
<td>1.500</td>
</tr>
<tr>
<td>Arbors Assoc. (2001-07)</td>
<td>0.063</td>
</tr>
<tr>
<td>Palm Villa II Assoc. (2001-08)</td>
<td>0.048</td>
</tr>
<tr>
<td>Palm Court Assoc. (2002-12)</td>
<td>0.066</td>
</tr>
<tr>
<td>Less: New Applications</td>
<td></td>
</tr>
<tr>
<td>Hawaii Prince Golf Club</td>
<td></td>
</tr>
<tr>
<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.371</td>
</tr>
<tr>
<td>Gentry Development Co. (2001-11)</td>
<td>0.172</td>
</tr>
<tr>
<td>Gentry Development Co. (2002-15)</td>
<td>0.560</td>
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<tr>
<td>Haseko (Ewa), Inc. (Ewa Marina)</td>
<td>-1.103</td>
</tr>
<tr>
<td>Available Allocation</td>
<td>-5.344</td>
</tr>
</tbody>
</table>

*Proposed marina project will result in a permanent reduction in caprock storage capacity.*
<table>
<thead>
<tr>
<th>ITEM</th>
<th>KAPOLEI AQUIFER SYSTEM (mg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>5.000</td>
</tr>
<tr>
<td>Less: Other Existing Permits</td>
<td></td>
</tr>
<tr>
<td>Pu‘u Makakilo (1904-02)</td>
<td>-1.150</td>
</tr>
<tr>
<td>Current Available Allocation</td>
<td>3.850</td>
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<tr>
<td>Less: Requests for New Interim Permits</td>
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</tr>
<tr>
<td>Campbell Estate (1905-08,10)</td>
<td>0.302</td>
</tr>
<tr>
<td>State HFDC (2003-04,07)</td>
<td>0.494</td>
</tr>
<tr>
<td>Kapolei People’s Inc. (2003-01,02,05)</td>
<td>1.000</td>
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<tr>
<td>-1.796</td>
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</tr>
<tr>
<td>Less: New Applications</td>
<td></td>
</tr>
<tr>
<td>(none)</td>
<td>-0.000</td>
</tr>
<tr>
<td>Available Allocation</td>
<td>2.054</td>
</tr>
</tbody>
</table>
1. The PCUG will prepare a non-potable master plan for the Puuloa Aquifer System which will include: a projection of all non-potable supply requirements; a management plan to optimize use of non-potable resources including treated wastewater effluent and the available supply of brackish groundwater; and a compilation of hydrologic data which will provide the basis for the proposed use of non-potable resources.

2. A draft of the non-potable master plan, as a work in progress, will be submitted in 90 days. In addition to a discussion of each of the master plan topics indicated above, this draft report will also include a recommended plan to manage water use over a proposed two-year interim period. The management plan at a minimum shall include the following:

(a) An agreement among PCUG members to keep actual water use of the Puuloa Aquifer System below an amount jointly agreed to by the PCUG members and the CWRM. Actual water use shall be evaluated on a 12-month moving average basis.

(b) An agreement among the PCUG members for the pro-rata participation in wastewater reuse by all PCUG members.

(c) An agreement to allow new interim water uses by PCUG members as long as they are consistent with conditions (a) and (b) above.

3. The PCUG requests that the CWRM enter into agreements confirming that the interim 2-year period shall not be counted as part of a 4-year "use it or lose it" assessment by the CWRM.

4. The PCUG will form a steering committee to work directly with the City's Department of Wastewater Management on wastewater effluent reuse. Based on a preliminary assessment of the quantity and location of required non-potable supply, an evaluation of pipeline delivery of effluent treated to R-1 quality will be given the highest priority.

5. The PCUG believes that a more complete set of data is necessary in order to make a confident assessment of the Puuloa aquifer system's sustainable yield. PCUG members will collect and provide to the CWRM hydrologic data over and above that which is being submitted to the CWRM on a monthly basis as a requirement of its water use permits.
Hawaii Prince Golf Course

HASEKO (Ewa), Inc.

Gentry Homes, Ltd.

J. M. Killian
Department of Navy
(The Department of the Navy's Participation
is in connection with and in support of it's
agricultural outlease program.)

J. LEONARD KILIAN
Dir., NAVFAC Real Estate Division
Engr. Advisor, Naval Facilities Engineering Command
Engr. Estate Contracting Officer

EXHIBIT 6
# Oahu Drinking Water Picture

## Groundwater Sources:

<table>
<thead>
<tr>
<th>Source</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Developable Yield</td>
<td>415 mgd</td>
</tr>
<tr>
<td>Utilized</td>
<td>340 mgd</td>
</tr>
<tr>
<td>Available</td>
<td>75 mgd</td>
</tr>
</tbody>
</table>
**OAHU DEMAND VS. SUPPLY**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020 Projected Demand</td>
<td>90 mgd</td>
</tr>
<tr>
<td>(Ewa, Central Oahu, Waianae, Honolulu)</td>
<td></td>
</tr>
<tr>
<td>Available Supply</td>
<td>75 mgd</td>
</tr>
<tr>
<td><strong>DEFICIT</strong></td>
<td>-15 mgd</td>
</tr>
</tbody>
</table>
OAHU 2020 DEMAND

Forecasted Demand:

Potable 56.5 mgd
Nonpotable 33.5 mgd

TOTAL 90 mgd

Alternative Sources:

Groundwater 75 mgd
Wastewater Effluent 110 mgd
Conservation ?
September 11, 1996

Commission on Water Resource Management
Department of Land and Natural resources
State of Hawaii

Re: In the matter of the Allocation Plan For Water Use Permits
In Response to Lower Sustainable Yield Estimate for the Puuloa Area
Ewa Caprock Ground Water Management Area, Oahu

Chairman Wilson and members of the State Water Commission:

My name is Jeff Dinsmore. I am a Vice President of Gentry Homes, Ltd., and I am here to testify on behalf of the Puuloa Caprock Users Group on the Commission On Water Resource Management’s Staff submittal on the above mentioned subject. I previously testified at the August 14 hearing for the PCUG and requested a 90 day extension to prepare and submit a draft nonpotable water master plan for the Puuloa Caprock area.

The Puuloa Caprock Users Group is in agreement with the Staff recommendations and would like to thank them for their effort. We are confident that a mutually beneficial plan can be prepared and implemented.

We do have one change to request of the staff recommendation. We would like to request that the deadline for the submittal of any additional data for consideration of the sustainable yield be extended from September 30, 1996 until December 18, 1996.

Thank you for your time and due consideration of our request. If you have any questions, I will do my best to answer them for you.

Sincerely,

Puuloa Caprock Users Group

Jeffrey C. Dinsmore
REPORT ON PERMIT VIOLATIONS
Applicants for New Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

APPLICANT(S):

(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-04,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La’aulu St., #1G
Ewa Beach, HI 96706

LANDOWNER(S):

Same

Same

Same
On March 13, 1996, the Commission on Water Resource Management (Commission) deferred action on all pending requests to continue uses in the Ewa Caprock and directed the staff to submit a report describing permit violations in the Ewa Caprock. The Commission also directed staff to resolve the violations prior to Commission action on the requests for new interim water use permits.

A summary of the permit violations is shown in Table 1.
Table 1. Summary of Permit Violations

<table>
<thead>
<tr>
<th>APPLICANT/WELL NO.</th>
<th>NO PERMIT APPLICATION</th>
<th>WELL</th>
<th>PUMP</th>
<th>WATER USE</th>
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<tr>
<td></td>
<td></td>
<td>WCR</td>
<td>ELEV</td>
<td>AS- BUILT</td>
</tr>
<tr>
<td>Hawaii Prince</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1901-03</td>
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<td></td>
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<td>1900-02</td>
<td></td>
<td></td>
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<td>1900-17</td>
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<td>1900-18</td>
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<td>X</td>
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<tr>
<td>Campbell Estate</td>
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<td>1905-08</td>
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<td></td>
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<tr>
<td>Gentry Development</td>
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<td>WELL/PUMP**</td>
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<td>2001-03</td>
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<td>2001-04</td>
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<td>2003-04</td>
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<tr>
<td>2003-05</td>
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<td>X</td>
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<td></td>
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<tr>
<td>2003-07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Not a clear condition of the permit
** After-the-fact application for a pump installation permit received 3/13/96.

WCR: Well Completion Report
ELEV: Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
AS-BUILT: As-built sectional drawing of the well
PUMP TEST: Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.
PCR: (Permanent) Pump Installation Completion Report
AS-BUILT: As-built sectional drawing of the permanent pump installation
WUR: Water Use Report
OVER PUMPAGE: 12-month moving average withdrawals in excess of allocation.
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT VIOLATIONS:

The asterisk (*) denotes items that were not clear conditions of the permit, but are needed by the staff to carry out resource assessment and analytical work. In most cases, the lack of clarity resulted from the issuance of combined well construction/pump installation permits, which did not specifically require pump completion reports and as-built sectional drawings of the pump installation. The staff has addressed this problem by developing a new procedure for combined well construction/pump installation permits applications, whereby the staff will recommend that the Commission approve the issuance of the well construction permit and delegate to the Chairperson the authority to approve the issuance of the pump installation permit upon the Commission’s receipt of adequate pump test results and any other items that were required under the terms of the well construction permit.

Table 1 shows a number of wells under "Gentry Development" that have been transferred to individual homeowner's associations. However, Gentry was the entity in control of the well at the time that the construction violations occurred and thus should be responsible for seeking after-the-fact permits and/or compliance with well/pump permit conditions. A similar condition exists for wells listed under "State HFDC", where three (3) of the wells have been transferred to Kapolei Peoples, Inc.

WATER USE REPORTING:

The frequency of reporting water data for Well No. 2001-03 is inconsistent. As of April 3, 1996, the staff is not in receipt of any reports for 1996. Section 13-168-7(b) HAR requires the owner or operator of any well to file a report "...on a regular monthly (calendar or work schedule) basis to the commission on forms provided by the commission on or before the end of the month following the month for which water usage is to be reported."

At present, water data are being reported for Well No. 2001-05 on a regular basis; however, as of April 3, 1996, a report for January 1996 has not been submitted, and there are no reports for March-June 1995.

Reports for Well No. 2002-12 are inadequate, i.e. the January 1996 report, the beginning of the period for which the amount is reported is unknown. In addition, when withdrawals are zero, monthly reports should still be submitted with the "Date Measurement(s) Taken" field filled in. A sample of the Commission's official report form is shown in Exhibit 1.

OVERPUMPAGE:

Table 1 also shows that withdrawals at the Hawaii Prince wells (Well Nos. 1900-02, 17 to 20 & 1901-03) and two Gentry-developed wells (Well Nos. 2001-05 and 2001-08) are in excess of the respective allocations. The graphs of reported monthly water use and computed 12-month moving averages are shown in Exhibits 2 to 4. The water use permit for Well No. 2001-08 has been transferred to Palm Villa II Homeowners Association. The current water use permittees should be held responsible for any violations related to usage and water use reporting.
An issue is whether the overpumpage should be viewed as an indication of underestimated water needs or whether enforcement action is more appropriate. The Commission has been approving interim permits for new uses pending verification of the actual quantity of water needed. Section 174C-50(g) provides "[i]n the final determination, the Commission may increase or reduce the amount initially granted the permittee".

With regard to pumpage at the Hawaii Prince wells, the extent to which the withdrawals have exceeded the allocation is not certain. Hawaii Prince has been estimating their water use on the basis of pumping times and pump capacities. The pump in EP 22 (Well No. 1900-02), Hawaii Prince's major pumping source, is a very old OSCo pump that is most likely running at less than 100% efficiency. Therefore, reported estimated pumpage is probably greater than actual pumpage. The installation of flowmeters in each of the Hawaii Prince wells was completed on February 29, 1996. A review of actual water use in relation to the allocation should be done in light of metered pumpage data.

**SUMMARY/CONCLUSION:**

Letters have been sent to each of the entities listed in Table 1, notifying them of their lack of compliance with permit conditions and requesting the submittal of other items and documents that are needed by the Commission but were not clear conditions of the permit. The letters establish a May 15, 1996 deadline for compliance.

The requests for continued uses will be resubmitted for Commission action once all violations have been resolved and following the public hearing to modify the Water Resources and Protection Plan to include the Ewa Caprock as a hydrologic unit and to establish a sustainable yield for the caprock aquifer system. We are planning to hold the public hearing in July 1996.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Exhibit(s): 1 (Monthly Water Use Report Form)
2 (Graph of Monthly Water Use for Well No. 2001-05)
3 (Graph of Monthly Water Use for Well No. 2001-08)
4 (Graph of Monthly Water Use for Well Nos. 1900-02, 17 to 20 & 1901-03)

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson
MONTHLY GROUNDWATER USE REPORT FOR
GENTRY DEVELOPMENT CORP.
P.O. BOX 295
HONOLULU, HI 96809

Month of __________, 19__

Date Measurement(s) Taken

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly groundwater use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 621, Honolulu HI 96809. For assistance, please call 587-0265 (Oahu only) or 1-800-468-4644 (neighbor islands).

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Water Level (ft. above msl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments or additional information:

Submitted by (print) ___________________________ Title ___________________________
Signature ___________________________________ Date ___________________________

EXHIBIT 'I
Palm Villa II Homeowners Association
Palm Villa II Well (Well No. 2001-08)

EXHIBIT 3

monthly values — WUP
12-MAV
Cl (mg/l)
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

EXHIBIT 4

pumpage (mgd)

JAN 93 JAN 94 JAN 95 JAN 96

date (latest last 12/95)

12-MAV WUP combined monthly withdrawal
MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: March 13, 1996
TIME: 9:00 a.m.
PLACE: Honolulu Int'l Airport
         Interisland Terminal Conference Center, 7th Floor

Chairperson Michael Wilson called the meeting of the Commission on Water Resource
Management to order at 9:15 a.m.

The following were in attendance:

MEMBERS:  Mr. Michael Wilson
           Mr. Richard Cox
           Dr. Lawrence Miike
           Mr. Robert Girald
           Mr. David Nobriga
           Mr. Herbert Richards, Jr.

STAFF:     Ms. Rae Loui
           Mr. Roy Hardy
           Mr. Glenn Bauer
           Mr. Charley Ice

COUNSEL:   Mr. William Tam

OTHERS:    Alan Suwa
           James Kumagai
           Piikea Miller
           Bob Nakata
           Ryan Imata

           Yvonne Izu
           Kathleen Hoff
           Lola N. MENCH
           Stephen Thomas
           Raymond Kanna

           Ms. Lyann Mizuno
           Mr. Eric Hirano
           Ms. Lenore Nakama
           Ms. Janis Uwaine
           E.A. Ho'oipo Martin
           Yukie Y. Ohashi
           Tom Nance

All written testimonies submitted at the meeting are filed in the Commission office and are
available for review by interested parties. The items were not taken in the order posted on
the agenda.

1. MINUTES OF THE FEBRUARY 21, 1996 MEETING

   MOTION: (NOBRIGA/RICHARDS)

   To approve the minutes.

   UNANIMOUSLY APPROVED.

2. OLD BUSINESS/ANNOUNCEMENTS

   Deputy Director Rae Loui announced that there would be a hearing on Friday, March
   15, 1996 on Maui regarding the following:
ORDER TO SHOW CAUSE TO THE COUNTY OF MAUI WHY:

1. A WATER EMERGENCY SHOULD NOT BE DECLARED FOR THE IAO AQUIFER SYSTEM
2. THE ACTIONS NECESSARY TO MEET THE EMERGENCY SHOULD NOT BE ORDERED

3. REQUEST TO SCHEDULE A PUBLIC HEARING TO MODIFY WATER RESOURCES AND PROTECTION PLAN, SUSTAINABLE YIELD ESTIMATE FOR EWA CAPROCK AQUIFER SYSTEM

GENTRY DEVELOPMENT COMPANY, APPLICATION FOR A WATER USE PERMIT, APPLICATION FOR WELL PERMITS, GENTRY AREA 26 WELL (WELL NO. 2001-11), WELL CONSTRUCTION: 19-INCH DIAMETER, 58-FOOT DEEP WELL, PUMP INSTALLATION: 500 GPM PUMP, WATER USE: FUTURE NONPOTABLE URBAN USE FOR 0.172 MGD

APPLICATIONS FOR WATER USE PERMITS, REQUESTS TO CONTINUE NONPOTABLE URBAN USES, EWA GROUND WATER MANAGEMENT AREA, OAHU

(WELL NOS. 1905-08.10), THE ESTATE OF JAMES CAMPBELL

(WELL NOS. 2003-01.02.04.05.07), STATE OF HAWAII, HOUSING FINANCE & DEVELOPMENT CORP.

(WELL NOS. 1900-02.17 TO 20 & 1901-03), HAWAII PRINCE GOLF CLUB

(WELL NOS. 2001-03.04.05.09.10.11 & 2002-15), GENTRY DEVELOPMENT CO.

(WELL NO. 2001-07), THE ARBORS ASSOCIATION

(WELL NO. 2001-08), PALM VILLAS II ASSOCIATION

(WELL NO. 2002-12), PALM COURT ASSOCIATION

(WELL NO. 1902-01), HASERO (EWA), INC.

PRESENTATION OF SUBMITTAL: Deputy Director Rae Loui and Glenn Bauer

STAFF'S RECOMMENDATION:

Staff requested to amend the recommendation as follows:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).
2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.

5. The Commission adopts the following policy statement on water reclamation:

It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain and reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

TESTIMONIES:

James Kumagai, consultant for the Commission on Water Resource Management was available to answer questions.

Deputy Director Rae Loui stated that a report on the progress of the recharge trench would be submitted to the Commission at the next Oahu Commission meeting.

MOTION: (COX/GIRALD)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

Chairperson Wilson directed Deputy Director Rae Loui to send a letter informing the Ewa caprock users that there may not be enough water to go around at a certain time and to stress to the users that it is important for them to work with the City and County and also to indicate to the City and County that we are anxious to help them in working with the users. In the event that the users and the City and County cannot work together to come up with a solution, then the Commission will have to step in and institute a solution.

The Commission requested staff to submit a report on the permit violations in the Ewa Caprock.
The Commission also requested a report on current allocations and potential pumpages in the caprock.

4. PACIFIC ATLAS (HAWAII) INC., DEFERRAL—APPLICATION FOR A WATER USE PERMIT, BAY VIEW NOS. 1 TO 5 WELLS (WELL NOS. 2447-02 TO 06), TMK 4-5-30:37, FUTURE IRRIGATION USE FOR 0.208 MGD, KOOLAUPoko GROUND WATER MANAGEMENT AREA, OAHU

PRESENTATION OF SUBMITTAL: Ms. Lyann Mizuno

Staff amended the second paragraph under the Background section of the submittal as follows:

On October 5, 1995, pump installation permit applications were received from Pacific Atlas (Hawaii), Inc. for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06).

STAFF’S RECOMMENDATION:

Staff recommended that the Commission:

1. Defer action on the water use permit application for Bay View Nos. 1 to 5 (Well Nos. 2447-02 to 06) until the next regular meeting on Oahu.

2. Direct staff to report to the Commission on the applicant’s compliance with the well construction permit conditions, along with recommendations on the imposition of fines, if any. This report shall be submitted prior to recommendations for Commission action on the applications for the pump installation permits, the after-the-fact stream channel alteration permit, and the water use permit.

TESTIMONY BY APPLICANT:

Mr. Tom Nance, project engineer, stated that they pumped each of the wells for just two days. There is an effect on the other wells that is noticeable and in that time period they did not see any affect on the stream. He also stated that there may be one over a longer period of time, although he does not think it will happen but he is willing to run more tests. He further stated that these are very small capacity wells with a cost of around $15,000 each and a seven day pump test would double their cost. He requested that they put the permanent pumps in the wells and pump them simultaneously, which is how they would be operated, and run the aquifer test in that manner. They would pump three of the five wells over a seven day period, producing a little more than the water use permit that they are asking for and they would monitor all the wells, including the two that weren't pumped. They would also monitor several locations on Kawa Stream and would get all the information that they would need. He further testified that the grassing begins next week. The only source of water that they have is a temporary connection to the Board of Water Supply and they received notice that they need to get off. He asked that the Commission consider allowing the permanent pumps to be installed for testing and grassing. Therefore, he requested that the Commission allow them to go ahead and
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

March 13, 1996
Honolulu, Oahu

REQUEST TO SCHEDULE A PUBLIC HEARING
TO MODIFY WATER RESOURCES AND PROTECTION PLAN
Sustainable Yield Estimate for
Ewa Caprock Aquifer System

Gentry Development Company
APPLICATION FOR A WATER USE PERMIT
APPLICATION FOR WELL PERMITS
Gentry Area 26 Well (Well No. 2001-11)
Well Construction: 19-inch Diameter, 58-foot Deep Well
Pump Installation: 500 gpm Pump
Water Use: Future Nonpotable Urban Use for 0.172 mgd

APPLICATIONS FOR WATER USE PERMITS
Requests to Continue Nonpotable Urban Uses
Ewa Ground Water Management Area, Oahu

APPLICANT(S):
(Well Nos. 1905-08,10)
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07)
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

LANDOWNER(S):
Same
Same

Item 3
(Well Nos. 1900-02,17 to 20 & 1901-03)
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10,11 & 2002-15)
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07)
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puanui St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

In 1990, the Commission on Water Resource Management (Commission) adopted the Water Resources and Protection Plan (Plan). The Plan included, as required by HRS 174C-31(c), "hydrologic units and their characteristics, including the quantity and quality of available resource...". The Plan did not include the brackish Ewa Caprock Aquifer as a hydrologic unit (Exhibit 1).

In the 1988-1992 timeframe, Ewa Caprock water use permits totalling 19.524 million gallons per day (mgd) were awarded mainly to existing irrigation uses (eg. Oahu Sugar Co.). Other existing water use permits totaled 39.608 mgd for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L).
On March 3, 1993, the Commission officially adopted the boundary of the entire brackish Ewa Caprock Aquifer and designated the aquifer as a water management area (Exhibit 1). Due to uncertainties regarding the aquifer's sustainable yield, the Commission did not adopt a sustainable yield estimate for the aquifer.

On March 17, 1993, the Commission deferred action on pending applications for water use permits in the Ewa Caprock Aquifer to provide additional time for the public to review the proposed permits and issues related to water use permit processing.

On April 28, 1993, to satisfy the needs of new developments in the Kapolei and Puuloa areas of the caprock, applicants were awarded interim water use permits with a specified duration of one year. Special conditions were attached to each interim permit; these are shown in Exhibit 2.

On May 18, 1994, the Commission deferred action on requests for new interim permits to continue nonpotable urban uses to provide applicants with an additional thirty (30) days to comply with the data reporting requirement of the expired interim permits. In order for the Commission to track the behavior and response of aquifers in designated ground water management areas, all water use permits are conditioned on regular monthly reporting of pumpage, chlorides, water levels, and water temperatures. Water use reporting is required from all ground and surface water users statewide in accordance with §13-168-7 HAR.

On July 13, 1994, the Commission awarded new interim permits, valid for one year, for the above sources (excluding Well Nos. 2001-10 & 11). The special conditions of the new interim permits are shown in Exhibit 3.

On January 25, 1995, an interim water use permit was issued to Gentry Development Corp. for a new source to supply the Ewa by Gentry developments (Well No. 2001-10). The duration of this permit was for less than one year to be consistent with all other interim permits set to expire on July 13, 1995.

At the July 5, 1995 Commission meeting at Honokaa, Hawaii, the Commission voted to extend the duration of the interim permits that were due to expire on July 13, 1995, to allow decision-making on these requests to be made on Oahu. Requests for new water use permits to continue ground water uses after the July 12, 1995 expiration date have been received from each of the above applicants. Hawai'i Prince has requested that their interim permitted use be increased by 0.371 mgd to bring their total interim allocation to 0.5 mgd.

On August 25, 1995, Gentry Development Company submitted applications for new well construction/pump installation and water use permits for Gentry Area 26 Well (Well No. 2001-11) for future nonpotable urban use for 171,600 gpd. At the January 24, 1996 Commission meeting in Wailuku, Maui, action on the water use permit application was deferred to the Commission's next regular meeting on Oahu.
On February 21, 1996, the Commission approved the staff's recommendation to again defer action on the applications for Well No. 2001-11 pending the staff's review and analysis of ground water conditions in the Ewa Caprock Aquifer.

ANALYTICAL WORK:

The Ewa Caprock Aquifer is currently undergoing a period of change in response to the large-scale modifications in land and water use as sugarcane is replaced by urban developments. There has been much effort involved in modelling the behavior of the caprock aquifer. In an effort to better understand the existing and historical data upon which assessments of Ewa Caprock Aquifer dynamics are based, the available historical data from basal and caprock wells that were used for sugarcane irrigation supply were compiled and analyzed by staff. In addition, the staff has established a monitoring network and has been collecting ground water data at Oahu Sugar Company (OSCo) and private wells since April 1994. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer over time.

A preliminary draft report of this analysis is submitted herewith as Exhibit 4. The major preliminary conclusions drawn in the draft report include recommendations for:

1. A sustainable yield of less than 10 mgd in the Puuloa area and less than 5 mgd in the Kapolei area. (Exhibits 5 and 6 show the current allocations and pending requests for ground water in the Puuloa and Kapolei areas.)

2. Reduction in permitted uses, unless there is a drastic change to the inflow of ground water to the caprock.

3. Adoption of a "go slow" approach to new wells in the Puuloa region.

4. Further division of the caprock into smaller management areas.

WATER USE PERMITS:

One condition that new water use permit applications must meet is that the use: "can be accommodated with the available water source..." §174C-49(a) HRS. An estimate of sustainable yield is critical to this determination.

In light of the staff's recent analysis, which recommends a sustainable yield that is considerably less than current permitted uses, the Commission should defer action on new use applications pending 1) a final draft report, revised subsequent to peer review, and 2) incorporation of the Ewa Caprock Aquifer in the Water Resources and Protection Plan (in the event that the final report recommends adoption of a sustainable yield for the caprock aquifer). Pursuant to §174C-31(m), a public hearing must be held to modify the Water Resources and Protection Plan. Staff hopes to hold the public hearing by July 1996.
Possible violations are another issue with the interim water use permits in the caprock. There are possibly twenty (20) violations which range from unpermitted well construction and pump installations to noncompliance with approved permit conditions concerning all permittees to differing degrees. The staff is in the process of identifying potential violations for each well listed above and will attempt to resolve these issues with the applicants.

With regard to well construction permit conditions for wells that have been transferred to another permittee, it is unclear who should be responsible for compliance. For example, pumps have been installed in a number of the Gentry wells without an application or approval. Some of these wells have since been transferred to individual homeowner's associations. Should the homeowner's association be responsible for seeking an after-the-fact permit, or should the entity who was in control of the well at the time of the violation be responsible?

**NON-POTABLE WATER MASTER PLAN:**

The Planning Department, City and County of Honolulu, is in the process of revising the Development Plans for Ewa and Central Oahu. The draft plan shows a projected population increase from 130,526 in 1990 to 185,091 in 2020. This corresponds to a 42% increase in population for the area. A 60% increase in housing units over the same time period is projected: from 36,262 units in 1990 to 58,118 units in 2020 (for Ewa Employment and Dispersed Residential; Exhibit 7). This will result in an unquantified (as yet) but certain increase in nonpotable water needs.

To address the expected increase in nonpotable water demand for urban uses, the Commission and the City Department of Wastewater Management hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. The plan recommends construction of a demonstration recharge trench in the Ewa Caprock using reclaimed water. There are many issues regarding the use of reclaimed water. An entity is needed to address and resolve these issues. Staff has been discussing the feasibility and potential application of the recharge trench proposed by our consultant as a means by which to ensure the future viability of the nonpotable Ewa Caprock Aquifer with key personnel from the Department of Health, City Department of Wastewater Management, City Planning Department, and the Board of Water Supply. The consensus is that a water reclamation program should move forward, and the recharge trench is a good first step.

It is recommended that the Commission adopt a reclaimed water policy statement, which specifically addresses only the Ewa Caprock, but may include other areas in the future. The policy statement should recognize reclaimed water as a valuable water resource. A policy statement is also needed to address the concerns of the Department of Health regarding contamination of potable water resources. Specific language is suggested in the recommendation section below.
RECOMMENDATIONS:

The staff recommends the following:

1. The Commission directs staff to submit the preliminary draft report for a peer review and to finalize the report in light of any review comments that may be received. The final report should include recommendations on further delineation of aquifer systems within the Ewa Caprock Aquifer and the possible adoption of a sustainable yield estimate(s).

2. The Commission authorizes staff to schedule a public hearing to modify the Water Resources and Protection Plan in accordance with HRS 174C-31(m). This hearing must be held on Oahu and must be noticed at least 90 days in advance. Permittees shall be mailed a copy of the notice.

3. The Commission directs staff to notify existing water use permittees and applicants for new water uses in the Ewa Caprock Aquifer System that the applications for continued or future use will be deferred for a period of approximately six (6) months until a decision is made on the possible establishment of a sustainable yield estimate in the Water Resources Protection Plan.

4. Direct staff to resolve violations prior to Commission action on requests for continued uses.
The Commission adopts the following policy statement on water reclamation:

It is the policy of the Commission on Water Resource Management (Commission) to promote the viable and appropriate reuse of reclaimed water in so far as it does not compromise beneficial uses of existing water resources.

I. Ewa Caprock

Recognizing that reclaimed water is a valuable resource in the Ewa Plain, direct or indirect reuse will be championed by the Commission. It is the policy of the Commission that the water resources of the Ewa Caprock Aquifer will be allocated only for nonpotable uses.

Respectfully submitted,

W. Ray Hardy

for RAE M. LOUI
Deputy Director

Attachments

APPROVED FOR SUBMITTAL:

[Signature]

for MICHAEL D. WILSON, Chairperson
ISLAND OF OAHU
TOTAL = 465 MGD

HYDROLOGIC UNITS
Sustainable Yield / Aquifer Code

PEARL HARBOR
184 MGD / 302

WAIAEA
15 MGD / 303

WAIALAE WEST
4 MG /D / 30105
WAIALAE EAST
2 MG /D / 30106

WAIPAHU-WAIAWA
110 MGD / 30203

KOOLAUPOKO
43 MGD / 30603
(DY = 13.72 MGD)

KOOLAUPOKO
13 MGD / 30602
(DY = 0.14 MGD)

WAIMANALO
8 MG /D / 30604
(DY = 0.83 MGD)

WAIMALU
45 MGD / 30201

WAIALUA
25 MGD / 30501

WAIKALEWA
3 MGD / 30303

WAINEA
3 MGD / 30303

NANAKULI
1 MGD / 30301

MAKAIA (undetermined)

EWATUNIA
20 MGD / 30204

MOANALUA
18 MGD / 30104

KALII
15 MGD / 30101

PALOLO
8 MG /D / 30101

HONOLULU
53 MG /D / 301

LEI
15 MG /D / 304

KAWAILOA
30 MGD / 30403

WAIHAIWA
110 MGD / 30203

KOAULAULOA
35 MGD / 30601

KOHANA
13 MGD / 30602
(DY = 0.14 MGD)

KOHANA
13 MGD / 30602
(DY = 13.72 MGD)

NORTH
91 MG /D / 304

CENTRAL
23 MG /D / 305

WINDWARD
99 MG /D / 306

DEVELOPMENT VOLUME

Ewa Screeen overlaying 30205 & 30203 basc aquifer systems
Chairperson and Members
Commission on Water Resource Management

April 28, 1993

Special Conditions
Ewa Caprock Temporary Water Use Permits

1. The temporary permits shall be valid for one (1) year from its approval date (April 28, 1994).

2. Quantities of allocations for each applicant are those calculated in Exhibit 3 for 1993 under the additional required allocation column. The pending applications which have no new or negative additional requirements are denied.

3. Each applicant’s allocation shall be for the cumulative withdrawals from the corresponding well sources specified by each applicant in Exhibit 2, except for Gentry Pacific’s well sources. Staff will be working with Gentry to associate water use permits for each well with each project individually within their total required allocation as shown in Exhibit 3.

4. Each applicant’s allocation shall be used only for the corresponding uses specified by each applicant in Exhibit 3.

5. Within one (1) year, the applicants shall jointly submit a plan for the conversion to an alternative non-potable source other than the Ewa Caprock Aquifer. This plan shall include the applicant’s intentions of funding the actual development of the alternative non-potable source.

6. Within sixty (60) days after approval, each applicant shall submit a water conservation plan or program according to the conditions in Attachment C.

7. The applicants shall continue to actively participate in the continuing development of the Ewa Caprock Regional Plan and its two main components which shall be coordinated by the Commission on Water Resource Management.

8. The applicants must actively participate in generating more information to show the utility of the caprock source in the absence of OSCo. recharge irrigation over the caprock and the complete absence of OSCo irrigation in the Pearl Harbor area.

9. Temporary permits shall not be renewed if any of the above is not provided or followed.

EXHIBIT 2
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 2
5. Require applicants cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

6. Require that all temporary permits be subject to the standard conditions of a water use permit listed in Attachment B and the Conservation conditions listed in Attachment C.

CONSERVATION CONDITIONS
EWACAPROCKWATERUSEPERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

a. Reduce the demand for non-potable water by:

   • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
   • Mulching planting areas with organic materials, etc., to minimize evaporation;
   • Efficiently maintaining the plants;
   • Improving land management practices to conserve water.

b. Improve efficiency in use and reduce losses and waste of non-potable water by:

   • Using efficiently designed landscaping and irrigation systems;
   • Monitoring irrigation requirements and controlling usage accordingly;
   • Managing irrigation scheduling to minimize water demand;
   • Eliminating opportunities for water wastage;
   • Maintaining and improving irrigation systems as necessary.

c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.

EXHIBIT 3
Description of the Caprock Aquifer

The Ewa Plain caprock is a thick wedge of interbedded marine and terrestrial sediments that were deposited on the flanks of the Koolau and Waianae volcanoes during sea level changes and isostatic subsidence of Oahu during the Pleistocene ice ages. At the coast this sequence is greater than 1,000 feet thick (Stearns and Chamberlain, 1967). Inland, the sediments thin and pinch out against weathered lava flows.

The primary caprock aquifer is the highly permeable upper coralline limestone layer (referred to as "Limestone Aquifer 1" in Report R-79). The limestone layer continues offshore, but inland contacts alluvial sediments (Mink, 1989). Ground water within the aquifer is unconfined with a water level only several feet above sea level. The general ground water gradient is toward the coast.

Below this limestone layer, and found throughout the Ewa Plain, is a ubiquitous brown clay layer that acts as a bottom (aquiclude) to the coral aquifer. The clay layer is deeper at the coast than inland. Therefore, near the coast the brackish ground water floats on saline water as a Ghyben-Herzberg lens, but inland the brown clay truncates the salt water. Below the clay are other coral, sand, and mud deposits that contain very saline water. All plantation caprock wells and all new wells exploit the upper limestone aquifer. Alluvial ground water may be available in the Honouliuli area. However, developing alluvial water is not as easy as from coral due to the generally lower permeability of alluvium.

Prior to sugar cultivation, the caprock received a steady flux of ground water from natural leakage from the Koolau and Waianae basal aquifers, intermittent recharge from rainfall, and from occasional large storms which allowed dry streams, such as Kaloi Gulch, to flow to the Ewa Plain. The amount of leakage into the mauka caprock boundary is dependent upon the height of the water table in the basalt. When the first artesian well was drilled near Honouliuli in 1879 ground water rose to an estimated height of 32 feet msl (Cox, 1981, p. 55). West of Honouliuli the original ground water level in the Waianae aquifer would have been about 10 feet less (Mink, 1980, p.37). The demise of sugar recharge into the caprock aquifer is similar to pre sugar days, except that the amount of natural leakage is much less due to the reduction of water levels in the basal aquifers.

Because of Ewa Plain's land use history, CWRM Report R-79 (Mink, 1989) divided the caprock into five broad areas: 1) Honouliuli; 2) Puuloa; 3) Kapolei; 4) BPNAS; and 5) Malakole. Honouliuli and Kapolei areas essentially overlie alluvium, while Puuloa, BPNAS, and Malakole areas are composed essentially of
coral limestone. However, for convenience of management, Honouliuli-Puuloa is considered to be a single region as are Kapolei-BPNAS and Malakole. Though in essence, the upper aquifers are hydraulically connected, and there may be only a weak connection between this aquifer and the lower ones.

History of Ewa Caprock Aquifer Development

The Ewa Plain has been irrigated with ground water since 1890. By 1930, Ewa Plantation had drilled 70 artesian basal wells (clustered as pumping batteries) through the Ewa Plain caprock sediments to irrigate cane lands makai of Farrington Highway (Stearns and Vaksvik, 1935). From 1930-35, five shallow wells (EP Pumps 20-24) were dug into the Ewa caprock to produce more irrigation water. All of them penetrated a shallow coral aquifer and were capable of producing large quantities of irrigation water. Later, other caprock sources were brought on line (EP Pumps 26,27,28,29; EP Pump 30; and EP Pump 31). The accompanying map shows the location of Ewa Plantation basal and caprock pumps.

When the shallow caprock wells were constructed, they pumped brackish ground water that originated primarily from basal return irrigation water. Consequently, the caprock water mixed with the artesian basal water already irrigating the region.

Figures 1-3 illustrate the chloride and pumpage history of the Ewa Plantation’s basal sources. Pumpage includes total draft from the Koolau Aquifer (excluding EP Pump 10-12), and well battery pumpage. For convenience, water quality from the various pump batteries are shown separately. Figure 1 presents the most saline of the sources. EP Pumps 1 and 9 probably applied all of its water in the vicinity of Ewa Mill and near the first caprock sources. These batteries had deep wells that were drilled into the upper transition zone. To improve quality some were plugged back with cement, but all were abandoned and sealed by 1950. Figures 2 and 3 shows the marginal quality and potable quality sources respectively.

The freshest source, EP Pump 15,16, was recommended by Stearns (Stearns and Vaksvik, 1935, p. 460) as a way to freshen up the limestone aquifer. He noted that chloride concentrations in the basal sources had approached high levels and that pumpage from the new caprock wells would increase chloride concentrations in the coral aquifer by recirculating irrigation water. Evapotranspiration by sugar cane concentrated the salts in the return water. Construction of EP Pump 15,16 began in 1937 and it was put on-line to irrigate cane fields around 1939 or 1940.

Figure 4 shows initial (first 10 years) conditions in the caprock when the shallow wells were first constructed. Average yearly pumpage was about 11 mgd, while seasonal variations ranged from less than 5 mgd to more than 15 mgd. Water quality varied slightly with pumpage and with the seasonal variation of applied
basal water. Though Stearns mentioned (1935, p. 460) that much of the applied basal water had chlorides as high as 700± mg/l (and higher), Figure 4 shows that the caprock sources range between 700± mg/l to 1,000± mg/l.

Figure 5 presents the history of pumpage and chlorides for all caprock sources utilized by Ewa Plantation and Oahu Sugar Company (OSCo). Unfortunately there are missing monthly pumpage data between 1940 and 1963. The estimated average of 12 mgd is from CWRM Report R-79 (Mink, 1989). The graph does show a significant rise in chlorides for all caprock sources during the 1940's. Until the 1970's the average imported amount of Koolau basal water was 60-70 mgd. After 1981, the average amount dropped to less than 50 mgd.

CWRM Report R-88 entitled, Drought in Hawaii, indicates that the period from 1940-1954 was dry, and that "drought" was reported to be moderate to extreme. Though the data do not overlap, increased pumpage from artesian, and probably the caprock wells, contributed to the rise in chloride concentration around 1947 as seen in Figure 5. After EP Pumps 1 and 9 were abandoned and sealed, fresher basal water was used to irrigate Ewa cane lands. The result was a wholesale freshening of the caprock aquifer from the mid 1950's to the mid 1970's.

The rise in caprock chloride concentration beginning in the mid 1970's was due to several factors: 1) an increase in caprock well pumpage from 20 mgd to 30 mgd; 2) continued use of marginal quality basal water on lands near Ewa Mill and Fort Weaver Road; 3) several "extreme drought" periods throughout the 1970's reported in R-88; and 4) switching from furrow-irrigated cane to drip-irrigated cane in the mid 1970's to early 1980's (Hugh Morita, personal communication, 1996).

When OSCo took over from Ewa Plantation around 1970, they may have operated the irrigation system differently. Hugh Morita (personal communication, 1996) said that EP Pumps 3 and 7 supplied water to Field 57, which is mauka of EP Pump 23. From here the water split, some was piped to the EP 23 distribution system and the remainder was sent towards Ewa Mill. All of this water irrigated fields growing over the coral aquifer. EP Pumps 4 and 6 sent water west to a ditch system that runs at elevation 120± feet msl. EP Pump 5 supplied water to a ditch at elevation 160± feet msl. EP Pump 2 and Pumps 15 and 16 supplied water to cane in the Honouliuli area. All of this water irrigated fields growing on the alluvium. EP Pump 8 was for domestic use only.

Examination of Figures 2 and 3 will provide approximate 50-50 mixes of artesian water. For example during the last 15 years, Pumps 3 and 7 give a 50-50 mix of 500 mg/l chloride, while Pumps 4 and 6 show a mix of about 400 mg/l. The actual mix would be weighted to the pump which supplies the greatest proportion of water.
Report R-79 utilized a single cell mixing model to calculate ground water flows and caprock water chloride concentrations. The model calculated a steady-state inflow of return water and natural leakage for 1930 at 15 mgd. For the drip irrigation period between 1982-87 the model still assumes a 15 mgd inflow of ground water with a quality of 550 mg/l. The model calculated a steady-state mix of 1226 mg/l for water pumped from the caprock aquifer. Mink (1989) estimates that 4 mgd of the 15 mgd was the due to natural leakage, and 11 mgd was return irrigation water.

Since the late 1980's, Ewa Plain land use changes occurred rapidly as many cane fields were replaced by golf courses and housing developments. Consequently, the amount and location of applied irrigation water changed considerably. By November 1994 all irrigation to Ewa Plain cane fields had ceased and all OSCo caprock sources stopped pumping (except EP Pump 22). This action reduced the average 1994 pumpage from the caprock aquifer in the Puuloa area from 17 mgd to 3 mgd, and a portion of irrigation water ceased returning to the caprock aquifer.

Periods of Chloride Equilibrium

Examination of Figure 5 shows that only two periods of relative chloride stability exist in the record. The first is from 1930 to about 1940, and the second is from 1952 to approximately 1970. These intervals represent periods of stable pumping, acreage, and irrigation methods. The chloride quality of the mixture of the applied basal water (Figures 1-3) was relatively stable during the early 1930's, and again between 1952 to 1970. Chlorides in the caprock wells rose in the early 1940's when water quality in EP Pumps 1 and 9 worsened.

All other periods in the record that show rising (1940-1949; 1975-present) or falling (1950-1952) chloride values are during times of non-equilibrium when a major change took place such as caprock pumpage, irrigation method, acreage, or quality of applied basal water.

It is interesting to note from Figure 5 that even after sugar ceased, and total pumpage reduced to less than 5 mgd, some wells continued to exhibit rising chlorides. Any ground-water flow or solute transport model constructed should calibrate to the two equilibrium periods outlined above.

Estimated Sustainable Yield of the Ewa Plain

Report R-79 provided sustainable yield estimates for the Ewa Plain caprock aquifer. Unlike the methodology used to calculate sustainable yield for large basaltic aquifer systems (State Water Resource Protection Plan, Vol. II, 1992), the sustainable yield estimate for the caprock is based on an optimal amount of pumpage to achieve an acceptable water quality for irrigation (< 1,000 mg/l chloride). Essentially, sustainable yield for the caprock aquifer is defined as "net pumpage" or the difference between
total pumpage and the return irrigation component plus natural leakage.

During the plantation time, water quality was a function of cane acreage, caprock pumpage, irrigation method (furrow or drip), and basal water quality. Assuming that natural leakage is constant, changes in the irrigation method and acreage changed net pumpage or sustainable yield. Since the upper limestone aquifer is a result of a 100 years of irrigation, past land use changes and irrigation methods have altered the sustainable yield several times. Return basal irrigation water and natural basal leakage inflow from the Honouliuli alluvium into the limestone aquifer contributed to recharge. The table below summarizes these changes as presented in R-79 and Figure 5 for the Puuloa area.

<table>
<thead>
<tr>
<th>Period</th>
<th>Average Caprock Pumpage (mgd)</th>
<th>Caprock Chloride (mg/l)</th>
<th>Irri. Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-1940</td>
<td>11</td>
<td>700-1050</td>
<td>Furrow</td>
<td>Equilibrium condition 2500 acres of cane</td>
</tr>
<tr>
<td>1970-1980</td>
<td>22</td>
<td>600-800</td>
<td>Furrow Drip</td>
<td>Non-equilibrium conditions EP Pumps 20,21,22 increasing chlorides</td>
</tr>
<tr>
<td>1980-1989</td>
<td>21</td>
<td>900-1000</td>
<td>Drip</td>
<td>Non-equilibrium conditions</td>
</tr>
<tr>
<td>1989-1994</td>
<td>14</td>
<td>1000-1400</td>
<td>Drip</td>
<td>Non-equilibrium conditions Reduced acreage</td>
</tr>
</tbody>
</table>

Report R-79 estimates (p. 41) that fields irrigated by Koolau or Waianae basal sources return 53 percent of the applied water if furrow irrigation methods are employed or 41 percent if drip methods are used (using water balance coefficients applied in CWRM Report R-78, 1988). For caprock sources 49 percent is returned for furrow, whereas only 29 percent is returned for drip. Using 1981 and 1986 (mentioned in R-79 as predominately furrow and drip years respectively) to compare differences for return water quantities over the entire region, the report estimates that 32 mgd of basal water and 15.3 mgd of caprock water was return irrigation in 1981, while 16 mgd basal and 5.5 mgd caprock was return water in 1986. Net pumpage in 1981 was 15.7 mgd, while in 1986 it was 13.5 mgd (R-79, p. 43).
From the above analysis of the return component, R-79 (p. 48) estimated the sustainable yield for the three areas. Sustainable yield is maintaining chlorides at "less than 1,000 mg/l for current [as of 1989] and anticipated land use conditions". "Future" means when sugar operations cease, our present condition, and when there is no significant amount of return irrigation water. Below is the table presented in R-79 (p. 48).

<table>
<thead>
<tr>
<th>Area</th>
<th>Caprock Aquifer</th>
<th>Current (mgd)</th>
<th>Future (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli-Puuloa</td>
<td></td>
<td>10-15</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Kapolei-BPNAS</td>
<td></td>
<td>5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Malakole</td>
<td></td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

The present time

Presently the Puuloa Sector caprock aquifer is in a state of non-equilibrium. All imported basal water has ceased. Though pumpage from private wells averages between 2-3 mgd, a very small fraction of that amount returns as recharge. Recirculation of the same water and salt build-up in the soil can only be alleviated by direct infusion of fresh water. This infusion comes from sporadic large winter storms and from an unknown amount of leakage from the basal aquifer. The estimated recharge by rainfall over the Puuloa Sector is 2 mgd (R-79, p. 42).

Leakage estimates for the range from 1-1.5 mgd/mile (CDM Report, 1993) to 5 mgd/mile as used in the Ewa Plain strip model (Bolke and Bauer, in prep.). Over the two mile boundary, the inflow estimates range from 3-10 mgd. The R-79 single-cell mixing model estimated 15 mgd inflow from Honouliuli into Puuloa, but of that amount natural leakage was estimated to be 4 mgd.

Eyre (1987, p. 12) estimated a net of 30 mgd leaking into the caprock (Kapolei area) from the Waianae basal lens during the plantation era (after removing plantation pumpage), and 33 mgd for pre-development (pre 1879) time (8 mgd of rainfall and 25 mgd natural ground-water flow from Schofield). The hydrologic budget was based on work by Giambelluca (1986) and employed by Eyre to solve a mixing-cell model that determined the effects of drip irrigation to water quality in the basal aquifer.

Changes to Sustainable Yield

The caprock aquifer is currently undergoing a period of change. It will take an unknown amount of time for a new equilibrium to set in. One and a half years have elapsed since the cessation of both sugar and the infusion of basal irrigation that resulted. Ground water (residual cane irrigation water +
storm recharge + natural leakage + minor irrigation return water) is slowly moving through the coral aquifer. Hydrologic properties of the aquifer will govern how long it takes to change to a new steady-state.

As stated above, estimated sustainable yield for the caprock was based on a net pumpage that supported a particular water quality. Net pumpage now does not include a large return irrigation component, but may include an increase in natural leakage due to reduction of 60± mgd of plantation pumpage and attendant changes in the basal water level. Therefore, a new sustainable yield that would maintain irrigation quality water must be much less than previously assigned. For the Honouliuli-Puuloa area, estimates for natural leakage and rain recharge could be as high as 12 mgd or as low as 5 mgd. A good estimate for caprock recharge was lost when sugar cultivation ceased.

Golf course irrigation is different than drip irrigation for cane since it is less intensive and is concentrated over a small area. Giambelluca (1991, p. 43) estimates that recharge attributed to park irrigation is about 6 percent of recharge from drip-irrigated cane fields. Golf courses may be somewhat greater. For natural areas Giambelluca's water balance puts recharge at 16 percent of drip irrigation.

The Commission granted a current allocated use of 19 mgd for the caprock aquifer. If everyone with a permitted use pumped their allocated amount, the aquifer would quickly salt up and become unusable for irrigation. Every user would have to cease or drastically reduce pumping and wait for natural leakage or for some kind of artificial recharge to improve water quality. From Figure 5, nonuse of EP Pump 27,28 after 1994 drastically reduced the chloride concentration at that source. Later, Figures 6-8 will show a movement of fresher water into the area surrounding EP Pumps 27,28.

Due to the profound changes in land and water use, the Commission should tread slowly until there is a better idea of the natural changes occurring within the aquifer. The new sustainable yield for the Puuloa area will be less than 10 mgd, perhaps close to 5 mgd. Constant monitoring of pumpages and chloride data will provide a refined estimate. As will be discussed below, we know that low capacity wells in Puuloa Sector have maintained relatively stable or improving water quality, whereas large capacity plantation wells appear to cause localized up-coning and increasing chlorides.

Analysis of Caprock Aquifer Since 1994

Anticipating the cessation of sugar and the accompanying widespread land and water use changes, the CWRM staff have regularly sampled OSCo and private wells since April 1994. Chloride samples and specific conductance measurements are collected from about 20 wells on a monthly to six week schedule,
and over a single day. Most of the wells are located in the Puuloa Sector, three wells are in the Kapolei Sector, and two wells are in the Malakole Sector. Since the program began, several wells were dropped and others added depending upon access or reliability of the measurement. The primary purpose of sampling is to provide baseline data that can measure changes to the caprock aquifer with time.

Figures 6, 7 and 8 are computer-drawn isochlor (lines representing equal chloride concentration) maps based on chloride data collected from wells in June 1994, September 1995, and February 1996. The isochlor lines only relate chloride data between the wells from which they were collected. In June 1994 sugar was still being cultivated in the vicinity of EP Pump 23. Figures 7 and 8 represents land and water use conditions as they are today. Recharge by rainfall and natural leakage will lower chloride concentrations and cause a shift of the isochlor lines. What is apparent when comparing Figures 6 with 7 and 8 is the worsening water quality around EP Pump 22, and freshening taking place west and southeast of Kapolei Golf Course. The EP Pump 22 situation may be a result of pumping and irrigation practices at Hawaii Prince Golf Course, whereas changes in water quality west of Kapolei Golf Course are probably natural.

Generally, the data collected since 1994 support an estimated sustainable yield that is less than 10 mgd for the Puuloa area (current pumpage averages 2-3 mgd). As will be shown later, individual wells equipped with small capacity pumps, show either a reduction or stabilization of chlorides, while EP Pump 22, fitted with a large capacity pump, shows a continuing rise in chlorides. Figures 6-8 provide a "animated" view of the changes now occurring.

In the Kapolei-BPNAS Sector, the majority of the pumpage is from the Kapolei Golf Course. Chlorides at the golf course are stable, and may be a result of basal ground-water leakage from the Waianae aquifer. The sustainable yield estimated by Mink (R-79, 1989) was less than 5 mgd. Present usage is about 1.1 mgd. A large portion of this aquifer is located under BPNAS where no pumpage occurs. Leakage from the Waianae basal aquifer is no longer 30 mgd estimated by Eyre (1987) but some lesser quantity. This amount would be natural ground-flux (estimated 33 mgd) minus total pumpage in Ewa-Kunia Aquifer System (present average about 9 mgd) or about 22 mgd.

R-79 estimated the Malakole area sustainable yield to be less than one mgd after sugar irrigation. Most of the usage is industrial. The upper aquifer supplies some water that is in excess of 1,000 mg/l. Pumpage from this sector is over 12 mgd. Some of the pumpage is from a lower coral aquifer in the caprock.

Honouliuli-Puuloa Area

Since the demise of OSCo the greatest aquifer changes will
occur in the Puuloa Sector. Present pumpage for the area averages 2.8 mgd. About 1.5 mgd of the present pumpage is east of Fort Weaver Road at the Hawaii Prince Golf Course and Ewa International Golf Club. Gentry Development Company irrigation wells and the Honouliuli Sewage Treatment Plant wells make up the remainder with small capacity wells.

Figures 9, 9a, 10, 10a, 11, and 11a focus on chloride as related to pumpage and land use changes since 1992 at Hawaii Prince Golf Course. Six wells supply the course with water. HPGC wells 1, 2, and EP Pump 22 (wells 1901-03, 1900-17, and 1900-02 respectively) are located about 500 feet, 1,000 feet, and 2,000 east of Fort Weaver Road respectively. Water quality at HPGC wells 1 and 2 appears to be improving over time, whereas at EP Pump 22 the opposite is occurring. EP Pump 22 pumps about four times the amount of water produced from each of the other wells. Though not shown, water quality at the HPGC wells near EP Pump 22 are affected by the high pumpage, suggesting possible upconing. Evaporation from the large reservoir ponds prior to irrigation will increase the chlorides of the applied water. Pan evaporation in Ewa is about 85 inches/year (R-79, p. 43). Salt can build up in the soil, only to be flushed back into the aquifer after a storm. The wells closer to Fort Weaver Road may also be affected more by storm recharge because of improving quality.

Currently, there is a request to increase the usage at EP Pump 22. From the data presented in Figures 11 and 11a, an increase in pumpage is not warranted since chlorides are already in excess of what the grass can tolerate and exceeds the 1000 mg/l associated with sustainable yield. Greater pumpage at this well could adversely affect their other sources by increasing the chloride mixture of the irrigation water applied to the west end of the course, as well as exacerbate the localized up-coning on the east side. Ewa International Golf Club, located south and down gradient of Hawaii Prince, could also be detrimentally affected.

Figures 12, 12a, 13, 13a, 14, and 14a illustrate chloride and pumping trends at three Gentry sources. Palm Villa 1 (2001-06), and Palm Court (2002-12) show a steady chloride decline since 1994. Palm Villa 2 (2001-08) averaged about 800 mg/l since 1994, but had declined from 1,200 mg/l from a sample collected in 1993.

Gentry Development is proposing two new wells and water use permits in Puuloa. Because of the small pump capacities proposed for these wells, the likelihood that they would detrimentally affect the aquifer or neighboring wells is simply unknown. What will occur will be a reduction of ground-water flux equal to amount of pumpage.

Figures 15 and 15a show an unusual phenomena at the Honouliuli Sewage Treatment Plant (STP). Wells 1902-03 and 04
are about 20 feet apart, both drilled to a bottom elevation of -15 feet msl. Chloride concentrations are typically 50-200 mg/l apart, with water quality ranging between 500 and 700 mg/l chloride. General trend shows that chlorides have increased in Well 1902-03 but have remained stable in Well 1902-04. The difference in water quality must be due to some geologic control, such as a crack or solution cavity within the coral aquifer.

As stated above, water levels within the caprock are do not enter into estimating sustainable yield. Water levels can fluctuate as much as 0.5 feet during the day due to the tidal signal. During 1957-58 water levels were collected in EP Pumps 21-24. Figure 16 shows that instaneous water levels varied during the two years of measurement. Water levels dropped to a low of 1.3 in January 1958. The strike began in February 1958 and lasted two months. Even though irrigation ceased, water levels were increasing when the first measurements were done after the strike. Report R-88 indicates that years these years had average to slightly above average rainfall. Static water levels in January 1957 were about 2.5 feet msl. The highest water level during the entire time appears to be near EP Pump 22 and could indicate mounding of irrigation water at that site, since wells west and north appear to be "down-gradient".

Figure 17 plots 1995 water level data collected by Tom Nance at EP Pump 24 with daily rainfall at Ewa Mill and Honolulu Observatory at Ewa Beach. There does not seem to any correlation between storm events and rising water levels. In fact, several high water level periods are during the driest part of the year. When Nance (personal communication, 1996) compared EP Pump 24 water levels with ocean tidal data he found a very close correlation. Tides could account for large water level changes observed in Figure 16. Storm events seem to have a greater impact on water quality than water levels.

Unknown factors make it difficult to compare water levels presented in Figure 16 to Figure 17. What is known, however, irrigation water was applied to fields by the furrow method in the 1950’s, with water levels changing by a foot over a year. EP Pump 24 water levels collected by Nance represent a time of localized and limited irrigation and average about 1.7± feet msl.

**Kapolei-BPNAS Sector**

Present water use in this sector averages about 1.1 mgd. Most of the pumpage occurs at the Kapolei (HFDC) Golf Course. Of the six wells drilled, five are pumping. Water quality has stayed relatively constant. Figures 18 and 18a present pumpage and chloride data for Well B (2003-02). Average chloride is 450 mg/l. Increased leakage from the basal aquifer is thought to be the reason for the constancy of the chloride data.

Other wells in the sector include the Kapolei Campbell wells 1905-08 and 1905-10. The primary source, 1905-08, pumps about
0.150 mgd with chlorides averaging 500 mg/l. The Desalt Plant wells are presently off line. Its caprock source, Well 1905-09, averaged about 700 mg/l. The Desalt Plant wells can almost be placed in the Malakole Sector.

Water quality underlying Barbers Point Naval Air Station is unknown. Pumpage from the mauka Kapolei Golf Course wells and the Kapolei Campbell wells will affect ground water quality and its availability when BPNAS is turned over to the State.

Malakole Sector

Pumpage from the Malakole Sector is presently about 12.6 mgd. The estimated sustainable yield for 1,000 mg/l water is less than 1 mgd. Of the total quantity pumped, 2.6 mgd from is brackish water developed by Kalaeloa Partners (wells 1805-03-09). Specific conductivity of the water developed by them average about 10,000 umhos which is equivalent to a chloride concentration of over 3,000 mg/l. The additional 9.6 mgd is essentially highly brackish and saline used for wash down, cooling and other industrial purposes.

CWRM personnel sample the Hawaii Raceway Park well (1905-01). This well is used infrequently for dust control. Chlorides ranged between 1,100 mg/l in June 1993 to 580 mg/l in October 1995. Most of the samples collected hover around 870 mg/l.

If the Commission wants to preserve the 1,000 mg/l water for other than industrial purposes, then the Malakole Sector should be divided. Total pumpage for new wells mauka of Hawaii Raceway Park could be managed at less than 1 mgd, whereas industrial wells in Campbell Industrial Park can be allowed to continue at present rates.

Refinement of Data and Future Projects

Water quality and pumpage data collected by CWRM personnel and by water users will be continually updated by graphs and isochlor maps. More sampling points need to be added to the CWRM network. Three or four test holes should be drilled within or near BPNAS. Though water level do not appear to be related to water quality, a network of small diameter water level wells should be drilled throughout the Ewa Plain.

Bolke and Bauer (in prep.) began a ground water model using SUTRA. The model was calibrated to a period (late 1980's) that was not in equilibrium. Additional work should be done to calibrate the model to the two stable periods outlined above. Additional modelling work combined with caprock monitor wells need to address the changes in natural leakage that are now occurring from both the Waianae and Koolau aquifer.

Conclusions and Recommendations
Several major conclusions can be drawn from the above discussion:

1. Sustainable yield for the caprock aquifer assumes that total pumpage within a sector will maintain a chloride concentration of 1,000± mg/l.

2. The caprock aquifer, especially the Honouliuli-Puuloa area, has not reached an equilibrium since cessation of cane irrigation in 1994. To achieve and maintain a good irrigation quality water will require a change in the sustainable yield to a value less of than 10 mgd, and less than 5 mgd in the Kapolei-BPNAS area. The historical record of the caprock aquifer argues for a reduction of permitted uses, unless there is a drastic change to the inflow of ground water.

3. In light of 2. above, the Commission should adopt a "go slow" approach to new wells in the Puuloa region. Small irrigation wells appear not to presently cause problems; however, cumulative effects could occur. At the present time we do not have enough data regarding the natural post-OSCo changes that are occurring within the limestone aquifer. The isochlor maps do show a continuing change throughout the Ewa Plain.

4. The Malakole area is pumping much higher than the sustainable yield of less than 1 mgd estimated in R-79. This sector should be divided into two. Sustainable yield for Campbell Industrial Park is meaningless when water for industrial purposes is used. However, there should be some limit, because heavy pumpage could affect ground water underlying BPNAS. Mauka of Campbell Industrial Park, pumpage should be limited to less than 1 mgd.

5. Future modelling efforts should use calibration "targets" of equilibrium periods of 1930-1940 and from 1952-1965.

6. Separation of the Ewa caprock aquifer into three broad management areas has merit. These broad regions can be subdivided into smaller areas that require special management. Perhaps the concept of "sustainable capacity", the amount of water developed from a well or a battery of wells (such as Hawaii Prince Golf Course) that will allow stabilization of chlorides, should be more fully developed and used by the Commission for special management of smaller areas.
REFERENCES

Board of Water Supply, unpublished data files.


Most Saline EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps 1 and 9 supplied the most saline water. They were located near Ewa Mill.

FIGURE 1
Marginal EP Basal Sources
Chlorides and Pumpage

FIGURE 2
- Ewa Pump 3  - Ewa Pump 4  - Ewa Pump 5  - Ewa Pump 6

Ewa Plantation Pumps 3, 4, 5, & 6 supplied marginal quality water.
Marginal to Potable EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps
2, 7, 8, 15 & 16 supplied marginal quality to potable irrigation water.

FIGURE 3
- Ewa Pump 2  - Ewa Pump 7  - Ewa Pump 8  - Ewa Pumps 15, 16
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Average monthly pumpage (mgd)

Start 1937
Basal (low Cl) irrigation
Pumps 15,16
Basal (high Cl) irrigation

Total imported basal water from Koolau ranged < 50-70 mgd

Est. average yearly pumpage (12 mgd)

Average monthly pumpage (mgd)

Stop 1994

Supplemental Graphs

FIGURE 5

Ref: CWRM, BWS files, R-79, & Steams (1935, 1940)


EP27,28 \ EP30
Isochlor Map of Ewa Caprock Aquifer
September 1995
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

FIGURE 9a
= HPGC 1 (Qave = .148 mgd)
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

FIGURE 10

HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well 2
Ewa Caprock, Oahu

FIGURE 10a
HPGC 2 (Qave=0.160 mgd)
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

FIGURE 11
EP-22 (Qave=1.021 mgd)

Ref: CWRM, BWS files, & R-79
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

![Graph showing chloride concentration and pumpage over time.](image-url)

- **Total caprock average monthly pumpage (mgd)**
- **Basal (low Cl) irrigation**
- **OSC caprock pumpage ceased**
- **Total Hawaii Prince pumpage**
- **Well EP-22 pumpage**

**Figure 11:** EP-22 (Qave=1.021 mgd)

Ref: CWRM, BVS files, & R-79
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 12

- Gentry Palm Villa 1 (Qave=0.019 mgd)
- OSCo caprock pumpage ceased
- Total caprock average monthly pumpage (mgd)
- Palm Villa 1 pumpage
- Total Ewa Gentry pumpage

Ref: CWRM, BWS files, & R-79
Chloride and Pumpage of Ewa Gentry Wells, Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Ewa Gentry pumpage

Palm Villa 1 pumpage

Average Pumpage (mgd)

Chloride Concentration (mg/l)

Year

FIGURE 12a

* Gentry Palm Villa 1 (Qave=0.019 mgd)
FIGURE 13

- Gentry Palm Court (Qave= 0.025 mgd)
FIGURE 13a

Chloride and Pumpage of Ewa Gentry Wells, Ewa Caprock, Oahu

Chloride Concentration (mg/l)

200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600

Average Pumpage (mgd)

Total Ewa Caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Gentry Palm Court (Gave = .025 mgd)

Note: Created 1975 4th Ann. A.R. 76
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 14

Gentry Palm Villa 2 (Qave=0.031 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 14a

- Gentry Palm Villa 2 (Qave=0.031 mgd)
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

**Figure 15**

- Basal (low Cl) irrigation
- OSCo caprock pumpage ceased
- Total caprock average monthly pumpage (mgd)
- Total Honouliuli STP pumpage

Ref: CWRM, BWS files, & R-79

- Honouliuli STP 1902-03
- Honouliuli STP 1902-04 (Qave=0.654 mgd)
FIGURE 15a

Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

- Total caprock average monthly pumpage (mgd)
- Basal (low Cl) irrigation
- OSCo caprock pumpage ceased
- Total Honouliuli STP pumpage

Ref: CWRM, BWS files, & R-79

Honouliuli STP 1902-03  Honouliuli STP 1902-04 (Qave=0.654 mgd)
Monthly Water Level Measurements
Ewa Plantation Caprock Wells

FIGURE 16

Water Level @ EP-24 & Daily Rainfall
Ewa Caprock, Ewa, Oahu

No data available between days 212-251

Missing data: daily rainfall at Honolulu Observatory

Ref. Tom Nance, water level data
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

FIGURE 18

* HFDC B (Qave=0.270 mgd)
Chloride and Pumpage of HFDC Golf Course Well B, Ewa Caprock, Oahu

FIGURE 18a

HFDC B (Qave=0.270 mgd)
## PUULOA AQUIFER SYSTEM

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<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
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<td>Sustainable Yield Estimate</td>
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<td>(shown in Exhibit 8)</td>
<td>-17.170</td>
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<td>Hawaii Prince Golf Club</td>
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<tr>
<td>(1900-02, 17 to 20, 1901-03)</td>
<td>0.129</td>
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<td>Gentry Co.</td>
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<td>(2001-03)</td>
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<td>(2001-05)</td>
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<td>(2001-09)</td>
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<td>Palm Court Assoc. (2002-12)</td>
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<td>Haseko (Ewa), Inc. (Ewa Marina)</td>
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<td>Available Allocation</td>
<td>-4.784</td>
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* Proposed marina project will result in a permanent reduction in caprock storage capacity.

EXHIBIT 5
## KAPOLEI AQUIFER SYSTEM

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<tr>
<th>ITEM</th>
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<td>Available Allocation</td>
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**EXHIBIT 6**
### Scenario Comparisons

#### Central Oahu Development Plan Area

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<td>130,526</td>
<td>168,950</td>
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<td>130,526</td>
<td>184,444</td>
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<td>Ewa Employment</td>
<td>130,526</td>
<td>185,091</td>
<td>54,565</td>
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<td>Ewa &amp; Central Oahu Urban Centers</td>
<td>130,526</td>
<td>213,802</td>
<td>83,276</td>
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<td>Current Trend</td>
<td>130,526</td>
<td>177,736</td>
<td>47,212</td>
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**NOTE:** Baseline forecast for 1990-2020 islandwide increase is 28%.

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<th>1990 Housing Units</th>
<th>2020 Housing Units</th>
<th>1990-2020 Increase</th>
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<td>57,907</td>
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<td>Ewa Employment</td>
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<td>19,464</td>
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**NOTE:** Baseline forecast for 1990-2020 islandwide increase is 42%.

### Change in Resident Population

Central Oahu Development Plan Sub-Areas (1990-2020)

![Graph showing change in resident population](image)

### Change in Non-Construction Jobs

Central Oahu Development Plan Sub-Areas (1990-2020)

![Graph showing change in non-construction jobs](image)
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<thead>
<tr>
<th>WUP NO</th>
<th>APPLICANT</th>
<th>WELL NO.</th>
<th>WELL NAME</th>
<th>APPROVAL</th>
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18 Permits Totaling 17.170

EXHIBIT 8
July 5, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

Attached for your information are comments by the Board of Water Supply on the notice of applications for water use permits for the Ewa Caprock Groundwater Management Area. Comments by the Planning Department were forwarded earlier in a letter dated June 22, 1995, a copy which is attached.

Should you have any questions, please call Randolph Hara at 523-4483.

Sincerely,

Cheryl D. Soon
Chief Planning Officer

CDS:lh

Attachments

cc: Honorable Jeremy Harris, Mayor
(Mayor’s Control No. 23037)
June 29, 1995

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
    PLANNING DEPARTMENT

FROM: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
    BOARD OF WATER SUPPLY

SUBJECT: STATE WATER COMMISSION'S LETTER DATED MAY 30, 1995 TO
        MAYOR JEREMY HARRIS ON THE NOTICE OF APPLICATIONS FOR
        WATER USE PERMITS, EWA CAPROCK GROUNDWATER MANAGEMENT
        AREA, OAHU

We have no objections to the applications for permits for groundwater from the Ewa Caprock Aquifer.

If you have any questions, please contact Herbert H. Minakami at 527-6183.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater
Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd; Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd; Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honouliuli Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

cc: The Honorable Jeremy Harris, Mayor
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96808

STAFF SUBMITTAL
for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
July 5, 1995
Honokaa, Hawaii

EXTENSION -- Interim Water Use Permits
Ewa Caprock Ground Water Management Area, Oahu

Applicant: Landowner:

(Well Nos. 1905-08,10) same
The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

(Well Nos. 2003-01,02,04,05,07) same
State of Hawaii,
Housing Finance & Development Corp.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

(Well Nos. 1900-02,17 to 20 & 1901-03) same
Hawaii Prince Golf Club
91-1200 Fort Weaver Rd.
Ewa Beach, HI 96706

(Well Nos. 2001-03,04,05,09,10 & 2003-06) same
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

(Well No. 2001-07) same
The Arbors Association
91-920 La'aulu St., #1G
Ewa Beach, HI 96706
Staff Submittal

July 5, 1995

(Well No. 2001-08)
Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

(Well No. 2002-12)
Palm Court Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Mililani St., Suite 810
Honolulu, HI 96813

Background:

At the July 13, 1994 and January 25, 1995 meetings of the Commission on Water Resource Management (Commission), interim water use permits for durations of one year or less were approved for the above groundwater sources for various nonpotable uses at new developments in Ewa, Oahu. These permits are due to expire on July 12, 1995.

Expiration dates are being specified for water use permits in the Ewa Caprock because there are uncertainties regarding the present sustainable yield of the Ewa Caprock Aquifer and the impacts of land use changes on future water availability.

Requests for new water use permits to continue current groundwater uses after the July 12, 1995 expiration date have been received from each of the applicants.

RECOMMENDATION:

Staff recommends that the Commission extend the duration of the present water use permits until such time that a decision is made at a meeting on Oahu.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

MICHAEL D. WILSON, Chairperson
Minutes
Commission on Water Resource Management July 5, 1995

Unanimously approved. (Nobriga/Girald)

ITEM 6 PARKER RANCH, APPLICATION FOR A STREAM CHANNEL ALTERATION PERMIT, CONSTRUCTION OF A WATERLINE CROSSING, WAIKOLOA AND WAIKOLOA IKI STREAMS, KAMUELA, HAWAII (TMK 6-5-01:01 AND 21)

STAFF PRESENTATION: David Higa

Unanimously approved. (Nobriga/Cox)

ITEM 8 EXTENSION - INTERIM WATER USE PERMITS, EWA CAPROCK GROUND WATER MANAGEMENT AREA, OAHU

STAFF PRESENTATION: Roy Hardy

Unanimously approved. (Nobriga/Cox)

ITEM 9 STATUS REPORT ON AFTER-THE-FACT STREAM CHANNEL ALTERATION AND STREAM DIVERSION WORKS PERMITS AND PETITION TO AMEND THE INTERIM INSTREAM FLOW STANDARD, HIILAWE AND LALAKEA STREAMS, HONOKAA, HAWAII (TMK 4-8-03:06)

STAFF PRESENTATION: David Higa

The following persons gave oral and written testimonies:

Mr. Peter Simmons, Bishop Estate
Mr. Paul Matsuo, Dept. of Agriculture
Mr. Patrick Gardner, Legal Aid Society of Hawaii
Mr. Lawrence Miller
Mr. Jeffrey Quin
Mr. Robert Shioji
Mr. Ben Mahilum
Mr. Kakalau

Ms. Catherine Allen
Ms. Clara Lakakalia
Mr. Abraham Kamakawiuuole
Mr. Christopher Rathburn
Ms. Brenda Machado Lee
Mr. Jim Cain
Mr. Burt Kauhi
Mr. Karl Foytik
Mr. Kia Fronda

Chairperson Wilson stated that the purpose of this item was to get input from the community. A decision will be made at a later date.
June 22, 1995

Honorable Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use Permit (WUP) Applications
Ewa Caprock Groundwater Management Area, Oahu

This is in response to your memorandum dated May 30, 1995. We have reviewed the subject applications for non-potable water in the Ewa Caprock Aquifer for irrigation uses and provide the comments below for your consideration.

- Ewa by Gentry - 265,700 gpd; Hawaii Prince Golf Club - 500,000 gpd; Arbors - 63,000 gpd; Palm Villas II - 48,000 gpd; Palm Court - 66,000 gpd; Estate of James Campbell (Kapolei) - 302,000 gpd

The projects are shown on the Ewa Development Plan Land Use Map (DPLUM). Therefore, we have no objections to these temporary water use permit requests.

- Kapolei Golf Course and Villages of Kapolei - 1,494,000 gpd

The area identified within the HFDC request is designated Agriculture on the Ewa DPLUM. Although the proposed and existing uses are not consistent with this designation, the projects does have Act 15 exemption from County planning and zoning regulations. Therefore, we have no objections to HFDC request.
Ewa Marina - 1.5 mgd

The Ewa Marina (Haseko (Ewa), Inc.) development is shown on the Ewa DPLUM. However, the allocation of water for the Ewa Marina project may be premature at this time. Use of the water will not be needed until several approvals are granted. The Haseko Corporation is in ongoing discussion regarding drainage and the permits for the marina construction are part of a Commission on Water Resource Management contested case hearing.

Construction of the project including subdivision, grading and building permits will be delayed until these issues are resolved. We are unable to provide an estimate of when the project would be ready for an allocation. Please be clear that this comment regarding timing in no way is in opposition to development of Ewa Marina. The project should not be penalized from future allocations of water to implement the Ewa Development Plan.

Please be advised that the City is preparing a policy regarding reuse of Honouliuli Sewage Treatment Plant effluent within the Ewa plains area. When this effluent is available for public use, we recommend that the Commission require non-potable water users to use the treated effluent to meet their non-potable water needs.

Should you have any questions, please call Eugene Takahashi at 527-6022.

Sincerely,

[Signature]

CHERYL D. SOON
Chief Planning Officer

CDS:js

cc: The Honorable Jeremy Harris, Mayor
Mr. Michael D. Wilson, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Your Letter of May 30, 1995 on the Ewa Caprock Groundwater Use Permit Applications

Thank you for the opportunity to comment on these applications for permits for groundwater from the Ewa Caprock Aquifer. We have no objections to the permits and return the cover memo marked accordingly.

If you have any questions, please contact Herbert H. Minakami at 527-6183.

Very truly yours,

[Signature]

FOR RAYMOND H. SATO  
Manager and Chief Engineer

Attachment
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Water Use Permit, Ewa Caprock Ground Water Management Area, O‘ahu for Well Nos. 1900-02, 17-20; 1901-03; 1902-01; 1905-08,10; 2001-03-05,07-10; 2002-12; 2003-01-07 Honouliuli, ‘Ewa, Oahu

Thank you for the opportunity to review this project. The applicants propose to use water from existing sources. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

EJ:jk
To: The Honorable Michael Wilson, Chairperson
Commission on Water Resource Management

From: Dr. Bruce Anderson
Deputy Director, Environmental Health

Subject: Water Use Permit Applications
Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health’s "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

c: WWB
June 2, 1995

Mr. Michael D. Wilson  
Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Applications for Water Use Permits - Ewa Caprock Groundwater Management Area, Oahu (Public Notice)

We have reviewed the subject document received with your memorandum dated May 30, 1995, and have the following comments to offer:

1. The following TMKs are located within the State Land Use Urban District:

   9-1-10: 17  
   9-1-12: 5, 6, 7  
   9-1-16: 1, 35  
   9-1-70: 132

2. TMKs 9-1-10: 6 and 7 are located within the State Land Use Agricultural District.

3. According to current TMK records, TMK 9-1-61: 9 has been transferred to TMK 9-1-69: 4, which is located within the State Land Use Agricultural District.

4. TMK 9-1-16: 25 is located within the State Land Use Urban and Agricultural Districts. We would like to note that LUC Docket No. A94-708/Office of State Planning, State of Hawaii, which proposes the reclassification of portions of this parcel from the State Land Use Agricultural District to the Urban District, is tentatively scheduled for action on July 27 & 28, 1995.
5. The following areas are predominantly located within the State Land Use Urban District, however, portions of these areas may also be located within the State Land Use Agricultural District:

A) City of Kapolei
B) Kapolei Business Park
C) Kapolei Regional Park
D) Kapolei Golf Course
E) Villages of Kapolei

We have no other comments to offer at this time.

We have enclosed your cover memorandum as requested.

Should you have any questions, please feel free to call me or Kathy Yonamine at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer
TO: Mr. Kali Watson, Chairperson  
Department of Hawaiian Home Lands  
Dr. Lawrence Milke, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Ms. Esther Ueda, Executive Officer  
Land Use Commission  
Mr. Raymond Sato, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Mr. Patrick Onishi, Director  
Department of Land Utilization  
Mrs. Cheryl D. Soon, Chief Planning Officer  
Planning Department  

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management  

SUBJECT: Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Contact person: Kathy Yonamine  
Phone: 587-3822  
Signed:  
Date: 6/05/95
PUBLIC NOTICE

Applications for Water Use Permits
Ewa Caprock Groundwater Management Area, Oahu

The following applications for new interim water use permits for the Ewa Caprock Aquifer have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas." Each of the applicants below have been awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

Haseko Well No. 1 (Well No. 1902-01)
Applicant: Haseko (Ewa), Inc.
820 Millani St., Ste. 810
Honolulu, HI 96813
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Haseko Well No. 1 (Well No. 1902-01) at Oahu Sugar Co. Field 088, Ewa, Oahu, Tax Map Key 9-1-12:5
Quantity Requested: 1,500,000 gallons per day.
Water Use: Golf course, roadway, and maintenance irrigation
Place of Water Use: Ewa Marina development, Ewa, Oahu, TMKs 9-1-12:5,6,7

Geiger Park (2001-03)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Geiger Park (Well No. 2001-03), located near intersection of Geiger and Ft. Weaver Rds., Ewa, Oahu, TMK 9-1-16:35
Quantity Requested: 30,000 gallons per day.
Water Use: Irrigation for 10-acre park
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMK 9-1-16:35

Sunrise Apts. (2001-04)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Sunrise Apts. (Well No. 2001-04), Ewa by Gentry construction site, Ewa, Oahu, TMK 9-1-61:8
Quantity Requested: 40,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:7,41-50
Soda Creek III (2001-05)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Soda Creek III (Well No. 2001-05), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-70:132
Quantity Requested: 20,000 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-70:132

Ft. Weaver Apts. (2001-09)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Ft. Weaver Apts. (Well No. 2001-09), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2
Quantity Requested: 23,400 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:2,9

Gentry Golf Course (2003-06)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Gentry Golf Course (Well No. 2003-06), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-61:2
Quantity Requested: 130,200 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Ewa by Gentry development, Ewa, Oahu, TMKs 9-1-61:Lots 2 & 54

Gentry Area 24 (2001-10)
Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Gentry Area 24 (Well No. 2001-10), Ewa by Gentry development, Ewa, Oahu, TMK 9-1-10:17
Quantity Requested: 22,100 gallons per day.
Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry development, TMKs 9-1-10:17
EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03)

Applicant: Hawaii Prince Golf Club
91-1200 Ft. Weaver Rd.
Ewa Beach, HI 96706

Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: EP 22 & Wells 1 to 5 (1900-02, 17 to 20 & 1901-03), Hawaii Prince Golf Club, Ewa, Oahu, TMKs 9-1-10:6,7
Quantity Requested: 500,000 gallons per day.
Water Use: Golf course irrigation
Place of Water Use: Hawaii Prince Club, Ewa, Oahu, TMK 9-1-10:6

Arbors (2001-07)
Applicant: The Arbors Homeowners Association
91-920 La‘aulu St., #1G
Ewa Beach, HI 96706

Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Arbors (2001-07), The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:32
Quantity Requested: 63,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: The Arbors, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:28,32,36-39

Palm Villa II (2001-08)
Applicant: Palm Villas II Association
91-1119 Mikohu St., #D
Ewa Beach, HI 96706

Date Completed Application Received: May 10, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Palm Villa II (2001-08), Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:27
Quantity Requested: 48,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Palm Villas II, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:13-15,25-27,34

Palm Court (2002-12)
Applicant: Palm Court Homeowners Association
91-1019 Puaniu St., #25R
Ewa Beach, HI 96706

Date Completed Application Received: May 22, 1995
Aquifer: Ewa Caprock Aquifer System, Oahu
Water Source: Palm Court (2002-12), Palm Court, Ewa by Gentry, Ewa, Oahu, TMK 9-1-61:22
Quantity Requested: 66,000 gallons per day.
Water Use: Landscape irrigation
Place of Water Use: Palm Court, Ewa by Gentry, Ewa, Oahu, TMKs 9-1-61:17-23
Kapolei Irr (1905-08 & 10)

Applicant: The Estate of James Campbell
1001 Kamokila Blvd.
Kapolei, HI 96707

Date Completed Application Received: May 22, 1995

Aquifer: Ewa Caprock Aquifer System, Oahu

Water Source: Kapolei Irr (1905-08 & 10), Kapolei City development, TMK 9-1-16:01

Quantity Requested: 302,000 gallons per day.

Water Use: Nonpotable urban uses

Place of Water Use: City of Kapolei, Kapolei Business Park, Kapolei Regional Park, Oahu

Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,07)

Applicant: State of Hawaii
Housing Finance and Development Corp. Blvd.
7 Waterfront Plaza, Suite 300
500 Ala Moana Blvd.
Honolulu, HI 96813

Date Completed Application Received: May 23, 1995

Aquifer: Ewa Caprock Aquifer System, Oahu

Water Source: Kapolei Irr A,B,C-1,D,E (2003-01,02,04,05,2003-07), Kapolei Golf Course, TMK 9-1-16:25

Quantity Requested: 1,494,000 gallons per day.

Water Use: Golf course and urban irrigation

Place of Water Use: Kapolei Golf Course and Villages of Kapolei, Oahu

Written objections or comments on the above applications may be filed by any person who has property interest in any land within the Ewa Caprock Groundwater Management Area, any person who will be directly and immediately affected by the proposed water use(s), or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by June 22, 1995. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) the applicant(s) at the above address(es).

COMMISSION ON WATER RESOURCE MANAGEMENT

EDWIN T. SAKODA for

MICHAEL D. WILSON
Chairperson

Dated: 5/30/95

TO:  
Mr. Kali Watson, Chairperson  
Department of Hawaiian Home Lands  

Dr. Lawrence Milke, Director  
Department of Health  

Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  

Ms. Esther Ueda, Executive Officer  
Land Use Commission  

Mr. Raymond Sato, Manager & Chief Engineer  
Honolulu Board of Water Supply  

Mr. Patrick Onishi, Director  
Department of Land Utilization  

Mrs. Cheryl D. Soon, Chief Planning Officer  
Planning Department  

FROM:  
Michael D. Wilson, Chairperson  
Commission on Water Resource Management  

SUBJECT:  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)
To: The Honorable Michael Wilson, Chairperson
Commission on Water Resource Management

From: Dr. Bruce Anderson
Deputy Director, Environmental Health

Subject: Water Use Permit Applications

Ewa Caprock Groundwater Management
Aiea, Oahu
TMK: 9-1-12: 05

Thank you for allowing us to review and comment on the subject applications contained in your memorandum dated May 30, 1995.

We have no objections to the use of the Ewa Caprock groundwater for irrigation purposes in the Ewa Management Area. However, there are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock Aquifer. The Department of Health recommends that Water Use Permit from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent becomes available, we recommend that the applicant be given a reasonable time to connect to the effluent water system, then the Water Use Permit, should be withdrawn. Provisions to include the proper infrastructure to implement these conditions should be required as part of any new construction plans.

All reuse plans must conform to applicable provisions of the Department of Health's "Guidelines for the Treatment and Use of Reclaimed Water." We reserve the right to review the detailed plans for conformance to these guidelines and to the Hawaii Administrative Rules, Chapter 11-62.

Should you have any questions, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4294.

c: WWB
TO: Mr. Kali Watson, Chairperson
   Department of Hawaiian Home Lands

Dr. Lawrence Miike, Director
   Department of Health

Mr. Clayton H. W. Hee, Chairperson
   Office of Hawaiian Affairs

Ms. Esther Ueda, Executive Officer
   Land Use Commission

Mr. Raymond Sato, Manager & Chief Engineer
   Honolulu Board of Water Supply

Mr. Patrick Onishi, Director
   Department of Land Utilization

Mrs. Cheryl D. Soon, Chief Planning Officer
   Planning Department

FROM: Michael D. Wilson, Chairperson
       Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
         Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

We have no comments
We have no objections
Comments attached
Additional information requested
Extended review period requested

Contact person: Luis A. Moreira
Phone: 594-1935

Signed: Luis A. Moreira
Date: 06/23/95
TO: Mr. Kali Watson, Chairperson  
Department of Hawaiian Home Lands  
Dr. Lawrence Miike, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Ms. Esther Ueda, Executive Officer  
Land Use Commission  
Mr. Raymond Sato, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Mr. Patrick Onishi, Director  
Department of Land Utilization  
Mrs. Cheryl D. Soon, Chief Planning Officer  
Planning Department  

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management  

SUBJECT: Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

1. We have no comments
2. We have no objections
3. Comments attached
4. Additional information requested
5. Extended review period requested

Contact person: Herbert H. Minakami  
Phone: 527-6183
Signed: RAYMOND H. SATO  
Manager and Chief Engineer  
Date: 06/14/95
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director  
Commission on Water Resource Management

SUBJECT: Request for Comments  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)

Response:
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Contact person: MANABU TAGOMORI  
Phone:  
Signed:  
Date:
Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:
☑ We have no comments
☐ We have no objections
☐ Comments attached
☐ Additional information requested
☐ Extended review period requested

Contact person: Cathy Tilton
Phone: 70382

Signed: [Signature]
Date: 6/13/95
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development  

FROM: Rae M. Loui, Deputy Director  
Commission on Water Resource Management  

SUBJECT: Request for Comments  
Water Use Permit Applications  
Ewa Caprock Groundwater Management Area, Oahu  

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response: 6/7/95
( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested  

DOFAW HAS NO COMMENTS OR OBJECTIONS TO THE PROPOSED REQUEST.

Contact person: Administrator  
Phone: 587-0166  

Signed: Administrator  
Date: _______________
TO: Aquatic Resources
   Forestry and Wildlife/Natural Area Reserve System
   Historic Preservation
   Land Management
   Office of Conservation and Environmental Affairs
   State Parks
   Water and Land Development

FROM: Rae M. Loui, Deputy Director
       Commission on Water Resource Management

SUBJECT: Request for Comments
         Water Use Permit Applications
         Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:
   () We have no comments
   () We have no objections
   () Comments attached
   () Additional information requested
   () Extended review period requested

Contact person: [Signature]
Phone: 587-0218

Signed: [Signature] Date: 6-2-95
Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Patrice Nagata

Phone: 587-0218

Signed: Rae M. Loui

Date: 6/11/95
Mr. Ronald M. Uemura
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Uemura:

Enclosed is a copy of the public notice for your water use permit applications for six (6) Ewa by Gentry wells in the Ewa Caprock Aquifer. The attached notice will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

Please be aware that there may be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI
Deputy Director

LN:ss
Encl.
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ____________________________ Phone: ____________________________
Signed: ____________________________ Date: ____________________________
TO: Other Interested Parties

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or interferences with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18 of our Administrative Rules and must be filed by the June 22, 1995 deadline.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
TO: Mr. Kali Watson, Chairperson
Department of Hawaiian Home Lands
Dr. Lawrence Miike, Director
Department of Health
Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs
Ms. Esther Ueda, Executive Officer
Land Use Commission
Mr. Raymond Sato, Manager & Chief Engineer
Honolulu Board of Water Supply
Mr. Patrick Onishi, Director
Department of Land Utilization
Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Applications
Ewa Caprock Groundwater Management Area, Oahu

Transmitted for your review and comment is a copy of the public notice for water use permit applications in the Ewa Caprock Aquifer. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995. The requests are for new water use permits to continue current or immediate nonpotable uses in the Ewa Caprock Groundwater Management Area. Public notice of the water use permit applications will be published in the Honolulu Star Bulletin issues of June 3, 1995 and June 7, 1995.

We would appreciate your review of the proposed nonpotable uses for any conflicts or inconsistencies with the programs, plans, and objectives specific to your organization or department only. Please return this cover memo form by June 22, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response: 

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Phone:

Signed: Date:
Honororable Jeremy Harris, Mayor  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813  

Dear Mayor Harris:

Notice of Applications for Water Use Permits  
Ewa Caprock Groundwater Management Area, Oahu

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for water use permit applications for the Ewa Caprock Groundwater Management Area, which will be published in the Honolulu Star Bulletin.

These requests are for new water use permits to continue current or immediate nonpotable uses at new developments in Ewa, Oahu. The applicants were previously awarded interim water use permits for durations of one year or less, which will expire on July 12, 1995.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We would appreciate receiving your comments, within the next sixty (60) days, on whether these proposed nonpotable uses are consistent with county plans and policies.

Aloha,

Michael D. Wilson
Chairperson

Enclosures
May 22, 1995

Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Request For Extension of the Water Use Permits For Wells 2001-03 to -05, -09, and -10 and 2003-06 Ewa Caprock Groundwater Management Area

In response to your letter of May 5, 1995, we wish to confirm by this letter that Gentry Development Company will require the continued use of the following six Ewa Caprock Wells:

<table>
<thead>
<tr>
<th>State No.</th>
<th>Project Name</th>
<th>Use Allocation (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-03</td>
<td>Geiger Park</td>
<td>0.0300</td>
</tr>
<tr>
<td>2001-04</td>
<td>Sunrise Apartments</td>
<td>0.0400</td>
</tr>
<tr>
<td>2001-05</td>
<td>Soda Creek III (Sun Terra Tot Lot)</td>
<td>0.0200</td>
</tr>
<tr>
<td>2001-09</td>
<td>Fort Weaver Apartments (Coronado)</td>
<td>0.0234</td>
</tr>
<tr>
<td>2003-06</td>
<td>Gentry Golf Course</td>
<td>0.1302</td>
</tr>
<tr>
<td>2001-10</td>
<td>Gentry Area 24</td>
<td>0.0221</td>
</tr>
</tbody>
</table>

The first four wells are currently in use. Based on pumpage records to date, no modifications of the permits are required. The last two wells, wells no. 2003-06 and 2001-10, are currently under design. Their construction is expected to begin before the end of 1995.

We have also attached an updated annual non-potable demand projection to the year 2000.

Sincerely,

GENTRY HOMES, LTD.

Randolph K. Onye  
Vice President
NOTES:

1. Roadway landscaping is estimated at an average of 2.75 GPD / linear foot of roadway based on plans completed to date by various landscape architects.

2. Commercial and public facilities are estimated at 1200 GPD gross area based on BWS non-potable water use guidelines. Industrial is estimated at 2800 GPD / acre based on these standards.

3. Irrigation of parks is estimated at 4000 GPD / gross area.

4. Irrigation of low density multi-family residential parcels is estimated at 4000 GPD per landscaped area. Development to date has averaged 50 percent of the parcel in landscaping. Irrigation at 4000 GPD per net area is equivalent to 2000 GPD per gross area.

5. Golf course irrigation is estimated at 4000 GPD net area. The total area of turfgrass and adjacent landscaping is 162.5 acres of the 172.2 gross 172.2 gross acres of the three parcels which comprise the golf course.
Mr. Ronald M. Uemura  
Gentry Development Company  
P.O. Box 295  
Honolulu, Hawaii 96809  

Dear Mr. Uemura:

Notice of Water Use Permit Expiration  
Well Nos. 2001-03 to 05, 09, 10 & 2003-06  
Ewa Caprock Groundwater Management Area, Oahu

On July 13, 1994 and January 25, 1995, the Commission on Water Resource Management (Commission) approved interim water use permits for durations of one year or less for the following Ewa by Gentry wells:

- Geiger Park (Well No. 2001-03) 0.0300 mgd
- Sunrise Apts. (Well No. 2001-04) 0.0400 mgd
- Soda Creek III (Well No. 2001-05) 0.0200 mgd
- Ft. Weaver Apt. (Well No. 2001-09) 0.0234 mgd
- Gentry Golf Course (Well No. 2003-06) 0.1302 mgd
- Gentry Area 24 (Well No. 2001-10) 0.0221 mgd

Please be aware that these interim water use permits are due to expire on July 12, 1995.

If you require continued use of these wells after the July 12, 1995 expiration date, please confirm this in writing by May 22, 1995. Please indicate any modifications to the present allocations or any other permit term that should be made at this time. All proposed modifications should be fully described and supported. In addition, please attach updated annual nonpotable demand projections to the year 2000 and 5-year demand projections to project build-out for each of these caprock source(s).

All timely requests for new or continued use(s) of Ewa Caprock groundwater will be submitted for Commission action, tentatively, at the meeting of June 14, 1995. Failure to respond by the May 22, 1995 date will create a presumption of abandonment of the use beginning July 13, 1995. If you wish to revive the use after July 13, 1995, you must apply for a permit pursuant to §13-171-12, Hawaii Administrative Rules.

As you are aware, the Commission hired a consultant to develop a nonpotable water master plan for Central Oahu and the Ewa Plain. On April 3, 1995, you were sent a copy of the 3-part pre-final draft report, "Water Reclamation" (February 1995), which recommends reuse of treated sewage effluent as a means of recharging the caprock aquifer. Please do not overlook the May 15, 1995 deadline for submitting your comments on the draft report. Your participation and input is essential to the development and implementation of a successful nonpotable water master plan for Ewa, Oahu.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

LN:ss
May 19, 1995

Ms. Rae Loui  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P. O. Box 621  
Honolulu, Hawaii  96809  

Dear Ms. Loui:

Subject: Gentry Area 24 Well - Well No. 2001-10

Attached please find the executed groundwater use permit and well construction/pump installation permit for Gentry Area 24 Well - Well No. 2001-10 in the Ewa Caprock Groundwater Management Area, Oahu.

We are also attaching our water shortage plan for the well as requested in your letter dated April 13, 1995. A copy of the Ewa by Gentry Water Conservation Plan that was previously submitted will continue to be used for this project and is attached as part of the requirements for this well.

Thank you for your support and approval of our continued use of non-potable water for irrigation purposes.

Very truly yours,

GENTRY HOMES, LTD.

Randolph K. Ohye,  
Vice President - Site Development

RKO:sacm

Attachments:  
Groundwater Use Permit  
Well Construction/Pump Installation Permit  
Water Shortage Plan dated May 19, 1995  
Water Conservation Plan dated April 8, 1994

cc: T. Nance, TNWRE (w/attach.)  
B. Edwards (cover only)

/area24w1-wewa
GROUNDWATER USE PERMIT

PERMITTEE

Applicant/Water User: GENTRY DEVELOPMENT CORP.
Address: P.O. BOX 295
HONOLULU, HI 96809

Landowner of Source: GENTRY DEVELOPMENT CORP.
Address: P.O. BOX 295
HONOLULU, HI 96809

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>OAHU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>&lt; 21 mgd</td>
</tr>
<tr>
<td>Well Name</td>
<td>GENTRY AREA 24</td>
</tr>
<tr>
<td>State Well No.</td>
<td>2001-10</td>
</tr>
</tbody>
</table>

PERMITTED USE INFORMATION

Reasonable beneficial use: IRRIGATION

Withdrawal (12 month moving ave.): 0.022 mgd (based on 7.37 acres landscaped area and roadway)
% of Sustainable Yield: < 1%

Location of water use

<table>
<thead>
<tr>
<th>TMK #</th>
<th>9-1-10:17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>EWA BY GENTRY DEVELOPMENT</td>
</tr>
<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>A-1</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use groundwater from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

1. The water described in this water use permit may only be taken from the location described, used for the reasonable beneficial use described, and at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use groundwater is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49 (1992), which means that it:
GROUND WATER USE PERMIT
GENTRY DEVELOPMENT CORP., Well No. 2001-10

a. Can be accommodated with the available water source;
b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
c. Will not interfere with any existing legal use of water;
d. Is consistent with the public interest;
e. Is consistent with State and County general plans and land use designations;
f. Is consistent with County land use plans and policies; and
g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The groundwater use here must not interfere with surface or other groundwater rights or reservations.

5. The groundwater use here must not interfere with interim or permanent instream flow standards. If it does, then:
a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its January 25, 1995 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the groundwater source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on a monthly basis.
12. This permit shall be subject to the Commission’s periodic review of the Ewa Caprock Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer(s), is reduced.

13. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years of more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Groundwater Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.

20. This permit is subject to the special conditions attached as Exhibit A which are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
22. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on January 25, 1995.

Michael Wilson, Chairperson
Commission on Water Resource Management

Date of Permit Issuance: APR 13 1995

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: Date:

Printed Name: Randolph K. Ouye.

Firm or Title: Vice President, Gentry Homes, Ltd.

PLEASE SIGN AND RETURN ONE COPY OF THIS PERMIT TO THE COMMISSION AND RETAIN A COPY FOR YOUR RECORD.
A. The interim water use permit shall be valid until July 12, 1995.

B. The applicant shall cooperate with the Commission's initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

C. The applicant shall comply with the following Conservation conditions:

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within sixty (60) days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for nonpotable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants; and
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of nonpotable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for wastage; and
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative nonpotable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT

for

Gentry Area 24 Well
Well No. 2001-10
Ewa Caprock Ground Water Management Area, Oahu

TO: Gentry Development Corp.
P.O. Box 295
Honolulu, HI 96809

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct, test, and install a pump in Gentry Area 24 Well (Well No. 2001-10), is approved subject to the following conditions:

1. The Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a 110 gpm capacity, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the attached protocol. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson’s approval.

3. The proposed use(s) shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

5. The following shall be submitted to the Commission within thirty (30) days after completion of work:

a. Well completion report.
b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.

c. As-built sectional drawing of the well.

d. Plot plan and map showing the exact location of the well.

e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

6. The applicant shall comply with all applicable laws, rules, and ordinances.

7. The well construction/pump installation permit application and staff submittal approved by the Commission at its January 25, 1995 meeting are incorporated into the permit by reference.

8. The permit may be revoked if work is not started within six (6) months after the date of issuance or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management
APR 13 1995
Date of Issuance

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: ____________________________ Date: ________________

Printed Name: Randolph K. Ouye

Firm or Title: Vice President, Gentry Homes, Ltd.

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

Attachment
cc: USGS
    Department of Health
    Safe Drinking Water Branch
    Wastewater Branch
    Ground Water Protection Program
    Honolulu Board of Water Supply
    Tom Nance Water Resources Engineering
Gentry Homes, Ltd.

Water Shortage Plan
Gentry Area 24 Well (Well No. 2001-10)

If the Commission on Water Resource Management declares a water shortage in the Ewa Caprock Groundwater Management Area requiring a reduction in pumpage from our wells, Gentry has as short term option of connecting to the Board of Water Supply potable water system. This back-up connection will be made in accordance with Board of Water Supply standards.

For long term options, Gentry Development Company has previously submitted alternate non-potable source plans such as Honouliuli Wastewater Plant effluent, Waiahole Ditch water, and basalt aquifer wells. Within the Ewa by Gentry-East project, we are sizing pipelines to accommodate all of these possibilities.
April 8, 1994

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

Attention: Rae M. Loui, Deputy Director

Re: EWA BY GENTRY WATER CONSERVATION PLAN

Dear Ms. Loui:

The following program has been implemented with regard to water conservation and we feel this program is in compliance with the DLNR requirements for the water use permit:

1. The use of drought and salt tolerant trees, shrubs and groundcovers has been and will continue to be incorporated into all projects at Ewa by Gentry. In our continuing efforts to improve and adjust our landscaping for drought and salt tolerance, we have introduced Seashore Paspalum Grass for lawn areas and increased our utilization of coral, gravel and rock in lieu of groundcover planting, during the past year.

2. Irrigation systems are designed specifically to conform with non-potable water source pump requirements.

3. Irrigation controller schedules are adjusted during rainy periods to conserve water.

4. Broken irrigation pipes and equipment are promptly repaired to insure that water is not wasted. Irrigation heads, valves and controllers are routinely adjusted to maximize irrigation efficiency.

5. Installation of pop-up irrigation heads is utilized to reduce damage to exposed irrigation equipment and resulting water loss.

6. Irrigation submeters are being installed on specific irrigation zones downstream of primary irrigation water meters to improve irrigation monitoring and evaluation.
7. A landscape committee was formed to ensure continuity and compliance with water conservation requirements, and to improve design, installation and maintenance of landscaping, irrigation systems and non-potable wells.

8. A Landscape Booklet was developed which is distributed to all buyers at Ewa by Gentry. This guide stresses the importance of utilizing drought tolerant planting in combination with efficient irrigation, provides information on suitable drought tolerant plants and introduces homeowners to xeriscape as well as basic landscape design and installation concepts to insure successful landscaping.

This program has been extremely successful in our continuing efforts to minimize water usage and improve the Ewa by Gentry Community.

If you have any questions or concerns, please contact us.

Sincerely,

BROWNlie & LEE

Richard C. Brownlie, ASLA
Principal

RCB/sy
Mr. R. K. Ouye  
Gentry Development Corp.  
P.O. Box 295  
Honolulu, HI  96809  

Dear Mr. Ouye:

Approval of Well Construction/Pump Installation  
and Water Use Permit for Well No. 2001-10  
Ewa Caprock Groundwater Management Area, Oahu

On January 25, 1995, the Commission on Water Resource Management (Commission) approved your applications for a well construction/pump installation permit and a water use permit for the Gentry Area 24 Well (Well No. 2001-10). The water use permit provides for the use of 22,100 gallons per day (gpd) of water on a 12-month moving average basis.

Enclosed with this letter of approval are the following:
1. Your water use permit  
2. Your well construction/pump installation permit  
3. Your official monthly water use report form

Please be sure to read the conditions of your approved well construction/pump installation permit and your approved water use permit. If you accept these terms, please sign and return one copy of each permit to the Commission and retain the other copy for your record.

Be aware that you are required to keep a record of your monthly total pumpage. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

In addition, you are required to submit a water shortage plan to the Commission. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Ewa Caprock Groundwater Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission’s overall Water Shortage Plan.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN: ss
Attachments
State of Hawaii  
Department of Land and Natural Resources 
COMMISSION ON WATER RESOURCE MANAGEMENT

MONTHLY GROUNDWATER USE REPORT FOR

GENTRY DEVELOPMENT CORP.  
P.O. BOX 295  
HONOLULU, HI 96809

Month of __________, 19__

Date Measurement(s) Taken

/ / /

(Month / Day / Year)

INSTRUCTIONS: Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly groundwater use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call 587-0285 (Oahu only) or 1-800-488-4844 (neighbor islands).

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement</th>
<th>Chloride (mg/l)</th>
<th>Temp. (°F)</th>
<th>Water Level (ft. above msl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments or additional information:

Submitted by (print) ____________________________  Title ____________________________

Signature ____________________________  Date ____________________________
GROUNDWATER USE PERMIT

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Landowner of Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td><strong>Address</strong></td>
</tr>
<tr>
<td>GENTRY DEVELOPMENT CORP.</td>
<td>GENTRY DEVELOPMENT CORP.</td>
</tr>
<tr>
<td>P.O. BOX 295</td>
<td>P.O. BOX 295</td>
</tr>
<tr>
<td>HONOLULU, HI 96809</td>
<td>HONOLULU, HI 96809</td>
</tr>
</tbody>
</table>

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>Water Management Area</th>
<th>Aquifer Sector</th>
<th>Aquifer System</th>
<th>System Sustainable Yield</th>
<th>Well Name</th>
<th>State Well No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAHU</td>
<td>EWA CAPROCK</td>
<td>EWA CAPROCK</td>
<td>EWA CAPROCK</td>
<td>&lt; 21 mgd</td>
<td>GENTRY AREA 24</td>
<td>2001-10</td>
</tr>
</tbody>
</table>

PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>Withdrawal (12 month moving ave.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRRIGATION</td>
<td>0.022 mgd (based on 7.37 acres landscaped area and roadway)</td>
</tr>
<tr>
<td></td>
<td>&lt; 1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location of water use</th>
<th>TMK #</th>
<th>Address</th>
<th>State land use classification</th>
<th>County zoning classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9-1-10:17</td>
<td>EWA BY GENTRY DEVELOPMENT</td>
<td>URBAN</td>
<td>A-1</td>
</tr>
</tbody>
</table>

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use groundwater from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

1. The water described in this water use permit may only be taken from the location described, used for the reasonable beneficial use described, and at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use groundwater is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49 (1992), which means that it:
GROUND WATER USE PERMIT
GENTRY DEVELOPMENT CORP., Well No. 2001-10

a. Can be accommodated with the available water source;
b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
c. Will not interfere with any existing legal use of water;
d. Is consistent with the public interest;
e. Is consistent with State and County general plans and land use designations;
f. Is consistent with County land use plans and policies; and

g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The groundwater use here must not interfere with surface or other groundwater rights or reservations.

5. The groundwater use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its January 25, 1995 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;
   c. insure adequate conservation measures;
   d. require efficiency of water uses;
   e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the groundwater source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on a monthly basis.
12. This permit shall be subject to the Commission’s periodic review of the Ewa Caprock Aquifer System’s sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer(s), is reduced.

13. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee’s water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years of more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Groundwater Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.

20. This permit is subject to the special conditions attached as Exhibit A which are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS 174C or HAR § 13-171 may result in the suspension or revocation of this permit.
22. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on January 25, 1995.

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management
Date of Permit Issuance: APR 13 1995

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: __________________________ Date: ____________
Printed Name: ____________________________________________
Firm or Title: ______________________________________________

PLEASE SIGN AND RETURN ONE COPY OF THIS PERMIT TO THE COMMISSION AND RETAIN A COPY FOR YOUR RECORD.
GROUND WATER USE PERMIT
GENTRY DEVELOPMENT CORP., Well No. 2001-10

EXHIBIT A

Water Use Permit
Groundwater

SPECIAL CONDITIONS

A. The interim water use permit shall be valid until July 12, 1995.

B. The applicant shall cooperate with the Commission’s initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

C. The applicant shall comply with the following Conservation conditions:

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within sixty (60) days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for nonpotable water by:
      - Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (xeriscape);
      - Mulching planting areas with organic materials, etc., to minimize evaporation;
      - Efficiently maintaining the plants; and
      - Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of nonpotable water by:
      - Using efficiently designed landscaping and irrigation systems;
      - Monitoring irrigation requirements and controlling usage accordingly;
      - Managing irrigation scheduling to minimize water demand;
      - Eliminating opportunities for wastage; and
      - Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative nonpotable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Cecil Santos, Land Agent
Oahu District Land Management

SUBJECT: Well Construction/Pump Installation and Water Use Permit Applications, Ewa Caprock Ground Water Management Area, Puuleoa, Oahu 2001-10

Land Management Division has reviewed the subject application and has determined that the project does not affect or significantly impact on State-owned land managed by DLNR - Land Management Division.

Thank you for allowing us the opportunity to review and comment on the proposed project. Should you have any questions, please contact Nicholas Vaccaro at 587-0433.
TO: Mr. Edwin Watson, Acting Supervisor  
Division of Land/Transportation  
Office of the Attorney General  

ATTN: Mr. William Tam, Deputy Attorney General  

FROM: Rae M. Loui, Deputy Director  

SUBJECT: Issuance of Water Use Permit  

Transmitted for your review and signature are two (2) copies of a water use permit for Well No. 2001-10. We request your approval as to the form of the permit document. Please return the permits with your signature to the Commission on Water Resource Management.
TO: Mr. Edwin Watson, Acting Supervisor
Division of Land/Transportation
Office of the Attorney General

ATTN: Mr. William Tam, Deputy Attorney General

FROM: Rae M. Loui, Deputy Director

SUBJECT: Issuance of Water Use Permit

Transmitted for your review and signature are two (2) copies of a water use permit for Well No. 2001-10. We request your approval as to the form of the permit document. Please return the permits with your signature to the Commission on Water Resource Management.

LN:ss
AGENDA 1

ITEM 9  GENTRY DEVELOPMENT CORP., APPLICATION FOR WATER USE PERMIT AND WELL CONSTRUCTION/PUMP INSTALLATION PERMIT, EWA CAPROCK GROUNDWATER MANAGEMENT AREA, OAHU

Staff recommendation No. 1 to amend the permitted use quantity from 45,900 gpd to 22,100 gpd.
ITEM 8

DEPARTMENT OF TRANSPORTATION, APPLICATION FOR A STREAM CHANNEL ALTERATION PERMIT, MODIFICATION OF FIVE CULVERT CROSSINGS AT KAHEKILII HIGHWAY, AT VARIOUS TAX MAP KEYS, KANEOHE, OAHU

The Attorney General's office will review language with regard to Condition No. 3 (hold harmless clause) in the recommendation section.

Unanimously approved with the recommendation that staff work with the Attorney General's office to revise the language in the hold harmless clause.

(Nakata/Ing).

ITEM 9

GENTRY DEVELOPMENT CORP., APPLICATION FOR WATER USE PERMIT AND WELL CONSTRUCTION/PUMP INSTALLATION PERMIT, GENTRY AREA 24 WELL (WELL NO. 2001-10), EWA CAPROCK GROUNDWATER MANAGEMENT AREA, OAHU

Pursuant to the CWRM's directive at the July 13, 1994 CWRM meeting, a six­month status report was given on the compliance of holders of interim one­year permits with the conditions of their permits.

Mr. Tom Nance of Tom Nance Water Resources Engineering and Mr. Barry Edwards of Gentry Development testified in support of the staff's recommendation.

Dr. Anthony requested deferral stating that there were too many uncertainties regarding the caprock and that the community experts were needed to evaluate the caprock situation and review existing reports.

Mr. Fred Madlener was against the granting of any permits due to uncertainties in the water resource.

Ms. Toni Bissen of Native Hawaiian Advisory Council did not support staff's recommendation because the caprock may already be over-allocated, but supports effluent reuse.

Mr. Girald made a motion to defer because more information is needed and that we are so close to July when all permits will be reviewed. No one seconded.

Mr. Ing commented that the process and procedure that staff has come up with is reasonable given the current situation of playing "catch-up" with county development plans and zoning. There are sufficient safeguards built in these permits to stop any situation where the resource is in jeopardy.

Mr. Nakata would support a deferral until the next Oahu meeting and would like to see the reaction to tomorrow's briefing (January 26, Dr. Kumagai on Water Reclamation).

Mr. Nakata asked staff what was the approximate pumpage at this point in time--looks like an overallocation.

Mr. Nance gave amounts of pumpage occurring and summarized that there is no over pumpage going on today.
Aloha, and thank you for the opportunity to present testimony to the Commission concerning Agenda #1, item 9 and item 16. I'm Toni Bissen with the Native Hawaiian Advisory Council (NHAC). NHAC is a non-profit organization which provides educational, technical and advocacy services to Native Hawaiians who are striving to preserve and protect their water rights and insure adequate availability of water to enable the meaningful exercise of these rights. Among our primary goals are to assist in the empowerment of the Native Hawaiian community to exercise control and governance over community resources, to promote economic self-sufficiency of Hawaiians and to successfully advance the Hawaiian community's economic development and financial stability. We have been working on behalf of the Hawaiian community on water rights issues since shortly after the passage of the Water Code and we have been the most consistent organization in following the Water Commission and in commenting on its policies and practices.

Agenda 1
Item 9  Gentry Development Corp., Applications for Water Use Permit and Well Construction/Pump Installation Permit, Ewa Caprock Groundwater Management Area, Oahu

NHAC BELIEVES DUE TO THE OVERALLOCATED CONDITIONS OF THE PUULOA AQUIFER SYSTEM, NO WATER USE PERMITS SHOULD BE ISSUED FROM THE EWA CAPROCK GROUND WATER MANAGEMENT AREA.

In order to obtain a water use permit an applicant shall establish that the proposed use of water meets seven listed criteria. H.R.S. 174C-49(a), H.A.R. 13-171-13(a). These seven items are:

1. Can be accommodated with the available water source;
2. Is a reasonable-beneficial use as defined in section 174C-3;
3. Will not interfere with any existing legal use of water;
4. Is consistent with the public interest;
5. Is consistent with state and county general plans and land use designations;
6. Is consistent with county land use plans and policies; and
7. Will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

In the submittals prepared by Commission staff, table 1 outlines the sustainable yield for the Puuloa aquifer system, other existing permits and lists ~5.373 as available for allocation. The applicant requests 45,900 gpd for the new uses of landscape and roadway irrigation. Total allocations exceed the estimated sustainable yield of the Puuloa aquifer; Given this situation it would seem impossible for the applicant to meet criteria #1 - Whether the water use requested can be accommodated with the available water source. The applicant's request therefore cannot be accommodated by the available water source and on this criteria alone the water use permit could be denied.

With respect to exhibit 3, staff's conclusions are overgeneralized. Exhibit 3 shows fluctuations in chlorides at three Gentry well sites and gives no information about other nearby wells and aquifer conditions. For example, chlorides in well 2001-02 are greater today than at the beginning of the sampling period. Because of the incomplete analysis in relation to climatic variability and pumping rate, and because of uncertainties regarding the dynamics of the caprock system, the data presented in exhibit 3 does not clearly indicate that present pumpage from the system has not led to increased salinity of the groundwater in the vicinity.

The Water Commission is mandated to preserve, protect and manage Hawaii's precious water resource. Proper management of the resource is dependent on applying fair and just standards to all water allocation decisions. Those standards are clearly listed in H.R.S. 174C-49 and H.A.R. 13-171-13 and must be complied with as a matter of law.

**Item 16 Recommendation on the Petition for the Designation of the Island of Lanai as a Water Use Management Area**

NHAC SUPPORTS THE INTENT BEHIND THE REQUEST TO DESIGNATE LANAI A WATER MANAGEMENT AREA AS IT SEEKS TO CREATE THE ENVIRONMENT TO RESOLVE THE SERIOUS WATER DISPUTES TAKING PLACE.

NHAC supports designation as one of the necessary mechanisms to resolve the water disputes on the island. One primary reason we would like to support designation is to provide the conditions to establish reservations for Hawaiian Home lands. Commission staff
has taken the position that their only authority and process for water allocation applies in designated water management areas. They have, therefore, concluded that water reservations are feasible only in water management areas. By designating Lanai a water management area, water reservations can then be established.

Although NHAC does not agree with this narrow interpretation of reserving water for Hawaiian Home lands only in water management areas, the staff has been operating under this understanding. NHAC believes that Act 325 gives the Commission authority to reserve water from non-designated water management areas. Under Act 325, the Water Commission is under a duty to assure native Hawaiians have sufficient water reserved for foreseeable homestead development. Act 325 amended the Water Code and established HRS 174C-101(a) which states:

"...Decisions of the commission on water resource management relating to the planning for, regulation, management and conservation of water resources in the State shall, to the extent applicable and consistent with other legal requirements and authority, incorporate and protect adequate reserves of water for current and foreseeable development and use of Hawaiian home lands..."

Therefore, since the Water Commission has the duty to establish reservation for Hawaiian home lands, as well as having the responsibility to protect, preserve and manage water resources in the State, the Commission can reserve water for Hawaiian home lands in non-designated areas.
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Gentry Development Company
Application for Water Use Permit and
Well Construction/Pump Installation Permit
Ewa Caprock Groundwater Management Area, Oahu

Applicant: Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

Landowner: Same

Background:

The boundaries of the brackish Ewa Caprock Aquifer were officially adopted by the Commission on Water Resource Management (Commission) on March 3, 1993 without any sustainable yield estimate. In the 1988-1992 timeframe, permits totalling 19.524 mgd were awarded mainly to existing irrigation uses (e.g. Oahu Sugar Co.). Other permits totalling 39.608 mgd were for various salt water and highly brackish to saline water uses (chlorides > 1,000 MG/L).

To satisfy the needs of new developments in the Kapolei and Puuloa areas of the caprock (Exhibit 1), interim water use permits not exceeding one year were granted at the April 28, 1993 Commission meeting. At the July 13, 1994 Commission meeting, new interim one year permits were approved upon timely written request, provided that all conditions of the interim permits were met. A current listing of all permittees in the Puuloa area of the caprock is provided in Exhibit 2 (caprock permittees holding interim one year permits that will expire on July 12, 1995 are indicated with an asterisk (*)). Any new permits issued in the caprock should be made valid until July 12, 1995 so that the Commission may consider new interim permits in a comprehensive manner.

On October 11, 1993, Gentry Development Company (Gentry) submitted completed applications to construct a new well, install a pump, and use 45,900 gallons per day of brackish groundwater in the Puuloa area of the caprock. The well will be used for irrigation supply and other nonpotable needs of proposed multi-family developments. Specific information regarding the sources, uses, notifications, objections, field investigation(s) are described in Attachment A and the attached exhibits.
Can I get 12-MAU for 2001-04? I report 12/4
0.024 mg/l
2001-05 NO REPORT
10/14 0.026
2001-08

(NO graph)

Also, <NAME> wants status report on monthly data reports.

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Pumpage</th>
<th>Chlorides</th>
<th>Vo. Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905-08-10</td>
<td>Campbell Ext.</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2003-01 to 05</td>
<td>HFDC</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<tr>
<td>1900-02, 17 to 20, 1901-03</td>
<td>HI Prime</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>2001-03</td>
<td>Gambia</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
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<tr>
<td>-05</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

"Stacked in Nov 1995"
The action suddenly stopped while both sides waited patiently for the hornet to calm down.
"Yesterday! I was told the meeting was today!"
Puuloa Aquifer System

<table>
<thead>
<tr>
<th>Sustainable Yield Estimate</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less: Other Existing Permits</td>
<td>-20.373</td>
</tr>
<tr>
<td>Current Available Allocation</td>
<td>-5.373</td>
</tr>
<tr>
<td>Less: Pending Application</td>
<td>-0.046</td>
</tr>
<tr>
<td>Total</td>
<td>-5.419</td>
</tr>
<tr>
<td>Plus: Future Revocation (Oahu Sugar Co.)</td>
<td>14.694</td>
</tr>
<tr>
<td>Potential Available (when Oahu Sugar Co. closes)</td>
<td>9.275</td>
</tr>
</tbody>
</table>
Analysis & Issues:

The current guideline used for sustainable yield for water suitable for irrigation uses (chlorides < 1,000 MG/L) is 21 mgd. Consultants to the Commission, Yuen & Associates, Inc. (1989), project that estimated sustainable yield will decrease to 16 mgd after cessation of sugar cane operations. Although Yuen & Associates, Inc. made these estimates based on three aquifer systems (Malakole, Puuloa, and Kapolei), the Commission did not officially adopt the separate aquifer systems. If the sustainable yield were divided between the three aquifer systems, the Puuloa Aquifer System may be presently over-allocated. Table 1 shows the current allocations and pending applications for water use permits in relation to the unofficial sustainable yield estimate for the Puuloa Aquifer System. Further, Puuloa would be greatly over allocated if the available yield were to decrease once sugar cane operations cease. Yuen & Associates’ estimate of Puuloa sustainable yield after sugar cane irrigation ceases is 10 mgd.

TABLE 1. PUULOA AQUIFER SYSTEM

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
</tr>
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<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>15</td>
</tr>
<tr>
<td>Less: Other Existing Permits</td>
<td>20.373</td>
</tr>
<tr>
<td>Available Allocation</td>
<td>-5.373</td>
</tr>
</tbody>
</table>

As Oahu Sugar Co. ceases operations, the immediate response to the decrease in pumped irrigation water will likely be an increase in basal water levels, which may result in an increase in the flux to the caprock. However, long term effects are uncertain.

The available data on water quality to determine the effects of pumpage are limited. The Commission has established a network to closely monitor the groundwater conditions over time. Data from existing Gentry wells are gathered on a monthly basis. Exhibit 3 shows a decrease in chlorides at three (3) Gentry well sites. The data have not been analyzed in relation to climatic variability or pumping rates, which may help to explain the downward trend in chloride concentrations. Although there is uncertainty regarding the dynamics of the caprock system, the observed data indicate that the present pumpage from the system has not led to increased salinity of the groundwater in the vicinity of the Gentry developments in Puuloa (Exhibit 1). However, the situation must continue to be monitored.

It is apparent that the Commission must initiate and coordinate the development of a joint plan for the conversion to an alternative nonpotable source, should the future viability of the caprock aquifer be diminished. To address this, the Commission has hired a consultant to develop a nonpotable water master plan for Central Oahu, including the Ewa plain. An important policy question is the use of reclaimed water. How much should the uncertainty in caprock water availability drive the encouragement of the use of reclaimed water? Final recommendations will be submitted for consideration by the Commission this year. A briefing on the results of the study will be held on January 26, 1995.

RECOMMENDATION

Staff recommends that the Commission:

1. Approve the issuance of an interim water use permit to Gentry Development Co. for the reasonable and beneficial use of 22,150 gallons per day of nonpotable water from Gentry Area 24 Well (Well No. 2001-10) for landscape and roadway irrigation, subject to the standard conditions of a water use permit listed in Attachment B and the following special conditions:
a. The applicant shall comply with the Conservation conditions listed in Attachment C.

b. The interim water use permit shall be valid until July 12, 1995.

c. The applicant shall cooperate with the Commission's initiative in the development of the Nonpotable Water Master Plan for Central and Leeward Oahu.

2. Approve the issuance of a well construction/pump installation permit to the Gentry Development Co. for the Gentry Area 24 Well (Well No. 2001-10), subject to the standard conditions listed in Attachment D and the following special condition:

a. The final pump capacity shall be approved by the Chairperson upon completion of the drilling and aquifer testing.

Respectfully submitted,

RAE M. LOUI
Deputy Director

Michael D. Wilson, Chairperson
Q: How about enforcement by staff?
Q: Cumulative impacts? Analysis case-by-case at present.
- Data too skimpy, need opp to review all work
  in 1989 Nwink/Siwan report, Prince's work, etc.

Medlin: ) 13 1077 Friends,
With need to be conservative cannot continue to allocate
from an unknown resource.

Toni Bissen: Believes that agri is over-allocated.
If no more priority should be issued. Burden on applicant
to meet conditions.
Exhibit 3 overgeneralized.
Support efficient re-use.

Bobby - request referral till July when rest
of permits will be due.
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER:
Puuloa Aquifer System, Ewa Caprock Aquifer, Oahu
Sustainable Yield:
NA mgd
Existing Water Use Permits:
20.373 mgd
Available Allocation:
NA mgd
Total of other pending allocations:
0 mgd

WELL:
Gentry Area 24 Well (Well No. 2001-10)
Location:
Ewa by Gentry Development, Oahu, TMK:9-1-17
Year Drilled:
NA
Casing Diameter:
12 in.
Elevations (msl= 0 ft.)
Water Level:
Ground:
34 ft.
Bottom of Solid Casing:
4 ft.
Bottom of Perforated:
-16 ft.
Bottom of Open Hole:
-20 ft.
Total Depth:
55 ft.
Grouted Annulus Depth:
NA ft.
Pump Capacity:
110 gpm

Use Information

Quantity Requested: 45,900 gallons per day.
Proposed Type of Water Use: Landscape and roadway irrigation
Place of Water Use: Ewa by Gentry Development, Oahu at TMK: 9-1-10:17

Reported Water Usage:
Nearby Similar Water Usage:
Puuloa Aquifer System
Current 12-Month Moving Average Withdrawal: 17.016 gpd

ATTACHMENT A
Mike - dehumanization is not. 1. Social, economic, psychological, political, etc.

Peter - need education to dehumanization, because it is not a natural state.

Mike - dehumanization is not. 1. Social, economic, psychological, political, etc.

Peter - need education to dehumanization, because it is not a natural state.

Dana - playing “catch-up” with DP & LDP.

Valerie - need for “catch-up” with DP & LDP.

Peter - need for “catch-up” with DP & LDP.

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Peter - need for “catch-up” with DP & LDP.

Dana - playing “catch-up” with DP & LDP.
Nearby Surrounding Wells and Other Registered Ground Water Use

There are thirteen other wells within a mile of the well (Exhibit 1A). Most of these are planned for future use at the Ewa by Gentry Development. No estimate of existing withdrawals from the Puuloa Aquifer System is provided in the 1992 Draft of the Oahu Water Management Plan.

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on December 12 and 19, 1994 and copies of the notice were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by January 4, 1995.

Objections

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by April 11, 1994. No objections were filed with the Commission.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

The application is for a proposed water source and future water use and as such, no field investigation is warranted.

---

Barry Edwards - G.E. by Gentry began 1987

All present 3,000 homeowners, contemplate

Gentry has complied with permits & conditions of

Temp. permits.

Private studies done to look @ re-use. Comments

Start for current study. Welcome re-use with

ATTACHMENT A
What should development stop? Nothing?

Area 23; 24 includes 50 container housing units.

M&D: From commitment, are OS&Co-Capeville?

It's unclear what issue we're discussing today. Is it relevant? (Based on the discussion, etc.)

Mike: Can we vote on the original staff recommendation?
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

4. The ground water use approved must not interfere with surface or ground water rights or reservations.

5. The ground water use approved must not interfere with interim or permanent instream flow standards or policies as determined by the Commission. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use permit is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and staff submittal approved by the Commission at its January 25, 1995 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

ATTACHMENT B
Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance the Commission's September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission's periodic review of the applicable aquifer's sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the Ewa Caprock Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

14. The use(s) authorized by law and by the water use permit do not constitute ownership rights.

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

16. The permittee shall prepare and submit a water shortage plan within 30 days of issuance of the permit to assist the Commission in fulfilling HAR §13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Ewa Caprock Ground Water Management Area.

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.

ATTACHMENT B
# PUULOA AQUIFER SYSTEM

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* INTERIM ONE YEAR PERMIT
CONSERVATION CONDITIONS
EWA CAPROCK WATER USE PERMITS

1. The permittee shall adopt self-administered water conservation programs and plans with collective monitoring to protect and maintain the caprock resource. Water conservation programs and plans shall be submitted to the Commission within 60 days from the date of Commission approval.

2. Water conservation programs and plans shall address (as applicable) but not be limited to the following:

   a. Reduce the demand for non-potable water by:
      • Identifying and utilizing water efficient plants and drought tolerant plants for landscaping and quantifying their demands (Xeriscape);
      • Mulching planting areas with organic materials, etc., to minimize evaporation;
      • Efficiently maintaining the plants;
      • Improving land management practices to conserve water.

   b. Improve efficiency in use and reduce losses and waste of non-potable water by:
      • Using efficiently designed landscaping and irrigation systems;
      • Monitoring irrigation requirements and controlling usage accordingly;
      • Managing irrigation scheduling to minimize water demand;
      • Eliminating opportunities for water wastage;
      • Maintaining and improving irrigation systems as necessary.

   c. Industrial users should employ the recirculation of cooling water and the reuse of cooling and process water.

3. The permittee shall pursue and participate in alternative non-potable water source development and use such as wastewater reuse (direct reuse and/or recharge injection).

4. In the event that water conservation programs and plans are not complied with or that a waste of water is occurring, the Commission shall proceed with the necessary actions to revoke this permit.
STANDARD WELL CONSTRUCTION/PUMP INSTALLATION PERMIT CONDITIONS

1. The Commission shall be notified before work commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a 110 gpm capacity, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the protocol established by the Commission. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

3. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

6. The permit may be revoked if work is not started within six (6) months after the date of issuance or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

7. That the pumping test shall follow the aquifer pump testing protocol established by the Commission. Prior to conducting the aquifer pump test, the applicant shall mutually agree with the Commission staff to a methodology and analysis of the test results.

8. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
   b. Elevations of well (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

9. The well shall not be used for drinking water unless it is properly tested and approved by the State Department of Health.

10. The well construction/pump installation water use permit application and staff submittal approved by the Commission at its "F26"C meeting are incorporated into the permit by reference.

11. The permit shall be subject to review by the Attorney General.

ATTACHMENT D
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# PUUOLA AQUIFER SYSTEM

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<td>FORT WEAVER APT.</td>
<td>07/13/94</td>
<td>0.023</td>
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<td>GENTRY PACIFIC, LTD.</td>
<td>2002-12</td>
<td>PALM COURT 3</td>
<td>11/13/94</td>
<td>0.100</td>
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<td>GENTRY PACIFIC, LTD.</td>
<td>2002-13</td>
<td>PALM COURT 3</td>
<td>07/13/94</td>
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<td>2002-14</td>
<td>WEST LOCH 1</td>
<td>07/13/94</td>
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<td>2002-14</td>
<td>WEST LOCH 2</td>
<td>07/13/94</td>
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<td>2003-06</td>
<td>GENTRY G.C.</td>
<td>07/13/94</td>
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<td>U.S. FISH &amp; WILDLIFE</td>
<td>2101-14</td>
<td>HONOLULU UNIT</td>
<td>10/27/93</td>
<td>0.216</td>
</tr>
</tbody>
</table>

* INTERIM ONE YEAR PERMIT

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**EXHIBIT 2**
EXHIBIT 3
January 12, 1995

To: The Honorable Michael Wilson, Chairperson
Commission on Water Resource Management

From: Lawrence Miike
Director of Health

Subject: Well Construction/Pump Installation and Water Use Permit Application,
Ewa Caprock Ground Water Management Area, Puuloa, Oahu
TMK: (1) 9-1-10: 17

There are plans to provide treated wastewater effluent for non-potable purposes in the immediate area of the Ewa Caprock aquifer. The Department of Health recommends that Water Use Permits from this aquifer be granted only if no other alternative source is available, and only until the effluent is available to the applicant. Once the effluent is available, it is recommended that the applicant be given a reasonable time to connect to the effluent water system and that the Water Use Permit be withdrawn.

cc: WWB
REF: WRM: SS

TO:

Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, M.D., Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Donald A. Clegg, Director
Department of Land Utilization

Ms. Cheryl Soon, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation and Water Use Permit Applications, Ewa Caprock Ground Water Management Area, Pualoa, Oahu

Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, or objective specific to your organization or department only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: Thomas E. Arizumi, Chief
Environmental Management Division

Phone: 586-3304
Signed: Thomas E. Arizumi

Date: 01/12/94
TO: Mrs. Hoaliku L. Drake, Director
    Department of Hawaiian Home Lands

    Dr. Peter A. Sybinsky, M.D., Director
    Department of Health

    Mr. Clayton H. W. Hee, Chairperson
    Office of Hawaiian Affairs

    Mr. Kazu Hayashida, Manager & Chief Engineer
    Honolulu Board of Water Supply

    Mr. Donald A. Clegg, Director
    Department of Land Utilization

    Ms. Cheryl Soon, Chief Planning Officer
    Planning Department

FROM: Keith W. Ahue, Chairperson
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation and Water Use Permit
         Applications, Ewa Caprock Ground Water Management Area,
         Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well
construction/pump installation and water use permits for Gentry Development Corporation for
Well No. 2001-10. Public notice of the water use permit application will be published in the

We would appreciate your review of the attached applications for any conflicts or
inconsistencies with the programs, plans, or objective specific to your organization or department
only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at
587-0218.

Attachment(s)

Response:

☐ We have no comments
☐ We have no objections
☐ Comments attached
☐ Additional information requested
☐ Extended review period requested

Contact person: Luis A. Manrique
Phone: 596-1935
Signed: Date: 12/20/94
January 3, 1995

Honorable Michael D. Wilson, Chairperson
Department of Land and Natural Resources
Commission on Water Resource Management
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Water Use, Well Construction, and Pump Installation
Permit Applications
for Gentry Development Company
Gentry Area 24 Well 2001-10

Thank you for giving us the opportunity to review and comment on this water use permit application.

We have reviewed the subject application and have no objections to the use of non-potable water for the irrigation of landscaped areas and roadway landscaping. However, it is our understanding that water use permits within the Ewa Caprock area have been issued on a temporary basis until plans for alternate non-potable water sources can be developed. We, therefore, recommend that the applicant indicate the status of their plans for alternate sources of non-potable water to the Commission for review prior to the approval of any permits.
The Board of Water Supply's comments are also attached for your information.

Please call Rona Suzuki of our staff at 527-6076 if you have any questions.

Sincerely,

CHERYL D. SOON
Acting Chief Planning Officer

Attachment

c: The Honorable Jeremy Harris, Mayor
   (Mayor's Control No. 21133)
TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT
FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY
SUBJECT: STATE WATER COMMISSION'S LETTER OF DECEMBER 8, 1994 ON THE WATER USE PERMIT APPLICATION FOR GENTRY DEVELOPMENT CORPORATION CAPROCK WELL NO. 2001-10

Thank you for the opportunity to comment on this permit. We have no objection to the use of water from this well.

If you have any questions, please call Herbert Minakami at 527-6183.

cc: Mayor Jeremy Harris
Mr. Keith Ahue, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Your Letter of December 8, 1994 on the Water Use Permit Application for Gentry Development Corporation Caprock Well No. 2001-10

Thank you for the opportunity to comment on this permit. We have no objection to the use of water from this well.

If you have any questions, please call Herbert Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer

Attachment
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, M.D., Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Donald A. Clegg, Director
Department of Land Utilization

Ms. Cheryl Soon, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation and Water Use Permit Applications, Ewa Caprock Ground Water Management Area, Pualoa, Oahu

Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, or objective specific to your organization or department only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

() We have no comments

() We have no objections

() Comments attached

() Additional information requested

() Extended review period requested

Contact person: Herbert H. Minakami
Phone: 527-6183

Signed: For KAZU HAYASHIDA
Manager and Chief Engineer

Date: 12/04/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Application for Well Construction/Pump Installation and Water Use Permit, Well No. 2001-10
Ewa Caprock Ground Water Management Area
Gentry Development Corporation
TMK: 9-1-10:017

Thank you for the opportunity to review this project. A review of our records shows that there are no known historic sites at this parcel. This area was in sugar cane cultivation for many years. Because sugar cane cultivation would have destroyed any historic sites that might have been present, we believe that this project will have "no effect" on historic sites.

We also believe that construction of Well No. 2001-10 will have "no effect" on historic sites.

EJ:jk
Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

We have no comments.

We have no objections.

Comments attached.

Additional information requested.

Extended review period requested.

Contact person: Lenore Nakama

Phone: 587-0219

Date: 12/12/94
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director  
Commission on Water Resource Management

SUBJECT: Request for Comments  
Well Construction/Pump Installation and Water Use Permit Applications, Ewa Caprock Ground Water Management Area, Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)
Response:

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Contact person:  
Phone:  
Signed:  
Date: DEC 26 1994
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Commission on Water Resource Management
Honolulu, Hawaii

DEC-8 1994

FROM:
Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Well Construction/Pump Installation and Water Use Permit
Applications, Ewa Caprock Ground Water Management Area, Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well
construction/pump installation and water use permits for Gentry Development Corporation for
Well No. 2001-10. Public notice of the water use permit application will be published in the

We would appreciate your review of the attached applications for any conflicts or
inconsistencies with the programs, plans, and objectives specific to your division only. Please
return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at
587-0218.

LN: ss
Attachment(s)
Response:

☒ We have no comments
($) We have no objections
($) Comments attached
($) Additional information requested
($) Extended review period requested

Contact person: Cathy Tilton
Phone: 7-0382

Signed: T. Hikouchi
Date: 12-16-94
TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments
Well Construction/Pump Installation and Water Use Permit
Applications, Ewa Caprock Ground Water Management Area,
Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well
construction/pump installation and water use permits for Gentry Development Corporation for
Well No. 2001-10. Public notice of the water use permit application will be published in the

We would appreciate your review of the attached applications for any conflicts or
inconsistencies with the programs, plans, and objectives specific to your division only. Please
return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at
587-0218.

Response:

( ) We have no comments
☑ We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ___________________________ Phone: ____________

Signed: ___________________________ Date: 12/21/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Well Construction/Pump Installation and Water Use Permit Applications for Gentry Development Corporation for Well No. 2001-10 in the Ewa Caprock Ground Water Management Area, Puuloa, Oahu

The applications involve construction and operation of a well near the Ewa Gentry Development to provide approximately 45,900 gallons of brackish water for landscape irrigation. We have no objections from the aquatic biological resources standpoint.
Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response: 12/14/94

(✓) We have no comments
(✓) We have no objections
() Comments attached
() Additional information requested
() Extended review period requested

Contact person: ___________________________ Phone: 587-0166

Signed: ____________________ Date: 12/14/94
Mr. R.K. Ouye  
Gentry Development Corp.  
P.O. Box 295  
Honolulu, HI 96809

Dear Mr. Ouye:

We acknowledge receipt of your completed applications for a water use permit and a combined well construction/pump installation permit for the proposed Gentry Area 24 Well (Well No. 2001-10).

Enclosed is a copy of the public notice for your water use permit application which will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

Please be aware that there may be objections to your water use permit application. If objections are made, the objector is required to file such objections with the Commission and is also required to send you a copy of the objections.

You, or any other party, may respond to objections by filing a brief in support of your application with the Commission within ten (10) days of the filing of an objection. You, or the other party, must also send a copy of the response to the objector.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

RAE M. LOUI  
Deputy Director

LN:ss  
Encl.

c:  Tom Nance, Tom Nance Water Resource Engineering
TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
FROM: Rae M. Loui, Deputy Director
    Commission on Water Resource Management
SUBJECT: Request for Comments
    Well Construction/Pump Installation and Water Use Permit
    Applications, Ewa Caprock Ground Water Management Area,
    Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well
construction/pump installation and water use permits for Gentry Development Corporation for
Well No. 2001-10. Public notice of the water use permit application will be published in the

We would appreciate your review of the attached applications for any conflicts or
inconsistencies with the programs, plans, and objectives specific to your division only. Please
return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at
587-0218.

LN:ss
Attachment(s)
Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ________________________________ Phone: ______________
Signed: ________________________________ Date: ______________
Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or interferences with the programs, plans, and objectives of the organization or agency that you represent. Written objections should be made in accordance with Section 13-171-18 of our Administrative Rules and must be filed by the January 4, 1995 deadline.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ________________________________ Phone: ________________

Signed: ________________________________ Date: ________________
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, M.D., Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Mr. Donald A. Clegg, Director
Department of Land Utilization

Ms. Cheryl Soon, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation and Water Use Permit Applications, Ewa Caprock Ground Water Management Area, Puuloa, Oahu

Transmitted for your review and comment are copies of applications for well construction/pump installation and water use permits for Gentry Development Corporation for Well No. 2001-10. Public notice of the water use permit application will be published in the Honolulu Star Bulletin issues of December 12, 1994 and December 19, 1994.

We would appreciate your review of the attached applications for any conflicts or inconsistencies with the programs, plans, or objective specific to your organization or department only. Please return this cover memo form by January 4, 1995.

If you have any questions regarding these applications, please contact Lenore Nakama at 587-0218.

Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact person: ____________________________ Phone: ______________

Signed: ____________________________ Date: ______________
Honorable Jeremy Harris  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813  

Dear Mayor Harris:

Notice of an Application for a Water Use Permit  
Ewa Caprock Ground Water Management Area, Puuloa, Oahu

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-171-17(a), we are sending you a copy of the public notice for the water use permit application for Gentry Development Corp. for Well No. 2001-10, which will be published in the Honolulu Star Bulletin.

In addition, Section 13-171-13(b), of our Administrative Rules, states:

"Within sixty days after receipt of notice of a permit application, the county shall inform the commission if the proposed use is inconsistent with the county land use plans and policies."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

KEITH W. AHUE

Enclosures
PUBLIC NOTICE

Applications for Water Use Permits
Groundwater Management Areas, Oahu

The following applications for water use permits have been received and are hereby made public in accordance with Department of Land and Natural Resources Administrative Rules 13-171, "Designation and Regulation of Water Management Areas."

Uwau Tunnel Extension (Well No. 2953-03)
Applicant: Dole Food Company, Inc.
650 Iwilei Road
Honolulu, HI 96817
Date Completed Application Received: November 9, 1994
Aquifer: Waipahu-Waiawa System, Pearl Harbor Sector, Oahu
Water Source: Uwau Tunnel Extension (Well No. 2953-03) at Waipio, Ewa, Oahu, Tax Map Key 9-5-4:1
Quantity Requested: 2,700,000 gallons per day.
Existing Water Use: Agriculture and other irrigation uses
Place of Water Use: Waipio, Ewa, Oahu at multiple Tax Map Keys

Gentry Area 24 (Well No. 2001-10)
Applicant: Gentry Development Corp.
P.O. Box 295
Honolulu, HI 96809
Date Completed Application Received: October 11, 1994
Aquifer: Puuloa System, Ewa Caprock Sector, Oahu
New Water Source: Gentry Area 24 Well (well No. 2001-10) at Ewa By Gentry Development, Oahu, Tax Map Key 9-1-10:17. (An application for a combined well construction/pump installation permit has also been received.)
Quantity Requested: 45,900 gallons per day.
New Water Use: Landscape and roadway irrigation (7.37 acres)
Place of Water Use: Ewa By Gentry Development at Tax Map Key: 9-1-10:17

Written objections or comments on the above applications may be filed by any person who has property interest in any land within the hydrologic unit of the source of water supply, any person who will be directly and immediately affected by the proposed water use, or any other interested person. Written objections shall: (1) state property or other interest in the matter (provide TMK information); (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; and (3) state all grounds for objections to the proposed permit. Written objections must be received by January 4, 1995. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

RAE M. LOUI for
KEITH W. AHUE
Chairperson

Dated: DEC -5 1994

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Commission on Water Resource Management
Honolulu, Hawaii

JUN 21 1994

TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: ____________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________ Date: SEP 6 1994

MANABU TAGOMORI
TO:  
Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  
Dr. Peter A. Sybinsky, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Donald A. Clegg, Director  
Department of Land Utilization  
Robin Foster, Chief Planning Officer  
Planning Department  

FROM:  
Keith W. Ahue, Chairperson  
Commission on Water Resource Management  

SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Attachments

Response:  
Contact person: Darrell Yagodich  
Phone: 586-3837  
Planning Office Administrator  

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested Please refer to attached sheet.  
( ) Extended review period requested  

Signed: Darrell Yagodich  
Date: 7/1/94.
Attachment
Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Haseko (Ewa), Inc., Well No. 1902-01
Gentry Development Co., Well No. 2001-10

Additional information requested:

(1) How does project impact sustainable yield?

(2) How does it conform to an overall strategy for water quality protection for this aquifer?

(3) How does it fit into overall reallocation of land uses over the aquifer?
July 11, 1994

Honorable Keith Ahue, Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Water Use Permit Application
for Gentry Development Co.
Well No. 2001-10

The comments of the Board of Water Supply (BWS) on the subject application are attached.

We have reviewed the subject application and have the following comments to offer:

- The parcels identified as Tax Map Key 9-1-61: 02 and 54 are designated Park/Golf Course & Park on the Ewa Development Plan Land Use Map (DPLUM).

- It is our understanding that water use permits within the Ewa Caprock area have been issued on a temporary basis until plans for alternate non-potable water sources can be developed. We, therefore, recommend that the applicant indicate the status of their plans for alternate sources of non-potable water to the Commission for review prior to the approval of any permits.

Should you have any questions, please call Eugene Takahashi of our staff at 527-6022.

Sincerely,

Robin Foster
Chief Planning Officer

RF:lh

Attachment
July 1, 1994

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
DEPARTMENT OF PLANNING

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: WATER USE PERMIT APPLICATIONS FOR OAHU COUNTRY CLUB WELL NO. 2050-01, HASEKO WELL NO. 1902-01, GENTRY WELL NO. 2001-10, CAMPBELL WELL NO. 4258-09

We have the following comments on water use permits for these wells:

1. Oahu Country Club Well No. 2050-01: The exploratory drilling to develop water from the alluvium and the Nuuanu basalt was unsuccessful. As before, we oppose a water use permit to develop potable water from the basal aquifer for golf course irrigation. We again suggest use of surface water and/or capture of runoff for irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objections to a water use permit for this caprock well.

3. Gentry Development Co. Well No. 2001-10: We do not object to a water use permit for this well except that it should be conditioned on evidence that it does not adversely affect yield or quality of the Department of Parks and Recreation Well No. 2002-13 and Well No. 2002-14.

4. Campbell Estate Well No. 4258-09: We have no objection to a water use permit for this caprock well for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

cc: Mayor Frank F. Fasi
Thank you for the opportunity to review this project. A review of our records shows that there are no known historic sites at this parcel. This area was in sugar cane cultivation for many years. Because sugar cane cultivation would have destroyed any historic sites that might have been present, we believe that this project will have "no effect" on historic sites.
Mr. Keith Ahue, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Water Use Permits for Oahu Country Club Well No. 2051-01, Haseko Well No. 1902-01, Gentry Well Nos. and Campbell Estate Well No. 4258-09

We have the following comments on applications for water use permits for these wells and return the covers appropriately marked and signed:

1. Oahu Country Club Well No. 2051-01: The exploratory well was unsuccessful in development of sufficient water from the alluvium and the Nuuanu basalt. As before, we oppose a water use permit for tapping into the Koolau aquifer and use of potable water for golf course irrigation. We again suggest use of surface water and/or capture of runoff for golf course irrigation.

2. Haseko Inc. Well No. 1902-01: We have no objection to a water use permit for this caprock well.

3. Gentry Development Co. Well No. 2001-01: We do not object to a water use permit for this caprock well except that it should be conditioned on evidence there will be no adverse impact on the quality and quantity of water from the Department of Parks and Recreation Well Nos. 2002-13 and 14.

4. Campbell Estate Well No. 4258-09: We have no objection to a water use permit for this caprock well used for aquaculture.

If you have any questions, please call Herbert H. Minakami at 527-6183.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer
TO: Mrs. Hoaliku L. Drake, Director  
Department of Hawaiian Home Lands  
Dr. Peter A. Sybinsky, Director  
Department of Health  
Mr. Clayton H. W. Hee, Chairperson  
Office of Hawaiian Affairs  
Mr. Kazu Hayashida, Manager & Chief Engineer  
Honolulu Board of Water Supply  
Donald A. Clegg, Director  
Department of Land Utilization  
Robin Foster, Chief Planning Officer  
Planning Department  
FROM: Keith W. Ahue, Chairperson  
Commission on Water Resource Management  
SUBJECT: Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

Attachments

Response: Contact person: Herbert H. Minakami  
Phone: 527-6183

( ) We have no comments  
( ) We have no objections  
(✓) Comments attached (Board of Water Supply's 7/5/94 letter.)  
( ) Additional information requested  
( ) Extended review period requested

Signed:  
Kazu Hayashida  
Manager and Chief Engineer  
Date: 7/5/94
TO: Mrs. Hoaliku L. Drake, Director
    Department of Hawaiian Home Lands

Dr. Peter A. Sybinsky, Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Kazu Hayashida, Manager & Chief Engineer
Honolulu Board of Water Supply

Donald A. Clegg, Director
Department of Land Utilization

Robin Foster, Chief Planning Officer
Planning Department

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit
application for Gentry Development Co. for Well No. 2001-10. Public notice of this
application will be published in the Honolulu Star Bulletin issues of June 15, 1994
and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return
this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore
Nakama at 587-0218.

Attachments

Response: Contact person: Bill Wong Phone: 516-4258

We have no comments
() We have no objections
() Comments attached
() Additional information requested
() Extended review period requested

Signed: Bill Wong Date: 7/11/94
TO: Aquatic Resources  
| Forestry and Wildlife/Natural Area Reserve System  
| Historic Preservation  
| Land Management  
| Office of Conservation and Environmental Affairs  
| State Parks  
| Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
| Water Use Permit Application  
| Puuola Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Wayne Chung Phone: 587-0166

( ) We have no comments
X ( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: MICHAEL G. BUCK  Date: 7/6/94
Administrator
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Commission on Water Resource Management  
Honolulu, Hawaii  
JUN 21 1994

TO:  
Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN: ky

Attachments

Response:  
Contact person:  
Phone:  
We have no comments
() We have no objections
() Comments attached
() Additional information requested
() Extended review period requested

Signed:  
Date:
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Commission on Water Resource Management  
Honolulu, Hawaii  

JUN 21 1994

TO:  
Aquatic Resources  
✓Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response:  
Contact person: ___________________ Phone: ___________________

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed: ___________________ Date: 6/29/94
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Henry Sakuda, Administrator
Division of Aquatic Resources

SUBJECT: Comments on Water Use Permit Application by Gentry Development Co. for Well No. 2001-10 in the Puuloa Ground Water Management Area, Oahu

The application involves installation of a new well to pump 238,000 gallons of brackish caprock water per day from a well located near the old Ewa sugar mill for golf course irrigation. We have no objections from the aquatic biological resources standpoint.
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
Office of Conservation and Environmental Affairs  
State Parks  
Water and Land Development

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Gentry Development Co. for Well No. 2001-10. Public notice of this application will be published in the Honolulu Star Bulletin issues of June 15, 1994 and June 22, 1994 see attached.

We would appreciate your review of the attached application and please return this cover memo form by July 7, 1994.

If you have any questions regarding this application, please contact Lenore Nakama at 587-0218.

LN:ky

Attachments

Response: Contact person: Steve Tagawa  Phone: 587-0385

( ) We have no comments  
( ) We have no objections

( ) Comments attached

( ) Additional information requested

( ) Extended review period requested

Signed: OCSD  Date: 6/24/94
Mr. Keith Ahue  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii  96809

Dear Mr. Ahue:

Water Use, Well Construction and Pump Installation Permit Applications for Gentry's Area 24 Irrigation Well in the Ewa Limestone Aquifer

On behalf of the Gentry Development Company, I am pleased to submit the enclosed Water Use, Well Construction, and Pump Installation permit applications and $50 filing fee for an irrigation well in Ewa by Gentry. The water would be used for landscape irrigation within Areas 23 and 24. These are multi-family projects which will be under construction shortly.

If you have any questions or require additional information, feel free to call Randolph Ouye at Gentry Development Company (599-8285) or me. Thank you for your attention to this matter.

Sincerely,

Tom Nance

cc: Randolph Ouye

Enclosures
APPLICATION FOR WATER USE PERMIT

94-14

9-21-94

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

APPLICATION FOR WATER USE PERMIT

PERMITTEE INFORMATION

1. (a) APPLICANT
   Firm/Name: Gentry Development Company
   Contact Person: R. K. Ouye
   Address: P. O. Box 295
   Honolulu, HI 96809

(b) LANDOWNER OF SOURCE
   Firm/Name: Gentry Development Company
   Contact Person: R. K. Ouye
   Address: P. O. Box 295
   Honolulu, HI 96809

SOURCE INFORMATION

2. WATER MANAGEMENT AREA:
   Pearl Harbor Management Area
   (Ewa Caprock)
   ISLAND: Oahu

3. (a) EXISTING WELL/DIVERSION NAME AND STATE NUMBER:
   (b) Proposed NEW WELL/DIVERSION NAME:
   Location: In Ewa by Gentry Development
   Tax Map Key: 9-1-10:17
   (Attach a USGS map, scale 1'' = 2000", and a property tax map showing source location referenced to established property boundaries.

4. LOCATION OF PROPOSED WATER USE:
   (a) Proposed use of water is:
   Existing New
   (b) Tax Map Key: ____________
   If location of use is over multiple TMAs, please complete Table 1 on back of application.
   (c) Address:
   (d) Current Land Use District (check one):
   Urban Agriculture
   Conservation Rural
   (e) Current County Zoning Code:

5. QUANTITY OF WATER REQUESTED:
   45,900 gallons per day

6. METHOD OF MEASUREMENT:
   Flowmeter Open-pipe
   Weir Office
   Other (explain)

7. QUALITY OF WATER REQUESTED:
   □ Fresh□ Brackish□ Salt□ Potable
   □ Non-Potable
   □ Other (explain)

8. PROPOSED USE:
   □ Municipal (including hotels, stores, etc.)
   □ Industrial
   □ Non-Potable
   □ Other (explain)
   □ Individual Domestic
   □ Military
   □ Irrigation
   □ Other (explain)

For questions 12 & 13: If multiple TMAs are involved, please complete Table 1 on back of application.

11. TOTAL NUMBER OF RESIDENCES TO BE SERVED:

12. TOTAL ACRES TO BE IRRIGATED AND TYPE OF CROP:
   (acres) 7.37 Acs. of Landscaped Area & Roadway
   (crop) Landscaping
   During Nightly Irrigation Cycle
   (daytime hours of operation, ex. 7 a.m. to 2 p.m.)

13. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION:

14. APPLICANT MUST BRIEFLY DESCRIBE FOLLOWING POTENTIAL RESTRICTIONS ON WATER USE:
   (a) Impact on Sustainable yield (?):
   (b) Instream Flow Standards affected (?):
   (c) Hawaiian Home Lands use affected (?):
   (d) Other existing legal uses affected (?):
   (e) Other (pending permits, EIS, etc.): (?)

15. REMARKS, EXPLANATIONS:
   The quantity of water requested is based on the landscape architects, Brownlie & Lee, estimate.

For Official Use Only:

Date Received Date Accepted
Date Accepted
Date

Hydrologic Unit No.

Landowner Signature
Landowner Address

4/13/93 WUPA Form
### TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TMK</th>
<th>CURRENT COUNTY ZONING CODE</th>
<th>NET ACRES</th>
<th>GPD/ACRE</th>
<th>TOTAL GPD</th>
<th>% OF TOTAL TO BE USED OVER NEXT 4 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentry Area 24</td>
<td>9-1-10:17</td>
<td>A-1</td>
<td>3.33</td>
<td>6,216</td>
<td>20,700</td>
<td>100</td>
</tr>
<tr>
<td>Gentry Area 23</td>
<td>9-1-10:17</td>
<td>A-1</td>
<td>4.04</td>
<td>6,237</td>
<td>25,200</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>7.37</strong></td>
<td></td>
<td><strong>45,900</strong></td>
<td></td>
</tr>
</tbody>
</table>
WATER USE PERMIT NO. 799

This report has been prepared in accordance with 13-171-22(b) of the Hawaii Revised Statutes requiring a 20-year review of issued water use permits to determine permit compliance. Following is a summary of permit information, site characteristics, methodology, findings, and recommendations for this State permit file.

Permit Information

Water User: AOAO Suncrest/Shores/Lombard/Avalon
Landowner of Source: AOAO Suncrest/Shores/Lombard/Avalon
Permitted Withdrawal Rate: 0.22 mgd (Based upon a 12-month moving average)
Water Management Area: Puuloa
Island: Oahu
Aquifer Sector/System: Ewa Caprock/Puuloa
System Sustainable Yield: 1000 mg/l
Water Type: Brackish
Original CWRM Date: July 12th, 2006
Standard Conditions: 1-19
Special Conditions: 1-2, 38, 40-44

Water Source

State Well Number(s): 2001-10
Well Name: Gentry Area 24
Water Source TMK Number(s): 1st Division, 9-1-102:022
State Land Use Classification(s): Urban
County Zoning Classification(s): A-1
Geographical Coordinates: Latitude 21° 20' 25.4” North
Longitude 158° 01’ 10.1” West

End Use

End Use TMK Number(s): 1st Division, 9-1-102:Various
State Land Use Classification(s): Urban
County Zoning Classification(s): A-1
Beneficial Use Explanation: Use for irrigation of 7.37 acres of landscape and roadway

Background Information

State Well No. 2001-10 was originally governed by Water Use Permit 629, which was issued to AOAO Suncrest/Shores/Lombard/Avalon on August 28th, 2002 with an interim status. In 2006, Water Use Permit 629 was superseded by Water Use Permit 799, which transferred the permit from an interim to a permanent status.

Consistent water use reporting records are available up until late 2006. However, at the approximate time of the aforementioned permit transfer, water use reporting has been halted. Chloride records are completely absent from the reporting database. Reference the permit file for additional information on reporting history.

Water Use Permit 799 was approved during the July 12th, 2006 Commission on Water Resource Management meeting. Standard conditions 1-19 and special conditions 1-2, 38, & 40-44 are the governing conditions for this water use permit. A complete list of all standard and special conditions is given in the permit file.

Field Investigation Information

Contact: Ray Hinchman
Site Address: Laupai St.
Ewa Beach, HI 96706

Brown and Caldwell conducted a field investigation on July 29th, 2008 from 10:00 a.m. until 10:30 a.m. with Mr. Ray Hinchman. During this time, type of water usage was verified, GPS coordinates of well head(s) were recorded, flow meter installation and functionality were documented, and property TMK information was verified. The wellhead, its related appurtenances, and water usage area were visually inspected to assess compliance with permit conditions. Visual inspection of water loss/waste was limited to outdoor areas within the usage boundary. Reference the TMK and GIS maps in the permit file for a visual representation of the site.

Summary of Findings for Water Use Permit No. 799

State Well No. 2001-10 is located on TMK parcel 9-1-102:022 at 21° 20' 25.4” N, 158° 01’ 10.1” N, with a real time accuracy of ±12 feet. The well is located in a sub-grade chamber on the Makai side of Laupai Street along with pressure tanks, the flowmeter, and other related
appurtenances. Water is drawn from the well via submersible pump, metered at the site, and conveyed through two small pressure tanks. From the tanks, the water is distributed into the central irrigation system that waters approximately seven acres of landscape and roadway. Reference the Appendix for photographs of the previously described system components.

The following are a list of standard condition(s) that the permittee is found to be in non-compliance with:

(10) An approved flowmeter must be installed to measure monthly withdrawals and a month record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis.

Although the permittee had been reporting water use in the past, records have not been available since late 2006. Furthermore, no salinity level reporting records are on file. As such, the permittee is in violation of Standard Condition (10).

Based upon visual inspection of the system, all components appear to be in full working order. The permittee demonstrated functionality of an installed flowmeter and provided access to the site grounds where no wasting of water or water loss was observed. Upon review, however, it was found that the end use TMK parcel numbers given in the permit database do not match the actual end use location. This, along with the fact that the permittee is not submitting reports of water use and salinity levels to the Commission, prevents the permittee from achieving complete permit compliance.

Recommendations

- Address the following discrepancies between the Commission's electronic database and actual field investigation findings:
  - Water source and end use TMK parcel numbers
- Address violation of Standard Condition (10) regarding non-reporting of water use and salinity levels
- Address issue of use on non-permitted TMK parcels
20-Year Water Use Permit Review
Water Use Permit No. 799

APPENDIX

Field Investigation Photographs
Figure 1 – State Well No. 2001-10

Figure 2 – Functional system flowmeter
Figure 3 – Pressure tanks

Figure 4 – System controls
Figure 5 – Sub-grade well chamber location

Figure 6 – Typical end use location
Standard Conditions List

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means “the use of water in such a quantity as is necessary for economic and efficient utilization, which is both reasonable and consistent with State and County land use plans and the public interest.” (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in Section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its <Insert Date> meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

Variations of Standard Condition (8) are as follows:

i. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.
9. This permit may be modified by the Commission and the amount of water initially
granted to the permittee may be reduced if the Commission determines it is
necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as
      of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if
      applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the
      Commission’s police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action
to the permittee and provide the permittee an opportunity to be heard

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a
monthly record of withdrawals, salinity, temperature, and pumping times must be
kept and reported to the Commission on Water Resource Management on forms
provided by the Commission on a monthly basis (attached).

Variations of Standard Condition (10) are as follows:
   i. The applicant shall keep monthly pumpage estimates to be submitted
      annually to the Commission.
   ii. An approved flowmeter(s) need not be installed to measure monthly
      withdrawals and a monthly record of withdrawals, salinity, temperature, and
      pumping times must be kept and reported to the Commission on Water
      Resource Management on forms provided by the Commission on a yearly
      basis (attached).
   iii. An approved flowmeter(s) must be installed to measure withdrawals and a
      monthly record of withdrawals, water-levels, salinity, and temperature must
      be kept and reported to the Commission on a monthly basis in accordance
      with the Commission's September 16, 1992 action on reporting
      requirements.
   iv. Approved flowmeters must be installed to measure monthly withdrawals
      and a monthly record of withdrawals must be kept and reported to the
      Commission on Water Resource Management on a monthly basis.
   v. An approved flowmeter(s) must be installed to measure monthly
      withdrawals and a monthly record of withdrawals, salinity, temperature, and
      pumping times must be kept and reported to the Commission on Water
      Resource Management on forms provided by the Commission on a
      quarterly/yearly basis (attached).
   vi. An approved flowmeter shall be installed to measure water withdrawals
   vii. An approved flowmeter(s) must be installed to measure withdrawals; and a
        record of the withdrawals must be kept and reported to the Department of
Land and Natural Resources, Division of Water and Land Development,
P.O. Box 373, Honolulu, HI 96809, on a monthly basis.

viii. Although not stated as a condition of the permit § 13-168-7 HAR requires you to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form.

ix. An approved flowmeter shall be installed and the withdrawal from Well 1851-73 shall be recorded and reported to DLNR on a monthly basis by the owner and/or operator of the well.

x. The withdrawals from these wells shall be recorded and reported to the DLNR on a monthly basis by the BWS.

xi. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting water usage on a monthly basis.

xii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

xiii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission along with water level and salinity measurements.

11. This permit shall be subject to the Commission's periodic review of the <Aquifer> Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the <Aquifer> Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The uses(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservations, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter
into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period or forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the <Aquifer>Ground-Water Management Area.

17. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter or attached exhibits are incorporated herein by reference.

20. If the ground-water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

Variations of Standard Condition (20) are as follows:
   i. The permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within two years from the date of permit issuance.

21. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of Chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

22. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five (5) years of the filing of the application to continue the existing use.

23. The water use permit shall be issued only after agricultural review.

24. That scheduled adjustments to Oahu Sugar Co. permitted use shall be initiated upon discontinuance of agricultural uses.
25. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on <Insert Date>.

26. The permit shall be subject to the review by the Attorney General.

27. The permit holder may be required to relinquish this permit at any time or specified time after issuance to the Board of Land and Natural Resources in accordance with Chapter 166 of Title 13.

28. The applicant shall obtain the necessary land acquisition documents from the Hawaii Housing Authority.
Special Conditions List

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.

2. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

3. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning “GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII” date <Insert Date & Version #>.

4. Standard Condition 10 is emphasized, to report consumption on a regular basis.

5. The applicant may continue this existing use of ground water within the limits approved by the Commission, and the actual issuance of the interim permit shall not be a reason to interrupt this existing use.

6. This interim water use permit shall cease to become interim and shall be subject to HRS § 174C-55 upon administrative review of the quantity within five (5) years, provided that all conditions of the use (including the review of the quantity which shall not be greater than the amount initially granted) remain the same. Enforcement of the allocation limit shall be stayed pending staff's review and issuance of a permanent water use permit.

7. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days.

8. In the event the pump tests show that aquifer boundary conditions do not support the requested withdrawals, the Commission reserves the right to amend this permit, after a hearing, to a level that is supported by the pump tests.

9. The existing use may be continued within the levels approved by the Commission, and the actual issuance of the permit document shall not be a reason to interrupt the approved level of use.

10. The filing of an application by Kukui, Inc. for a new or modified water use permit for the Kualapuu Aquifer in excess of 2.0 mgd (total system withdrawal) shall be just cause for re-consideration of this interim permit by the Commission.

11. Upon completion of a new transmission line for the transport of water use by Well #17, the permit shall be modified to reduce the allocation amount by the additional 79,220 gallons per day allocated for use of the Molokai Irrigation System.

12. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall conduct a feasibility study and submit a report describing
alternative sources of nonpotable water for irrigation uses at the resort area. It is suggested that the developer consider use of dual lines in the subdivisions so that effluent may be used in the existing reuse system. Another consideration is the development of brackish water wells in the Kaluakoi Aquifer system for mixing with the effluent generated at the resort.

13. Within six (6) months from the date of approval of a water use permit for the well, the application shall evaluate the filter back discharges into Kakaako Gulch to determine if excessive preventable waste is occurring and identify possible measures to eliminate or reduce such waste. The evaluation shall be conducted in cooperation with the Commission staff and staff of the Department of Health's Safe Drinking Water Branch, which regulates the drinking water system.

14. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall 1) implement a leakage control and detection system and compete repairs to prevent such leakage and 2) implement use of xeriscaping and low-flow fixtures.

15. Action on the future use portion of the water use permit application for Well #17 (Well No. 0901-01) is deferred pending the establishment of existing uses in the aquifer. Kukui Inc.'s application for uses in excess of those uses existing on July 15, 1992 will be considered "new" uses and will be taken up by the Commission as soon as other existing use applications have been decided. In the interim, a. The Commission shall recognize that there is disagreement between the applicant's staff calculations of reasonable-beneficial existing use b. The Applicant will have the burden of proof to show within six (6) months reasonable-beneficial existing use calculations that support the applicant's request as opposed to staff's calculations.
   c. The Commission's enforcement of the approved existing use allocation will be suspended for six (6) months.

16. The permittee shall submit a notice of intent and written request to continue the use at least ninety (90) days prior to the expiration of the interim five-year permit.

17. The Commission shall delegate to Maui Department of Water Supply the authority to allocate the use of water for municipal purposes, as provided in §174C-48(b).

18. Maui Department of Water Supply shall be exempt from the requirements for permit modifications, as provided in §174C-57(c).

19. The permittee must meter water use and monitor chloride concentrations on a monthly basis and submit monthly reports of water use and chloride concentrations to the Commission.

20. Standard Condition 16 is waived for saltwater wells.

21. The permit will be revoked if (1) stream monitoring shows that pumping the well reduces stream flow, or (2) the electromagnetic resistivity survey indicates that the
well was drilled into a dike compartment, unless the applicant submits a petition for an amendment to the interim instream flow standard with the well completion report. However, no use of the water may be made without a Pump Installation Permit, which cannot be issued during consideration of the amendment of the interim instream flow standard.

22. The applicant shall present the results of the electromagnetic resistivity survey, pump tests, and stream monitoring to a community meeting as well as to the Commission.

23. A final determination of water use quantity shall be made within five (5) years of the filing date of the application (<Insert Date>) to continue existing use.

24. The applicant shall implement, by December 31, 1995, a biological and hydraulic monitoring program for a minimum 2-year period that: 1) documents the existing operating procedure, 2) seeks to identify the impacts of all operating alternatives on Waikolu Stream, and 3) seeks to identify the effectiveness of weir modifications (Dam No. 1). This program shall incorporate the three new wells, Wells #4-6 (Well Nos. 0855-06, -05, &-04, respectively), which may be pumped within the approved limits, for monitoring and testing purposes only. Further, semi-annual reports summarizing data and preliminary findings shall be submitted to the Commission. It is suggested that the Department of Agriculture work with the State Division of Aquatic Resources and other affected agencies to prepare the monitoring program in light of the difficult technical questions raised by this application. A particular concern is the coordination of this monitoring program with the ongoing National Park Service study by Anne Brasher. A draft of this plan shall be submitted to the Commission staff within ninety (90) days for technical review and comment. Results of the monitoring program shall be used to make recommendations to the Commission on any additional use of the wells, and shall be made readily available to all interested parties.

25. That the Commission approves the well construction permit for the Kamiloloa-Waiola Well (Well No. 0759-01), subject to the standard well construction conditions and the special conditions for the pumping well for the aquifer tests.

26. That the Commission authorizes the Chairperson to approve and issue a pump installation permit upon acceptance of adequate pump test result, subject to the standard pump installation conditions.

27. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

28. The applicant shall follow the agreed monitoring plan.

29. If pesticides used by the applicant are found in ground or surface water and can be traced to the applicant's use, the CWRM may revoke the permit immediately upon such finding.
30. Issuance of the interim permit shall be withheld until the reservation of water for DHHL is set by rule. Applicant may continue this existing use within the approved limits.

31. The applicant shall submit well modification and pump installation permit applications for administrative approval by chairperson prior to beginning any work required to complete well.

32. Should any stream flow impacts result from use, petition to amend interim instream flow standards shall be submitted.

33. Should any dewatering result from use, pumping shall cease immediately.

34. Shall submit accurate schematic diagram of distribution system for the battery of 5 wells.

35. Shall be subject to a 6-month independent audit & monitoring.

36. Final pump capacity shall be determined from pump test results & approved administratively by signature of chair.

37. The permittee shall seek and submit to the Commission within ninety (90) days written confirmation from the Department of Land Utilization of the non-conforming use.

38. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the chairperson.

39. The duration of the interim permit shall be:
   a. To July 1, 2006, or
   b. Until treated wastewater is available and acceptable for use, or
   c. Until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

40. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

41. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

42. Require adherence to the chloride sampling protocol and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

43. Require adherence to the Conservation Conditions.
44. In the event a water shortage is declared by the Commission, permittees in the <Insert Aquifer System> shall comply with the <Insert Aquifer System> water shortage plan adopted by the Commission.

45. The permittee shall contact the Department of Health, Clean Water Branch and obtain the necessary discharge permit(s).

46. Permit shall be interim and replaces existing WUP for 2051-07 & 11.

47. Applicant shall submit an acceptable archaeological inventory survey report to DHP. If historic sites affected, a plan to mitigate these affects must be accepted by DHP and completed by applicant.

48. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

49. (The permittee) may report monthly pumpage on yearly basis.

50. Prior to issuance of any permits, must submit filing fee for after-the-fact pump installation permit.

51. The term of this permit shall be twenty years from the date of issuance of the permit with a five-year Board review to determine compliance with the provisions of the permit.

52. The amount of water to be withdrawn under this permit shall be 0.19 mgd, averaged annually, for irrigation use. This permitted use of 0.19 mgd when added to a preserved use of 0.27 mgd amounts to a total of 0.46 mgd, averaged annually, which may be withdrawn from well 1646-01.

53. The use authorized by the permit must not interfered substantially and materially with existing individual household uses and existing uses.

54. The use of this well shall be subject to the shortage and emergency powers of the Board of Land and Natural Resources (BLNR).

55. This permit may be suspended or revoked, in accordance with Chapter 166.

56. The permit holder may be required to relinquish this permit to BLNR, in accordance with Chapter 166

57. The withdrawal from Well 1646-10 shall be recorded and reported to DLNR on a monthly basis by the permittee.

58. In the event that emergency water use occurs, the permittee shall notify the Commission in writing within one (1) day of pumping, to in form the Commission as to the nature of the emergency and the expected duration of the emergency. A water
use report shall also be filed pursuant to Standard Condition 10 and Administrative Rule 13-168-7.

59. Note DOH's requirements related to non-potable water systems (attached to original permit).

60. Standard Condition 16 requiring the submittal of a water shortage plan is waived.

61. All non-potable spigots and piping shall be clearly labeled as “DO NOT DRINK, NON-POTABLE” to prevent direct human consumption.

62. Standard Condition 10 is modified. Due to the inability to take water level measurements, the requirement to measure monthly water levels is waived. In addition, as long as the U.S. Geological Survey is collecting and analyzing the chloride content of the well water, the requirement for the permittee to measure and report chlorides is also waived.

63. Well elevation components must be surveyed by a licensed surveyor and this information must be submitted to commission prior to issuance of permanent permit.

64. The permittee shall obtain approvals from the Department of Health and the U.S. Environmental Protection Agency prior to use of the water.

65. This water use permit, WUP No. <Insert #>, shall supersede WUP No. <Insert #>.

66. WUP No. <Insert #> is revoked

67. Standard Condition 17 is waived.

68. Standard Condition 22 for interim water use permits shall not apply.

69. To supplement our records, we request that you provide a map of the Galbraith Est. lands west of Wahiawa (2100 ac+) and the associated TMK's for use area.

70. Deferred action on portion requested for golf course irrigation pending further refinement of irrigation requirement and a feasibility study for utilization of surface water sources, including Wahiawa Reservoir.

71. Written justification be provided for any 'cushion' of 0.5 mgd.

72. The water use permit shall be an interim permit. The duration of the interim permit shall be until treated wastewater is available and acceptable for use. The permittee shall continue discussions with Honolulu Board of Water Supply regarding the use of reclaimed water.

73. The permittee is put on notice that this is a qualified approval in that this permit may be modified or revoked prior to the expiration of the interim permit if the
Commission decides that the use of additional basal ground water for dust control and landscape irrigation is not reasonable-beneficial use.

74. The permittee encouraged to use drought-tolerant landscaping to conserve water.

75. Should the applicant provide written evidence that the county DHCD approves a 201E exemption for the elderly affordable housing project then the applicant may modify a corresponding portion of their existing aquacultural use to be used by the exemption approved project within the Commission approved water use permit limits under recommendation 5.

76. The applicant shall obtain a water lease/permit from Land Division prior to actual use of the well water.

77. Require the permittee to sign a contract by May 14, 1998 with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20, and 1901-03.

78. Standard Condition 9 is waived.

79. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

80. Standard Condition 10 is waived.

81. Applicant must seek a determination from BLNR and Land Mgt Div as to whether water license required. If required, license must be obtained prior to issuance of permit. If not, permit will be issued w/out further action.

82. Commission defers action on use in excess of 452,000 gpd pending additional info from BWS and further staff analysis.

83. The permit shall be subject to the Commission’s sustainable yield review by December 1990.

84. The Commission shall delegate to the Honolulu Board of Water Supply the authority to allocate the use of water for municipal purposes, in accordance with §174C-48(b) HRS.

85. Honolulu Board of Water Supply shall be exempt from the requirements of permit modifications as provided in §174C-57.

86. BWS must participate in discussions, to be coordinated by Commission Staff, regarding a monitoring program to address impacts to Kaneohe Bay water quality, prior to any action on applications for future municipal uses.

87. A pump installation permit application must be made and approved prior to the installation of a permanent pump.
88. The water withdrawn shall be 0.7 mgd for municipal use.

89. The installed pump capacity of the well shall not be more than 700 gpm or 1.01 mgd.

90. The term of permit shall automatically expire twelve months from the date of issuance.

91. The Honolulu Board of Water Supply may continue to submit monthly water data on their own form, provided that the data are submitted in a format that is acceptable to the Commission staff.

92. Standard Condition 7 shall not apply.

93. Standard Condition 22 shall not apply.

94. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

95. This permit shall be subject to conditions providing for stream restoration if the Commission determines that additional water should be returned to the streams.

96. HECO 1 mgd for industrial use

97. Campbell Estate 1 mgd for municipal use through BWS, by separate agreement with HECO

98. BWS 1 mgd for municipal use.

99. The permit shall be subject to the Commission’s sustainable yield review by <Insert Date>.

100. The applicant shall obtain the current version of the Department of Health’s Guidelines Applicable to Golf Courses in Hawaii. Where relevant and viable, items of the guidelines should be implemented and sustained appropriately. To obtain the current version, contact the Safe Drinking Water Branch, Environmental Management Division at 808-586-4258 (Honolulu).

101. The future use portion of the application shall be deferred until existing uses in the Koolauloa area are established.

102. The water to be withdrawn under this permit shall be a total of 0.03 mgd (0.02 mgd preserved plus an additional 0.01 mgd permitted use), averaged annually, for domestic and irrigation use.

103. Existing well 1851-09 shall be properly sealed by a licensed drilling contractor. A well modification permit application, enclosed, shall be submitted to the Department for approval of the well sealing. A filing fee for sealing the well will not be required.
104. The permittee is required to test the source using a certified private laboratory and submit the test results to the Commission within three (3) months. The Commission will then forward the results to the Department of Health for their review. The Department of Health recommends that the well be routinely tested for microbiological and chemical parameters thereafter.

105. The permittee is required to submit a completed Registration of Well and Declaration of Water use by <Insert Date>.

106. The permittee shall contact the Department of Health for a written determination on the status of their water system and comply with any Department of Health requirements for monitoring and testing.

107. In the event that the original spring source decontaminates, the new well authorized will be shut down.

108. That within each aquifer the total permitted use shall not exceed the sustainable yield.

109. That any water available for allocation shall be for in-district use.

110. That scheduled reductions to Oahu Sugar Co. permitted use shall be initiated upon final termination of an Osco lease or sub-lease, whichever occurs later.

111. That permits for water use issued in accordance with the proposed schedule shall be interim permits subject to review and adjustment by 1995.

112. That the permit shall be an interim permit for a new use which is afforded to existing users as specified in §13-171-20.

113. That the original allocation of 0.200 mgd shall be taken to hearing for possible revocation at a later date to complete the transfer of the water use permit entirely to Well No. 3407-02. This revocation would reduce the current allocation afforded to the Kunihiro Well (Well No. 3406-06) to zero.

114. This allocation incorporates the unspecified domestic needs of the applicant and therefore necessitates a single meter be installed at the well.

115. Should any impacts to nearby wells or streams be established by the use of this well, the applicant shall address these issues to the satisfaction of the Commission.

116. If an economically feasible nonpotable source is identified, the applicant shall convert to the alternative nonpotable source.

117. The permit shall be subject to the Chairperson’s approval of a water use plan recommending possible measures to prevent or minimize saltwater contamination and establish courses of action to follow should the aquifer become to saline to use.
118. Permittee shall provide the necessary end-use information on the 10th residence to allow regulation of the use under Chapter 174C.

119. Standard Conditions 10 & 18 shall not apply.

120. Standard Condition 10 is modified to exempt the permittee from the requirement to install a flowmeter. Salt water withdrawals may instead be estimated based on pumping capacity and run time.

121. The applicant shall review the existing year long period of pumpage and streamflow data and provide analysis on ground and surface water interaction. Deadline is January 25, 1994.

122. The water use permit for Well Nos. 2301-27 to -32 for 0.75 mgd (WUP No. 419) shall be revoked upon issuance of a pump installation permit for the well.

123. The permittee shall use mulching to decrease evaporative losses and manage irrigation scheduling to minimize water demand.

124. The permittee shall submit a detailed agricultural plan to support any future water use permit application for increased agricultural use at this parcel.

125. If not already obtained, the permittee shall seek and obtain any necessary permits from the Department of Health for the proposed discharge to Malaekahana Stream.

126. Standard Condition 10 is modified to waive the requirement for installing a water meter on Well Nos. 2358-21, 22, and 29. The permittee shall install a water meter on Well No. 2358-26 to measure total monthly flow through the discharge line. This quantity should then be assumed to be the rate of natural flow from the other three wells for monthly reporting purposes.

127. The permit shall be effective upon submittal of documentation by Navy that it has met the DOH requirements for a public system.

128. This WUP shall be subject to Army's application for a WUP to reduce the permitted use of the Army's Schofield Shaft (2901-02 to 04, 10) by 0.208 mgd to a new total of 5.648 mgd. The Army's application shall be submitted within 60 days after the approval of this WUP or this WUP shall be void. Approval of the modification request shall be obtained from the CWRM prior to use of Well No. 3100-02 and issuance of this WUP.

129. Navy shall submit an after-the-fact PIPA, and approval of the permit shall be obtained prior to use of the well.

130. The well shall not be used for drinking water purposes unless it is properly tested and treated.
131. This permit is approved subject to reclaimed water becoming a practical alternative and provided that the Department of Health approves the reuse application.

132. Should any opae ula be recovered in the well water, the permittee shall notify the Division of Aquatic Resources and provide specimens to the Division of Aquatic Resources for analysis.

133. If a single meter at the well is used, the Commission shall allow an additional 1,000 gallons per day to the water use permit amount for the domestic needs of two residences, although a permit for individual domestic consumption is not required. Otherwise, the applicant must provide a meter to separately measure the irrigation consumption.

134. This permit is approved under the requirement that conversion to either: 1) treated wastewater becoming available for reuse as an alternative supply source, provided that Department of Health concerns over the use of treated effluent over the potable water aquifer have been addressed; and/or 2) other nonpotable source becoming available will occur in a timely manner.

135. These permits shall be subject to a review of actual use within four years for possible modification of the permitted amount.

136. The permit shall be reviewed in two (2) years for possible additional revocation due to nonuse.

137. The allocation is based on the projects listed in Exhibit 5 (of Item 10 of the May 20, 1998 Staff Submittal), except for the Queen's Beach GC (TMK 139-11-2,3), Lot 9 (TMK 139-17-51), and Varsity Place (TMK 128-24-35).

138. Kamehameha Schools Bishop Estate/Honolulu Board of Water Supply shall transfer the water use permit within ninety (90) days of the effective date of the transfer of the pump station to the Honolulu Board of Water Supply, pursuant to §174C-59 Hawaii Revised Statutes.

139. The permittee shall ensure that the water is recycled by either directing it into the Waiahole Ditch for use by downstream farmers (subject to the approval of the Agribusiness Development Corporation's Board) or into Waiekele Farm's existing irrigation system.

140. The permittee shall file a completed application to modify WUP No. 758 to reduce the allocation by 0.100 mgd within 60 days. If a completed water use permit modification application is not received within 60 days from this submittal's date, then the subject water use permit application (WUPA No. 767) shall be deemed denied without prejudice without the need for another hearing.

141. The water withdrawn shall be for municipal use. No improvements to the existing sources are required as the existing source capacities are greater than the increase.
142. Water license must be determined through LM.

143. Proposed other uses will be considered at a later date.
Water Use Permit Survey
(Please complete one survey form for each WUP)

WUP Number: 799 Well Number(s): 2021-10

Contact Information (of the person who will be present at site visit):
Name: Ray Hitchman of R&J Services
Phone (for phone interview): 306-3054 Fax: ___________
Email: ray.hitchman@randjservices.com
Best time to reach for phone interview: 8am to 4pm

Property Information (of the water use/well location):
Address: Laupahoehoe Street
City: Hilo Beach Zip: 96720
Well Location TMK (list all if multiple wells present):
Water Use TMK (list all if used on multiple lots):

Water Use/Well Information:
Is the water source currently in use? Yes ☒ No ☐
If no, please explain: ____________________________

What are you currently using the water for? (example: "Use for 45 acres of diversified agriculture and 3 residences"): Irrigation of

Is a flow meter installed and working properly? Yes ☒ No ☐
If no, please explain: ____________________________

Do you submit monthly water use reports to the State? Yes ☒ No ☐ via Joseph Aguakin
If no, please explain: ____________________________

Field Investigations:
A representative from Brown and Caldwell will be visiting wells in your area over the next two months between the times of 9:00 am and 5:00 pm. Each site investigation will take approximately 1-2 hours. Please indicate up to three potential days of the week and availability times for an on-site inspection of the well location and verification of water use compliance. The permit holder must provide Brown and Caldwell with at least five (5) working days notice of the need to reschedule.

Option #1 Date (M-F): 7/30 Time: 9:00 am ☒ 12:00 pm ☐ 3:00 pm ☐
Option #2 Date (M-F): 8/13 Time: 9:00 am ☒ 12:00 pm ☐ 3:00 pm ☐
Option #3 Date (M-F): 8/20 Time: 9:00 am ☒ 12:00 pm ☐ 3:00 pm ☐

Once this survey is returned, a Brown and Caldwell representative will be contacting you to conduct a phone interview and finalize the exact date and time of your field investigation. Please fax/mail completed surveys by July 18th, 2008 and direct any questions related to this survey to Mr. Milo Smith of Brown and Caldwell at:

1099 Alakea Street, Suite #2400
Honolulu, HI 96813
Tel: (808) 203-2661
Fax: (808) 533-0226
mcsmith@brwncald.com

For Official Use Only

Received: 7/18/08 Information Updated: 7/21/08 Phone Interview Complete: 7/24/08
Notes/Comments: ____________________________
### Phone Interview

<table>
<thead>
<tr>
<th>WUP Number:</th>
<th>799</th>
<th>Well Number(s):</th>
<th>2001-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>Ray Hinchman</td>
<td>Phone Number:</td>
<td>306-3064</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Attempt #1: Date/Time</th>
<th>Result: Reached</th>
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<tbody>
<tr>
<td>7/21/06 (11:15 a.m.)</td>
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<tr>
<th>Well Location TMK(s):</th>
<th>Water Use TMK(s):</th>
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<table>
<thead>
<tr>
<th>Water Source Address:</th>
<th>Zip Code:</th>
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<tbody>
<tr>
<td>Laupai Street</td>
<td>96706</td>
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<table>
<thead>
<tr>
<th>City:</th>
<th>Note/Comments:</th>
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<tbody>
<tr>
<td>Ewa Beach</td>
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<thead>
<tr>
<th>Currently using water source?:</th>
<th>Yes</th>
<th>No</th>
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<tr>
<th>How often is the water source being used?</th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
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<tr>
<th>How long have you been using this water source?:</th>
<th>N/A</th>
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</thead>
</table>

<table>
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<tr>
<th>Has there been any rezoning of the water source/water use properties?:</th>
<th>Yes</th>
<th>No</th>
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<tbody>
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<table>
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<tr>
<th>Have you reported the rezoning to the State?:</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
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<th>If no, explain:</th>
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<table>
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<tr>
<th>Scheduled field investigation day/time:</th>
<th>7/21/06 @ 10:00 a.m.</th>
</tr>
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</table>

<table>
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<tr>
<th>Notes (Special directions, site conditions, potential hazards, general notes, etc.):</th>
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<tbody>
<tr>
<td>Meet at Laupai St. behind the elementary school.</td>
</tr>
</tbody>
</table>

### Comments To Make:

- Although we prefer that you do not change your scheduled field investigation time, if you require a reschedule, you must provide Brown and Caldwell with at least five (5) working days notice of the need to reschedule.
- A representative from Brown & Caldwell will be making a reminder phone call to you sometime during the week prior to your scheduled field investigation.
- It is very important that you provide access to the site at the day and time agreed upon. Due to a very tight schedule, if you fail to provide access at the agreed upon time and/or do not reschedule with at least a five (5) working day notice, a makeup date will not be allowed.
- If for some reason you don't know where your well head is located, it would be a good idea to locate it prior to your field investigation to help make the visit go quickly and smoothly.

<table>
<thead>
<tr>
<th>Interviewed By:</th>
<th>M.S.</th>
<th>Date:</th>
<th>7/21/06</th>
<th>Time:</th>
<th>11:15 a.m.</th>
</tr>
</thead>
</table>


Field Investigation Checklist

WUP Number: 799  Well Number(s): 2001-10

Water Source
Well Location TMK(s): 9-1-102:022
Well Head GPS Coordinates: Latitude: 21° 20' 25.4" N Longitude: 106° 01' 10.1" W
Well Type: Drilled, Sub Pump
Currently using water source? Yes ☑ No ☐
Notes/Comments: ___________________________________________

Is there a flow meter installed? Yes ☑ No ☐
Is the flow meter operational? Yes ☑ No ☐
Notes/Comments: ___________________________________________

Water Use
Water Use TMK(s): Various (9-1-102:022) Various
What is the water being used for? (Use for landscape irrigation of ADAM)
Is the water being used within the permitted boundaries? Yes ☐ No ☑
If no, explain: Permitted TMK is 9-1-010:07
Is there any observed wasting of water or water loss? Yes ☐ No ☑
If no, explain: ___________________________________________
Are the permit conditions being complied with? Yes ☐ No ☑
If no, explain: No water use/salinity reports; non-permitted TMK

Other
Photographs of: Water Source ☐ Water Meter ☑ Usage Area ☑ Pump/Motor ☑
General Notes/Comments:
* Reporting halted in 2006 (a transfer of WUP?)
* Informed contact that reporting needs to begin ASAP

Investigated By: ____________________ Date: 7/20/08 Time: 10:00 a.m.
August 3, 2006

Ref: ewa caprock wup conversion act

Dear Water Use Permitee:

Hawaii Prince Golf Club/Hawaii Prince Hotel Waikiki Corp.,
Well Nos. 1900-02, 1900-17 to 20, 1901-03, WUP No. 469, 0.301 mgd, TMK 9-1-10:6
Haseko (Ewa), Inc., Well Nos. 1901-06, 1902-01, 1902-09 to 11, WUP No. 650, 3.300 mgd, TMK 9-1-12:5
Department of Parks and Recreation, Well No. 2001-03, WUP No. 167, 0.030 mgd, TMK 9-1-61:35
Palm Court Association, Well No. 2002-12, WUP No. 169, 0.040 mgd, TMK 9-1-61:22
Palm Villa II Association, Well No. 2001-08, WUP No. 168, 0.048 mgd, TMK 9-1-61:27
Arbors Association, Well No. 2001-07, WUP No. 171, 0.063 mgd, TMK 9-1-61:32
U.S. Fish & Wildlife, Well No. 2101-14, WUP No. 247, 0.216 mgd, TMK 9-1-17:12
Gentry Development Co., Well No. 2001-04, WUP No. 302, 0.040 mgd, TMK 9-1-61:7
Gentry Development Co., Well No. 2001-09, WUP No. 344, 0.023 mgd, TMK 9-1-61:2
Ewa by Gentry Community Association, Well No. 2001-05, WUP No. 450, 0.066 mgd, TMK 9-1-70:132
Gentry Homes, Ltd., Well No. 2001-12, WUP No. 504, 0.249 mgd, TMK 9-1-102:31
Gentry Homes, Ltd., Well No. 1901-05, WUP No. 505, 0.056 mgd, TMK 9-1-69:8
U.S. DOC/NOAA/NWS, Well No. 1900-23, WUP No. 501, 0.023 mgd, TMK 9-1-1:1
Coral Creek Golf, Inc., Well No. 2002-17, WUP No. 577, 0.498 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well No. 2001-13, WUP No. 578, 0.800 mgd, TMK 9-1-69:10
Coral Creek Golf, Inc., Well Nos. 2001-14, 2002-15, 17, 19, WUP No. 579, 0.892 mgd, TMK 9-1-16:10
AOAO Suncrest/The Shores/Lombard Way/Avalon, Well No. 2001-10, WUP No. 629, 0.022 mgd, TMK 9-1-10:17
State Housing Community Development Corporation of Hawaii, Well Nos. 2003-04,07, WUP No. 432, 0.494 mgd, TMK 9-1-16:25
State Housing Community Development Corporation of Hawaii, Well Nos. 2003-06, WUP No. 520, 0.237 mgd, TMK 9-1-16:108
Kapolei People's Inc., Well Nos. 2003-01,02,05, WUP No. 438, 1.000 mgd, TMK 9-1-16:25
Honolulu Board of Water Supply, Well Nos. 1905-08,10, WUP No. 740, 0.302 mgd, TMK 9-1-16:1

Conversion of Interim Water Use Permits for New Irrigation Uses to Permanent Water Use Permits
Puuloa and Kapolei Ground Water Management Areas, Oahu

This letter serves as your official notice of action by the Commission on Water Resource Management (Commission) on the subject water use permits.
By a unanimous vote at their meeting on July 12, 2006, the Commission corrected the error of approving and issuing interim permits for new irrigation uses in the Puuloa and Kapolei Ground Water Management Areas of the Ewa Caprock Aquifer Sector Area by converting the subject interim water use permits to permanent water use permits. All terms and conditions of the permits shall remain unchanged, except for Special Condition d., which is deleted.

The Commission ruled that permittees shall be notified by letter of the Commission's action to convert these water use permits from interim to permanent and the deletion of Special Condition d. The Commission further ruled that re-issuance of these water use permits is not necessary.

Please be advised that a compliance review will be initiated shortly as required under §174C-56 Hawaii Revised Statutes. We recommend that you carefully review the conditions of your permit and ensure that you are in compliance with all Standard and Special Conditions.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

DEAN A. NAKANO
Acting Deputy Director
STANDARD WATER USE PERMIT CONDITIONS

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:

   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:

   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

   a. protect the water sources (quantity or quality);
   b. meet other legal obligations including other correlative rights;

EXHIBIT 3
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the [Puuloa or Kapolei] Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the [Puuloa or Kapolei] Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

EXHIBIT 3
16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the [Puuloa or Kapolei] Ground-Water Management Area.

17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

EXHIBIT 3
SPECIAL CONDITIONS

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.
August 28, 2002

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Certified Management, Inc.
Agent for AOAO Suncrest/
The Shores/Lombard Way/Avalon
3179 Koapaka Street
Honolulu, HI 96819-1927

Dear Mr. Molina:

Transfer of Water Use Permit for Well No. 2001-10
Puuloa Ground-Water Management Area, Oahu

This is in response to a July 30, 2002 letter from Gentry Homes, Ltd., notifying us that the water use permit for Well No. 2001-10 (WUP No. 355) has been transferred to AOAO Suncrest/The Shores/ Lombard Way/Avalon, effective August 1, 2002.

This letter transmits your water use permit for Area 24 Well (Well No. 2001-10) for use of 0.22 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on July 18, 2001. This water use permit, WUP No. 629, supersedes WUP No. 355. As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 19:

Special Conditions

a. Should an alternate permanent source of water be found, the Commission reserves the right to revoke the permit, after a hearing.

b. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

c. Pumping shall cease immediately if the chloride reports show that the brackish water developed in the well exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve future variance requests is delegated to the Chairperson.

d. The duration of the interim permit shall be
   a) to July 1, 2006, or
   b) until treated wastewater is available and acceptable for use, or
   c) until such time that a significant change in permitted, actual, or projected uses or water supply occurs.
Mr. Molina  
Page 2  
August 28, 2002  

e. Action on any interim permit may be initiated by the Commission or any permittee upon letter request or pursuant to §174C-57 Haw. Rev. Stat. (Modification of permit terms).

f. This permit is approved under the assumption that wastewater will become available for reuse as an alternative supply source.

g. Require adherence to the chloride sampling protocol shown in Attachment B and the submittal of weekly chloride data. The authority to approve variances from the weekly reporting requirement is delegated to the Chairperson.

h. Require adherence to the Conservation Conditions shown in Attachment C.

i. In the event a water shortage is declared by the Commission, permittees in the Puuloa Aquifer System shall comply with the Puuloa Water Shortage Plan adopted by the Commission.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit.

We draw your attention to two key conditions of your permit that require your response. First, you are required to keep a record of weekly salinity and monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular weekly (for salinity) or monthly (for total pumpage, water level, and water temperature) basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit. Your water shortage plan simply identifies what you are willing to do should the Commission declare a water shortage situation in the Puuloa Ground-Water Management Area and can be as short as a one page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from all sources. The Commission is required, by law, to formulate a plan to implement such area-wide reductions, which should accommodate, include, and be consistent with your plans. Therefore, your help, by submitting your water shortage plan, is greatly needed in formulating the Commission's overall Water Shortage Plan.

If you have any questions, please call Lenore Nakama of the Commission staff at 587-0218.

Aloha,

GILBERT S. COLOMA-AGARAN  
Chairperson

Attachments
# GROUND-WATER USE PERMIT

## WUP NO. 629

### PERMITTEE

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
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<tr>
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<td>Agent for AOAO Suncrest/</td>
<td>Agent for AOAO Suncrest/</td>
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<td>The Shores/Lombard Way/Avalon</td>
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### PERMITTED SOURCE INFORMATION

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### PERMITTED USE INFORMATION

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<td>Chloride Cap</td>
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<td>County zoning classification</td>
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</tr>
</tbody>
</table>

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*STATE OF HAWAI'I*

DEPARTMENT OF LAND AND NATURE RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 521
HONOLULU, HAWAI'I 96806
Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the permittee is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following conditions:

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.

5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its July 18, 2001 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:

a. protect the water sources (quantity or quality);
b. meet other legal obligations including other correlative rights;
c. insure adequate conservation measures;
d. require efficiency of water uses;
e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Puuloa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Puuloa Aquifer System, or relevant modified aquifer(s), is reduced.

12. A permit may be transferred, in whole or in part, from the permittee to another, if:

a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer, which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

13. The use(s) authorized by law and by this permit do not constitute ownership rights.

14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances that will affect the permittee's water use.
15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee’s water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Puuloa Ground-Water Management Area.

17. The water use permit shall be subject to the Commission’s establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

18. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

19. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management
Mr. Randolph Ouye
Gentry Development Co.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Ouye:

Approval of Water Use Permit for Well No. 2001-10
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Area 24 Well (Well No. 2001-10) for use of 0.022 million gallons per day (mgd) of water on a 12-month moving average basis that was approved by the Commission on Water Resource Management (Commission) on May 14, 1997. This water use permit supersedes the water use permit that was issued to you on April 13, 1995.

As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 20:

Special Conditions

a. The duration of the interim permit shall be to October, 1998 or until such time that a significant change in permitted, actual, or projected use of water supply or water quality occurs.

b. Require adherence to the chloride sampling protocol (attached) and the submittal of weekly chloride data, as may be amended by the Commission staff.

c. Require adherence to the Conservation Conditions (attached).

d. Require permittee to sign a contract within twelve (12) months with the City Department of Wastewater Management to buy and use a total of 0.430 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 2002-15 and 2001-10.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form

Please be sure to read the conditions of your approved permit. If you accept these terms, please sign and return one copy of this permit to the Commission and retain a copy for your record.

You are required to keep a record of your monthly total pumpage, water level, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form. You should make copies of the enclosed report form as needed.

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

Michael D. Wilson
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 355

PERMITTEE

Applicant/Water User  Landowner of Source
GENTRY DEVELOPMENT CO. GENTRY DEVELOPMENT CO.
P.O. BOX 295 P.O. BOX 295
HONOLULU, HI 96809 HONOLULU, HI 96809

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
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<td>Water Management Area</td>
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<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
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<td>Aquifer System</td>
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<tr>
<td>State Well No.</td>
<td>2001-10</td>
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</table>

PERMITTED USE INFORMATION

| Reasonable beneficial use          | LANDSCAPE & ROADWAY IRRIGATION (9.37 ac) |
| Withdrawal (12 month moving ave.) | 0.022 mgd                          |
| Chloride Cap                       | 1,000 mg/l                         |
| Location of water use              | EWA BY GENTRY PROJECT              |
| TMK #                               | 9-1-10-17                          |
| Address                            | EWA BY GENTRY PROJECT              |
| State land use classification      | URBAN                              |
| County zoning classification       | A-I                                |

Pursuant to Hawaii's State Constitution, Article XI, Section 7, Hawaii Revised Statutes, Chapter 174C; Hawaii Administrative Rules, Chapters 13-167 through 13-171; and Hawaii decisional law and custom, the applicant is hereby authorized to use ground water from the sources and in the amount and from and upon the locations described above; subject however, to the requirements of law including but not limited to the following:
1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest" (HRS § 174C-3).

2. The right to use ground water is a shared use right.

3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with State and County general plans and land use designations;
   f. Is consistent with County land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).

4. The ground water use here must not interfere with surface or other ground water rights or reservations.

5. The ground water use here must not interfere with interim or permanent instream flow standards. If it does, then:
   a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
   b. The interim or permanent instream flow standard, as applicable, must be amended.

6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.

7. The water use permit application and submittal, as amended, approved by the Commission at its May 14, 1997 meeting are incorporated into this permit by reference.

8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.

9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).

12. This permit shall be subject to the Commission's periodic review of the PUULOA Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the PUULOA Aquifer System, or relevant modified aquifer(s), is reduced.
13. A permit may be transferred, in whole or in part, from the permittee to another, if:
   a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
   b. The Commission is informed of the transfer within ninety days.

   Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

14. The use(s) authorized by law and by this permit do not constitute ownership rights.

15. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.

16. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

17. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the PUUOLA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(6). The final determination of the water use quantity shall be made within five years of the filing of the application.

19. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.

20. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

21. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: ___________________________ Date: ___________________________

Printed Name: ___________________________ Firm or Title: ___________________________

Please sign both copies of this permit, return one to the Commission, and retain the other for your records.
Mr. Jeffrey C. Dinsmore  
Gentry Homes, Ltd.  
P.O. Box 295  
Honolulu, HI 96809

Dear Mr. Dinsmore:

Thank you for submitting signed copies of Ground Water Use Permits for Well Nos. 2001-02, 04, 05, 09, and 10.

Your request for a waiver from the weekly reporting requirement is hereby approved. Please submit monthly pumpage, chlorides, and water levels for each of your caprock wells on a regular monthly basis.

If you have any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

LN: ss
Mr. Randolph K. Ouye
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Dear Mr. Ouye:

Well Completion Report for Well No. 2001-10

We have received your Well Completion Report Part II for the Gentry Area 24 Well (Well No. 2001-10) and acknowledge that it is complete.

If you have any questions, please contact Lenore Nakama of the Commission staff at 587-0218.

Sincerely,

[Signature]

RAE M. LOUI
Deputy Director

LN:ss
TO  Dept. of Land & Natural Resources  DATE  PROJECT
Commission on Water Resource Management  July 22, 1997  Ewa by Gentry
P. O. Box 621  
Honolulu, HI  96809

Attention: Lenore Nakama

Re  Well No. 2001-10 (Area 24)

We are transmitting:

COPIES

1 ea.

DESCRIPTION

CWRM Well Completion Report  
(Permanent) Pump Installation  
(91-1004 Hulilau St., Ewa -- 9-1-10: 17)

Remarks:

For your records.

cc: G. Fukumitsu, TNWRE

If enclosures are not as noted, kindly notify us at once

Signed  Randolph K. Ouye,  
Sr. Vice Pres/COO  
Operations - Project Management
**WELL COMPLETION REPORT**

3/20/96 WCR Form

(Check Appropriate Box)  □ Well Construction  □ (Permanent) Pump Installation

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225, or 1-800-468-4644 Extension 70225.

1. State Well No.: 2001-10  Well Name: Gentry Area 24 Well  Island: Oahu
2. Location/Address: 91-1004 Hulilau St., Ewa  Tax Map Key: 9-1-10 Lot: 17

### PART I. WELL CONSTRUCTION REPORT

3. Drilling Company: ____________________________
4. Name of driller who performed work: ____________________________
5. Type of rig/construction: ________________________________________
6. Date(s) Well Construction and pump tests (if any) completed: ________________________________________
7. GROUND ELEVATION (referenced to mean sea level, msl): _________ ft.
   Well Bench Mark (description/location): ____________________________
   Elevation (msl): _________ ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)
   Depths (ft.) Rock Description, Water Level, Dates, etc.  Depths (ft.) Rock Description, Water Level, Dates, etc.
   __________ to __________
   __________ to __________
   __________ to __________
   (If more space is needed, continue on back.)
9. Total depth of well below ground: __________ ft.
10. Hole size:
    __________ inch dia. from __________ ft. to __________ ft. below ground
    __________ inch dia. from __________ ft. to __________ ft. below ground
    __________ inch dia. from __________ ft. to __________ ft. below ground
11. Casing installed:
    __________ in. I.D. x __________ in. wall solid section to __________ ft. below ground
    __________ in. I.D. x __________ in. wall perforated section to __________ ft. below ground
    Casing Material/Slot Size: ____________________________
12. Annulus:
    Grouted from __________ ft. below ground to __________ ft. below ground
    Gravel packed from __________ ft. below ground to __________ ft. below ground
13. Initial water level: __________ ft. below ground.  Date and time of measurement: __________
14. Initial chloride: __________ ppm  Date and time of sampling: __________
15. Initial temperature: __________ °F  Date and time of measurement: __________
16. PUMPING TESTS: Reference Point (R.P.) used: ____________________________, which elevation is __________ ft.
   (1) Step-Drawdown Test Date __________
   Start water level __________ ft. below R.P.
   End water level __________ ft. below R.P.
   (2) Long-term Aquifer Test Date __________
   Start water level __________ ft. below R.P.
   End water level __________ ft. below R.P.
17. Aquifer Pump Test Procedures data & graphs (1/96 LTAT Form) attached? __ Yes ___ No
18. As-built drawings attached? __ Yes ___ No
19. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) ____________________________  C-57 Lic. No. __________________
Signature ____________________________ Date ____________________________

Surveyor (print) ____________________________  Lic. No. ____________________________
Signature ____________________________ Date ____________________________

Applicant (print) ____________________________
Signature ____________________________ Date ____________________________
PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: Roscoe Moss Hawaii, Inc.

21. Name of person performing work: Pat Soon

22. Date Pump Installation Completed: 5/29/97

23. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.: Submersible, Crown, SC125-7
   - Capacity: 100 gpm
   - Motor type, H.P., Voltage, rpm: Submersible, 10 HP, 240/3/60, 3450
   - Depth of Pump Intake Setting: 36 ft. below Discharge Q, which elevation is (-) G.51 ft
   - Depth to bottom of airline: 32 ft. below Discharge Q, which elevation is (-) Z.51 ft
   - Pumping Head is 190 ft.
   - Type of flow meter: Turbine which measures in GPM

24. As-built drawings attached?: Yes ___ No ___

25. Other remarks/comments: (See below)

Pump Installation Contractor (print): Roscoe Moss Hawaii, Inc. C-57 Lic. No. C-16437

Signature: William C. Moore, Vice President

Date: 6/2/97

Applicant (print): GENTRY HOMES, LTD.

Signature: Randolph K. Utve, Sr. M.P./C.D.

Date: July 22, 1997

8.(cont'd) DRILLER'S LOG (cont'd):

<table>
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<tr>
<th>Dates (ft.)</th>
<th>Water Level Depth (ft.)</th>
<th>Rock Description, Remarks,</th>
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TO

FACE

SURFACE PLATE *
O.D. OF COUPLING
I.D. OF WELL
COLUMN *
POWER CONDUCTOR
3" COLUMN CHECK ULV
BOWL UNIT:
5HC125 ASSEMBLY
7 STAGE
5 3/8" O.D. OF BOWLS INCL. CONDUCTOR GUARD
MOTOR:
F/E MFR. 10 H.P. 240 VOLTS
3 PH. 3450 R.P.M. 5.38" MOTOR O.D.
PUMP PERFORMANCE
U.S.G.P.M.-----100
FT. TOTAL HD. 190
R.P.M.--------3450
PUMP NO.
PO. NO.

* = NOT BY CROWN PUMP

NOTE: 1 1/4" PVC SOUNDING TUBE
SET 32 FT BELOW & DISCHARGE
Gentry Homes, Ltd.
560 N. Nimitz Highway, Second Floor
Honolulu, HI 96817

WELL 2001-10 GENTRY AREA 24

Attn: Mr. Jon Young, P.E.

Gentlemen:

This is to certify that we performed a vertical survey for the non-potable well and appurtenant improvements along Laupa'i Street being a portion of Lot 11743 of Land Court Application 1069 as shown on Tax Map Key: 9-1-10: 27.

The following elevations were noted:

1. The top of the flange is at elevation 29.49 feet.
2. The top of the PVC pipe is at elevation 32.315 feet.
3. The "□" cut on the top of the concrete vault is at elevation 34.00 feet.

The benchmark for the Ewa Plain survey is the City and County Street Monument located at the intersection of Farrington Highway and makakilo Drive.

Very truly yours,

WALTER P. THOMPSON, INC.

James R. Thompson, Inc.
President
Licensed Professional Land Surveyor 3627

cc: TNWRE - G. Fukumitsu
Mr. Randolph K. Ouye
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, Hawaii 96809

Dear Mr. Ouye:

Pump Installation Permit
Gentry Area 24 (Well No. 2001-10)

Enclosed are two (2) originals of your approved Pump Installation Permit for the
captioned well(s) which authorizes permanent pump installation work for your well(s). As part
of the Chairperson’s approval, the following special condition was added and is part of your
permit under Permit Condition 10:

Special Condition

1. Permit Condition 3 may be modified through the water use permit conditions.

The well owner is responsible for all conditions of the permit. This includes
ensuring that the pump installation contractor, or other party who installs the pump,
submits a completed Part II of the Well Completion Report form (enclosed) within sixty
(60) days after the pump installation work is completed. Be advised that you may be
subject to fines of up to $1000 per day for any violations of your permit conditions.

Please sign and have the contractor sign both enclosed permit originals and return
one for our files.

A copy of the Well Completion Report (Part II) and a copy of your water use report
form are enclosed for your use. Except for the monthly water use report form, please
provide copies of all the information in this packet to your pump installation
contractor.

Finally, this letter is notice that we have accepted your Well Completion Report - Part
I as complete. However, in the future, if you wish to submit a graphical representation of the
data, you must also provide the data files on diskette (.PRN file).

If you have any questions, please call the Commission staff at 587-0218.

Aloha,

MICHAEL D. WILSON
Chairperson

Enclosures
PUMP INSTALLATION PERMIT

Gentry Area 24 Well, Well No. 2001-10

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for Gentry Area 24 Well (Well No. 2001-10) at Ewa, Oahu, TMK 9-1-10:17, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The pump installation permit shall be for installation of a 110 gpm capacity, or less, pump in the well.

3. The permittee shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on a monthly basis, on forms provided by the Chairperson (attached).

4. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

5. The permittee shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

6. The permittee shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

7. The pump installation permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97).

8. The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

10. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: April 14, 1997
Expiration Date: April 14, 1999

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day.

Permittee's Signature: __________________________ Date: ___________
Printed Name: __________________________ Firm or Title: ___________
Installer's Signature: __________________________ Date: ___________
Printed Name: __________________________ Firm or Title: ___________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachments
USGS
Department of Health/ Safe Drinking Water & Wastewater Branches
Honolulu Board of Water Supply
### Step-Drawdown Analysis

**By Glenn Bauer**

**Name of Well:** Gentry Area Well 24–Well # 2001-10  
**Date of Test:** Sept. 7, 1996  
**Date of Analysis:** Oct. 16, 1996

<table>
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<tr>
<th>s (ft)</th>
<th>GPM</th>
<th>s/Q</th>
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<tr>
<td>0.01</td>
<td>150</td>
<td>0.0001</td>
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<tr>
<td>0.04</td>
<td>237</td>
<td>0.0001</td>
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<tr>
<td>0.06</td>
<td>455</td>
<td>0.0001</td>
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<tr>
<td>0.11</td>
<td>615</td>
<td>0.0002</td>
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**Regression Output:**
- Constant: 4.69E-05 = b
- Std Err of Y Est: 2.11E-05
- R Squared: 0.860889
- No. of Observations: 4
- Degrees of Freedom: 2
- X Coefficient(s): 2.14E-07 = c
- Std Err of Coef.: 6.08E-08

**Drawdown**

\[ s = bQ + cQ^2 \]

if \( Q = 150 \text{ gpm} \)

- \( bQ = 0.007 \) calc. \( s = 0.012 \text{ ft.} \)
- \( cQ^2 = 0.005 \)
- \( L = 59.40 \) PERCENT OF HEAD LOSS = LAMINAR FLOW

adjusted drawdown using \( L = 0.07 \)

**Polubarinova-Kochina Eq.**

Adjusted \( "s" \) using constant "b"

| \[ \frac{Q(1.6L/r)}{2\pi Ls} \] | \[ 16179 \text{ ft/d} \] |
| \[ L \] | \[ 17.5 \text{ ft} \] |
| \[ r \] | \[ 0.5 \text{ ft} \] |
| \[ s \] | \[ 0.065 \text{ ft} \] |
| \[ Q \] | \[ 28877 \text{ cu. ft/d} \] |
| \[ h \] | \[ 1.6 \text{ ft} \] |
| \[ b \] | \[ 66 \text{ ft} \] |
| \[ T \] | \[ 1061345 \text{ ft}^4/\text{d} \] |

**Specific Capacity** \( Q/s = \)

- \( Q = 150 \text{ gpm} \)
- \( Q/s = 12658 \text{ GAU/FT OF DD} \)
WELL COMPLETION REPORT

PART I. WELL CONSTRUCTION REPORT

4. Name of driller who performed work: Dave McAllister
5. Type of rig/construction: Auger
6. Date(s) Well Construction and pump tests (if any) completed: Pump Test 9/7-8/96; 9/30/96
7. GROUND ELEVATION (referred to mean sea level, msl): 33.70 ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)
   Depth (ft.) Rock Description, Water Level, Dates, etc. Depth (ft.) Rock Description, Water Level, Dates, etc.
   0 to 3 Compacted Fill
   3 to 52.3 Tan to Off White Coral

9. Total depth of well below ground: 52.35 ft.
10. Hole size: 19 inch dia. from 0 ft. to 52.58 ft. below ground
    __________ inch dia. from __________ ft. to __________ ft. below ground
    __________ inch dia. from __________ ft. to __________ ft. below ground
11. Casing installed: 11.37 in. I.D. x Sch. 80 in. wall solid section to 29.85 ft. below ground
    11.37 in. I.D. x Sch. 80 in. wall perforated section to 47.35 ft. below ground
    Casing Material/Slot Size: PVC, 0.020" Slot Size
12. Annulus:
    Grouted from 0 ft. below ground to 29.85 ft. below ground
    Gravel packed from __________ ft. below ground to __________ ft. below ground
13. Initial water level: 32.1 ft. below ground
14. Initial chloride: 620 ppm
15. Initial temperature: 78.3 °F
16. PUMPING TESTS: Reference Point (R.P.) used: Ex. Grnd. @ Well, which elevation is 33.70 ft.
   (1) Step-Drawdown Test Date See Attached Data
   Start water level ______ ft. below R.P.
   End water level ______ ft. below R.P.
   (2) Long-term Aquifer Test Date See Attached Data
   Start water level ______ ft. below R.P.
   End water level ______ ft. below R.P.
17. Aquifer Pump Test Procedures data & graphs (1/96 LTAT Form) attached? X Yes _ No
18. As-built drawings attached? X Yes _ No
19. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) Mel's Water Works Hawaii, Inc. Lic. No. C-18254
Signature
Date 9-30-96

Surveyor (print) See Attached Certif. Ltr.
Signature
Date

Applicant (print) Mel's Water Works Hawaii, Inc.
Signature
Date

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

WELL COMPLETION REPORT

Well Drilling Surveyor (print)

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225, or 1-800-468-4644 Extension 70225.

1. State Well No.: 2001-10
   Well Name: Gentry Area 24
   Island: Oahu
2. Location/Address: Iroquois Point Road, Ewa, Hawaii
   Tax Map Key: 9-1-10:Lot 17
   State Well
   No.:
   Name:
   Island:
   Address:
   Tax Map Key:

   PART I.
   WELL CONSTRUCTION REPORT

4. Name of driller who performed work: Dave McAllister
5. Type of rig/construction: Auger
6. Date(s) Well Construction and pump tests (if any) completed: Pump Test 9/7-8/96; 9/30/96
7. GROUND ELEVATION (referred to mean sea level, msl): 33.70 ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)
   Depth (ft.) Rock Description, Water Level, Dates, etc. Depth (ft.) Rock Description, Water Level, Dates, etc.
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   3 to 52.3 Tan to Off White Coral

9. Total depth of well below ground: 52.35 ft.
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    Casing Material/Slot Size: PVC, 0.020" Slot Size
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   (1) Step-Drawdown Test Date See Attached Data
   Start water level ______ ft. below R.P.
   End water level ______ ft. below R.P.
   (2) Long-term Aquifer Test Date See Attached Data
   Start water level ______ ft. below R.P.
   End water level ______ ft. below R.P.
17. Aquifer Pump Test Procedures data & graphs (1/96 LTAT Form) attached? X Yes _ No
18. As-built drawings attached? X Yes _ No
19. Other remarks/comments: (On back of this form)
PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: ________________________________

21. Name of person performing work: ________________________________

22. Date Pump Installation Completed: ________________________________

23. PUMP INSTALLATION:

   Pump Type, Make, Serial No.: ________________________________ Capacity: _______ gpm

   Motor type, H.P., Voltage, rpm: ________________________________

   Depth of Pump Intake Setting _______ ft. below _______ , which elevation is _______ ft.

   Depth to bottom of airline _______ ft. below _______ , which elevation is _______ ft.

   Pumping Head is _______ ft. Type of flow meter: ________________ which measures in _______

24. As-built drawings attached? __ Yes __ No

25. Other remarks/comments: (See below)

Pump Installation Contractor (print) ________________________________ C-57 Lic. No. ________________________________

Signature ________________________________ Date ________________________________

Applicant (print) ________________________________

Signature ________________________________ Date ________________________________

8. (cont'd) DRILLER'S LOG (cont'd):

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<th>Water Level Dates</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks,</th>
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<th>Depth (ft.)</th>
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19. & 25. Remarks:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
GROUND ELEVATION = 33.70' MSL

- 2.15'
- 32'
- 32.1' DTW from ground level
- 17.5'
- 12" PVC, Sch 80, Solid casing
- 12" PVC, Sch 80, Well screen
- 9" Diameter Borehole

Cement Grout
Cement Plug

AS-BUILT WELL SECTION - GENTRY AREA 24
N.T.S.
## GENTRY AREA 24 WELL PUMP TEST (STATE WELL NO. 2001-10)

### MEL'S WATER WORKS HAWAII, INC.

**SEPT. 7 TO 8, 1996**

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<th>DATE</th>
<th>TIME</th>
<th>Date in Decimal Format</th>
<th>Date in Meter Reading (Gallons)</th>
<th>Field Computed Flow Rate from Meter (gpm)</th>
<th>Temperature during pump test (deg F)</th>
<th>Chloride (ppm)</th>
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### NOTES:

1. DATA PROVIDED BY MEL'S WATER WORKS HAWAII, INC.
September 27, 1996

TOM NANCE
WATER RESOURCE ENGINEERING

Gentry Homes, Ltd.
560 N. Nimitz Highway, Second Floor
Honolulu, HI 96817

Attn: Mr. Randy Ouye
Senior Vice-President

Gentlemen:

This is to certify that we performed a vertical survey for the non-potable well at Area 24, Multi-Family Housing, Ewa by Gentry being a portion of Lot 11743 of Land Court Application 1069 at Honouliuli, Ewa, Oahu, Hawaii as shown on Tax Map Key: 9-1-10: Por. 19.

The following elevations were noted:

1. The top of the casing is at elevation 35.85 feet
2. The ground elevation at the casing is 33.7 feet
3. A "□" was set on the curbing adjacent to the well. The elevation of the point is 33.32 feet.

The benchmark for the Ewa Plain survey is the City and County Street Monument located at the intersection of Farrington Highway and Makakilo Drive.

Very truly yours,

WALTER P. THOMPSON, INC.

[Signature]

James R. Thompson
President
Licensed Professional Land Surveyor 3627

[Stamp]

[Seal]

WELL NO. 2001-10
DATE: October 8, 1996

TO: Department of Land and Natural Resources
Commission on Water Resource Management
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

ATTENTION: Lenore Nakama

SUBJECT: Gentry Area 24 Well

We herewith transmit the following:
Original Well Completion Report for Gentry Area 24 Well # 2001-10

Remarks:

We herewith transmit the above documents for your use.
Please feel free to call the undersigned if there are any questions regarding this matter.

Sincerely,
Tom Nance Water Resource Engineering

Greg Fukumitsu, P.E.

cc: Jerome Fukuda - Gentry Homes Ltd. (Trans only)
Mr. Michael Wilson  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject:  *Ewa by Gentry, Area 23/24 Non-Potable Well (Well No. 2001-10)*

Please be advised that Gentry Homes, Ltd. will be starting construction and testing the new well and installation of the pump within the next thirty days.

Our contractor will be Mel's Water Works Hawaii, Inc., and our engineer is Tom Nance Water Resource Engineering. Our contractor was given a letter to proceed with the ordering of materials on July 23, 1996. Drilling will start on August 7, 1996.

We will submit the necessary reports to the Commission after completion of testing.

Very truly yours,

GENTRY HOMES, LTD.

[Signature]

Randolph K. Ouye,  
Senior Vice President  
Chief Operating Officer

JSF:ev  
cc:  T. Nance, TNWRE  
c:letters-2324wll.doc
Deadline was 10/13 - today is 12/4.
I think we need to go to the CWEM for this extension unless it is o.k. to extend ministerially which I don't believe we can do.

02/95

Because the request was timely (and I really don't know why it fell through the cracks), I believe we are obligated to give them the benefit of an admin. extension.

I spoke with Randy Ouye by phone and prepared this update response.

F: GENT 24. EXT

Sorry about this, found it in my "pile" - I don't see it on our database - what's the status?

Q: Removal shall we go ahead w/ this?  

YES
Mr. Randolph K. Ouye, Senior Vice-President  
The Gentry Companies  
P.O. Box 295  
Honolulu, Hawaii 96809  

Dear Mr. Ouye:  

Well Construction Start Date Extension  
Gentry Area 24 Irrigation Well (Well No. 2001-10)  

Thank you for your letter of September 13, 1995 requesting extension of your start date for the captioned well, under the permit approved January 25, 1995. We apologize for misplacing a timely response approving your request. By our phone conversation of March 15, 1996, we understand that you expect to begin construction in June.

By this letter, the start date for construction under this permit is extended to September 13, 1996, as requested. The other conditions of the permit remain the same. The permit itself expires January 25, 1997. If you encounter difficulty completing the project before the permit expiration, please notify us by mid-October to initiate a request to extend the permit.

If you have any questions, please call Charley Ice at 587-0251.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director  

Cl:ss
September 22, 1995

Ms. Rae Loui, P.E.
State of Hawaii
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii  96809

Dear Ms. Loui:

Subject: Gentry Area 24 Irrigation Well (#2001-10)
Well Construction Permit

Gentry Development Company received a well construction permit for this irrigation well on April 13, 1995 for the proposed Ewa by Gentry Area 24 multi-family development.

We respectively request that our start of construction be extended beyond the six month start period. We have been delayed by design considerations for this project and request a six-month extension.

The well construction work, as outlined in the permit application, will still be completed within the two-year time period after permit approval.

Thank you for considering our request. If you have any questions, please feel free to call me at 599-8285.

Very truly yours,

GENTRY HOMES, LTD.

Randolph K. Ouye,
Senior Vice President
Site Development

RKO:sacm

cc:  T. Nance, TNWRE
     B. Edwards
     J. Fukuda
     J. Young

/a24well-wewa
Ms. Rae Loui, P.E.
State of Hawaii
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Subject: Gentry Area 24 Irrigation Well (#2001-10)
Well Construction Permit

Gentry Development Company received a well construction permit for this irrigation well on April 13, 1995 for the proposed Ewa by Gentry Area 24 multi-family development.

We respectively request that our start of construction be extended beyond the six month start period. We have been delayed by design considerations for this project.

The well construction work, as outlined in the permit application, will still be completed within the two-year time period after permit approval.

Thank you for considering our request. If you have any questions, please feel free to call me at 599-8285.

Very truly yours,

GENTRY HOMES, LTD.

Randolph K. Ouye,
Senior Vice President
Site Development

RKO:sacm

cc: T. Nance, TNWRE
B. Edwards
J. Fukuda
J. Young

/a24well-wewa
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT

for

Gentry Area 24 Well
Well No. 2001-10
Ewa Caprock Ground Water Management Area, Oahu

TO: Gentry Development Corp.
P.O. Box 295
Honolulu, HI 96809

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct, test, and install a pump in Gentry Area 24 Well (Well No. 2001-10), is approved subject to the following conditions:

1. The Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The well construction/pump installation permit shall be for construction, testing, and installation of a 110 gpm capacity, or less, pump in the well, as determined by the pumping test results. The applicant shall coordinate with the Commission and conduct a pumping test in accordance with the attached protocol. A means to accurately measure water levels, acceptable to the Commission, shall also be provided. The applicant shall submit to the Commission the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

3. The proposed use(s) shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

4. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

5. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report.
b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
c. As-built sectional drawing of the well.
d. Plot plan and map showing the exact location of the well.
e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other water quality data.

6. The applicant shall comply with all applicable laws, rules, and ordinances.

7. The well construction/pump installation permit application and staff submittal approved by the Commission at its January 25, 1995 meeting are incorporated into the permit by reference.

8. The permit may be revoked if work is not started within six (6) months after the date of issuance or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management
APR 13 1995
Date of Issuance

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant's Signature: _____________________________ Date: ______________

Printed Name: __________________________________________

Firm or Title: ____________________________________________

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

Attachment
cc: USGS
    Department of Health
        Safe Drinking Water Branch
        Wastewater Branch
        Ground Water Protection Program
    Honolulu Board of Water Supply
    Tom Nance Water Resources Engineering
APPLICATION FOR PERMIT

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

APPLICATION FOR PERMIT

1. APPLICANT: (may be a, b, or c, but all must be filled in)
   (a) WELL OWNER
      Firm/Name: Gentry Development Company
      Contact Person: R.K. Ouwe
      Address: P.O. Box 295
                Honolulu, HI 96809
   (b) LANDOWNER
      Firm/Name: Gentry Development Company
      Contact Person: R.K. Ouwe
      Address: P.O. Box 295
                Honolulu, HI 96809
   (c) CONTRACTOR
      Firm/Name: Roscoe Moss Hawaii, Inc.
      Contact Person: C.J. Custer
      Address: 91-259 Olai Street
                Ewa Beach, Hawaii 96707

2. WELL LOCATION/NAME: Gentry Area 24 Well
   Island: Oahu
   Address: In Ewa by Gentry Development
   Tax Map Key: 9-1-10:17

3. (a) PROPOSED WORK:
      • Drill New Well
      • Modify Existing Well
      • Install New Pump
      • Deepen
      • Abandon/Seal

4. PROPOSED PUMP INFORMATION:
   Pump Type:
   • Deep Well Turbine
   • Submersible
   • Centrifugal
   Motor:
   • Propeller
   • Reciprocating
   • Impulse

5. PROPOSED USE:
   • Municipal (including hotels, stores, etc.)
   • Domestic (individual, noncommercial water use)
   • Irrigation (crop)
     - Landscape Areas
     - State Land Use District
     - County Zoning (describe)

6. (a) PROPOSED AMOUNT OF WITHDRAWAL:
      45,900 gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
      • Flow-meter
      • Open-pipe
      • Orifice Plate

7. PENDING ACTIONS:
   • CDUA
   • SMA
   • EIS
   • EA
   • NONE
   • Other (explain)

8. REMARKS, EXPLANATIONS:
   A water use application for this well is being processed concurrently with this permit with the Commission on Water Resource Management.

OTE: Signing below indicates that the applicant understands that, if the permit requested is granted by the Commission on Water Resource Management, the proposed work is to be completed within two (2) years of the approval date. In addition, the contractor shall submit to the Commission a well completion report, well abandonment report, or both, within 30 days after the completion date of the permitted work. The applicant also understands that monthly water use data shall be submitted to the Commission. The applicant further understands that approval of a proposed permit shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Vell Owner
Signature: Randolph K. Ouye, VP
Date: 9-23-94

Landowner
Signature: Randolph K. Ouye, VP
Date: 9-23-94

Contractor
Signature: Randolph K. Ouye, VP
Date: 9-23-94

For Official Use Only: Data Received __________________ Date Accepted __________________
Field Checked By __________________ Date __________________

Longitude ___________  Aquifer System Name __________________
Latitude ___________ State Well No. __________________
9. PROPOSED WELL SECTION

- Elevation at top of casing: 34.0 ft., msl.
- Ground Elevation: 33.0 ft., msl*
- Cement Grout: 25 ft.
- Rock Packing: 30 ft.
- Hole Diameter: 19 in.
- Total Depth: 55 ft.

Solid Casing:
- Material: PVC (Schedule 80)
  - Length: 30 ft.
  - Diameter: 12 in.
  - Wall thickness: 0.70 in.

Casing:
- Perforated: Yes
- Screen: No
- Material: PVC (Schedule 80)
  - Length: 25 ft.
  - Diameter: 12 in.
  - Wall thickness: 0.70 in.
  - Openings: 24 sq. in./L.F.

Open Hole:
- Length: 0 ft.
- Diameter: 0 in.

*Approximate elevation at time of filing application. Ground elevation above mean sea level (msl) by a surveyor licensed by the State must be submitted at start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.