These are good practices - I hope that they follow through with them,
March 17, 2009

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

Subject: Water Use Permit, Puuloa Ground-Water Management Area, Oahu  
WUP No. 856 for Well No. 2001-05 (supersedes WUP No. 792)  

Dear Mr. Kawahara:  

As required by the Conservation Conditions Ewa Caprock Water Use Permits attached to your February 12, 2009 letter, enclosed is the Water Conservation Program and Plan for irrigation of landscaped areas in Ewa by Gentry.  

Please call me at  if you require additional information.  

Sincerely,  

Suzanne C. Alawa, CMCA, LSM, PCAM  
General Manager  

cc: Mike Brant
Ewa by Gentry shall minimize demand for non-potable water by:

1. Utilizing low maintenance water efficient plants which are brackish water, drought, wind and pest tolerant. Planting shall have minimal susceptibility to insect and disease to minimize usage of insecticides and fungicides. Groundcover species shall densely cover the ground to minimize weed establishment and germination and thus minimize the application of herbicides.

2. Planting trees, shrubs and groundcovers which have proven themselves in the growing environment at Ewa by Gentry including:

**Native**
- Trees
  - Alahee
  - Coconut
  - Dwarf Hau
  - Hala
  - Kou
  - Lonomea
  - Loulu

- Shrubs
  - Aali’i
  - Ahu’awa
  - Akoko
  - Hawaiian Cotton, Ma’o
  - Hibiscus
  - Hinahina
  - Kului
  - Mountain Naupaka
  - Naio
  - Nanu
  - Naupaka

- Groundcovers
  - Ae’ne
  - Akulikuli
  - Carex
  - Hinahina
  - Hunakai
  - Naio Papa
  - Nanea

**Non Native**
- Trees
  - Autograph
  - Beach Heliotrope
  - Bridal Veil Plumeria
  - California Pepper
  - Geiger Tree
  - Hong Kong Orchid
  - Italian Cypress
  - Olive
  - Plumeria
  - Podocarpus
  - Silver Buttonwood
  - Silver Trumpet
  - Travellers Tree
  - White Bird of Paradise

- Palm
  - Areca Palm
  - Bottle Palm
  - Coconut
  - Dwarf Date
  - Giant Cycad
  - Manila Palm
  - Neodypsis
  - Royal Palm
  - Washingtonia Palm
  - Woodyetia
Ohai (Sesbania molokaiensis)  
Pa`u o Hi`iaka  
Native Plumbago, ilie`e  
Pohinahina  
Ulei  
Vitex rotundifolia

Shrubs  
Agave  
Bird-of-Paradise  
Caricature Plant  
Copperleaf  
Croton Mame  
Dwarf Spider Lily  
Eldorado  
Galphimia  
Green Eranthemum  
Lilinoi Ti  
Natal Plum  
Purple Eranthemum  
Sago  
Spider Lily  
Yucca

Groundcovers  
Dwarf Ice Plant  
Ice Plant  
Meyers Asparagus Fern  
Society Garlic

3. Utilizing plant materials which develops a minimum of undesired or excessive growth or foliage which must be frequently trimmed.

4. Installing and maintaining organic mulch in groundcover areas where feasible and beneficial to plant growth to reduce evaporation and for weed and erosion control. Mulch shall be spread to a thickness of 2-inches in wide beds below hedge planting to minimize weed establishment and eliminate the need for groundcover and related water and maintenance. Mulch shall not be installed to excessive depths which will inhibit plant growth or present an environment which creates insect or slug problems.

5. Maintaining landscaping with minimal application of pesticides and fertilizer. Fertilizer shall not be applied on established planting more frequently than on a quarterly basis. Fertilizer shall not be applied if it will result in excessive plant growth or where current plant condition is excellent.

6. Improving land management plans to conserve water, this includes at least annual laboratory soil analysis to determine current soil fertility levels and necessary nutrient supplements. Rainfall and run-off shall be captured thru site and landscape grading to create sump areas and minimize the use of berms.
Ewa by Gentry shall improve efficiency in use of non-potable water and reduce losses and waste of non-potable water by:

1. Utilizing efficiently designed landscaping and irrigation systems.
2. Monitoring irrigation requirements and controlling usage by checking the condition of all landscaping on at least a weekly basis and adjusting irrigation duration and frequency accordingly.
3. Managing irrigation scheduling to minimize water demand by monitoring the weather on both a daily and seasonal basis and adjusting irrigation schedules and operating times and duration of irrigation cycles accordingly. Turning off irrigation controllers when raining.
4. Eliminating water wastage by checking irrigation system and promptly repairing leaks and breaks in irrigation pipes. Irrigation system shall be checked at least monthly to insure that the radius and arc of each irrigation head is correct and that each head is not overthrowing pavement or spraying onto structures. Leaks and malfunctioning irrigation equipment reported by residents to the Homeowners Association or the landscape maintenance contractor shall be repaired no later than the following day, excluding Sunday.
5. Maintaining and improving irrigation system as necessary. Consult with Landscape Architect who designed the existing irrigation system prior to making modifications to the irrigation system which will change existing flow rates or equipment application rates or area of coverage.
March 2, 2009

Mr. Wayne M. Hashiro, P.E., Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Hashiro:

Ewa by Gentry, Irrigation Source Contingency Plan
Water Use Permit Nos. 855, 857, 858, and 859

Enclosed for your information is a copy of the irrigation water supply contingency plan submitted by Gentry Homes, Ltd. Gentry Homes submitted this plan in accordance with Special Condition 4 of the captioned water use permits, which states:

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

The Commission included Special Condition 4, as a condition of permit approval on January 22, 2009, in response to a comment received from the Board of Water Supply on Gentry Homes' applications for these permits.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DEM:ss
Enclosure

c: Mike Brant, Gentry Homes
Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706
Mail Provides:
mailing receipt
unique identifier for your mailpiece
A record of delivery kept by the Postal Service for two years

Important Reminders:
Certified Mail may 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.
For an additional fee, delivery may be restricted to the addressee or addressee’s authorized agent. Advise the clerk or mark the mailpiece with the endorsement “Restricted Delivery”.
If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the certified Mail receipt is not needed, detach and affix label with postage and mail.

IMPORTANT: Save this receipt and present it when making an inquiry.
PS Form 3800, August 2006 (Reverse) PSN 7530-02-000-9047
**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

   Ms. Suzanne Alawa  
   Ewa by Gentry Community Association  
   91-1795 Keaunui Drive  
   Ewa Beach, HI 96706

   (WUP No. 856)

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature  
   
   [Signature]

B. Received by (Printed Name)  
   
   Rebecca Simmons 02/13/09

C. Date of Delivery  

D. Is delivery address different from item 1?  ☐ Yes  ☑ No

If YES, enter delivery address below:

   Ewa by Gentry Community Association  
   91-1795 Keaunui Drive  
   Ewa Beach, HI 96706

**3. Service Type**

- ☑ Certified Mail
- ☐ Express Mail
- ☐ Registered
- ☐ Return Receipt for Merchandise
- ☐ Insured Mail
- ☐ C.O.D.

**4. Restricted Delivery? (Extra Fee)  ☐ Yes**

**PS Form 3811, February 2004  Domestic Return Receipt  102595-02-M-1**
February 12, 2009

Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Dear Ms. Alawa:

Modification of Water Use Permit
WUP No. 792 to WUP No. 856, for Well No. 2001-05
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the Soda Creek III Well (Well No. 2001-05). Your permit, which was approved by the Commission on Water Resource Management on January 22, 2009, authorizes use of 0.195 million gallons per day (mgd) of water on a 12-month moving average basis. This transmittal corrects the permits that we issued to you on January 27, 2009, notably, that you are not required to submit a water shortage plan for the four wells subject to these permits. As part of the Commission's approval, the following special conditions were added to your approved permit under Standard Permit Condition 19:

**Special Conditions**

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

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

3. Pumping shall cease immediately if chloride measurements show that the brackish water drawn by the well(s) exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve variance requests is delegated to the Chairperson.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

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

6. Standard Condition 16 is waived for brackish water wells.

7. The permittee shall comply with the conservation conditions for Ewa caprock water use permits, attached to this permit.
Enclosed with this approval letter are the following:

1. Water Use Permit No. 856
2. Conservation Conditions – Ewa Caprock Water Use Permits
3. Your monthly water use report form

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

We draw your attention to two conditions of your permit that require your response. First, Standard Condition 10 requires you to keep a record of your monthly total pumpage, water level in the well, chloride concentration, and water temperature measurements. This information must be submitted to the Commission on a monthly basis using the enclosed water use report form. You may make copies of the enclosed report form or download blank forms, as needed, from our website at http://www.hawaii.gov/dlnr/cwrmlandresources_permits.htm.

Second, Special Condition 4 requires you to submit a contingency plan for water use in the event that chloride concentrations in your well exceeds the 1,000 mg/l chloride limit established for Ewa caprock irrigation water supply sources. Your contingency plan must be submitted within thirty (30) days of the issuance date of this permit.

If you have any questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

LAURA H. THIELEN
Chairperson

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form

c: Mike Brant, Gentry Homes, Ltd.
GROUND-WATER USE PERMIT
WUP NO. 856

PERMITTEE

<table>
<thead>
<tr>
<th>Permittee/Water User</th>
<th>Landowner of Source</th>
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<tbody>
<tr>
<td>Ewa by Gentry Community Association</td>
<td>Ewa by Gentry Community Association</td>
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<tr>
<td>91-1795 Keaunui Drive</td>
<td>91-1795 Keaunui Drive</td>
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<tr>
<td>Ewa Beach, HI 96706</td>
<td>Ewa Beach, HI 96706</td>
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PERMITTED SOURCE INFORMATION

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<th>Island</th>
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<tr>
<td>Water Management Area</td>
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<td>Puuloa</td>
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<tr>
<td>Aquifer System</td>
<td>System Sustainable Yield</td>
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<td>Well Name</td>
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<td>State Well Nos.</td>
<td>2001-05</td>
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PERMITTED USE INFORMATION

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<th>Reasonable beneficial use</th>
<th>Irrigation</th>
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<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>0.195 mgd</td>
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<tr>
<td>Location of water use</td>
<td>Multiple: 9-1-070:042, 132, &amp; 043; 9-1-061:023; 9-1-076:174 &amp; roadway; 9-1-082:009 to 024, 061 to 064, 073 to 078, 118, &amp; 119; 9-1-093:025 to 032, 046 to 048, &amp; 075 to 089</td>
</tr>
<tr>
<td>TMK(s)</td>
<td>Urban</td>
</tr>
<tr>
<td>State land use classification</td>
<td>R-5 and 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 January 22, 2009, 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. Approved flowmeters must be installed to measure monthly ground-water 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 (see attached form).

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.

[Signature]
LAURA H. THIELEN, Chairperson
Commission on Water Resource Management

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form
Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

WUP No. 856

Article Number
(Transfer from service label)

Form 3811, February 2004
Domestic Return Receipt
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809

Affi: Denise
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</tbody>
</table>

Ms. Suzanne Alawa  
Ewa by Gentry Community Association  
91-1795 Keaunui Drive  
Ewa Beach, HI 96706
Certified Mail Provides:

- A mailing receipt
- A unique identifier for your mailpiece
- A record of delivery kept by the Postal Service for two years

Important Reminders:

- Certified Mail may 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.
- For an additional fee, delivery may be restricted to the addressee or addressee's authorized agent. Advise the clerk or mark the mailpiece with the endorsement "Restricted Delivery".
- If a postmark on the Certified Mail receipt is desired, please present the article at the post office for postmarking. If a postmark on the Certified Mail receipt is not needed, detach and affix label with postage and mail.

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

PS Form 3800, August 2006 (Reverse) PSN 7530-02-000-9047
Ms. Suzanne Alawa  
Ewa by Gentry Community Association  
91-1795 Keaunui Drive  
Ewa Beach, HI 96706  

Dear Ms. Alawa:

Modification of Water Use Permit  
WUP No. 792 to WUP No. 856, for Well No. 2001-05  
Puuloa Ground-Water Management Area, Oahu

This letter transmits your water use permit for the Soda Creek III Well (Well No. 2001-05). Your permit, which was approved by the Commission on Water Resource Management on January 22, 2009, authorizes use of 0.195 million gallons per day (mgd) of water on a 12-month moving average basis. As part of the Commission's approval, the following special conditions were added to your approved permit under Standard Permit Condition 19:

**Special Conditions**

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

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

3. Pumping shall cease immediately if chloride measurements show that the brackish water drawn by the well(s) exceeds 1,000 mg/l of chloride, unless a variance from the chloride limit has been granted. The authority to approve variance requests is delegated to the Chairperson.

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, in which case the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

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

6. The permittee shall comply with the conservation conditions for Ewa caprock water use permits, attached to this permit.

Enclosed with this approval letter are the following:
1. Water Use Permit No. 856
2. Conservation Conditions – Ewa Caprock Water Use Permits
3. Your monthly water use report form

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

We draw your attention to three conditions of your permit that require your response. First, Standard Condition 10 requires you to keep a record of your monthly total pumpage, water level in the well, chloride concentration, and water temperature measurements. This information must be submitted to the Commission on a monthly basis using the enclosed water use report form. You may make copies of the enclosed report form or download blank forms, as needed, from our website at http://www.hawaii.gov/dlnr/cwrm/resources_permits.htm.

Second, you are required to submit a water shortage plan to the Commission within thirty (30) days of the issuance date of this permit (see Standard Condition 16). Your water shortage plan should state what you are willing to do if the Commission declares a water shortage situation in the Ewa Caprock Ground-Water Management Area, and can be as concise as a one-page letter. In a water shortage situation, the Commission may require temporary reductions in pumpage from some or 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 plan. Therefore, we need your water shortage plan to assist us in formulating the Commission's overall Water Shortage Plan.

Third, Special Condition 4 requires you to submit a contingency plan for water use in the event that chloride concentrations in your well exceeds the 1,000 mg/l chloride limit established for Ewa caprock irrigation water supply sources. Your contingency plan must be submitted within thirty (30) days of the issuance date of this permit. This plan may be combined with your water shortage plan submittal, although the contingency plan is expected to cover longer-range supply needs than would normally be covered by a water shortage plan.

If you have any questions, please call Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]

Laura H. ThieLEN
Chairperson

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form

c: Mike Brant, Gentry Homes, Ltd.
PERMITTEE

Permittee/Water User

Address: Ewa by Gentry Community Association
         91-1795 Keaunui Drive
         Ewa Beach, HI 96706

Landowner of Source

Address: Ewa by Gentry Community Association
         91-1795 Keaunui Drive
         Ewa Beach, HI 96706

PERMITTED SOURCE INFORMATION

Island: Oahu

Water Management Area: Ewa Caprock

Aquifer Sector: Puuloa

Aquifer System: Puuloa

System Sustainable Yield: N/A (1,000 mg/l chloride concentration limit for irrigation uses)

Well Name: Soda Creek III

State Well Nos.: 2001-05

PERMITTED USE INFORMATION

Reasonable beneficial use: Irrigation

Withdrawal (12 month moving ave.): 0.195 mgd

Location of water use

Multiple: 9-1-070:042, 132, & 043; 9-1-061:023; 9-1-076:174 & roadway; 9-1-082:009 to 024, 061 to 064, 073 to 078, 118, & 119; 9-1-093:025 to 032, 046 to 048, & 075 to 089

TMK(s): 9-1-070:042, 132, & 043; 9-1-061:023; 9-1-076:174 & roadway; 9-1-082:009 to 024, 061 to 064, 073 to 078, 118, & 119; 9-1-093:025 to 032, 046 to 048, & 075 to 089

State land use classification: Urban

County zoning classification: R-5 and A-1

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 January 22, 2009, 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. Approved flowmeters must be installed to measure monthly ground-water 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 (see attached form).

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.

LAURA H. THIELEN, Chairperson
Commission on Water Resource Management

Attachments: Conservation Conditions – Ewa Caprock Water Use Permits
Water Use Report Form
DATE: January 22, 2009
TIME: 9:00 a.m.
PLACE: Kalanikou Building, Conference Room 132
1151 Punchbowl Street
Honolulu, Hawaii 96813

A. APPROVAL OF MINUTES
   1. December 17, 2008

B. ANNOUNCEMENTS

C. GROUND WATER REGULATION
   1. Gentry Homes, Ltd. and Ewa by Gentry Community Association, APPLICATIONS FOR
      WATER USE PERMITS: WUP No. 855, Future Irrigation Use, 66,085 gpd (Well No. 1901-08); WUP No. 856, Modify Existing Irrigation Use to 194,768 gpd (Well No. 2001-05); WUP No. 857, Modify Existing Irrigation Use to 224,615 gpd (Well No. 2001-12); WUP No. 858, Modify Existing Irrigation Use to 36,975 gpd (Well No. 1901-05); WUP No. 859, Future Irrigation Use, 255,108 gpd (Well Nos. 1900-24 and 2000-06); Puuloa Ground Water Management Area, Oahu
   2. Oasis Water Systems, Inc., REQUEST TO EXCEED MAXIMUM PERMITTED WELL
      DEPTH: Lanikai Condominium Irrigation Well, “Welly 1” (Well No. 0319-01), TMK (4) 4-3-002:003, Wailua, Kauai

D. NON-ACTION ITEMS
   1. Report to the Twenty-Fifth Legislature, 2009 Regular Session: 20-Year Review of Water
      Use Permits

E. NEXT COMMISSION MEETINGS (TENTATIVE)
   1. February 18, 2009
   2. March 18, 2009
Barry said BWS's concern is really having to deal with the Community Associations in the future once Gentry hands management over to them and if and when the wells start consistently going over 1000 mg/l. The gentry non-potable systems have been designed to use the caprock wells and currently the WW reuse has some other issues to overcome as follows:

1. The WW reuse can only deliver about 50 psi if they were to hook up and various booster pumps would be necessary to bring the gentry irrigation systems up to the 70 psi they require. Seems kinda high to me but that's what Gentry's irrigation systems need.
2. Although nearby, the hook up would have to occur on Fort Weaver Rd and is a bit far away from the demand areas (part of the booster pump need).
3. Honouliuli can only deliver 10 mgd of WW reuse and the short of it is that BWS has other users projected to use what little remains in the reuse system. BWS could probably handle 100,000 gpd or so but not much more.

Barry offered to be at the CWRM mtg to help answer other WW reuse questions should they arise.

--- Forwarded by Roy Hardy/DLNR/StateHiUS on 01/07/2009 02:27 PM ---

I'll touch base with him - haven't spoken to him in awhile and I'd like to discuss some other things with him as well. Still waiting on his call back.

Denise E Mills/DLNR/StateHiUS

Do you want me to call Barry?

Roy Hardy/DLNR/StateHiUS

Ken just raised a question about the BWS comments and WW reuse based on Commissioner Kiyosaki's comments from the last mtg. Though we included the 'contingency plan' condition for approval, we should probably ask BWS if the BWS could actually deliver water or if they've got some contractual agreements in place already with Gentry. Several of the wells are bouncing around 1,000 mg/l where they should be stopping pumping until they go down. In the meantime, they would need WW reuse to make up any deficits or face fines if we raise enforcement priority on the caprock. I can check with Barry Usagawa at
I think they are good to go.
Denise E Mills/DLNRI/StateHiUS

Just want to confirm that no further work is needed to complete the submittal for the Gentry WUPs. Submittals are due on Thurs. this week, so I wanted to make sure I don't miss anything this time.
Gentry Homes, Ltd. and Ewa by Gentry Community Association

APPLICATIONS FOR WATER USE PERMITS

WUP No. 855, Future Irrigation Use, 66,085 gpd (Well No. 1901-08)
WUP No. 856, Modify Existing Irrigation Use to 194,768 gpd (Well No. 2001-05)
WUP No. 857, Modify Existing Irrigation Use to 224,615 gpd (Well No. 2001-12)
WUP No. 858, Modify Existing Irrigation Use to 36,975 gpd (Well No. 1901-05)
WUP No. 859, Future Irrigation Use, 255,108 gpd (Well Nos. 1900-24 and 2000-06)

Puuloa Ground Water Management Area, Oahu

SUMMARY OF REQUEST:

Gentry Homes, Ltd. and the Ewa by Gentry Community Association (hereinafter referred to as “Gentry,” except when discussing details of an individual application or referring to only one applicant) are requesting approval to:

- Modify three existing water use permits (WUPA Nos. 856, 857, and 858) to increase the use of brackish water for irrigation of landscaped areas along roadways within the Ewa by Gentry...
development project in Ewa Beach. The total quantity of water requested in these applications is 456,358 gallons per day (gpd). The existing permits allow use of 371,000 gpd for the same purposes.

- Obtain two new water use permits (WUPA Nos. 855 and 859) for new irrigation uses within the Ewa by Gentry development project. The total quantity of water requested in these two applications is 321,293 gpd.
- The total water use requested is 777,551 gpd (0.778 million gallons per day [mgd]).

LOCATION MAP: See Exhibit 1.

BACKGROUND:

On March 3, 1993, the Commission adopted the boundary of the Ewa caprock aquifer as a separate aquifer system area overlying the designated ground water management areas of the Waipahu-Waiawa, Ewa-Kunia, and Maka'ikai aquifer system areas. Because of uncertainties regarding the nonpotable utility and sustainable yield of the caprock formation, the Commission had not adopted a sustainable yield estimate for the Ewa caprock aquifer.

Designation of the Ewa caprock aquifer as a water management area was precipitated by the City and County of Honolulu’s (City’s) urbanization plans for the Ewa Plain and adoption by the City of a local ordinance that requires dual water systems for all new developments. Potable water was to be provided through the municipal system, with non-potable water supply provided by two sources: (1) wells designed to pump from the caprock and (2) treated effluent from the Honouliuli Wastewater Treatment Plant. The projected future demand when this ordinance was adopted was 25 mgd, which is higher than the estimated natural recharge to the caprock aquifer of less than 16 mgd.¹

In 1993, the Commission began approving 1-year temporary permits for new uses of caprock ground water. Temporary rather than permanent permits were issued in response to concerns about the future viability of the caprock to serve as a reliable water source of nonpotable water supply consequent to the loss of return of irrigation recharge from sugar cane agriculture. From 1993 until 2006, the Commission approved only 1-year temporary permits (later called interim permits) for the caprock aquifer. In analyzing water availability, the Commission used guidelines for estimating sustainable yields for the Puuloa, Kapolei, and Malakole aquifer system areas of the Ewa Caprock Aquifer Sector (hereinafter referred to as the caprock aquifer).

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 non-potable uses.

On May 14, 1997, the Commission adopted a chloride concentration limit of 1,000 milligram per liter (mg/l) as a basis for regulating water use from wells completed in the caprock aquifer and to prevent degradation of the natural quality of ground water in the caprock aquifer. The intent was to restrict pumpage in any caprock well with a chloride concentration approaching 1,000 mg/l to prevent a build-up of sodium in the clayey soils and to protect other adjacent users of caprock water from drawing water with chloride concentrations above 1,000 mg/l. This limit corresponds to the generally accepted upper limit of irrigation-quality water. Thus, in lieu of an aggregate sustainable yield figure, usually expressed as a volume of water, brackish ground water pumped from irrigation wells is required to have chloride concentrations below 1,000 mg/l.

In conjunction with extending annual interim permits during the 1990s and after the millennium, the Commission tracked progress on developing reclaimed water as an alternate source of non-potable supply for well owners in the Puuloa, Kapolei, and Malakole aquifer system areas. On July 20, 2000, an agreement was reached between the Honolulu Board of Water Supply (BWS), the City, and U.S. Filter, allowing the BWS to purchase the Honouliuli Wastewater Treatment Plant and become a purveyor of reclaimed water, with a goal of securing customers for 10 mgd by July 1, 2001. U.S. Filter would operate the plan for BWS under a 20-year service agreement. The City was to provide secondary effluent to the facility and take back 4 mgd of the reclaimed water for reuse by the City. Some of the reclaimed water was intended for use at the Campbell Industrial Park.

On July 12, 2006, the Commission converted a total of 26 interim water use permits to permanent permits. This included the three existing permits for Gentry Homes, Ltd. (for Well Nos. 1901-05 and 2001-12) and Ewa by Gentry Community Association (for Well No. 2001-05). The total quantity of water use allowed by these three permits was 0.371 mgd (see Attachment A).

On October 8, 2008, the Commission received four complete water use permit applications from Gentry Homes, Ltd. and one water use permit application from the Ewa by Gentry Community Association. Three of these applications are to modify the existing water use permits that were made permanent on July 12, 2006. Two applications (WUPA No. 855 and 859) are for proposed new uses.
Staff Submittal

January 22, 2009

Brackish water is requested for irrigating landscape plantings along roadways within the Ewa by Gentry project and two park areas.

The details of Gentry’s five water use permit applications, including source information and a summary of public notices made, are provided in Attachment A. All of the applications are for water that will be used for irrigation of landscape plantings along roadways and some park irrigation within the Ewa by Gentry development. The locations of Gentry’s existing and proposed new wells and the corresponding water use permit application (WUPA) number are shown in Exhibit 3. The areas of existing and proposed new uses are delineated in a site plan prepared as part of the Ewa by Gentry Irrigation Master Plan (Exhibit 4).

Applications to Modify Existing Permits

The water use permit modifications requested can be summarized as follows:

- **WUPA No. 856** – The Ewa by Gentry Community Association is seeking to increase the allocated quantity for Well No. 2001-05 (under WUP No. 792) from 66,000 gallons per day (gpd) up to 194,768 gpd, for a net change of 128,768 gpd. This part of the development is known as the Sun Terra Tot Lot.
  - The water would be used on multiple TMKs within an area along Kapolei Parkway and within areas generally bounded by Kapolei Parkway, Geiger Road, Fort Weaver Road, and Keaunui Drive. The total land area proposed for irrigation under this permit is 31.3 acres. (See also Exhibit 4.)
  - The proposed use TMKs for WUPA No. 856 are listed in Exhibit 5.

- **WUPA No. 857** – Gentry Homes, Ltd. is seeking a modification that will decrease the allocated quantity for Well No. 2001-12 (under WUP No. 793) from 249,000 down to 224,615, for a net reduction of 24,385 gpd. This part of the development is known as Keaunui Area 30.
  - The area covered by this application is bounded generally by Arizona Road to the north, Fort Weaver to the west, Iroquois Road and East-West Loch Road to the south, and various lots around Keaunui Drive. The total land area proposed for irrigation under this permit is 36.09 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 857 are listed in Exhibit 6.

- **WUPA No. 858** – Gentry Homes, Ltd. is seeking a modification that will decrease the allocated quantity for Well No. 1901-05 (under WUP No. 794) from 56,000 gpd down to 36,975 gpd, for a net reduction of 19,025 gpd. This part of the development is known as Gentry Area 13.
  - The area covered by this application is roadway landscaping along Geiger Road west of Kapolei Parkway, and within the area bounded generally by Geiger Road to the north, Kapolei Parkway to the east, Launahale Street to the south, and the eastern boundary of the Coral Creek Golf Course. The total land area proposed for irrigation under this permit is 5.94 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 858 are listed in Exhibit 7.
Applications for New Water Use Permits

The applications for new water uses, both requested by Gentry Homes, Ltd., are for a total of 321,108 gpd that would be supplied by three new wells (Well Nos. 1901-08, 1900-24, and 2000-06), which are not yet constructed.

- **WUPA No. 855** – The quantity of water requested is 66,085 gpd, for irrigation uses within the Gentry Area 45 portion of the Ewa by Gentry development.
  - The area covered by this application is within parcels along Kapolei Parkway. The total land area proposed for irrigation under this permit is 10.62 acres. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 855 are listed in Exhibit 8.

- **WUPA No. 859** – The quantity of water requested is 255,108 gpd, for use on a total of 41.0 acres of roadway landscaping within the Gentry Area 35 portion of the Ewa by Gentry development.
  - The use area covered by this application is bounded generally by the north boundary of the Hawaii Prince Golf Club (located to south of the proposed use area), Fort Weaver Road to the west, Iroquois Road and East-West Loch Road to the north, and Makalea Street and Hoowalea Street to the east. (See Exhibit 4.)
  - The proposed use TMKs for WUPA No. 859 are listed in Exhibit 9.

The specific plant materials proposed for the Ewa by Gentry development, in each of the areas covered by Gentry’s five water use permit applications, are listed in Exhibit 10.

Gentry’s Water Use Under Existing Permits

A review of Gentry’s past water use from the Ewa by Gentry Community Association well (Well No. 2001-05) was 0.052 mgd through September 30, 2008, on a 12-month moving average basis (12-MAV), which is slightly under its allocation of 0.066 mgd (see Exhibit 11). Pumpage from this well has been increasing since approximately April 2008. If the current pattern of increased pumpage continues, water use under this permit could exceed the permitted quantity and lead to a permit violation. The quantity of water requested under WUPA No. 856 is approximately 3 times more than the current permitted quantity. Chloride concentrations in this well have ranged from 754 to 988 mg/l from January 2007 through September 2008, with an average concentration of 852 mg/l.

Pumpage records for the other two wells (Well Nos. 2001-12 and 1901-05) show that Gentry has pumped more water than the amount allocated under its existing permits. The quantity of water drawn from Well No. 2001-12 through September 30, 2008, on a 12-MAV basis, was 0.247 mgd, which is below the current allocation of 0.249 mgd (Exhibit 12). However, before September 2008, the 12-MAV
Staff Submittal

January 22, 2009

MAV exceeded the permitted quantity with the average pumpage ranging from 0.276 to 0.303 between December 2007 and August 2008, which is a violation of the permit. Chloride concentrations in this well have ranged from 742 to 928 mg/l from January 2007 through September 2008, with an average concentration of 797 mg/l.

The quantity of water pumped from Well No. 1901-05 through September 30, 2008, on a 12-MAV basis, was 0.123 mgd (Exhibit 13). This is more than double the permitted quantity of 0.056 mgd for this well. Between December 2007 and August 2008, the 12-MAV for this well ranged between 0.140 and 0.168 mgd. These quantities are almost consistently 2.5 to 3 times higher than the allocated quantity; however, Gentry Homes' application to modify the existing permit for this well seeks to reduce the allocation from 0.056 mgd to 0.037 mgd. Chloride concentrations in this well have ranged from 864 to 1,110 mg/l from January 2007 through September 2008, with an average concentration of 987 mg/l. The concentration reported for three months in this period was 1,000 mg/l, and two measurements, reported in March and April 2008, were 1,026 mg/l and 1,110 mg/l, respectively. Concentrations in this well have remained in this range at least since the start of 2007.

ANALYSIS/ISSUES:

Section 174C-49(a) of the State Water Code establishes seven criteria that must be met to obtain a water use permit. An analysis of the proposed permits in relation to these criteria follows.

(1) Water availability

In establishing a sustainable capacity for irrigation wells, the Commission found the following:

1. The Ewa caprock aquifer is a thin basal aquifer vulnerable to salinity intrusion (most salinity profiles indicate sharp salinity changes). Therefore, the quantity of developable water supply depends entirely on well location.

2. Because the caprock aquifer lens is thin, salinity intrusion is a significant limitation, particularly for wells in the makai portion of the aquifer. If ground water withdrawal from the aquifer occurs primarily in mauka areas, more developable supply may be available.

3. The aquifer's main source of recharge is ground water inflow (leakage) from the basalt aquifer at the inland margin of the interbedded coralline rock formations that comprise the Ewa caprock aquifer system. The amount of leakage cannot easily be quantified and is, in part, dependent upon the water levels in the basal aquifer.

4. Sustainable yield is a theoretical number that assumes optimal well placement in an aquifer. The spatial distribution of chloride in the caprock aquifer, however, doesn't fit the notion of managing ground water allocations and withdrawals on the basis of a single sustainable yield pumpage number.
6. The magnitude of tidal influences are equal to or greater than pumping influences and thus makes water-level monitoring as a means for estimating sustainable yield and regulating water use extremely difficult.

7. The caprock aquifer is para-basal inland, which means that the bottom of the aquifer is truncated by the low-permeability clay layer that underlies the upper limestone aquifer.

8. The hydrology of the Ewa caprock aquifer is sufficiently unique to warrant consideration of alternative regulatory considerations. This is particularly appropriate given the change in irrigation returns and availability of reclaimed water to supplement the naturally-occurring recharge.

To respond to concerns about the viability of the caprock aquifer to meet future non-potable water demands in the Ewa region, staff performed quarterly monitoring of water levels and chloride concentrations in select caprock wells from 1994 to 2001. The monitoring network initially included some Malakole aquifer system area wells, but those wells were later dropped due to mainly industrial needs not dependent upon chloride concentrations and the focus placed on irrigation wells in the Kapolei and Puuloa aquifer systems in response to irrigation development pressures within the eastern portion of the Ewa Plain.

A total of 63 permitted and registered wells are known to be within the Puuloa Aquifer System Area (see Exhibit 14). Wells in the vicinity of the Ewa by Gentry development project are included in Exhibit 1. Brackish water from the caprock aquifer within this area is used primarily for a variety of irrigation purposes, as follows:

- Landscape and/or park irrigation (IRRLA, IRRPA) – 19 wells
- Golf course irrigation (IRRGC) – 19 wells
- Agriculture (crops and processing) (AGRCP) – 1 well (U.S. Navy)
- Habitat maintenance (IRRHMM) – 1 well (U.S. Fish and Wildlife Service)

Of the remaining wells, two are permitted for industrial use (Well Nos. 1902-03 and -04), one is permitted for domestic use (Well No. 1901-02), ten are recorded as unused, four are maintained as observation (monitor) wells, and six are abandoned.

The total permitted quantity of water from the Puuloa Aquifer System Area is 14.817 mgd, allocated through 24 active water use permits (see Exhibit 2). The water use from wells within this system is 3.274 mgd (12-MAV), based on reports filed with the Commission; actual use of ground water in this area could be higher. For some wells, the 12-MAV was calculated from pumpage data through only December 2005; more recent quantities could not be calculated. Pumpage could not be calculated and is not known for 11 permits (noted as “N/R” in Exhibit 15) because there are no reports on record.
As noted in the Background section, above, at the July 18, 2001 Commission meeting, staff recommended that the total allocation for the Puuloa Aquifer System Area should not exceed 15 mgd. On this basis, then the quantity available for allocation is only 0.183 mgd. Gentry’s water use applications propose to increase water use within the Ewa by Gentry development by 0.407 mgd. Although this increase, if approved, would bring the total permitted water use for the Puuloa system to 15.224 mgd, staff does not believe this would cause the aquifer to be overused nor at risk of becoming degraded for several reasons, including the examples given in the following paragraphs.

First, staff expects that follow-up on the findings of the 20-year review report, which will be provided to the Legislature in January 2009, will involve some combination of revocations or partial revocations for non-use, enforcement of the requirement for permittees to submit annual or monthly reports of their water use and chloride concentrations measured in their well water, or other actions. Staff anticipates re-examining the status of water use permits and water usage for the caprock aquifer to bring the permitted quantities in line with actual use. As noted earlier, available records indicate that actual use is approximately one-fourth the total permitted quantity. Though slightly less than one-half have not reported use, of those that have some have reported either no use or use at a rate that is a fraction of the permitted quantity. For example, the U.S. Navy’s average use through December 2007 was 0.238 mgd, which is only 4 percent of the quantity of 5.890 mgd allocated in WUP No. 189 (see Exhibit 2).

Second, as more reclaimed water from the Honouliuli Wastewater Treatment Plant becomes available for irrigation and other non-potable uses in the area, permitted quantities of and demand for ground water should be reduced. As water users in the area shift to reclaimed water as a source of non-potable water, demand for brackish ground water is expected to decline further. HASEKO (Ewa), for example, has entered into an agreement with the BWS to provide up to 0.600 mgd of reclaimed water, which offsets HASEKO’s ground water use by that amount. The quantity of water currently allocated for HASEKO’s use is 3.3 mgd. The availability of 0.600 mgd of reclaimed water effectively reduces HASEKO’s need for ground water to 2.7 mgd. Additionally, HASEKO’s reported water use (12-MAV) is only 0.079 mgd, which represents approximately 2 percent of its allocation (see Exhibit 2).

Pump test data show that the caprock aquifer is capable of producing large quantities of brackish water without causing much drawdown of the water table.

Staff believes that the quantity of water is available in the caprock aquifer is sufficient to meet the proposed uses for the following reasons:

- The aquifer is a thin basal aquifer, and the salinity impacts of withdrawals at an individual well site will likely be confined to the immediate vicinity of the pumping well.
Although the recommended total permitted quantity for the Puuloa Aquifer System Area is 15 mgd (a staff recommendation made at the October 18, 1998 Commission meeting), several factors indicate that there is sufficient brackish water available to permit the quantity requested in Gentry’s applications. These factors include:

- Water use records show that actual water use under existing permits issued for area wells is much lower;
- It is anticipated that, to follow up on the findings of the 20-year review, staff will identify and recommend to the Commission permits that should be revoked in whole or in part for nonuse; and
- Some users have already or are shifting to reclaimed water as a source of non-potable water supply, which leads to a corresponding reduction in demand for brackish ground water to meet their needs.

- Based on the hydraulic properties of the caprock aquifer and an assessment of other uses in the vicinity of Ewa by Gentry project, it is unlikely that the proposed withdrawal of up to 0.778 mgd will interfere with other users in the area.

(2) Reasonable-beneficial

Section 174C-3 HRS defines "reasonable-beneficial use" is

"...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 both reasonable and consistent with the state and county land use plans and the public interest."

I. Purpose of Use

The applicant is requesting approval to use a total of 0.778 mgd of brackish ground water to irrigate landscape plantings along roadways and in community park areas within the Ewa by Gentry development.

II. Quantity Justification

A letter included with each of the applications, provided by Browlie & Lee (see Exhibit 15), a firm that provides landscape and irrigation services for the Ewa by Gentry development, explains the basis for the water use quantities requested in Gentry’s applications. According to this letter, for 18 years Browlie & Lee has dealt with the requirement to provide low maintenance and drought-tolerant plantings within the development. The firm also cites its experience in applying water conservation efforts. Their estimates include a 15 percent inefficiency factor to account for the high percentage of small irregular planting areas among
the residential lots in the subdivision. The small size and density of lots shown on the irrigation master plan (Exhibit 4) and the accompanying inventory of proposed use TMKs listed in Exhibits 5 through 9, illustrate the disaggregated nature of the areas the planned irrigation systems will serve.

In comments submitted by OHA (see Exhibit 16), OHA agrees that potable water should not be used for the proposed purpose. Also, OHA asks whether the landscaping “will use drought-tolerant local or endemic [plant] species common to the area.” The plant materials provided as part of Gentry’s applications (see Exhibit 10) are drought-tolerant plants.

III. Efficiency of Use

Gentry states that spray heads will be used in its irrigation system for all of the use areas proposed in its water use permit applications. The proposed irrigation practice is to apply the amount of water needed to meet the demand. (This is stated as “irrigate to demand” on each of the applications.) Efficiency is also discussed in the preceding section, Quantity Justification.

IV. Analysis of Practical Alternatives

Gentry’s analysis of alternative potable and non-potable sources is summarized below.

1. Municipal Sources – The Board of Water Supply requires the use of non-potable water for irrigation in the Ewa region. The use of brackish water from the caprock aquifer effectively reduces the amount of potable water needed for the development.

2. Wastewater Reuse (Reclaimed Water) – Treated effluent from the Honouliuli Wastewater Treatment Plant is not available in this area.

3. Ditch System – No ditch system water is available for this area.

4. Desalinization – Desalinization is not financially practical.

5. Surface Water – A source of surface water for alternate supply is not available in this area.

The 2000 Legislature amended the Water Code to include a new section, §174C-51.5 HRS that provides the Commission with the authority to require dual line (potable and non-potable) water supply systems in new industrial and commercial developments located in water management areas. The statute (§174C-51.5(3)(b) HRS) requires county boards of water supply, in consultation with the state Department of Health, to adopt standards for non-potable water distributed through dual-line water supply systems and rules regarding the use of non-potable water. The City and County of Honolulu has addressed this requirement through the Ewa Development Plan and various project approvals.

The consistency of this application with other beneficial-reasonable use criteria is discussed in the following sections.
(3) Interference with other existing legal uses

A discussion of other ground water users in the vicinity of the Ewa by Gentry development and within the Puuloa Aquifer System Area is provided above in Section 1, Water Availability.

All of Gentry's applications state that there are no known conflicts with any existing legal uses. Staff does not believe Gentry's proposed use will interfere with other legal water uses in the area.

(4) Public interest

In each of its applications, Gentry explains that the use of brackish water [for the proposed irrigation uses] preserves potable water that would otherwise be used for irrigation. This assessment is consistent with the Ewa Development Plan, which requires non-potable water use in the Ewa region for the purpose of preserving potable water supplies for other uses that require lower levels of chloride and total dissolved solids.

No public comments and no objections were received on any of Gentry's applications.

(5) State and county general plans and land use designations

Based on comments received from the State Land Use Commission (LUC) and from the City and County of Honolulu, Department of Planning and Permitting (DPP), the proposed uses are consistent with state and county general plans and land use designations.

The LUC confirms that the Ewa by Gentry development is located within the State Land Use Urban District. Activities and uses with the Urban District are under the jurisdiction of the City and County of Honolulu, Department of Planning and Permitting (DPP).

In the DPP's comments on Gentry's water use permit applications (Exhibit 17), it states that the proposed use for roadway landscaping irrigation and park irrigation (proposed only in WUPA No. 856 and 857) is consistent with local zoning. The DPP further notes that the proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan, which requires (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

Comments from the BWS are included in the comment letter provided by the DPP (Exhibit 17). The BWS requests contingency plans for the new proposed wells, Well Nos. 1901-08, 1900-24, and 2000-06, in the event that chloride levels in these wells exceeds the 1,000 mg/l limit.
(6) **County land use plans and policies**

The proposed uses are consistent with local land use plans and policies, as discussed under Section 5, above.

(7) **Interference with Hawaiian home lands rights**

All permits approved by the Commission are subject to the prior rights of Hawaiian home lands, as set forth in the Hawaiian Homes Commission Act (§221 HRS).

Gentry’s applications state that the proposed water uses will not interfere with the rights of Hawaiian home lands. The Department of Hawaiian Home Lands (DHHL) and OHA were provided a copy of Gentry’s applications for review and comment. In its comments (see Exhibit 15), OHA asks for assurances from the Commission that uses from each of the proposed sources “will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code.”

Standard conditions 3.g., 6., and 9.f. of all water use permits (see Attachment B) provide notice to all permittees that the Commission’s approval is subject to the requirements of the Hawaiian Homes Commission Act, as amended, and cannot interfere with Hawaiian home land rights, in accordance with §174C-101(a) HRS. Given these conditions, it is unlikely that Gentry’s proposed water uses will interfere with Hawaiian home land rights, provided it fully complies with these and other permit conditions. The assurance requested by OHA, therefore, can be addressed by monitoring Gentry’s performance with respect to the permit conditions and promptly addressing any violations that have the potential to interfere with the rights of Hawaiian home lands.

**OTHER**

As noted in the Background section, Gentry’s water use under two existing permits has exceeded the allocated quantities. These pumpage violations are identified in the report on the 20-year review of the water use permits that will be provided to the Legislature in January 2009. The results of the 20-year review provide an opportunity to look at the permit process, permit compliance, and information management (maintenance) in a holistic way, rather than addressing issues such as overpumping on a case-by-case basis. For example, a comprehensive review of active caprock permits and pumpage records would aid reassessment and refinement of the quantity of ground water available for allocation. This would help identify permits in which the allocation should be adjusted to reflect actual use, and which permits and how many permits should be revoked in whole or in part.

**RECOMMENDATION:**

Staff recommends that the Commission approve issuance of five water use permits, as follows:
1. Water use permit no. 855 to Gentry Homes, Ltd., for the reasonable and beneficial use of 66,085 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 1901-08, a proposed new well).

2. Water use permit no. 856 to the Ewa by Gentry Community Association for the reasonable and beneficial use of 194,768 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 2001-05, an existing well). This modifies and supersedes water use permit no. 792.

3. Water use permit no. 857 to Gentry Homes, Ltd., for the reasonable and beneficial use of 224,615 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 2001-12, an existing well). This modifies and supersedes water use permit no. 793.

4. Water use permit no. 858 to Gentry Homes, Ltd., for the reasonable and beneficial use of 36,975 gallons per day of brackish water from the Ewa caprock aquifer (Well No. 1901-05, an existing well). This modifies and supersedes water use permit no. 794.

5. Water use permit no. 859 to Gentry Homes, Ltd., for the reasonable and beneficial use of 255,108 gallons per day of brackish water from the Ewa caprock aquifer (Well Nos. 1900-24 and 2000-06, two proposed new wells).

Approval of these permits should be subject to (1) the standard water use permit conditions listed in Attachment B; (2) the following special conditions, and (3) the conservation conditions Ewa caprock water use permits listed in Attachment C.

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

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

4. The permittee shall submit a contingency plan for water use in the event the chloride concentration in the permitted well(s) exceeds the 1,000 mg/l sustainable capacity limit established for Ewa caprock aquifer sources, the permittee shall seek an alternative source of supply. The contingency plan shall be submitted to the Commission within 30 days of the issuance of this permit.

5. In the event that the tax map key(s) at the location(s) of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change(s) within thirty (30) days after the permittee receives notice of the change(s).
6. Standard Condition 16 is waived for brackish water wells.

Respectfully submitted,

KEN C. KAWAHARA, P.E.
Deputy Director

Attachment(s):
A Water Use Permit Detailed Information
B Water Use Permit Standard Conditions
C Conservation Conditions for Ewa Caprock Water Use Permits

Exhibit(s):
1 Location Map
2 Active Water Use Permits in the Pualoa Aquifer System Area
3 Ewa by Gentry Well Locations
4 Ewa by Gentry Irrigation Master Plan
5 Proposed Irrigation Plan and Use TMKs for WUPA No. 856
6 Proposed Irrigation Plan and Use TMKs for WUPA No. 857
7 Proposed Irrigation Plan and Use TMKs for WUPA No. 858
8 Proposed Irrigation Plan and Use TMKs for WUPA No. 855
9 Proposed Irrigation Plan and Use TMKs for WUPA No. 859
10 Proposed Plant Materials and Irrigated Acres
11 Well No. 2001-05 Pumpage Data, Ewa by Gentry Community Association
12 Well No. 2001-12 Pumpage Data, Gentry Homes, Ltd.
13 Well No. 1901-05 Pumpage Data, Gentry Homes, Ltd.
14 Nearby Wells and Water Uses
15 Basis for Quantity Estimate Prepared by Brownlie & Lee for Gentry
16 Comments from Office of Hawaiian Affairs
17 Comments from C&C Honolulu, Department of Planning and Permitting

APPROVED FOR SUBMITTAL:

LAURA H. THIELEN
Chairperson
**WATER USE PERMIT DETAILED INFORMATION**

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<th>Well Number and Name</th>
<th>1901-08</th>
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<td>19</td>
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<td>Pump capacity (gpm)</td>
<td>100 (proposed)</td>
<td>200 (proposed)</td>
<td>430</td>
<td>355</td>
<td>150 (proposed)</td>
<td>150 (proposed)</td>
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</tbody>
</table>

**Notes:**
1. Ewa by Gentry Community Association
2. The current permitted pump capacity is 110 gpm. Applicant has applied for a new pump installation permit to increase the capacity to 200 gpm.

---

**ATTACHMENT A**
Use Information

Quantity Requested

<table>
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<th>Well Description</th>
<th>GPD</th>
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<tr>
<td>WUPA No. 855 (new use, one new well)</td>
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<tr>
<td>WUPA No. 856 (modify use, one existing well)</td>
<td>194,768</td>
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<td>WUPA No. 857 (modify use, one existing well)</td>
<td>224,615</td>
</tr>
<tr>
<td>WUPA No. 858 (modify use, one existing well)</td>
<td>36,975</td>
</tr>
<tr>
<td>WUPA No. 859 (new use, two new wells)</td>
<td>255,108</td>
</tr>
</tbody>
</table>

Total quantity requested: 777,551 gpd

Proposed type of water use: Irrigation (landscaped areas, park)

Place of water use: Multiple TMKs within the Ewa by Gentry development
(proposed use TMKs are shown in Exhibits 5 through 9)

Water Usage (12-MAY) Reported by Gentry (Ewa by Gentry development)\(^1\)

<table>
<thead>
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<th>Well Description</th>
<th>mgd</th>
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<tbody>
<tr>
<td>Ewa by Gentry Community Association (Well No. 2001-05)</td>
<td>0.066</td>
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<tr>
<td>Gentry Homes (Well No. 2001-12)</td>
<td>0.249</td>
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<tr>
<td>Gentry Homes (Well No. 1901-05)</td>
<td>0.056</td>
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</tbody>
</table>

Puuloa Aquifer System Area

Current 12-MAV Withdrawal (See Exhibit 2): 3.274 mgd

\(^1\) Also see Exhibit 2 for water usage reported by other well operators within the Puuloa Aquifer System Area.

Nearby Surrounding Wells and Other Registered Ground Water Use

Exhibit 14 lists other permitted and registered wells that are constructed within the Puuloa Aquifer System Area, and Exhibit 15 shows the well locations. A total of 63 wells are known to be in the area. Brackish ground water drawn from the Ewa caprock aquifer in this area is primarily used for a variety of irrigation purposes, as follows:

- Landscape and/or park irrigation (IRRLA, IRRPA) – 19 wells
- Golf course irrigation (IRRGC) – 19 wells
- Agriculture (crops and processing) (AGRCP) – 1 well (U.S. Navy)
- Habitat maintenance (IRRHM) – 1 well (U.S. Fish and Wildlife Service)

Of the remaining wells, two are permitted for industrial use (Well Nos. 1902-03 and -04), one is permitted for domestic use (Well No. 1901-02), ten are recorded as unused, four are maintained as observation (monitor) wells, and six are abandoned.

The total permitted quantity of water from the Puuloa Aquifer System Area is 14.817 mgd (see Exhibit 2), allocated through 25 active water use permits. The reported water use from wells within this system is 3.274 mgd (12-MAV), based on water use reports filed with the Commission; actual existing use of ground water in this area could be higher.
Public Notice

In accordance with §13-171-17, HAR, public notices were published in the Honolulu Star Bulletin on October 29, 2008 and November 5, 2008, and a copy of both notices sent to Mayor Hannemann’s office. Copies of the completed application were sent to the Honolulu Board of Water Supply, the City and County of Honolulu Department of Planning and Permitting, the state Departments of Health and Department of Hawaiian Home Lands, various divisions of the Department of Land and Natural Resources, the Land Use Commission, and the Office of Hawaiian Affairs. Comments and objections to the proposed permit were to be filed with the Commission by November 20, 2008.

Comments were received from most of the review agencies and are addressed in the analysis of the application and the recommended permit special conditions. No comments were received from the general public or other interest groups.

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 November 20, 2008.

No objections were filed.
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 December 17, 2008 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 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. 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 for the Puuloa Aquifer System Area’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 Area, 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.

ATTACHMENT B
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
EXHIBIT 1

- Existing Source
- New Proposed Source
### Aquifer System Water Use Permit Index (caprock)

**ISLAND OF OAHU**

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<th>Well Name</th>
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**WMA Aquifer System: PUULOA**

**Sustainable Yield:**

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Tuesday, December 02, 2008

**EXHIBIT 2**
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<th>Applicant</th>
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<th>WUP (mgd)</th>
<th>12-MAV (mgd)</th>
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Summary for 'SYSTEM' = PUULOA (44 detail records)

Totalling 14.817
Available 3.274 reported
Address Keaunui Dr
Ewa Beach, HI 96706

Google Maps

Get Google Maps on your phone
Text the word "GMAPS" to 466453

---

EWA BY GENTRY

Water Supply Wells for Irrigation Master Plan

WUPA Nos. 855 through 859

Existing wells: 1901-01, 2001-05, 2001-12

New proposed wells: 1900-24, 1901-08, 2000-06

EXHIBIT 3

http://maps.google.com/maps?f=q&hl=en&geocode=&q=keaunui+drive,+ewa+beach&sl... 10/16/2008
Table 1: LAND USE CONSISTENCY / EFFICIENCY - Soda Creek III Well

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<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
<th>USE TMK</th>
<th>State Land Use District</th>
<th>CDUP Req Date</th>
<th>County Zoning Code</th>
<th>SMAP Req Date</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (YN)</th>
<th>Units or Net Acreage</th>
<th>Applicant’s Justification for Quantity of Requested Use for Item 7</th>
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<tr>
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<td>Sun Terra</td>
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<td>N</td>
<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
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TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 194,768

31.3
## Table 1: LAND USE CONSISTENCY / EFFICIENCY - Gentry Keaunui Well

### LAND USE CONSISTENCY

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<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
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<th>State Land Use District</th>
<th>CDUP Regd. Yr (date app)</th>
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<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate. For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
</tr>
<tr>
<td>Road Irrigation - IRRLA</td>
<td>Area 26 frontage</td>
<td>9-1-102:052 (Keaunui ROW)</td>
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<td>9-1-107:008</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
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<td>9-1-102:28</td>
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<td>P-2</td>
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<td>Area 30</td>
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TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 224,615

36.09
### Table 1: LAND USE CONSISTENCY / EFFICIENCY - Gentry Area 13

#### LAND USE CONSISTENCY

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<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
<th>USE TMK</th>
<th>State Land Use District Code</th>
<th>CDUP Reqd Y(date app)</th>
<th>County Zoning Code</th>
<th>SMAP Request Y(date app)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (Y/N)</th>
<th>Sub-Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
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<tbody>
<tr>
<td>Road Irrigation - IRRLA</td>
<td>Area 13 Huelani</td>
<td>9-1-116:13</td>
<td>Urban</td>
<td>NA</td>
<td>A-1</td>
<td>NA</td>
<td>N</td>
<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlie and Lee letter dated July 2, 2008 for application rate.</td>
<td></td>
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<tr>
<td>Road Irrigation - IRRLA</td>
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<td>A-1</td>
<td>NA</td>
<td>N</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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<td>9-1-116:2</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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<td>Rate Irrigation - IRRLA</td>
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<td>For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
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**TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above)**: 36,975

**5.94**
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<th>USES THAT DO NOT REQUIRE POTABLE WATER</th>
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<td>Roadway Irrigation - IRRLA</td>
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<td>Area 41, 45/46, 48, 40,</td>
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</tr>
<tr>
<td>&amp; Keaunui west,</td>
<td></td>
</tr>
<tr>
<td>9-1-69:portion 005</td>
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<td>Urban</td>
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<td>NA</td>
<td></td>
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<td>NA</td>
<td></td>
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<td>N</td>
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<tr>
<td>All irrigation use is based on actual use for Ewa by Gentry; see attached Brownlie and Lee letter dated July 2, 2008 for application rate. For overall irrigation area locations see attached Ewa By Gentry Irrigation Master Plan, dated 4-22-08</td>
<td></td>
</tr>
</tbody>
</table>

| Roadway Irrigation - IRRLA           |  |
| Area 14                              |  |
| 8-1-88:08                            |  |
| Urban                                |  |
| NA                                   |  |
| NA                                   |  |
| N                                    |  |

TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 66.085 10.62

*Corrected per phone conversation w/ Greg Fukumitsu (TNWRE) mm 10/14/08
### Table 1: LAND USE CONSISTENCY / EFFICIENCY - Area 35 Well

#### LAND USE CONSISTENCY

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<tr>
<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
<th>USE TNK</th>
<th>County Zoning Code</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (Y/N)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
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<tbody>
<tr>
<td>Uses That Do Not Require Potable Water</td>
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<table>
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<tr>
<th>Category</th>
<th>Description</th>
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<th>Quantity of Use (GPD)</th>
<th>Sub-Metered (Y/N)</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
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</thead>
<tbody>
<tr>
<td>Roadway Irrigation - IRRPA</td>
<td>Area 19 &amp; Fort Weaver Rd. Fronting Area 20</td>
<td>9-1-136-064</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
<td>NA</td>
<td>N</td>
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<td>Roadway Irrigation - IRRPA</td>
<td>Iroquois Point @ Keaunui Dr</td>
<td>9-1-97.178</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
<td>NA</td>
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<td>Keaunui Rd B @ Area 21</td>
<td>9-1-10:56</td>
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<td>9-1-10: portions of 50 to 119</td>
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<td>Area 37</td>
<td>9-1-141:044</td>
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**TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above):** 255,108

**41.0**
Table 2: IRRIGATION INFORMATION

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<th>Development Designation</th>
<th>Plant Materials</th>
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<th>Total acreage</th>
<th>D</th>
<th>Net Irrigated Area</th>
<th>E</th>
<th>Begin Growth Period</th>
<th>F</th>
<th>End Growth Period</th>
<th>G</th>
<th>Irrigation System</th>
<th>H</th>
<th>Irrigated Practice</th>
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<td>Wedelia &amp; Shrubs*</td>
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* Asterisk denotes use of the following shrubs (drought/salt-tolerant) used but not listed
  - Hibiscus
  - Croton
  - Spider Lily
  - Eldorado
  - Eranthemum
  - Dwarf Date Palm
  - Natal Palm
# Puuloa Aquifer System / Ewa Caprock Aquifer
## Wells, Well Status, and Water Uses

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<th>WELL NO.</th>
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</table>
July 2, 2008

Mr. Greg Fukumitsu
Tom Nance
Water Resources Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, Hawaii 96813

Subject: **EWA WUP PERMIT**

Dear Greg:

We have been responsible for virtually all of the landscape and irrigation system design at Ewa by Gentry since 1990. Based on our 18 years of experience with this development and dealing with the requirement for low maintenance, drought and brackish water tolerant planting we have found through our water conservation efforts that the average daily irrigation requirement is approximate 1.0 gallons per square foot of planting area per week. We have established this irrigation water demand through both on site field experimentation and the following calculation:

**Irrigation Application Rate Calculation**

Ewa 15-year average annual pan evaporation rate: 86.56 inches per year
Less Ewa Gentry average annual rainfall (18.75-inches), derated 25% (14.06) inches per year

Evapotranspiration Rate 72.50 inches per year

72.5 inches per year = 0.87 gals./s.f./week
15% irrigation inefficiency factor, high percentage of small irregular planting areas = 0.13 gals./s.f./week
Total weekly irrigation demand = 1.0 gals./s.f./week

We have found that the rainfall contribution to irrigation must be derated at least 25% based on field experience and the irrigation inefficiency factor is approximately 15% due in large part to the high percentage of small irregular planting areas within the housing parcels.

The irrigation well service areas are outlined on the Irrigation Master Plan prepared by our office. The bulk service area irrigation demand are as follows:
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<tr>
<th>Area Well</th>
<th>Service Area</th>
<th>Gallons per day</th>
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If you have questions regarding this information, please contact me.

Sincerely,
BROWNLE & LEE

[Signature]
Richard C. Brownlie, ASLA
Principal

cc: Darian Chun
Gentry Homes, Ltd.
November 19, 2008

Denise Mills  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawai‘i 96809


Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting. If thirsty exotics are being watered, that would also not be compatible with the city Watershed Management Plan and Ewa Development Plan. (Ewa Development Plan, page 4-21)

The applicant is proposing to use a total of 582,783 gallons per day of water for irrigation. If these WUPAs are combined with the nearly identical WUPA No. 856, then this total goes up to 777,551 gallons per day. This amount of water for accessory irrigation should be scrutinized to ensure that the request is reasonable and the use is beneficial. Certainly we agree that potable water should not be used for this proposed purpose.

We request that the applicant use recycled water if possible, or be required to do so when it does become available for this proposed use. OHA notes that the Ewa Development Plan projects future nonpotable demand for this area to be 31 mgd. (Ewa Development Plan, page 4-
19) The demand for this use is to be met with uses such as this proposal, from low chloride irrigation water sources. However, strategies in the city Watershed Management Plan for this area include development of infrastructure not currently in existence or proposed and sources which have since been abandoned such as the Kalaeloa desalination plant. (Honolulu Advertiser article, 11-17-08 Kalaeloa desalination plant put on hold)

We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code. We also ask if this nonpotable source is low in total dissolved solids that may affect water quality in the quantities requested.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

‘O wau iho nō me ka ‘oia‘i‘o,

Clyde W. Nāmu‘o
Administrator
November 19, 2008

Denise Mills  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawai‘i 96809

RE:   Request for comments on the proposed Water Use Permit Application (WUPA), Pu‘uloa Ground Water Management Area, O‘ahu, TMK: 9-1-70: 132.

Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting.

We request that the applicant use R-2 water if possible, or be required to do so when it does become available for this proposed use. We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

‘O wau iho nō me ka ‘oia‘i‘o,

Clyde W. Nāmu‘o  
Administrator
November 18, 2008

Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Keys: 9-1-116:013, 9-1-102:064, 9-1-136:064, and 9-1-069:005

We have reviewed Water Use Permit Applications (WUPA) 855, 857, 858, and 859 submitted by Gentry Homes, Ltd. and have the following comments to offer.

1. **WUPA 855:** The area identified by the TMK in Table 1 of the application is zoned A-2 Medium Apartment District as stated in Table 1. The proposed use of water for roadway landscaping irrigation in areas of the Ewa by Gentry development is consistent with supporting A-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

2. **WUPA 857:** The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District, A-1 Low Density Apartment District, and P-2 General Preservation District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5, A-1, and P-2 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.
Ms. Laura H. Thielen, Chairperson  
Commission on Water Resource Management  
Department of Land and Natural Resources  
November 18, 2008  
Page 2

3. **WUPA 858**: The areas identified by the TMKs in Table 1 of the application are zoned A-1 Low Density Apartment District as stated in Table 1. The proposed use of the water for roadway landscaping in areas of the Ewa by Gentry development is consistent with supporting A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

4. **WUPA 859**: The areas identified by the TMKs in Table 1 of the application are zoned R-5 Residential District and A-1 Low Density Apartment District as stated in Table 1. The proposed use of water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when necessary) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The locations of the two (2) existing and three (3) proposed wells, and the areas identified by the TMKs in all four (4) applications are not in the Special Management Area.

The Board of Water Supply requests contingency plans for well nos. 1901-08, 1900-24, and 2000-06, should the chloride levels of these wells exceed the 1,000 ppm CWRM limit.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

[Signature]

Henry Eng, FAICP, Director  
Department of Planning and Permitting

HE: lh  
p:DivFunction/WUP/2008elog2578

cc: Board of Water Supply, Attn: Glenn Oyama
November 10, 2008

Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
Box 621
Honolulu, Hawaii 96809

Dear Ms. Thielen:

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Key: 9-1-070:132

We have reviewed the application and have the following comments to offer.

The areas identified by the TMKs in Table 1 of the application are zoned R-5 and A-1 as stated in Table 1. The proposed use of the water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting the R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when required) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The Soda Creek Well (Well No. 2001-05) and those parcels in Table 1 are not in the Special Management Area.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:js

p:DivFunction/WUP/2008elog2679
**WATER USE PERMIT DETAILED INFORMATION**

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<td>Proposed use area (total acres)</td>
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**Source Information**

- New or existing source: New, Existing, Existing, Existing, New, New
- Owner/Operator: Gentry Homes, Ewa by Gentry, Gentry Homes, Gentry Homes, Gentry Homes, Gentry Homes
- Year drilled: N/A, 1994, 1999, 1999, N/A, N/A
- Casing diameter (in.): Not constructed, 11, 30, 20, Not constructed, Not constructed
- Elevation data (datum = mean sea level, 0 ft):
  - Water level: --, 1.0, --, 1.0, --, --
  - Ground surface: --, 31, 31, 33, --, --
  - Bottom of solid casing: --, 1, 2, -2, --, --
  - Bottom of perforated casing: --, -24, -8, -8, --, --
  - Bottom of open hole: --, -24, -8, -10, --, --
  - Total depth (ft): --, 55, 39, 43, --, --
  - Grouted annulus depth (ft): --, 27, 27, 19, --, --
  - Pump capacity (gpm): 100 (proposed), 200 (proposed), 430, 355, 150 (proposed), 150 (proposed)

**Notes:**

1. Ewa by Gentry Community Association
2. The current permitted pump capacity is 110 gpm. Applicant has applied for a new pump installation permit to increase the capacity to 200 gpm.
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**TOTAL** $351.52

**REMARKS:** LINE (1) Reimbursement for Public Notice costs for WUP No. 856

LINE (2) 
LINE (3) 
LINE (4) 
LINE (5) 
LINE (6) 
LINE (7) 
LINE (8) 
LINE (9) 
LINE (10)
CWRM Water Use Permit
Reviewer Comments / Routing

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<th>Reviewer</th>
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<td>Chester Lao</td>
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<td>Barry Usegawa</td>
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<td>Mayor's Office</td>
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November 19, 2008

Denise Mills  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawai‘i 96809

RE: Request for comments on the proposed Water Use Permit Application (WUPA), Pu‘uloa Ground Water Management Area, O‘ahu, TMK: 9-1-70: 132.

Aloha e Denise Mills,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated October 28, 2008. OHA has reviewed the project and offers the following comments.

OHA notes that the proposed use is for irrigation and landscaping purposes and that the applicant seeks to use brackish water for this purpose. OHA asks if the landscaping is with drought tolerant local or endemic species common to the area. If there has been little to no effort to reasonably conserve this scarce resource in terms of landscaping, it could cast this request in questionable or unreasonable lighting.

We request that the applicant use R-2 water if possible, or be required to do so when it does become available for this proposed use. We request assurances that uses from this source will not adversely affect constitutionally protected Native Hawaiian uses in the area as protected in the state water code.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

‘O wau iho nō me ka ‘oia‘i‘o,

Clyde W. Nāmu‘o  
Administrator
November 20, 2008

Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. BOX 621
Honolulu, Hawai'i 96809

Dear Mr. Kawahara:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Water Use Permit Application – Pu'uloa Ground Water Management Area
Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu
TMK: (1) 9-1-070:132

Thank you for the opportunity to comment on the aforementioned project. We received the submittal on October 30, 2008. The proposed undertaking involves using water from and existing well (Well No.2001-05) for irrigation purposes.

We determine that no historic properties will be affected by this undertaking because:

- Intensive cultivation has altered the land
- Residential development/urbanization has altered the land
- Previous grubbing/grading has altered the land
- An accepted archaeological inventory survey (AIS) found no historic properties
- SHPD previously reviewed this project and mitigation has been completed
- Other: Water will be used from an existing well and no ground disturbing activities are proposed.

However, in the event that historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the State Historic Preservation Division, O'ahu Section needs to be contacted immediately at (808) 692-8015.

Please contact Teresa Kaneakua-Davan at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Nancy McMahon, Archaeology and Historic Preservation Manager
State Historic Preservation Division

ED
November 19, 2008

TO: Laura H. Thielen, Chairperson
    Commission on Water Resource Management
    Department of Land and Natural Resources

FROM: Orlando Davidson, Executive Officer

SUBJECT: Water Use Permit Application
          Puuloa Groundwater Management Area, Oahu

We have reviewed the subject application forwarded by your transmittal dated October 28, 2008. Based on the representation of Well No. 2001-05 on the accompanying maps, we find that it is located within the State Land Use Urban District.

With respect to your request as to whether the current designation is appropriate for the proposed project, please be advised that pursuant to section 205-2(b), Hawaii Revised Statutes, activities or uses within the Urban District are the jurisdiction of the respective counties as provided by their ordinances or regulations. As such, we suggest that you contact the City and County of Honolulu Department of Planning and Permitting directly for their comments on this matter.

Thank you for the opportunity to comment on the subject application. As requested, we are returning the cover memo for the subject application.

Please feel free to contact Bert Saruwatari of my office at 587-3822, should you require clarification or any further assistance.

Enclosure
October 28, 2008

TO: Mr. Dan Davidson, Executive Officer
   Land Use Commission

FROM: Laura H. Thielen, 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 (WUPA) No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed uses is described in the attached (see application Items 6, 7, 11, and 12). Specifically, we request that you inform us of the current state land use designation for the TMK parcels listed or TMK portions for the proposed use areas. Please also tell us whether the current state land use designation is appropriate for the project. Two maps are included with each application that show the proposed use areas: (1) a TMK map and (2) a map illustrating the Ewa by Gentry Irrigation Master Plan.

Please respond by returning this cover memo along with your review comments by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss Attachment(s)

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[✓] Only comments attached.

Contact person: BERT SARUWATARI
Phone: 587-3822

Signed: BERT SARUWATARI
Date: November 18, 2008
Ms. Suzanne Alawa  
Ewa by Gentry Community Association  
91-1795 Keaunui Drive  
Ewa Beach, HI 96706  

Dear Ms. Alawa:

Invoice for Public Notice  
Water Use Permit Application (WUPA No. 856), Well No. 2001-05  

We are attaching a copy of the Affidavit of Publication and the Invoice/Receipt for the subject notice. Please submit a check payable to the Department of Land and Natural Resources at the address shown above for the amount due by the date specified below.

**Amount Due:** $351.52  
**Due Date:** December 1, 2008

All water use permit applicants are required to pay the cost to publish the public notice(s) of their application(s). Payment is required to complete your application. Failure to submit the full amount due by December 1, 2008 will result in a rejection of your application. If you decide to proceed with this project in the future, a new water use permit application must be made, and you will be required to pay for the costs of both this public notice and the new public notice.

If you have any questions, please contact Denise Mills at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.  
Deputy Director

DEM:ss  
Enclosure
October 28, 2008

TO: /Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response:

[ ] We have no objections or comments
[ ] Objections attached
[X] Only comments attached

Contact person: Glenn Higashi
Signed: [Signature]

Phone: 587-0112
Date: 11/18/08
MEMORANDUM

TO: Dan A. Polhemus, Administrator
FROM: Glenn R. Higashi, Aquatic Biologist
SUBJECT: Comments on Water Use Permit Application (WUPA No. 856)

Comments
Requested By: Commission on Water Resource Management
Date of Request: 10/28/08  Date Received: 10/29/08

Summary of Project

Title: Water Use Permit Application (WUPA No. 856) submitted by Ewa by Gentry Community Association for Soda Creek III (Well No. 2100-05).

Project By: Ewa by Gentry Community Association
Ewa Beach, HI 96706

Location: Puuola System, Ewa Caprock Sector, Ewa Beach, Oahu TMK: (1) 9-1-070: 132

Brief Description:

The applicant, Ewa by Gentry Community Association proposes to modify Water Use Permit (WUP) No. 792 to increase the amount of brackish groundwater withdrawal from 0.66 million gallons per day to 0.195 million gallons per day from Well No. 2100-05 (aka Sun Terra Tot Lot Well) near Launahele Street south of Geiger Road, on its property in Ewa Beach, Oahu, Tax Map Key (1) 9-1-070: 132. This application is to accommodate irrigation water requirements for landscape areas on urban roadways and park in the proposed residential development. The proposed landscape vegetation that will be used are drought/salt-tolerant plants.

Comments:

The Division of Aquatic Resources (DAR) has no objections to this request since the proposed project is not expected to have significant adverse impact on aquatic resources values in the area as the well is situated inland and there are no anchialine ponds in the area.
STATE OF HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
P.O. BOX 621  
HONOLULU, HAWA'I 96809

October 28, 2008

TO:  

Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director
Commission on Water Resource Management

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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response:  

[ ] We have no objections or comments
[ ] Objections attached
[ ] Only comments attached

Contact person:  

Signed:  

Phone: 7-4175  

Date: NOV 17 2008
TO: Morris Atta, Administrator  
Land Division  

FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management  

SUBJECT: Request for Comments  
Water Use Permit Application  
Puualoa Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss  
Attachment(s)  

Response:
[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact person: Gary Martin  
Phone: 587-0421

Signed: Gary Martin  
Date: Nov 18, 2003
November 10, 2008

Ms. Laura H. Thielen, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
Box 621
Honolulu, Hawaii 96809

Dear Ms. Thielen:

Subject: Water Use Permit Application, Puuloa Ground Water Management Area, Ewa Beach, Oahu, Tax Map Key: 9-1-070:132

We have reviewed the application and have the following comments to offer.

The areas identified by the TMKs in Table 1 of the application are zoned R-5 and A-1 as stated in Table 1. The proposed use of the water for roadway landscaping and park irrigation in areas of the Ewa by Gentry development is consistent with supporting the R-5 and A-1 zoned areas of the Ewa by Gentry development. The proposed use of brackish caprock water is consistent with Section 4.2.1 of the Ewa Development Plan requiring (when required) a dual water system and non-potable water use to conserve potable water in the Ewa region.

The Soda Creek Well (Well No. 2001-05) and those parcels in Table 1 are not in the Special Management Area.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:js
p:DivFunction/WUP/2008elog2679
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management

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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss  
Attachment(s)

Response:

[ ] We have no objections or comments  
[ ] Objections attached  
[ ] Only comments attached

Contact person: Daniel S. Quinn  
Phone: 587-0240

Signed:  
Date: 11/6/08
TO: Honorable Micah Kane, Chairperson  
Department of Hawaiian Home Lands  
Honorable Chiyome L. Fukino, M.D., Director  
Department of Health  
\Attn: Mr. Tomas See, Chief, Wastewater Branch  
\Attn: Stuart Yamada, Chief, Safe Drinking Water Branch  
Mr. Clyde W. Namu'o, Administrator  
Office of Hawaiian Affairs  
Mr. Clifford Lum, Manager  
Honolulu Board of Water Supply  
\Attn: Mr. Chester Lao  
\Attn: Mr. Barry Usugawa  

FROM: Laura H. Thielen, 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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 200-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed use described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss  
Attachment(s)  

Response:  
[ ] We have no objections or comments  
[ ] Objections attached  
[ ] Only comments attached  

Contact person: Johnny Ong, Eng. on Oahu 586-4294  
Signed: Kori Inukami  
Date: 10-31-08
Date: 10-31-08

To: Commission on Water Resource Management
   Department of Land & Natural Resources
   State of Hawaii

Attn: Denise Mills

From: Lori Morikami, Planner
      Planning & Design Section
      Ph: 586-4294 Fax 586-4300
      Email: lori.morikami@doh.hawaii.gov

Subject: Well Construction/Pump Installation Permit/Water Use Permit for

Well No. 1900-09 9-10  Halaakole gd wtr
Well No. 1901-08, 2001-12, 1901-05, 2000-06 9-1900-24  punaloa gd wtr
Well No. 2001-05 punaloa gd wtr

Please find enclosed the application of the above subject project.
TO: Honorable Micah Kane, Chairperson
Department of Hawaiian Home Lands

Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attn: Mr. Tomas See, Chief, Waste Water Branch
Attn: Stuart Yamada, Chief, Safe Drinking Water Branch

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs

Mr. Clifford Lum, Manager
Honolulu Board of Water Supply
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

FROM: Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Paioha Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Welf No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 3, 2008.

We would appreciate your review of the proposed use described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response:
[ ] We have no objections or comments
[ ] Objections attached
[ ] Only comments attached

Contact person: Michael Miyahira
Signed: ____________________________
Phone: ____________________________
Date: 10/30/08

Laura H. Thielen, Chairperson
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Review transmittals for 5 WUPAs:

Ewa by Gentry Comm. Assoc.  WUPA 856

Gentry Homes  WUPAs 855, 857, 858, 859  (I still have the copies of these applications, making corrections/notations on them for reviewers.)

Shall we try for Oct 29 or Nov 5 with Nov 20 deadline. Shall we act ASAP to allow more 60 days before 12/17 comm mtg.
Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaumui Drive
Ewa Beach, HI 96706

Dear Ms. Alawa:

We acknowledge receipt, on October 8, 2008, of your completed application to modify your water use permit (WUPA No. 856; Well No. 2001-05) for Soda Creek III (also known as the Sun Terra Tot Lot Well). You can expect your application to be processed within ninety (90) days from the date of receipt unless there are objections to your application.

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 October 29, 2008 and November 5, 2008. You will be required to pay the cost to publish the public notice, which usually runs around $400. We will send an invoice shortly after the notice has been published.

Please be aware that there could be objections to your application. If objections are made, the objector is required to file such objections with the Commission and is required to send you a copy of the objections.

You or any other party(ies), may respond to objections filed with the Commission by filing a brief in support of your application with the Commission within ten (10) days after an objection has been filed. You or the other party(ies), must also send a copy of your response to the objector.

If you have any questions about the permit process, please contact Denise Mills at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Enclosure

c: Mark Brant, Gentry Homes, Ltd.
   Tom Nance
TO: Aquatic Resources
     Forestry and Wildlife/Natural Area Reserve System
     Historic Preservation
     State Parks

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:
[ ] We have no objections or comments
[ ] Objections attached
[ ] Only comments attached

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
TO: Morris Atta, Administrator  
Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management

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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
TO: Honorable Micah Kane, Chairperson  
Department of Hawaiian Home Lands  
Honorable Chiyome L. Fukino, M.D., Director  
Department of Health  
Attn: Mr. Tomas See, Chief, Wastewater Branch  
Attn: Stuart Yamada, Chief, Safe Drinking Water Branch  
Mr. Clyde W. Namu’o, Administrator  
Office of Hawaiian Affairs  
Mr. Clifford Lum, Manager  
Honolulu Board of Water Supply  
Attn: Mr. Chester Lao  
Attn: Mr. Barry Usugawa  

FROM: Laura H. Thielen, 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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed use described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss  
Attachment(s)  
Response:  

[ ] We have no objections or comments  
[ ] Objections attached  
[ ] Only comments attached  

Contact person: ________________________________  Phone: ________________________________  
Signed: ________________________________  Date: ________________________________
October 28, 2008

TO: Mr. Dan Davidson, Executive Officer  
Land Use Commission

FROM: Laura H. Thielen, 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 (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the proposed uses is described in the attached (see application Items 6, 7, 11, and 12). Specifically, we request that you inform us of the current state land use designation for the TMK parcels listed or TMK portions for the proposed use areas. Please also tell us whether the current state land use designation is appropriate for the project. Two maps are included with each application that show the proposed use areas: (1) a TMK map and (2) a map illustrating the Ewa by Gentry Irrigation Master Plan.

Please respond by returning this cover memo along with your review comments by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM:ss
Attachment(s)

Response:

[ ] We have no objections or comments.

[ ] Objections attached.

[ ] Only comments attached.

Contact person: ____________________________  Phone: ____________________________

Signed: ____________________________  Date: ____________________________
TO: Mr. Henry Eng, FAICP, Director  
Department of Planning and Permitting  
City and County of Honolulu

FROM: Laura H. Thielen, Chairperson  
Commission on Water Resource Management

SUBJECT: WATER USE PERMIT APPLICATION  
Puuloa Ground Water Management Area, Oahu

For your review and record, we are forwarding a copy of a water use permit application (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05, for confirmation of the zoning designation for the proposed use on the attached application, confirmation of the consistency of the proposed project with the current zoning designation, and any special management area issues. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008. Please respond by returning this cover memo form by November 20, 2008, which is the legal deadline for objections. If we do not receive your comments by this date, we will assume you have no objections to this application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

DM: ss
Attachment(s)

Response:

[ ] The proposed water use(s) is consistent with the current zoning designation(s).

[ ] This well project [ ] requires [ ] does not require an SMA permit. If an SMA permit is required, it [ ] has been approved [ ] has not been approved and [ ] is currently active [ ] is not currently active.

[ ] Comments attached.

Contact person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
October 28, 2008

Honorable Mufi Hannemann, Mayor
City & County of Honolulu
City Hall
Honolulu, HI 96813

Dear Mayor Hanneman:

Notice of an Application for Water Use Permit
Ewa by Gentry Project
Puuloa Ground Water 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 and water use permit application (WUPA No. 856) submitted by the Ewa by Gentry Community Association for Well No. 2001-05, 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."

In accordance with the procedure that has been established between our staff and the City’s Department of Planning and Permitting (DPP), we have sent copies of the application to DPP and the Board of Water Supply for review and comment. We look forward to receiving comments from DPP and BWS within the next sixty (60) days, on whether the proposed water use is consistent with the City’s plans, policies, land use designations, and zoning.

Sincerely,

Laura H. Thielen
Chairperson

DM:ss
Enclosures
TO: Other Interested Parties  
FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management  
SUBJECT: Request for Comments  
Water Use Permit Application  
Puuloa Ground Water Management Area, Oahu

In addition to serving you notice as required by § 174C-52(a), Hawaii Revised Statutes, we transmit for your review and comment a copy of a water use permit application (WUPA No. 856) for the Ewa by Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of October 29, 2008 and November 5, 2008.

We would appreciate your review of the attached application for any conflicts or inconsistencies 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, Hawaii Administrative Rules, and must be filed by the November 20, 2008 deadline. If we do not receive your comments by this date, we will assume you have no objections to the application.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Denise Mills at 587-0251.

Response:

[ ] We have no objections or comments.
[ ] Objections attached.
[ ] Only comments attached.

Contact person: ____________________________ Phone: ____________________________
Signed: ____________________________ Date: ____________________________

DM:ss 
Attachment(s)
PUBLIC NOTICE

Application for Water Use Permit
Puuloa Ground Water Management Area, Oahu

The following application to modify an existing water use permit has been received by the Commission on Water Resource Management. The Commission’s receipt of this application is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

WUPA No. 856
Soda Creek III (Well No. 2001-05)

Applicant: Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Landowner: Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Date Application Filed as Complete:
October 8, 2008

Hydrologic Unit: Aquifer Areas:
Puuloa System, Ewa Caprock Sector, Oahu

Water Source:
Soda Creek III (Well No. 2001-05; aka Sun Terra Tot Lot Well)
near Launaehele Street south of Geiger Road, Oahu, Tax Map Key
(1) 9-1-070:132

Quantity Requested:
0.195 million gallons per day

Existing/New Use:
Existing / Irrigation of 31.3 acres of roadway and park irrigation

Place of Water Use:
Multiple TMKs. Landscaping along Kapolei Parkway and areas bounded generally by Kapolei Parkway, Geiger Road, Fort Weaver Road, and Keaunui Drive. A map showing the Irrigation Master Plan for the Ewa by Gentry project with the irrigation zone covered by this water use permit application is available for public viewing on the Commission’s website at http://www.hawai.gov/dlnr/cwrm/...
or at 1151 Punchbowl Street, Room 227, Honolulu, Hawaii.

Written objections or comments on the above application 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 November 20, 2008. 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

KEN C. KAWAHARA, P.E., Deputy Director for
LAURA H. THIELEN, Chairperson

Dated: October 23, 2008

Thanks for your help on this. I have finished my part to begin processing the permits, and we estimate it will be 1-2 weeks before all the paperwork is done on our end and notices are submitted for publishing. You'll receive a copy of our acceptance letters to Mike Brant and Suzanne Alawa. We accepted the applications as complete on Oct. 8, which triggers the 90-day timeline for processing unless there are objections.

I'll contact you if we have questions about the irrigation plans for each area.

-Denise

"Greg Fukumitsu" <greg@tnwre.com>

Denise,

The client confirmed its OK to proceed with the Public Notice.

Thanks,

Greg Fukumitsu

--
Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
Roy-- The notices as drafted are OK'd by Gentry. So it looks like they're ready to move forward. --dm

--- Forwarded by Denise E Mills/DLNRIStateHIUS on 10/16/2008 07:32 AM ---

"Greg Fukumitsu"
<greg@tnwre.com>
10/15/2008 06:11 PM

To "Mills, Denise" <denise.e.mills@hawaii.gov>
cc
Subject Gentry WUP permits

Denise,

The client confirmed its OK to proceed with the Public Notice.

Thanks,

Greg Fukumitsu
--
Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
Fw: Gentry water use permits - please comment

FYI-- Hopefully we'll hear from Gentry soon if any corrections are needed on the notices.

--Denise

---- Forwarded by Denise E Mills/DLNR/StateHUS on 10/15/2008 07:00 AM ----

Denise,

Thanks, I'm sending this to Gentry for their review.. it looks OK.. wait till I hear from them.

Thank, Greg

On Tue, Oct 14, 2008 at 8:00 AM, <Denise.E.Mills@hawaii.gov> wrote:

Hi Greg,
I've drafted the public notices for the Gentry Homes and Ewa by Gentry water use permit applications. We will combine the four Gentry Homes applications into one notice, and will have a second notice for the Ewa by Gentry Community Association application. I would appreciate it if you would review the draft notices for accuracy and let me know if corrections are needed.

Rather than listing use TMKs on the notices (there are too many for all but one of the applications), I have prepared general descriptions of the proposed use areas based on the Irrigation Master Plan. This is just to help public reviewers, those who may be interested, navigate the areas that each application covers. We will also plan to post the Irrigation Master Plan on our website for public viewing--

The draft notices are attached for your review and comment. When you open this document, you will be prompted with a message regarding macros-- select "No." (Dates, noted in these drafts with XXX placeholders, will be added when we are ready to publish the notices.)

Thanks for your help! Denise
Hi Greg,
I've drafted the public notices for the Gentry Homes and Ewa by Gentry water use permit applications. We will combine the four Gentry Homes applications into one notice, and will have a second notice for the Ewa by Gentry Community Association application. I would appreciate it if you would review the draft notices for accuracy and let me know if corrections are needed.

Rather than listing use TMKs on the notices (there are too many for all but one of the applications), I have prepared general descriptions of the proposed use areas based on the Irrigation Master Plan. This is just to help public reviewers, those who may be interested, navigate the areas that each application covers. We will also plan to post the Irrigation Master Plan on our website for public viewing--

The draft notices are attached for your review and comment. When you open this document, you will be prompted with a message regarding macros-- select "No." (Dates, noted in these drafts with XXX placeholders, will be added when we are ready to publish the notices.)

Thanks for your help! Denise
PUBLIC NOTICE

Applications for Water Use Permits
Puuloa Ground Water Management Area, Oahu

The Commission on Water Resource Management has received four water use permit applications from Gentry Homes, Ltd. Two of these applications are for new water use supplied by three new water supply wells, and two are to modify existing water use supplied by two existing water supply wells. The Commission's receipt of these applications is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

Applicant: Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Landowner: Gentry Homes, Ltd.
P.O. Box 295
Honolulu, HI 96809

Date Applications Filed as Complete: October 8, 2008
Hydrologic Unit: Aquifer Areas: Puuloa System, Ewa Caprock Sector, Oahu

The two applications for new water use permits are:

- **WUPA No. 855**
  - **Water Source:** Gentry Area 45 Well (Well No. 1901-08)
  - Gentry Area 45 (Well No. 1901-08), a proposed new water supply well to be constructed about 250 ft south of Keaunui Dr and west of Fort Weaver Rd, Oahu, Tax Map Key (1) 9-1-069:005
  - **Quantity Requested:** 0.066 million gallons per day
  - **Existing/New Use:** New / Irrigation of 10.62 acres of roadway landscaping
  - **Place of Water Use:** Tax Map Key (1) 9-1-069:005, portion (Kapolei Parkway extension).

- **WUPA No. 859**
  - **Water Source:** Gentry Area 35 (Well Nos. 2000-06 and 1900-24)
  - Gentry Area 35, Wells #1 and #2 (Well Nos. 2000-06 and 1900-24). Two proposed new wells to be constructed near Hoowalea St and near the intersection of Kuanoo St and Hoomahana St (1900-24), Oahu, Tax Map Key (1) 9-1-136-064
  - **Quantity Requested:** 0.255 million gallons per day
  - **Existing/New Use:** New / Irrigation of 41.0 acres of roadway landscaping
  - **Place of Water Use:** Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by the Hawaii Prince Golf Club north boundary to the south, Ft Weaver Rd to the west, Iroquois Rd and East-West Loch Rd to the north, and Makalea St and Hoowalea St to the east.

The two applications to modify existing water use permits are:

- **WUPA No. 857**
  - **Water Source:** Keaunui Area 30 (Well No. 2001-12)
  - Keaunui Area 30 (Well No. 2001-12) on Keaunui Dr at Ma'ana St, Oahu, Tax Map Key (1) 9-1-102:064
  - **Quantity Requested:** 0.225 million gallons per day
  - **Existing/New Use:** Existing / Irrigation of 36.06 acres of roadway landscaping
  - **Place of Water Use:** Multiple TMKs or portions of TMKs. Roadway landscaping within the area bounded generally by Arizona Rd to the north, Ft Weaver Rd to the west, Iroquois Rd and East-West Loch Rd to the south, and various lots around Keaunui Dr.
• **WUPA No. 858**

  **Water Source:**
  Gentry Area 13 (Well No. 1901-05) on Launahele St near Kapolei Parkway, Oahu, Tax Map Key (1) 9-1-116:013

  **Quantity Requested:**
  0.035 million gallons per day.

  **Existing/New Use:**
  Existing / Irrigation of 5.94 acres of roadway landscaping

  **Place of Water Use:**
  Multiple TMKs. Roadway landscaping along Geiger Rd west of Kapolei Parkway, and within the area bounded generally by the Geiger Rd to the north, Kapolei Parkway to the east, Launahele St to the south, and the eastern boundary of the Coral Creek Golf Course.

A map showing the Irrigation Master Plan for the Ewa by Gentry project with specific irrigation zones to covered by these water use permit applications is available for public viewing on the Commission's website at [http://www.hawaii.gov/dlnr/cwrml/](http://www.hawaii.gov/dlnr/cwrml/)... or at 1151 Punchbowl Street, Room 227, Honolulu, Hawaii.

Written objections or comments on the above application 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 XXX. 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**

**LAURA H. THIELEN**
Chairperson

**Dated:**

Publish in: Honolulu Star Bulletin issues of XXX and XXX
PUBLIC NOTICE

Application for Water Use Permit
Puuloa Ground Water Management Area, Oahu

The following application to modify an existing water use permit has been received by the Commission on Water Resource Management. The Commission's receipt of this application is hereby made public in accordance with Section 13-171, Hawaii Administrative Rules, "Designation and Regulation of Water Management Areas."

WUPA No. 856 Soda Creek III (Well No. 2001-05)

Applicants: Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Landowners: Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Date Application Filed as Complete: October 8, 2008
Hydrologic Unit: Aquifer Areas: Puuloa System, Ewa Caprock Sector, Oahu
Water Source: Soda Creek III (Well No. 2001-05; aka Sun Terra Tot Lot Well) near Launahele Street south of Geiger Road, Oahu, Tax Map Key (1) 9-1-070:132
Quantity Requested: 0.195 million gallons per day
Existing/New Use: Existing / Irrigation of 31.3 acres of roadway and park irrigation
Place of Water Use: Multiple TMKs. Landscaping along Kapolei Parkway and areas bounded generally by Kapolei Parkway, Geiger Road, Fort Weaver Road, and Keaunui Drive. A map showing the Irrigation Master Plan for the Ewa by Gentry project with the irrigation zone covered by this water use permit application is available for public viewing on the Commission’s website at http://www.hawaii.gov/dlnr/cwrm/... or at 1151 Punchbowl Street, Room 227, Honolulu, Hawaii.

Written objections or comments on the above application 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 XXX. 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

LAURA H. THIELEN
Chairperson

Dated:

Publish in: Honolulu Star Bulletin issues of XXX and XXX
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* Asterisk denotes use of the following shrubs (drought/salt-tolerant) used but not listed:
  * Hibiscus
  * Croton
  * Spider Lily
  * Eildorado
  * Eranthemum
  * Dwarf Date Palm
  * Natal Palm
  * Naupaka
Denise,

The landscape architect found some minor typos and corrected the plantings. The numbers did not change. So please dump the other table and replace with this one.

Greg

---

Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141

Fax: 808-538-7757 Table 2 rev 10-8-08.xls
Hi Greg,

Based on our conversation yesterday about Table 2, the additional general information we agreed on should be sufficient. For our model assessment, I will extrapolate the information to nearly TMKs, which are very likely to have the same or very similar soil conditions and water needs. I'm trying to keep it simple to make it work with the level of detail you're able to provide.

Based on your new map, I designated the Area 35 Well #1 (the south well) as state well no. 1900-24 and Area 35 #2 as 2000-06. (I had these reversed before getting your updated map yesterday.) Because the wells haven't been constructed yet and the permit hasn't been issued, it's easy to change the state well numbers at this stage in the process. It's messier to do it later, so thank you for checking.

I hope this helps.

-Denise

"Greg Fukumitsu" <greg@tnwre.com>

Denise,

Thanks for the confirmation on my submittal. I'm assuming we're current on all the information you asked for except the Table 2 data for each WUP application. Gentry's landscape architect is currently working on the Table 2 data to complete our initial submittal. So we don't confuse the Area 35 Well Nos. 1 & 2, can you recheck it against your GIS system and confirm which SW # 1900-24 and 2000-06 is Well No. 1 and 2. Note, both skimming wells are on one WCR/PI permit.

Thanks, Greg Fukumitsu

On Fri, Sep 26, 2008 at 9:19 AM, Denise.E.Mills@hawaii.gov wrote:

Thank you for the information Greg.

We have updated our well information data base with the correct GPS coordinates for the Area 30
Keaunui Well (Well No. 2001-12) and the Area 13 Well (Well No. 1901-05).

As noted in our September 17 letter, we are planning to process the well construction/pump installation permits for the new wells (Nos. 1900-24, 1901-08, and 2000-06) with the Water Use Permit Applications once we receive the landscape irrigation information from you.

--Denise

Denise E. Mills
HYDROLOGIST

Hawaii Department of Land and Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813
Phone: (808) 587-0251
Denise.E.Mills@hawaii.gov

"Greg Fukumitsu" <greg@tnwre.com>
09/25/2008 01:52 PM

To "Mills, Denise" <denise.e.mills@hawaii.gov>
cc "Chun, Darian" <DarianC@GentryHawaii.com>, "Nance, Tom" <tom@tnwre.com>

Subj: Gentry WUP and WC/PI permit applications

Denise,

We're working on the WUP permit table 2 data with our landscape architect and hope to have it soon. The following will address the other items listed on your September 17, 2008 letter to us:

**Water Use Permit Applications:**

1. WUP No. 857 (modify WUP No. 793) - Area 30 Keaunui Well (SW# 2001-12). Please note the TMK on the WUP application is correct. Attached is the revised USGS map for this well with the Latitude and Longitude location for this well. GPS location confirmed by field verification on 9-24-08.

2. WUP No. 858 (modify WUP No. 794) - Area 13 Well (SW# 1901-05). Please note the TMK on the WUP application is correct. Attached is the revised USGS map for this well with the Latitude and Longitude location for this well. GPS location confirmed by field verification on 9-24-08.
Well Construction/Pump Installation Permit Application:

3. Gentry Area 35 Well Nos. 1 & 2 (SW Nos. 2000-06 AND 1900-24). I've attached the revised USGS map showing the well locations.

a.) Attached is a pdf with photographs of both wells as requested. Please note Area 35 No. 1 will be the southern well on this map.

b.) Section 23. SHPD approval. See attached Partial EIS.pdf. It contains the SHPD clearance for both Area 35 and 45 proposed irrigation wells.

Please call me if you have any questions on this submittal.

Thanks,

Greg Fukumitsu

Tom Nance Water Resource Engineering
680 Ala Moana Blvd., Suite 406
Honolulu, Hawaii 96813
Ph: 808-537-1141
Fax: 808-538-7757
Mr. Tom Nance  
Tom Nance Water Resource Engineering  
680 Ala Moana Boulevard, Suite 406  
Honolulu, HI 96813-5411

Dear Mr. Nance:

Ground Water Use Permit (WUP) Applications for  
WUP No. 855 (new use) – Well No. 1901-08  
WUP No. 856 (modify WUP No. 792) – Well No. 2001-05  
WUP No. 857 (modify WUP No. 793) – Well No. 2001-12  
WUP No. 858 (modify WUP No. 794) – Well No. 1901-05  
WUP No. 859 (new use) – Well Nos. 1900-24 and 2000-06

Well Construction/Pump Installation Permit Applications  
Well Nos. 1901-08, 1900-24, and 2000-06

We received, on August 18, 2008, the five captioned ground water use permit applications (WUPAs), two well construction/pump installation permit applications for three new wells, and the required filing fees. For time and cost efficiency, we would prefer to process your well construction/pump installation permit applications concurrently with the WUPAs, unless there are reasons that we should process your well construction/pump installation applications in advance of the WUPAs. We have reviewed each of these applications for completeness and have identified certain matters that must be addressed before we can accept these applications for processing.

**Ground Water Use Permit Applications**

1. **WUP No. 855 (application for new use)**—Item 12 (Table 2) has not been completed. Table 2 is applicable to the proposed use permit and therefore must be completely filled in and submitted to complete this application. Though your cover letter identifies total S.F. serviced and landscape irrigation, we need to know your declared information on irrigation practices (items E through H.) and types of landscape vegetation present (see Table 2 from IWREDSS attached). We enter the information requested on Table 2 as input values for a model that we use to evaluate the quantity(ies) of water requested for irrigation. Please note that the instructions at the top of Table 2 clearly state, "...including landscape and golf course irrigation uses.” (emphasis added) The information should include the type(s) of grass (e.g., zoysia, bluegrass) that will be irrigated, or if grasses are not planned, the type(s) of shrubs and trees that may be planted; every plant does not need to be named
individually. Without this information, we are unable to accurately assess whether the
total quantity of water requested is reasonable for the proposed uses and use locations.

2. **WUP No. 856 (application to modify WUP No. 792)** – Item 12 (Table 2) must be
completely filled in and submitted as described earlier.

3. **WUP No. 857 (application to modify WUP No. 793)**
   a) Item 12 (Table 2) must be completely filled in and submitted as described previously.
   b) The well location information provided for Well No. 2001-12 on the WUPA and on the
      maps attached to the WUP A is inconsistent both within your application and with the
      information contained in our well index. These inconsistencies and the information
      required to address them include:
      - Our record shows that Well No. 2001-12 is located within TMK 1-9-102:031,
        not the TMK listed on your application. Please confirm for us that the TMKs
        within this portion of the Gentry Homes' development have been changed
        since the well was completed in 1999.
      - The well location shown on the USGS quad map included with your
        application is different from the location shown on your TMK map. The
        USGS map location places the well within TMK 1-9-102:009. Please provide
        the correct map location for this well and submit corrected USGS and TMK
        maps.
      - The latitude and longitude for this well in our well index are 21°20'22" and 158
        '01'27" (NAD 83). These coordinates place the well at a location that is
        approximately 2,200 feet south of the location shown on your application.
        Please provide a GPS coordinate reading for this well to verify the well
        location.

4. **WUP No. 858 (application to modify WUP No. 794)**
   a) Item 12 (Table 2) must be completely filled in and submitted as described previously.
   b) The well location information provided for Well No. 1901-05 on the WUPA and on the
      maps attached to the WUP A is inconsistent both within your application and with the
      information contained in our well index. These inconsistencies and the information
      required to address them include:
      - Our record shows that Well No. 1901-05 is located within TMK 1-9-069:008,
        not the source TMK given on the WUP A. Also, the TMK map included with
        your application appears to place the well within TMK 1-9-069-019, which is
        also inconsistent with the location listed on the application. Please provide the
        correct TMK data for Well No. 1901-05.
      - The latitude and longitude for this well in our well index are 21°19'44" and 158
        '01'09" (NAD 83). These coordinates place the well at a location that is
        approximately 3,100 feet southeast of the location shown on your application,
        east of Fort Weaver Road. Please provide a GPS coordinate reading for this
        well to verify the well location.
      - Please submit corrected USGS and TMK maps.

5. **WUP No. 859 (application for new use)** – Item 12 (Table 2) must be completely filled in
   and submitted as described previously.
Well Construction/Pump Installation Permit Applications

1. **Both applications** – Applications for well construction/pump installation permits are required to be made by a contractor with a valid and active C-57, C-57a, or A license and who will perform the work, in accordance with the State Water Code (§ 174C-84(a), HRS). Because you have not identified a qualifying contractor, your application will not be accepted as complete until a qualifying contractor signs and completes sections 24 and 25 on the application form. However, we will process your incomplete application for review and if the review warrants the issuance of a permit, a letter of assurance will be issued in lieu of the permit. The letter of assurance will state that our intention to issue a permit when the contractor signs the application and the following conditions are met: (a) the contractor has no outstanding issues with the Commission; (b) there have been no significant changes to the application; (c) there have been no significant changes to applicable laws, rules, regulations; (d) there have been no significant changes to hydrologic conditions at or near the proposed well location.

2. **Well No. 1901-08 (Gentry Area 45)** – Contractor signatures required in Sections 24 and 25 (see Comment 1, above).

3. **Well Nos. 2000-06 and 1900-24 (Gentry Area 35, #1 and #2)**
   a) Please provide a photograph of the proposed well site.
   b) Section 23. State Historic Preservation Division (SHPD) – Please provide documentation from the SHPD showing the record of Gentry Homes' consultation with the HPD for the project.
   c) Contractor signatures required in Sections 24 and 25 (see Comment 1, above).

We will accept the captioned WUP As as complete upon receipt of the information outlined above, and we will accept your well construction/pump installation permit applications for processing upon receipt of the required information to complete the application for Well Nos. 2000-06 and 1900-24. You can expect these applications to be processed within 90 days from the date we receive the required information. You should be aware that WUPA processing could take longer if there are objections from the public and that pump installation permits cannot be issued until WUPs associated with those wells are first obtained.

Please contact Denise Mills of the Commission staff at 587-0251 if you have any questions concerning these applications.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss
Attachment

c: Mike Brant, Gentry Homes, Ltd
    Suzanne Alawa, Ewa by Gentry Community Association
### COMMISSION ON WATER RESOURCE MANAGEMENT
#### ROUTE SLIP FOR NEW APPLICATIONS

**FROM:** DENISE  
**DATE:** 26-Aug-08  
**SUSPENSE DATE:** 2-Sep-08

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<td>KAWAHARA,K.</td>
<td></td>
<td>YOSHINAGA, M.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WELL NUMBER** 2001-05  
**WELL NAME** Soda Creek III  
**WUP Number** 856

- [ ] WELL CONSTRUCTION  
- [ ] PUMP INSTALLATION

**ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated**

1. TRANS. LETTER  
2. PERMIT PROCESS TABLE  
3. CWRM MAP  
4. APPL. FORM (11 COPIES)  
5. USGS MAPS (11 COPIES)  
6. TAX MAPS (11 COPIES)  
7. PARCEL OWNER VERIF.  
8. CONTRACTOR VERIF.  
9. ALL INFO FILLED IN  
10. BACKGROUND CHECK  
11. $25 FEE DEPOSIT SLIP  
12. DHP/CDUP/SMA pre-screen (SMA map printout http://gis.hicentral.com/website/parcelzoning/viewer.htm., or INGRID'S SMA/CD MAP)  

**FOLDER:**  
- ☑ MADE NEW FILE FOLDER, ATTACHED  
- FILE FOLDER ALREADY MADE, IN FILE CABINET

**INCOMPLETE ACTION DATES:**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>will need to run IWREDDS model before CWRM mtg.</td>
</tr>
</tbody>
</table>

"Sun Tzu: 'Let them see."

---

*Note: The document contains various contact names and numbers, as well as a section for attaching necessary documents and making notes for action items.*
Assessed Values reflect tax year 2008.

Search criteria: TMK Taxkey 1-9-1-70-132

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo</th>
<th>Tnr</th>
<th>Address</th>
<th>Owner/Lessee</th>
<th>Bds</th>
<th>Bths</th>
<th>Land area</th>
<th>Liv area</th>
<th>Last Sale Instr</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>1-9-1-70-132</td>
<td>Sun Terra</td>
<td>F</td>
<td>PUHIKANI ST</td>
<td>EWA BY GENTRY COMMNTY ASSC</td>
<td>0</td>
<td>0</td>
<td>36,987 sqft</td>
<td>0</td>
<td></td>
<td>0</td>
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</table>

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.

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<thead>
<tr>
<th>SRC/D</th>
<th>COST</th>
<th>PROJECT</th>
<th>PH ACT</th>
<th>AMOUNT</th>
<th>NAME/DESCRIPTION (WANG INPUT)</th>
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</thead>
<tbody>
<tr>
<td>09</td>
<td>326</td>
<td>C 1026</td>
<td>0752</td>
<td>(1) $25.00</td>
<td>Wailani Drilling Services, Inc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2) $50.00</td>
<td>TNWRE Inc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3) $25.00</td>
<td>TNWRE Inc.</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>(4) $25.00</td>
<td>TNWRE Inc.</td>
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<tr>
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<td></td>
<td>(5) $50.00</td>
<td>TNWRE Inc.</td>
</tr>
</tbody>
</table>

**TOTAL** $175.00

**REMARKS:**

LINE (1) Manawai-Felton Well
LINE (2) Gentry 45 Well (WCPA/PIPA/WUPA)
LINE (3) WUP No. 792
LINE (4) WUP No. 793
LINE (5) WUP No. 794
LINE (6) Gentry Area 35 Well Nos. 1 & 2 (WCPA/PIPA/WUPA)
LINE (7)
LINE (8)
LINE (9)
LINE (10)
Mr. Ken Kawahara  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii  96809

Dear Mr. Kawahara:

Application to Modify Ground Water Use Permit No. 792  
Ewa by Gentry Community Association to Use  
Well No. 2001-05 in the Puuloa Aquifer System for Irrigation

On behalf of Ewa by Gentry Community Association, I am pleased to submit this Ground Water  
Use Permit (WUP) application to modify WUP No. 792, $25 filing fee, and other attachments for the Soda  
Creek III Well (Well No. 2001-05) in the Puuloa Aquifer System. If you have any questions or need  
additional information, feel free to call me or Suzanne Alawa of the Ewa by Gentry Community  
Association at 685-0111 ext. 26. Thank you for your attention to this matter.

Sincerely,

Tom Nance

cc:  
Suzanne Alawa  
Mike Brant  
Darian Chun

Attachments
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

APPLICATION FOR GROUND WATER USE PERMIT FOR PROPOSED NEW USE IN A DESIGNATED GROUND WATER MANAGEMENT AREA

FORM GWUPA-N

For detailed instructions on filling out this application form completely, refer to the attached instructions. Incomplete applications will not be accepted for processing.

The following must be attached before this application is accepted as complete:

- Portion of 7.5-Minute Series USGS topographic map (scale 1:24,000) with source location labeled and include the name of the quad.
- Property tax map, showing source location referenced to established property boundaries.
- Photograph(s) of the source(s) and location(s) of proposed end use(s), if applicable.

APPLICANT INFORMATION

Note: In accordance with §174C-31(1), HRS, the landowner shall be the joint applicant in the event the applicant is a lessee, licensee, developer, or any person with a terminable interest or estate in the land that is the water source of the permitted water.

1. APPLICANT'S INFORMATION

Name/Company: Ewa by Gentry Community Assoc. Suzanne Alawa, GM

Mailing Address:
91-1795 Keaunui Drive
Ewa Beach, Hawaii 96706

Phone: 685-0111 x26
Fax: 685-0114
E-mail: manager@ebgca.net

2. SOURCE LANDOWNER'S INFORMATION

Name/Company: Ewa by Gentry Community Assoc. Suzanne Alawa, GM

Mailing Address:
91-1795 Keaunui Drive
Ewa Beach, Hawaii 96706

Phone: 685-0111 x26
Fax: 685-0114
E-mail: manager@ebgca.net

SOURCE INFORMATION

3. ISLAND

Oahu

4. GROUND-WATER MANAGEMENT AREA

Puuola Aquifer System

5. SOURCE INFORMATION

Attach additional sheets, if necessary.

<table>
<thead>
<tr>
<th>Well Number (if known)</th>
<th>Well Name</th>
<th>Existing or Proposed?</th>
<th>TMK</th>
<th>Flowmeter installed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-05</td>
<td>Soda Creek Ill</td>
<td>Existing</td>
<td>9, 1, 70, 132</td>
<td>Yes, date installed 4/12/1996</td>
</tr>
</tbody>
</table>

PROPOSED USE INFORMATION

6. TOTAL QUANTITY OF WATER REQUESTED: In the space below, enter total from Box M in Item 11 (Table 1) of this application.

7. PROPOSED USE(S):

- Agriculture
- Domestic
- Industrial
- Irrigation
- Military
- Municipal

8. LOCATION OF PROPOSED WATER USE(S):

Show the location of the proposed use on the same USGS and TMK maps as the proposed source location. Otherwise, attach similar maps. See Item 11 (Table 1, column B) of this application.

NOTE: Signing below indicates that the signatories understand and affirm that the information provided on this application is accurate and true to the best of their knowledge. Further, the signatories understand that: 1) if necessary, further information may be required before the application is considered complete; 2) if a water use permit is granted by the Commission, this permit is subject to any existing legal uses, changes in sustainable yields and instream flow standards, reserved uses as defined by the Commission, and Hawaiian Home Lands future uses; and 3) the applicant is responsible for paying the public notice fees associated with this application.

9. APPLICANT

Signature: Suzanne C. Alawa
Printed Name: Suzanne C. Alawa
Date: 8-13-08

10. SOURCE LANDOWNER

Signature: Suzanne C. Alawa
Printed Name: Suzanne C. Alawa
Date: 8-13-08

Application accepted as complete on 10/5/08.
11. TABLE 1: LAND USE CONSISTENCY / EFFICIENCY OF USE (Attach additional copies, if necessary.)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURPOSE / WATER USE CATEGORY</td>
<td>TIME FOR PROPOSED LOCATION OF USE</td>
<td>STATE LAND USE DISTRICT</td>
<td>COLP REQUIRED?</td>
<td>SMAP REQUIRED?</td>
<td>UNITS OR ACRES</td>
<td>GDPNIIT OF USE (GPD)</td>
<td>QUANTITY OF WATER REQUESTED (sum of total potable use and total non-potable use)</td>
<td>JUSTIFICATION FOR QUANTITY OF WATER REQUESTED (if applicable, attach additional sheet showing how the quantity was calculated)</td>
<td></td>
</tr>
<tr>
<td>USES THAT REQUIRE POTABLE (DRINKING) WATER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| | Yes, date approved | Yes, date approved | Yes, not acquired | Yes, not acquired | No | No | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approved | Yes, date approve

Please explain if there are any limitations (e.g., legal, contractual) on the proposed water use(s) described in Table 1. Ref. §174C-51(5), HRS.
Table 1: LAND USE CONSISTENCY / EFFICIENCY - Soda Creek III Well

<table>
<thead>
<tr>
<th>Purpose/Water Use Category</th>
<th>Development Designation</th>
<th>USE TMK</th>
<th>State Land Use District</th>
<th>CDUP Req'd Y(date app)</th>
<th>County Zoning Code</th>
<th>SMAP Y(date app)</th>
<th>Quantity of Use (GPD)</th>
<th>Sub-Metered Acreage</th>
<th>Units or Net Acreage</th>
<th>Applicant's Justification for Quantity of Requested Use for Item 7.</th>
</tr>
</thead>
<tbody>
<tr>
<td>USES THAT DO NOT REQUIRE POTABLE WATER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadway/Park In - IRRLA &amp; PA</td>
<td>Sun Terra</td>
<td>9-1-70:42 &amp; 122</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
<td>NA</td>
<td>N</td>
<td>All irrigation use is based on actual use for Ewa by Gentry, see attached Brownlee and Lee letter dated July 2, 2008 for application rate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadway Irrigation - IRRLA</td>
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<tr>
<td>Roadway Irrigation - IRRLA</td>
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<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>9-1-76:174 &amp; Roadway</td>
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<td>R-5</td>
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<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>9-1-82:009 to 24</td>
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<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>9-1-82:061</td>
<td>Urban</td>
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<td>R-5</td>
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<td>Roadway Irrigation - IRRLA</td>
<td>9-1-82:062</td>
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<td>R-5</td>
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<td>Roadway Irrigation - IRRLA</td>
<td>9-1-82:063</td>
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<td>R-5</td>
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<tr>
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<td>9-1-82:064</td>
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<td>Roadway Irrigation - IRRLA</td>
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<td>R-5</td>
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<td>R-5</td>
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<td>Roadway Irrigation - IRRLA</td>
<td>9-1-82:076</td>
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<td>R-5</td>
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</tr>
<tr>
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<td>9-1-82:077</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
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<td>R-5</td>
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<td>R-5</td>
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<td>Roadway Irrigation - IRRLA</td>
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<td>R-5</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>9-1-93:25 to 32</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
<td>NA</td>
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<tr>
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<td>9-1-93:46-48</td>
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</tr>
<tr>
<td>Roadway Irrigation - IRRLA</td>
<td>9-1-93:75 to 89</td>
<td>Urban</td>
<td>NA</td>
<td>R-5</td>
<td>NA</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL USE REQUESTED (the sum of total potable use and non-potable use in the table above) = 194,768.313
12. TABLE 2: IRRIGATION INFORMATION [Not Applicable to this Permit]  

Table 2 received by e-mail on 10/18/08.

List all crops that will be grown, including landscape and golf course irrigation uses. Copy Table 2 and attach additional sheets to complete your list, if necessary.

<table>
<thead>
<tr>
<th>CR</th>
<th>TOTAL ACREAGE</th>
<th>NET IRRIGATED ACREAGE</th>
<th>BEGIN GROWTH PERIOD (month)</th>
<th>END GROWTH PERIOD (month)</th>
<th>IRRIGATION SYSTEM (refer to instructions)</th>
<th>IRRIGATION PRACTICE (refer to instructions)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments (continued from Column I). Please clearly indicate the crop (i.e., the row in table) these comments relate to.
### 13. TABLE 3: ALTERNATIVES ANALYSIS

<table>
<thead>
<tr>
<th>Municipal sources</th>
<th>A. Analysis of potable alternatives</th>
<th>B. Analysis of non-potable alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BWS requires the use of non-potable water for irrigation.</td>
<td>Use of onsite brackish groundwater will reduce potable water use.</td>
</tr>
<tr>
<td>Westwater reuse</td>
<td>Treated effluent from the Honouliuli WWTP is not available in this area.</td>
<td>Not Available</td>
</tr>
<tr>
<td>Ditch system</td>
<td>No ditch system available for this area.</td>
<td>Not Viable</td>
</tr>
<tr>
<td>Desalinization</td>
<td>Not Financially Practical</td>
<td>Not Financially Practical</td>
</tr>
<tr>
<td>Surface water</td>
<td>None is Available</td>
<td>None is Available</td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 14. PUBLIC INTEREST

[§174C-2(C), HRS states: The state water code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses. However, adequate provision shall be made for the protection of traditional and customary Hawaiian rights, the protection and propagation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture, and navigation. Such objectives are declared to be in the public interest.]

Explain below how the proposed new use(s) in your application are consistent with the public interest.

Use of onsite brackish groundwater preserves potable water which would otherwise be used for irrigation.

### 15. INTERFERENCE WITH THE RIGHTS OF THE DEPARTMENT OF HAWAIIAN HOME LANDS

Explain below how the proposed new use(s) of water will not interfere with the rights of the Department of Hawaiian Home Lands, as provided in section 221 of the Hawaiian Homes Commission Act.

There are no known conflicts or interference with DHHL rights.

### 16. INTERFERENCE WITH ANY EXISTING LEGAL USES

Explain below how the proposed new use(s) of water will not interfere with any other existing legal use(s) of water.

There are no known conflicts with any existing legal uses.
### Details

- **TMK:** 9-1-070:132
- **Historical TMK Sequence:**
- **Area (sq ft):** 36987
- **Area (acres):** 0.849
- **Lot Number:** 7456
- **Ohana:** (None)

### LAND CONTROL CODES

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOOD ZONE</td>
<td>FIRM ZONE D</td>
</tr>
<tr>
<td>HEIGHT LIMIT</td>
<td>25 FEET</td>
</tr>
<tr>
<td>HISTORIC SITE REGISTER NO</td>
<td></td>
</tr>
<tr>
<td>LOT RESTRICTIONS</td>
<td>NONE</td>
</tr>
<tr>
<td>SMA/SHORELINE</td>
<td>NOT IN SMA</td>
</tr>
<tr>
<td>SPECIAL DISTRICT</td>
<td>NOT IN SPECIAL DISTRICT</td>
</tr>
<tr>
<td>STATE LAND USE</td>
<td>URBAN DISTRICT</td>
</tr>
<tr>
<td>STREET SETBACK</td>
<td>NONE</td>
</tr>
<tr>
<td>ZONING (LUO)</td>
<td>R-5 RESIDENTIAL DISTRICT</td>
</tr>
</tbody>
</table>

### FACILITIES

<table>
<thead>
<tr>
<th>Facility Code</th>
<th>Year Built</th>
<th>No. of Floors</th>
<th>Total Floor Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>51 - Park</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### TMK SEPARATIONS

<table>
<thead>
<tr>
<th>Activity Code</th>
<th>Census Tract</th>
<th>Census Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 - MEMBERSHIP RECREATION (COUNTRY CLUB, GUN CLUB)</td>
<td>084.00</td>
<td>117</td>
</tr>
</tbody>
</table>

### Address List:

- City and County of Honolulu
- Department of Permitting & Planning
- 650 So. King St, Honolulu, HI 96813
- Fax: (808) 527-6743
- E-mail: info@honoluludpp.org
July 2, 2008

Mr. Greg Fukumitsu
Tom Nance
Water Resources Engineering
680 Ala Moana Boulevard, Suite 406
Honolulu, Hawaii 96813

Subject: **EWA WUP PERMIT**

Dear Greg:

We have been responsible for virtually all of the landscape and irrigation system design at Ewa by Gentry since 1990. Based on our 18 years of experience with this development and dealing with the requirement for low maintenance, drought and brackish water tolerant planting we have found through our water conservation efforts that the average daily irrigation requirement is approximate 1.0 gallons per square foot of planting area per week. We have established this irrigation water demand through both on site field experimentation and the following calculation:

**Irrigation Application Rate Calculation**

Ewa 15-year average annual pan evaporation rate: 86.56 inches per year
Less Ewa Gentry average annual rainfall (18.75-inches), derated 25% (14.06) inches per year
Evapotranspiration Rate 72.50 inches per year

72.5 inches per year = 0.87 gals/s.f./week
15% irrigation inefficiency factor, high percentage of small irregular planting areas = 0.13 gals/s.f./week
Total weekly irrigation demand = 1.0 gals/s.f./week

We have found that the rainfall contribution to irrigation must be derated at least 25% based on field experience and the irrigation inefficiency factor is approximately 15% due in large part to the high percentage of small irregular planting areas within the housing parcels.

The irrigation well service areas are outlined on the Irrigation Master Plan prepared by our office. The bulk service area irrigation demand are as follows:
<table>
<thead>
<tr>
<th>Area Well</th>
<th>Service Area</th>
<th>Gallons per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 35 Well</td>
<td>1,785,756 s.f.</td>
<td>255,108</td>
</tr>
<tr>
<td>Keaunui Well</td>
<td>1,572,305 s.f.</td>
<td>224,615</td>
</tr>
<tr>
<td>Sun Terra Tot Well</td>
<td>1,363,373 s.f.</td>
<td>194,768</td>
</tr>
<tr>
<td>Area 13 Well</td>
<td>258,825 s.f.</td>
<td>36,975</td>
</tr>
<tr>
<td>Area 45 Well</td>
<td>462,595 s.f.</td>
<td>66,085</td>
</tr>
</tbody>
</table>

If you have questions regarding this information, please contact me.

Sincerely,

BROWNLINE & LEE

Richard C. Brownlie, ASLA
Principal

cc: Darian Chun
    Gentry Homes, Ltd.
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
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, Puuloa 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 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.

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.,
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
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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
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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 9-1-61:1
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
Puuhonua and Kapolei Ground Water Management Areas, Oahu

ITEM C-2
PERMITTEES: 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 Makaiwa 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 Puuloa, 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 DOH/EPA 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.
Staff Submittal

July 12, 2006

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
<table>
<thead>
<tr>
<th>WUP No.</th>
<th>Well No.</th>
<th>Name 1</th>
<th>Address 1</th>
<th>City 1</th>
<th>Zip Code 1</th>
<th>Name 2</th>
<th>Address 2</th>
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**Exhibit 1**
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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.

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.

Exhibit 4
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.
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 C
Ms. Suzanne Azawa  
Ewa by Gentry Community Association  
91-1076 Polea St., #19A  
Ewa Beach, HI 96706  

Dear Ms. Azawa:

Notice of Action  
Extension of Interim Water Use Permit  
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 permit (WUP No. 450, Well No. 2001-05), 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 Puuloa Aquifer System shall comply with the Puuloa 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
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 Barber's 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 lg.

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
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).

Item 4
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 Puuola, 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 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. (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 groundwater 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 groundwater. 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, Puuloa 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.
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<td>U.S. NAVY</td>
<td>PAC DIV, NAVFAC ENG. CMD.</td>
<td>PEARL HA</td>
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EXHIBIT 2
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).

EXHIBIT 3
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.
Aquifer System Water Use Permit Index

**ISLAND OF OAHU**

<table>
<thead>
<tr>
<th>WUP No</th>
<th>Approved</th>
<th>Applicant</th>
<th>Well No.</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
<th>12-MAY (mgd)</th>
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**Summary for 'SYSTEM' = KAPOLEI (8 detail records)**

**Totalling** 2.033  1.552

|        |          | **WMA Aquifer System: PUULOA** |          |                |           |             |
|        |          | HAWAII PRINCE GOLF CLUB       | 1900-02  | EP 22           | 0.301     | 0.160       |
| 469    | 1/1/98   | HAWAII PRINCE GOLF CLUB       | 1900-17  | WELL 2          | 0.352     |             |
| 469    | 1/1/98   | HAWAII PRINCE GOLF CLUB       | 1900-18  | WELL 3          | 0.120     |             |
| 469    | 1/1/98   | HAWAII PRINCE GOLF CLUB       | 1900-19  | WELL 4          | 0.053     |             |
| 469    | 1/1/98   | HAWAII PRINCE GOLF CLUB       | 1900-20  | WELL 5          | 0.055     |             |
| 501    | 8/26/98  | U.S. DOCINOAANWS              | 1900-23  | PACIFIC TSUNAMI | 0.023     | N/R         |
| 469    | 1/1/98   | 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       | 0.905       |
| 167    | 5/14/97  | C&C DEPT. OF PARKS & REC      | 2001-03  | GEIGER PARK     | 0.03      | N/R         |
| 302    | 5/14/97  | GENTRY DEVELOPMENT CO.       | 2001-04  | SUNRISE APT.    | 0.04      | 0.013       |
| 450    | 5/14/97  | EWA BY GENTRY COMM ASSOC     | 2001-05  | SODA CREEK III | 0.066     | 0.037       |
| 171    | 5/14/97  | ARBORS ASSOCIATION           | 2001-07  | ARBORS          | 0.063     | 0.041       |
| 168    | 3/13/96  | PALM VILLA II ASSOCIATION    | 2001-08  | PALM VILLA 2    | 0.048     | 0.046       |
| 344    | 5/14/97  | GENTRY DEVELOPMENT CO.       | 2001-09  | FORT WEAVER AP  | 0.023     | 0.023       |
| 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    |          | CORAL CREEK GOLF, INC.       | 2001-13  | CORAL CREEK NO  | 0.8       | 0.499       |
| 579    |          | CORAL CREEK GOLF, INC.       | 2001-14  | CORAL CREEK NO  | 0.892     |             |
| 579    |          | CORAL CREEK GOLF, INC.       | 2002-12  | PALM COURT 3    | 0.04      | N/R         |
| 579    |          | CORAL CREEK GOLF, INC.       | 2002-15  | CORAL CREEK NO  | 0.183     |             |
| 577    |          | CORAL CREEK GOLF, INC.       | 2002-17  | CORAL CREEK NO  | 0.498     | 0.150       |
| 579    |          | CORAL CREEK GOLF, INC.       | 2002-17  | CORAL CREEK NO  | 0.150     |             |

Monday, May 21, 2001

**EXHIBIT 4**
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<th>Applicant</th>
<th>Well No.</th>
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<th>12-MAY (mgd)</th>
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Summary for 'SYSTEM' = PUULO (25 detail records)

Totalling 4.867 3.488

Monday, May 21, 2001

EXHIBIT 4
Gentry Pacific, Ltd. Pumpage
Sunrise Apt. Well (Well No. 2001-04)

pumpage (mgd)

0.080
0.065
0.050
0.035
0.020
0.015
0.010
0.005

date (latest data 11/00)

95 96 97 98 99 00

--- monthly values --- requested amount --- 12-MAV

EXHIBIT 5
Campbell Estate Caprock Pumpage
Kapolei Irr. Wells 1&2 (1905-08,10)

Combined Monthly Pumpage —— 12-MAV —— WUP —— 1905-08 Chloride

Date (latest data 04/01)
Hawaii Prince G.C. Combined Pumpage
(Well Nos. 1900-02, 17 to 20; 1901-03)

EXHIBIT 5

12-MAV  WUP  combined monthly withdrawal
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

Date (latest data 4/01)

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

Pumpage (mgd)

Date (latest data 04/01)

- Monthly values
- WUP
- 12-MAV
Gentry Pacific, Ltd. Pumpage
Coronado Well (Well No. 2001-09)

EXHIBIT 5

---

monthly values  WUP  12-MAV

(date (latest data 12/00)
Coral Creek Golf Course Withdrawals
Well 4 (2001-13)

pumpage (mgd)  12-MAV  max chloride level
Coral Creek Golf Course Withdrawals
Well 1 (2002-15)

EXHIBIT 5

- Pumpage (mgd)
- 12-MAV
- Max chloride level

Date (latest data 4/01)
Coral Creek Golf Course Withdrawals
Well 2 (2002-17)

EXHIBIT 5

pumpage (mgd)  12-MAV  max chloride level

date (latest data 4/01)
Coral Creek Golf Course Withdrawals
Lake A (2002-19)

pumpage (mgd)  12-MAV  max chloride level
Kapolei Golf Course
Well Nos. 2003-01,02,05 Combined

date (latest data 4/01)

- monthly pumpage
- 12-MAV
- 2003-01 Cl

- 2003-02 Cl
- 2003-05 Cl
- WUP
State HCDCH Kapolei Wells
Well Nos. 2003-04, 07 Combined

EXHIBIT 5

Date (latest data 4/01)

Monthly pumpage
- 12 MAV
- 2003-04 CI
- 2003-07 CI
- WUP
U.S. Fish and Wildlife Service
Honouliuli Unit (2101-14)

EXHIBIT 5

---

monthly withdrawal  
12-MAV  
WUP
Chloride and Pumpage of Ewa Plantation
Shallow Wells, Ewa Caprock, Oahu

Chloride Concentration (mg/l)

Start

Basal (high Cl) irrigation

Basal (low Cl) irrigation

Initial caprock Cl (average year)

Stop

Average Yearly pumpage (mgd)

Average Monthly pumpage (mgd)

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 Kaloi 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
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**

**EXHIBIT Z**
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)

Month/Year

1,000 Cl Cap • Well 1900-21 (Pond E)

EXHIBIT 7
Hawaii Prince Golf Course
Pumpage and Chlorides

[Graph showing average monthly pumpage and monthly chloride data for various wells over a period from 1994 to 2002.]
U. S. Fish and Wildlife Well 2101-14
Pumpage and Chlorides

EXHIBIT 7
Gentry Wells
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Monthly Chloride (mg/l)

Month/Year

- 1,000 Cl Cap
- Palm Villa I
- Palm Villa II
- Palm Court
- Sun Terra
- Sunrise
Haseko EP 27
Pumpage and Chlorides

Average Monthly Pumpage (mgd)

Month/Year

1,000 Cl Cap  •  EP27 Pit  □  EP 27 Pipe

Monthly Chloride (mg/l)
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

EXHIBIT 7
HFDCH 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

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

- Average Monthly Pumpage (mgd)
- Monthly Chloride (mg/l)

- 1,000 Cl Cap
- Well 1905-10 (West Well)
- 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.
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>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>10-20</td>
<td>140</td>
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<td></td>
<td>20-50</td>
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</tbody>
</table>

1 Assumes saturated well depth of 100 feet.

2 Five well volumes is a standard guideline recommended by EPA.
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.
**SENDER:**
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee’s Address
2. ☐ Restricted Delivery
   Consult postmaster for fee.

---

3. Article Addressed to:
   - Ewa by Gentry Community
     Association
   - 91-1070 Pohakast # K7A
   - Ewa Beach HI 96706
   (Well # 2001-05)

5. Signature (Addressee)

6. Signature (Agent)

---

4a. Article Number
   Z 0207185

4b. Service Type
   [ ] Registered [ ] Insured
   [ ] Certified [ ] COD
   [ ] Express Mail [ ] Return Receipt for Merchandise

7. Date of Delivery
   11/12/98

8. Addressee’s Address (Only if requested and fee is paid)

---

Print your name, address and ZIP Code here

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

Attn: Lenore
Dear Permittee:

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

LN:ss

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

<table>
<thead>
<tr>
<th>Permittee</th>
<th>Well No(s.)</th>
<th>WUP No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Estate of James Campbell</td>
<td>1905-08, 10</td>
<td>182</td>
</tr>
<tr>
<td>State of Hawaii, Housing Finance &amp; Development Corp.</td>
<td>2003-04, 07</td>
<td>432</td>
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<tr>
<td>Kapolei People’s Inc.</td>
<td>2003-01, 02, 05</td>
<td>438</td>
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<tr>
<td>Hawaii Prince Golf Club</td>
<td>1900-02, 17 to 20 &amp; 1901-03</td>
<td>469</td>
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<td>City and County of Honolulu</td>
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<td>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>The Arbors Association</td>
<td>2001-07</td>
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<tr>
<td>Palm Villas II Association</td>
<td>2001-08</td>
<td>168</td>
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<tr>
<td>Palm Court Association</td>
<td>2002-12</td>
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<tr>
<td>Coral Creek Golf, Inc.</td>
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</tr>
<tr>
<td>U.S. DOC/NOAA/National Weather Service</td>
<td>1900-23</td>
<td>501</td>
</tr>
</tbody>
</table>
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

   • Sampling Schedule

   The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

   • 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.
<table>
<thead>
<tr>
<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</th>
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<td>6</td>
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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 821
HONOLULU, HAWAI'I 96808

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)
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)
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

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
Staff Submittal  

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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 Honolulu 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 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 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 pumpage, 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
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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-issuance 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) *(f:/work/database/reports/wup-wma.rpt)*

October 5, 1998

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7 Permits Totalling Available SY: 1.796 (mgd) 1.550 (mgd)

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**EXHIBIT 2**

*(f:/work/database/reports/wup-wma.rpt)*
# Current Active Water Use Permits (Excluding salt water use permits)

**Exhibit 2**

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38 Permits Totalling 17.196
Available SY

EXHIBIT 3
**ISLAND OF OAHU**

**WMA Aquifer System:** KAPOLEI

**Sustainable Yield =** mgd

**WUP**

<table>
<thead>
<tr>
<th>No. Approved</th>
<th>Applicant</th>
<th>Well No</th>
<th>Well Name</th>
<th>WUP (mgd)</th>
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9 Permits Totalling Available SY
GUIDELINES FOR CHLORIDE CONCENTRATION SAMPLING FOR EWA CAPROCK

1. Sample Collection

- Sampling Schedule

The sampling schedule depends upon your pump capacity:

<table>
<thead>
<tr>
<th>Pump Capacity (gpm)</th>
<th>Sampling Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 50</td>
<td>Once a month</td>
</tr>
<tr>
<td>Greater than 50</td>
<td>Once a week</td>
</tr>
</tbody>
</table>

- 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)

EXHIBIT 4
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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<th>CASING DIAMETER (in.)</th>
<th>PUMP CAPACITY (gpm)</th>
<th>MINIMUM TIME (min.)</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.

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

Start 1937
Basal (high Cl) irrigation
Total imported basal water from Koolau ranged < 50-70 mgd

Stop 1994
Basal (low Cl) irrigation
Pumps 15, 16

Ref: OWRM, BWS files, R-79, & Beeman (1969, 1940)

Average monthly pumpage (mgd)
Average monthly pumpage (mgd)

Est. average yearly pumpage (12)
Average monthly pumpage (mgd)

Chloride Concentration (mg/l)

### Allocation Plan, Ewa Caprock Ground Water Management Area, Puuloa

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¹ Highest priority (Ag)
² Intermediate priority (G. Course)
³ Lowest priority (Landscape Irr, dust control)

Maximum reduction indicated in water shortage plan.
<table>
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<tr>
<th>No.</th>
<th>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>HAWAII PRINCE GOLF CLUB</td>
<td>1900-02</td>
<td>EP 22</td>
<td>0.900</td>
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38 Permits Totaling 17.196
Available SY
## Current Active Water Use Permits

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

### ISLAND OF OAHU

<table>
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<th>WMA Aquifer System: KAPOLEI</th>
<th>Sustainable Yield = mgd</th>
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### Wup

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9 Permits Totalling Available SY 2.946

EXHIBIT 8
July 28, 1997

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>
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<tr>
<td>Ft. Weaver Apartments</td>
<td>2001-09</td>
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<tr>
<td>Area 24</td>
<td>2001-10</td>
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</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.

[Signature]

Jeffrey D. Dinsmore  
Vice President, Land Development

JCD:cm  
Enclosures  

cc: Tom Nance, TNWRE
GROUND WATER USE PERMIT
WUP NO. 450

PERMITTEE

Applicant/Water User
Address: EWA BY GENTRY COMMUNITY ASSOC.,
91-1076 POLEA ST., #19A
EWA BEACH, HI 96706

Landowner of Source
Address: EWA BY GENTRY COMMUNITY ASSOC.,
91-1076 POLEA ST., #19A
EWA BEACH, HI 96706

PERMITTED SOURCE INFORMATION

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<th>Island</th>
<th>OAHU</th>
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<td>PUULOA</td>
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<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
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<td>Aquifer System</td>
<td>PUULOA</td>
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<td>System Sustainable Yield</td>
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<td>Well Name</td>
<td>SUN TERRA TOT LOTS</td>
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PERMITTED USE INFORMATION

Reasonable beneficial use PARK, LAWN & ROADWAY LANDSCAPE IRRIGATION

Withdrawal (12 month moving ave.) 0.066 mgd

Chloride Cap 1,000 mg/l

Location of water use

<table>
<thead>
<tr>
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<th>9-1-70:132</th>
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<tr>
<td>Address</td>
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<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>R-5</td>
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</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 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 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 PUULOQA 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 PUULOQA 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 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: 7/28/9_

Printed Name: ___________________________ Firm or Title: Vice President

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

Attachment
Mr. Jim Floody  
Ewa By Gentry Community Assoc.  
91-1076 Polea St., #19A  
Ewa Beach, HI 96706

Dear Mr. Floody:

Approval of Water Use Permit for Well No. 2001-05  
Puuola Ground Water Management Area, Oahu

This letter transmits your water use permit for Sun Terra Tot Lot Well (Well No. 2001-05) for use of 0.066 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. 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).

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,

[Signature]

MICHAEL D. WILSON  
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 450

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>EWA BY GENTRY COMMUNITY ASSOC.</td>
<td>EWA BY GENTRY COMMUNITY ASSOC.</td>
</tr>
<tr>
<td>91-1076 POLEA ST., #19A</td>
<td>91-1076 POLEA ST., #19A</td>
</tr>
<tr>
<td>EWA BEACH, HI 96706</td>
<td>EWA BEACH, HI 96706</td>
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</tbody>
</table>

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>OAHU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>PUULOA</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>EWA CAPROCK</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>PUULOA</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>NA</td>
</tr>
<tr>
<td>Well Name</td>
<td>SUN TERRA TOT LOTS</td>
</tr>
<tr>
<td>State Well No.</td>
<td>2001-05</td>
</tr>
</tbody>
</table>

PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>PARK, LAWN &amp; ROADWAY LANDSCAPE IRRIGATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>0.066 mgd</td>
</tr>
<tr>
<td>Chloride Cap</td>
<td>1,000 mg/l</td>
</tr>
<tr>
<td>Location of water use</td>
<td></td>
</tr>
<tr>
<td>TMK #</td>
<td>9-1-70:132</td>
</tr>
<tr>
<td>Address</td>
<td>EWA BY GENTRY PROJECT</td>
</tr>
<tr>
<td>State land use classification</td>
<td>URBAN</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>R-5</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 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 use 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 PUULO'A 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 PUULO'A 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.

Attachment
SEE EWA CAPROCK WMA

FOLDER #2 - #4
November 15, 1996

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 Application for Ewa by
Gentry Community Association, Well No. 2001-05

Enclosed are comments from the Department of Land Utilization (DLU) on the subject application. They were received after we transmitted Planning Department comments to you on October 28, 1996.

Should you have any questions, please call Eugene Takahashi of our staff at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:lh

Attachment

cc: Honorable Jeremy Harris, Mayor
(Mayor's Control No. 28149)
MEMORANDUM

TO:        CHERYL D. SOON, CHIEF PLANNING OFFICER
            PLANNING DEPARTMENT

FROM:      PATRICK T. ONISHI, DIRECTOR
            DEPARTMENT OF LAND UTILIZATION

SUBJECT:   WATER USE PERMIT APPLICATION

Applicant: Ewa by Gentry Community Association
Tax Map Key(s): 9-1-70: 132
Type of Use(s): Park, landscape and roadway irrigation

The proposed use on the above-referenced tax map key(s) has been reviewed. We find that the:

1. Current zoning designation is R-5 Residential District.
   [X] Proposed use(s) is/are permitted under current zoning.
   [ ] Proposed use(s) may be permitted if the following permit(s) is/are obtained:

2. [ ] Use is within the Special Management Area.
   [X] Use is not within the Special Management Area.

3. Additional Comments: ________________________________________________
   ________________________________________________
   ________________________________________________
The proposed project has been reviewed for the purpose of providing the above information and does not imply a recommendation of approval by this Department. Should you have any questions, please contact the Environmental Review Branch at 523-4077.

PATRICK T. ONISHI
Director of Land Utilization
October 28, 1996

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 Application for Ewa by
Gentry Community Association, Well No. 2001-05

This is in response to your memorandum dated September 27, 1996. We have reviewed the subject application and provide the comments below for your consideration.

- The Ewa by Gentry residential development is identified on the Ewa Development Plan Land Use Map.

- We have no objections to the use of non-potable water for irrigation purposes.

- The Board of Water Supply (BWS) has no objections to the subject water use permit application (see attached memorandum from the BWS).

Should you have any questions, please call Eugene Takahashi of our staff at 527-6022.

Sincerely,

CHERYL D. SOON
Chief Planning Officer

CDS:lh
Attachment

cc: The Honorable Jeremy Harris, Mayor
(Mayor’s Control No. 28149)
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 OF SEPTEMBER 27, 1996
TO MAYOR HARRIS ON THE PERMITTED USE APPLICATIONS FOR
1) CHEVRON WELLS 1807-01 & 02 AND 1807-03 & 04 AND
1806-20 & 21; 2) ROBERT LOO WELL 2201-01; 3) HALEKUA
WELL 2402-06; AND 4) EWA GENTRY WELL 2001-05

Copies of our responses to the Commission on Water Resource Management to the
following water use permit applications have been already faxed to your department.

1. Halekua Development Corp. Well 2402-06
2. Chevron Products Co. Well 1807-03 & 04 and Well 1806-20 & 21

We have no objections to a permitted use for the following wells if a sustainable yield is
not exceeded:

1. Ewa Gentry Well 2001-05
2. Chevron Products Co. Well 1807-01 & 02

If you have any questions, please contact Bert Kuioka at 527-6134.

Pure Water... our greatest need – use it wisely
TO: Honorable Kali Watson, Chairperson  
Department of Hawaiian Home Lands

Honorable Lawrence Miike, Director  
Department of Health  
Attn: Mr. Dennis Tulang  
Attn: Mr. William Wong

Honorable 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  
Attn: Mr. Chester Lao  
Attn: Mr. Barry Usugawa

Mrs. Cheryl D. Soon, Chief Planning Officer  
Planning Department

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management

SUBJECT: Water Use Permit Application  
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for  
Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application  
will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached  
application for any conflicts or inconsistencies with the land use designations, plans, policies,  
programs, or objectives specific to your organization or department only. Please respond by  
returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an  
extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN: ss  
Attachment(s)

Response:

(✓) We have no comments  
( ) We have no objections  
( ) Comments attached

Contact Person: Darrell Yagodich, Planning Administrator  
Phone: 586-3848

Signed: Darrell Yagodich  
Date: 10/24/96
TO: Honorable Kali Watson, Chairperson
Department of Hawaiian Home Lands

Honorable Lawrence Miike, Director
Department of Health
Attn: Mr. Dennis Tulang
Attn: Mr. William Wong

Honorable 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
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

☐ We have no comments
☐ We have no objections
☐ Comments attached

Contact Person: MELVIN J. HAMANO
Phone: 587-4258

Signed: MELVIN J. HAMANO
Date: Oct 14, 1996
TO: Honorable Kali Watson, Chairperson
Department of Hawaiian Home Lands

Honorable Lawrence Milke, Director
Department of Health
Attn: Mr. Dennis Tulang
Attn: Mr. William Wong

Honorable 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
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response: We have no comments
Comments attached

Contact Person: Luis A. Manrique Phone: 594-1755
Signed: Luis A. Manrique Date: 10/14/96
Subject: Request for Comments
Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu

To: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
State Parks

From: Rae M. Loui, Deputy Director
Commission on Water Resource Management

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

Response:

☐ We have no comments
☐ We have no objections
☐ Comments attached

Contact Person:  
Phone: 671-9927

Signed:  
Date: 10/23/96

RN: ss
Attachment(s)
TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    State Parks

FROM: Rae M. Loui, Deputy Director
      Commission on Water Resource Management

SUBJECT: Request for Comments
         Water Use Permit Application
         Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

Response:

( ) We have no comments
( ) We have no objections
(X) Comments attached

Contact Person: Glenn Higashi
Phone: X7-0112

Signed: Date: 10-14-96
MEMORANDUM

TO: Rae M. Loui, Deputy Director
    Commission on Water Resource Management

FROM: William Devick, Acting Director
    Division of Aquatic Resources

SUBJECT: Comments on Application for a Water Use Permit, Ewa Caprock Ground Water Management Area, Oahu (TMK 9-1-70:132)

The applicant, Ewa by Gentry Community Association, requests a water use permit for 66,000 gallons per day of brackish water from the Ewa Caprock Ground Water Management Area. The water will be pumped from the existing Well No. 2001-05 for irrigation of 13.23 acres of park lawn and roadway landscaping.

The Division of Aquatic Resources has no objections to this request since the proposed project is not expected to have any significant impact on aquatic resource values in this area.
TO: Honorable Kali Watson, Chairperson
   Department of Hawaiian Home Lands

Honorable Lawrence Milke, Director
Department of Health
Attn: Mr. Dennis Tulang
Attn: Mr. William Wong

Honorable 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
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached application for any conflicts or inconsistencies with the land use designations, plans, policies, programs, or objectives specific to your organization or department only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

We have no comments
We have no objections
Comments attached

Contact Person: Levi N. Kajiwara Phone: 586-4294
Signed: Oai N. Kajiwara Date: 10-7-96
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
Historic Preservation Division

SUBJECT: Chapter 6E-42 Historic Preservation Review -- Application for Water Use Permit, Ewa Caprock Ground Water Management Area, O‘ahu for Ewa By Gentry Community Association for Well No. 2001-05
Hoaeae, Waiekele, ‘Ewa, O‘ahu
TMK: 9-1-70:132

Thank you for the opportunity to review this project. The applicant proposes to use water from an existing source. Since an approved permit will not authorize any ground disturbing activities we believe that there will be "no effect" on historic sites.

This is our concurrence letter under Chapter 6E-42, Hawaii Revised Statutes.

EJ:jk
TO: Honorable Kali Watson, Chairperson
Department of Hawaiian Home Lands

Honorable Lawrence Miike, Director
Department of Health
Attn: Mr. Dennis Tulang
Attn: Mr. William Wong

Honorable 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
Attn: Mr. Chester Lao
Attn: Mr. Barry Usugawa

Mrs. Cheryl D. Soon, Chief Planning Officer
Planning Department

FROM: Michael D. Wilson, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu

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If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached

Contact Person: Esther Ueda
Phone: 587-3822

Signed: Esther Ueda
Date: 10/2/96
Mr. Michael D. Wilson, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai‘i 96809

Dear Mr. Wilson:

Subject: Water Use Permit Application
Ewa Caprock Ground Water Management Area, Oahu
Ewa By Gentry Community Association

We have reviewed the subject water use permit application, as transmitted by your memorandum dated September 27, 1996, and confirm that the location of Well No. 2001-05 and the location of proposed water use, identified as TMK: 9-1-70: 132, is within the State Land Use Urban District.

The parcel was part of a Agricultural District to Urban District reclassification under LUC Docket No. A88-627/Gentry Development Company for development of the Ewa by Gentry Master Planned Community.

We have no further comments to offer at this time.

Thank you for the opportunity to provide comments on the subject application.

If you have any questions in regards to this matter, please feel free to contact me or Leo Asuncion of my staff at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:th
Mr. Jim Floody  
Ewa By Gentry Community Association  
91-1076 Polea St., #19A  
Ewa Beach, HI 96706

Dear Mr. Floody:

We acknowledge receipt, on September 19, 1996, of your completed water use permit application for Well No. 2001-05. Enclosed is a copy of the public notice for your water use permit application for Well No. 2001-05 which will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

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  
Enclosure
TO: Aquatic Resources  
Forestry and Wildlife/Natural Area Reserve System  
Historic Preservation  
Land Management  
State Parks

FROM: Rae M. Loui, Deputy Director
Commission on Water Resource Management

SUBJECT: Request for Comments  
Water Use Permit Application  
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the attached application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your division only. Please respond by returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)  

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached

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 Application  
Ewa Caprock Ground Water Management Area, Oahu  

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.  

We would appreciate your review of the attached application 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 October 29, 1996 deadline.  

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

Response:

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  

Contact Person: ___________________________ Phone: _____________  
Signed: __________________________________ Date: _____________
TO: Honorable Kali Watson, Chairperson
    Department of Hawaiian Home Lands

    Honorable Lawrence Miike, Director
    Department of Health
    Attn: Mr. Dennis Tulang
    Attn: Mr. William Wong

    Honorable 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
    Attn: Mr. Chester Lao
    Attn: Mr. Barry Usugawa

    Mrs. Cheryl D. Soon, Chief Planning Officer
    Planning Department

FROM: Michael D. Wilson, Chairperson
      Commission on Water Resource Management

SUBJECT: Water Use Permit Application
         Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for
Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application
will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached
application for any conflicts or inconsistencies with the land use designations, plans, policies,
programs, or objectives specific to your organization or department only. Please respond by
returning this cover memo form by October 29, 1996.

If you have any questions, require additional information, or would like to request an
extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss
Attachment(s)

Response:

( ) We have no comments
( ) We have no objections
( ) Comments attached

Contact Person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
TO: Mr. Patrick Onishi, Director  
Department of Land Utilization  

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management

SUBJECT: WATER USE PERMIT APPLICATION  
Ewa Caprock Ground Water Management Area, Oahu

Transmitted for your review and comment is a copy of a water use permit application for Ewa By Gentry Community Association for Well No. 2001-05. Public notice of this application will be published in the Honolulu Advertiser issues of October 8 and 15, 1996.

We would appreciate your review of the proposed use that is described in the attached application (i.e. line item 6 or Table 1). Specifically, we request that you inform us of the current zoning designation for the TMK parcel, or portion thereof, for the proposed use area(s) and, secondly, whether the current zoning designation is appropriate for the proposed water use.

We have attached a TMK map(s) that covers the proposed use area(s). Where water is proposed for use on only a portion of a TMK parcel, or on parcels with multiple zoning, the proposed use area(s) has been clearly delineated on the attached map. Please respond by returning this cover memo along with your review comments by October 29, 1996.

If you have any questions, require additional information, or would like to request an extension of the review period for this application, please contact Lenore Nakama at 587-0218.

LN:ss  
Attachment(s)  

Response:

( ) The proposed water use(s) is consistent with the current zoning designation(s).  
( ) Comments attached

Contact Person: ___________________________________________ Phone: __________________

Signed: __________________________________________________ Date: _______________
Honorable Jeremy Harris, Mayor  
City & County of Honolulu  
City Hall  
Honolulu, HI 96813

Dear Mayor Harris:

Notice of an Application for Water Use Permit  
Ewa Caprock Ground Water 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 the water use permit application for Ewa By Gentry Community Association for Well No. 2001-05, which will be published in the Honolulu Advertiser.

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,

Michael D. Wilson  
Chairperson

Enclosures
PUBLIC NOTICE

Applications for Water Use Permits
Ground Water 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."

Honouliuli (Well No. 2202-01)
Applicant: Robert Loo
         99-058 Pooholua Dr.
         Aiea, HI 96701
Date Completed Application Received: September 16, 1996
Aquifer: Waipahu-Waiawa System, Pearl Harbor Sector, Oahu
Water Source: Honouliuli Well (Well No. 2202-01) at Honouliuli, Ewa, Oahu, Tax Map Key 9-1-19:15
Quantity Requested: 3,000 gallons per day.
Existing Water Use: Domestic supply for six (6) residences
Place of Water Use: 91-2210-E Ft. Weaver Rd. at Tax Map Key: 9-1-19:15

Sun Terra Tot Lot (Well No. 2001-05)
Applicant: Ewa By Gentry Community Association
         91-1076 Polea St., #19A
         Ewa Beach, HI 96706
Date Completed Application Received: September 19, 1996
Aquifer: Ewa Caprock System, Oahu
Water Source: Sun Terra Tot Lot Well (Well No. 2001-05) at Ewa By Gentry, Oahu, Tax Map Key 9-1-70:132
Quantity Requested: 66,000 gallons per day.
New Water Use: Irrigation supply for 13.23 acres of park lawn & roadway landscaping
Place of Water Use: Ewa By Gentry at Tax Map Key: 9-1-70:132
Request to modify water use permit to increase allocation by 0.046 mgd to 0.066 mgd.

P-2095 & P-2095A (Well Nos. 1807-01 & 02)
Applicant: Chevron Products Co.
         91-480 Malakole St.
         Kapolei, HI 96707
Date Completed Application Received: September 19, 1996
Aquifer: Ewa Caprock System, Oahu
Water Source: P-2095 & P-2095A Wells (Well Nos. 1807-01 & 02) at 91-480 Malakole ST., Oahu,
Tax Map Key 9-1-14:10
Quantity Requested: 1,500,000 gallons per day salt water (total for Well Nos. 1807-01 & 02)
Existing Water Use: Industrial
Place of Water Use: 91-480 Malakole ST. at Tax Map Key: 9-1-14:10

P-5219 & P-5219A (Well Nos. 1807-03 & 04)
Applicant: Chevron Products Co.
         91-480 Malakole St.
         Kapolei, HI 96707
Date Completed Application Received: September 19, 1996
Aquifer: Ewa Caprock System, Oahu
Water Source: P-5219 & P-5219A Wells (Well Nos. 1807-03 & 04) at 91-480 Malakole ST., Oahu, Tax Map Key 9-1-14:10
Quantity Requested: 100,000 gallons per day salt water (total for Well Nos. 1807-03 & 04)
Existing Water Use: Industrial
Place of Water Use: 91-480 Malakole ST. at Tax Map Key: 9-1-14:10

P-6109 & P-6109A (Well Nos. 1806-20 & 21)
Applicant: Chevron Products Co.
91-480 Malakole St.
Kapolei, HI 96707
Date Completed Application Received: September 19, 1996
Aquifer: Ewa Caprock System, Oahu
Water Source: P-6109 & P-6109A Wells (Well Nos. 1806-20 & 21) at 91-480 Malakole ST., Oahu, Tax Map Key 9-1-14:10
Quantity Requested: 2,000,000 gallons per day salt water (total for Well Nos. 1806-20 & 21)
Existing Water Use: Industrial
Place of Water Use: 91-480 Malakole ST. at Tax Map Key: 9-1-14:10

Kunia #5 (Well No. 2402-06)
Applicant: Halekua Development Corp.
2024 North King Street
Honolulu, HI 96819
Date Completed Application Received: September 20, 1996
Aquifer: Waipahu-Waiawa System, Pearl Harbor Sector, Oahu
Water Source: Kunia #5 (Well No. 2402-06) at Kunia 440 Reservoir site, Oahu, Tax Map Key 9-4-2:27
Quantity Requested: 955,900 gallons per day.
New Water Use: Municipal, industrial and domestic use for 1,163 residences
Place of Water Use: Royal Kunia Phase II Increment I at Tax Map Key: 9-4-2:por 1 & 51

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 October 29, 1996. Objections must be sent to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) the applicants at the above addresses.

COMMISSION ON WATER RESOURCE MANAGEMENT

RAE M. LOUI, Deputy Director for
MICHAEL D. WILSON, Chairperson

Dated: SEP 27 1996

Publish in: Honolulu Advertiser issues of October 8 and 15, 1996
TO: Department of Land and Natural Resources
Commission on Water Resource Management
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

ATTENTION: Ms. Lenore Nakama

RE: Water Use Permit

WE ARE TRANSMITTING:

<table>
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<tr>
<th>COPIES</th>
<th>DATE</th>
<th>NO.</th>
<th>DESCRIPTION</th>
</tr>
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<tr>
<td>1 each</td>
<td>9/17/96</td>
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<td>Application for Water Use Permit for Ground Water (original)</td>
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<td>15 each</td>
<td>9/17/96</td>
<td></td>
<td>Application for Water Use Permit for Ground Water (copies)</td>
</tr>
<tr>
<td>1 each</td>
<td>9/12/96</td>
<td>#517</td>
<td>Check from TNWRE, Inc. for $25.00 for Filing Fee</td>
</tr>
</tbody>
</table>

REMARKS:

The attached permit is being forwarded to you in response to your letter dated August 20, 1996 regarding our permit violation.

If you have any questions or concerns, please call Greg Fukumitsu of TNWRE, Inc. at 537-1141 or myself at 599-8256.

SIGNED:

T. Nance, TNWRE, Inc.
Site Construction Manager
Engineering & Site Construction Management

If enclosures are not as noted, kindly notify us at once
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

APPLICATION FOR WATER USE PERMIT

9-11-96

1. APPLICANT: Ewa by Gentry
   Community Association
   Jim Floody (President)
   91-1076 Polea Street, #19A
   Ewa Beach, Hawaii 96706
   685-0111

   Firm/Name
   Contact Person
   Address
   Phone

2. WATER MANAGEMENT AREA: Pearl Harbor Management Area
   (Ewa Caprock)

3. (a) EXISTING WELL/DIVERSION NAME AND STATE NUMBER:

4. SOURCE TYPE (check one):
   • Stream
   • Bail
   • Dike-confined
   • Perched
   • Caprock
   • Commercial
   • Military
   • Irrigation
   • Domestic
   • Industrial
   • Other (explain)

5. METHOD OF TAKING WATER (check one):
   • Artisanal
   • Well & Pump
   • Diverted Surface
   • Other (explain)

6. LOCATION OF PROPOSED WATER USE: (if possible, show on same maps
   as source location. Otherwise, attach similar maps)
   (a) PUC-Regulated System
   (b) Proposed use of water is: Existing New Both existing & new uses
   (c) Tax Map Key: 9-1-70:132
   (d) Address: Ka‘ahupahau Street and Piliokahe Place
   (e) Current State Land Use District(s):
   (f) Current County Zoning District(s):

7. QUANTITY OF WATER REQUESTED: 66,000 gallons per day (averaged over 1 year)

8. METHOD OF MEASUREMENT:
   • Flowmeter
   • Open-pipe
   • Weir
   • Orifice
   • Other (explain)

9. QUALITY OF WATER REQUESTED: Fresh

10. PROPOSED USE: Municipal (including hotels, stores, etc.)
       • Individual Domestic
       • Industrial
       • Military
       • Other (explain)

11. TOTAL NUMBER OF RESIDENCES TO BE SERVED: Not Applicable-Park and Roadway Irrigation

12. TOTAL ACRES TO BE IRRIGATED AND TYPE OF CROP: 13.23 Ac.s of Park Lawn and Roadway Landscaping

13. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: Not Available

14. APPLICANT MUST ESTABLISH THAT THE PROPOSED USE OF WATER:
   (a) Can be accommodated with the available water source.
   (b) Is a reasonable-beneficial use as defined in section 13-171-2, HAR. (see backside of this application)
   (c) Will not interfere with any existing legal use.
   (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 general policies.

15. REMARKS, EXPLANATIONS: (see backside of this application)

NOTE: Signing below indicates that the signatories understand and swear that: 1) the information provided on this application is accurate and true to the best of their knowledge; 2) Item 14 is the responsibility of the applicant prior to Commission approval; 3) If a water use permit is required by the Commission, this permit is subject to prior existing permitted uses, changes in sustainable yields and instream flow standards, reserved uses as defined by the Commission, and Hawaiian Homelands future uses; and 5) Upon permit approval, a water shortage plan must be submitted by the applicant should the Commission require one.

Applicant (print): Ewa by Gentry
Community Association
Ewa by Gentry
Community Association
Signature: Jim Floody
Date: 1/17/96

Landowner (print): Ewa by Gentry
Community Association
Signature: Jim Floody
Date: 1/17/96
"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.

15. REMARKS, EXPLANATIONS (cont'd):
See attached letter from Brownlie & Lee for reference map of irrigated areas.

### TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
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<tr>
<th>PROJECT NAME</th>
<th>TMK</th>
<th>CURRENT COUNTY ZONING CODE</th>
<th>UNITS NET ACRES</th>
<th>-GPD/UNIT- GPD/ACRE</th>
<th>TOTAL GPD</th>
<th>% OF TOTAL TO BE USED OVER NEXT 4 YEARS</th>
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<tbody>
<tr>
<td>Sun Terra Tot Lot</td>
<td>9-1-70:</td>
<td>R-5</td>
<td>0.80</td>
<td>4,990</td>
<td>3,990</td>
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<td></td>
<td>132</td>
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<tr>
<td>Kapolei Parkway, South of Geiger Rd</td>
<td>Public</td>
<td></td>
<td>1.95</td>
<td>4,990</td>
<td>9,730</td>
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<td></td>
<td>Road</td>
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<tr>
<td>Sun Terra Roads</td>
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<td>3.42</td>
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<td>Fort Weaver Road, South of Geiger Rd</td>
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<td>0.50</td>
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<td></td>
<td>Road</td>
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<td>Kapolei Parkway, North of Geiger Rd</td>
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<td>3.54</td>
<td>4,990</td>
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<tr>
<td></td>
<td>up to Railroad ROW</td>
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<td></td>
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<tr>
<td>Geiger Road Between Fort Weaver Road and Kapolei Parkway</td>
<td>Public</td>
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<td>3.02</td>
<td>4,990</td>
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<td>Road</td>
<td></td>
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TOTAL 66,015
Abandoned Airfield

Sun Terra Tot Lot Well
(State Well No. 2001-05)
TMK: 9-1-70-132
DEPARTMENT OF LAND AND NATURAL RESOURCES

DOCUMENT NO. UAC OR ATTACHED WORKSHEET DATE: 9/25/96

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<th>APP</th>
<th>D</th>
<th>SRC/ OBJ</th>
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<th>CTR</th>
<th>PROJECT</th>
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<td>0752</td>
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<td>$25.00</td>
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NAME/DESCRIPTION (HAND INPUT)

TNWRE INC.

REMARKS: LINE (1) Well No. 2001-05 (WUPA)
LINE (2)
LINE (3)
LINE (4)

TOTAL $25.00

TWNRE INC.
DBA TOM NANCE WATER RESOURCE ENGINEERING
680 ALA MOANA BLVD., STE. 406
HONOLULU, HI 96813

Bank of Hawaii
313 WARD AVENUE
HONOLULU, HAWAII 96813

September 12, 1996

PAYEE: **Twenty-five and 00/100** DOLLARS $25.00

TO
THE ORDER OF
Department of Land & Natural Resources

DETACH AND RETAIN THIS STATEMENT
THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW. IF NOT CORRECT PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED.

TNWRE INC.
DBA TOM NANCE WATER RESOURCE ENGINEERING

DELCUXE FORM WVC-3 V-2

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<tr>
<td>9/12/96</td>
<td>Filing Fee: Application For Water Use Permit Ewa Gentry - Sun Terra Tot Lot [Job No. 95-45]</td>
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</table>
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/MUIKE)

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 PUUOEA 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:

- Honouliuli Secondary Treatment Operational
- Demonstration Recharge Trench Operational (5 mgd)
- Testing Complete
- Complete Trench Operational (10 mgd)

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<th>Date</th>
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<td>9/1996</td>
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<tr>
<td>Demonstration Recharge Trench</td>
<td>12/1998</td>
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<tr>
<td>Testing</td>
<td>12/1999</td>
</tr>
<tr>
<td>Complete Trench Operational</td>
<td>12/2001</td>
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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 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 (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. UWAINÉ
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)
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
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 Puuloa 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>Event</th>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>Honouliuli Secondary Treatment Operational</td>
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</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 (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 proposed syd 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. Roy Hulda
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

John Actual:

1. Pimms: have raw data that has not primarily been submitted.
   Request add'l time to present & analyze data, may have affect on SY estimate.
   Campbell was called, and won't be in again.

4. MG, W. Prince: request that amendment to Decon. 2 be reconsidered (5 mgd compliance). Work in effect, be established. SY = 5 mgd. Was hoping to manage aquifer withdrawal, not performance standard.

Mike: do scenarios 1 w/5 mgd, 1 w/another SY.


Washdown, polymer, enhancement, mitigations
Low range projection = 2 mgd. (to come out of water effluent) 1 mgd for Babia Poi; west 13 decrease to 10 mgd.
## Scenario Comparisons

### Central Oahu Development Plan Area

<table>
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<tr>
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<tr>
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<td>48,424</td>
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**Central Oahu Projected Increase in Population**

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**Central Oahu Projected Increase in Housing Units**

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**Central Oahu Projected Increase in Civilian Non-Construction Jobs**

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<td>25,434</td>
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**Central Oahu Projected Increase in Non-Construction Jobs**

### Change in Resident Population

**Central Oahu Development Plan Sub-Areas (1990-2020)**

### Change in Non-Construction Jobs

**Central Oahu Development Plan Sub-Areas (1990-2020)**

**NOTE:** Baseline forecast for 1990-2020 islandwide increase is 20%.
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<thead>
<tr>
<th>PERMITTEE</th>
<th>WELL NAME (WELL NO.)</th>
<th>DATE OF APPROVAL</th>
<th>TYPE OF USE</th>
<th>ALLOCATION</th>
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<td>U.S. Navy</td>
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<td>0.000</td>
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**EXHIBIT 3**
### PUULOA AQUIFER SYSTEM

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<td>Less: Requests for New Interim Permits</td>
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<td>(2001-04)</td>
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<td>(2001-05)</td>
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<td>(2001-10)</td>
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<td>(2002-15)</td>
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*Proposed marina project will result in a permanent reduction in caprock storage capacity.*

**EXHIBIT 4**
## KAPOLEI AQUIFER SYSTEM

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<td><strong>Less: Other Existing Permits</strong></td>
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</tr>
<tr>
<td>Pu‘u Makakilo (1904-02)</td>
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<td><strong>Current Available Allocation</strong></td>
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<td>State HFDC (2003-04,07)</td>
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<td><strong>Less: New Applications</strong></td>
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<tr>
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<tr>
<td><strong>Available Allocation</strong></td>
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EXHIBIT 5
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.

EXHIBIT 6
Hawaii Prince Golf Course

HASEKO (Ewa), Inc.

Gentry Homes, Ltd.

J. M. Killian 8/28/96

Department of Navy
(The Department of the Navy's Participation is in connection with and in support of its agricultural oustlease program.)

J. M. Killian
Director, Real Estate Division
Puget Sound Naval Facilities Engineering Command
Real Estate Contracting Officer

Sago Hawaii Inc. dba
Ewa Beach International Golf Club

EXHIBIT 6
OAHU DRINKING WATER PICTURE

Groundwater Sources:

Developable Yield \hspace{1cm} 415 mgd
Utilized \hspace{1cm} 340 mgd
Available \hspace{1cm} 75 mgd
OAHU DEMAND VS. SUPPLY

2020 Projected Demand  90 mgd

(Ewa, Central Oahu, Waianae, Honolulu)

Available Supply  75 mgd

DEFICIT  -15 mgd
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
Mr. Randolph K. Ouye  
Gentry Homes, Ltd.  
560 N. Nimitz Hwy.  
Honolulu, HI 96817  

Dear Mr. Ouye:

Thank you for your letter of July 26, 1996, responding to our notice of water use permit violations for Well Nos. 2001-05 and 2001-09.

We understand that the overpumpage of Well No. 2001-09 was due to overwatering during the initial landscape grow-in period and that you will work to resume the allocation allowance for the well.

With regard to Well No. 2001-05, we understand that you will be submitting a request to modify the water use permit for additional allocation. We have attached a water use permit application form for your use. In the event that you are unable to reduce your pumpage such that you are within the allocation limit, we request that you submit a completed application within thirty (30) days from the date of this letter.

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

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director  

LN:ss  
Attachment
Ms. Rae Loui  
Deputy Director  
Department of Land & Natural Resources  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Re: Water Use Permit Violations for Well No. 2001-05 (WUP No. 303) (Sun Terra Tot Lot) & Well No. 2001-09 (WUP No. 344) (Coronado)

Receipt of your letter dated June 20, 1996 is acknowledged. My apologies to you for responding to your request after the July 15, 1996 deadline, however, ongoing investigations have been occurring, and the following conclusions have been made regarding the overpumpage at Well Nos. 2001-05 and 2001-09.

Well No. 2001-05 - Sun Terra Tot Lot. This well was designed to service the park and roadway areas in the immediate vicinity, and was allocated 0.020 mgd for that acreage. Since the initial allocation, additional landscaping requirements north of Geiger Road (Kapolei Parkway) necessitated additional irrigation lines onto Well No. 2001-05. We are in the process of submitting a request for a water use permit revision for the additional 0.044 mgd.

Well No. 2001-09 - Coronado. This well services the recently built Coronado multi-family complex which recently completed their landscape grow-in period in May 1996. We suspect that the overwatering of these areas during the initial grow-in period, and the continued watering of this area contributes to the overpumpage. We will work with the Coronado Association in resuming the allocation allowance for this well.

We will continue to monitor both wells to ensure their compliance with the Commissions guideline.
If there are any questions or concerns, please contact our Construction Manager, Jerome Fukuda, at 599-8227.

Thank You for your continued support.

Very truly yours,

GENTRY HOMES, LTD.

Randolph K. Ouye
Senior Vice President/
Chief Operating Officer

cc: J. Fukuda
    T. Nance, TNWRE

f/selina/st&cltr-doc
Mr. Randolph K. Ouye  
Gentry Homes, Ltd.  
560 N. Nimitz Hwy.  
Honolulu, HI 96817  

Dear Mr. Ouye:  

Notice of Water Use Permit Violations  
Well No. 2001-05 (WUP No. 303)  
Well No. 2001-09 (WUP No. 344)  
Ewa Caprock Ground Water Management Area, Oahu  

Reported monthly pumpages at Well Nos. 2001-05 & 09 show that the current twelve-month moving average withdrawals are in excess of the allocations (0.020 mgd and 0.023 mgd, respectively) that were approved by the Commission on Water Resource Management at its meeting of July 13, 1994.  

Please provide an explanation for the overpumpages and an estimate for the length of time that you will need to come into compliance with the terms of the permits. We request that you submit a written response to this letter by July 15, 1996.  

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

Sincerely,  

RAE M. LOUI  
Deputy Director  

LN:ss
MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: April 15, 1996
TIME: 9:00 a.m.
PLACE: DLNR Board Room, 1st Floor
Kalanimoku Building

Chairperson Michael Wilson called the meeting of the Commission on Water Resource Management to order at 9:10 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. Charley Ice
Ms. Lyann Mizuno
Ms. Lenore Nakama
Ms. Janis Uwaine

COUNSEL: Mr. William Tam

OTHERS:
Douglas MacDougal
Ben Matsubara
Richard Montgomery
Kathleen Hoff
Yvonne Izu
Carol Wilcox

Dawn K. Wasson
Yukie Ohashi
Kay Muranaka
Garrick Iwamuro
Barry Usagawa
Stephen Kubota

Dr. Jim Anthony
Tom Nance
Harry Hida
Herb Lee, Jr.
Chester Lao

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.

ITEM 1. MINUTES OF THE MARCH 13, 1996 MEETING.

MOTION: (RICHARDS/NOBRIGA)

To approve the minutes.

UNANIMOUSLY APPROVED.
TESTIMONY BY APPLICANT:

Mr. Ben Matsubara, representing Pacific Atlas, Inc., testified that they are in agreement with the staff recommendation and intend to comply with them. He further stated that the applicant accepts full responsibility for what has occurred and have undertaken steps to ensure that all of the requirements are complied with and will be updating the Commission staff in regards to their progress.

TESTIMONIES:

Ms. Carol Wilcox, testified that there should be no excuses for overlooking permits that are required.

Mr. Stephen Kubota, a Kaneohe resident, testified that he is concerned about the potential impacts on the fishpond, which he felt is valuable to Kaneohe Bay.

Mr. Herb Lee, Consultant to Pacific Atlas, Inc. and President of Waikalua Fishpond Preservation Society, which was set up due to a condition agreement between the City and the community, and Pacific Atlas, Inc. to preserve the Waikalua Fishpond as part of the SMA and PRU agreement going back to September, 1994. He testified that the Society is comprised of people from the community and recently got their preservation plan approved by the Department of Land and Natural Resources and have been in the process of implementing it since then. Part of that plan is to eradicate all of the mangrove around the pond area. They are also looking into planting native Hawaiian coastal plants around the pond as well as in the golf course area.

Mr. Ben Matsubara informed the Commission that they are currently grassing the area to prevent erosion.

Deputy Director Rae Loui suggested that the staff go to the area and report back to the Commission at its next meeting on April 19, 1996.

MOTION: (COX/GIRALD)

To defer action for 30 days and have the applicant stop all work related to the permits but allow work necessary to control the erosion.

UNANIMOUSLY APPROVED AS AMENDED.

ITEM 10.

REPORT ON PERMIT VIOLATIONS, APPLICANTS FOR NEW INTERIM WATER USE PERMITS, EWA CAPROCK, GROUND WATER MANAGEMENT AREA, OAHU

PRESENTATION OF REPORT: Ms. Lenore Nakama
Staff submitted a report as requested by the Commission during the March 13, 1996 meeting.

No action was required on this item.

ITEM 10. OTHER BUSINESS

None.

ADJOURNMENT: Chairperson Wilson adjourned the meeting at 2:52 p.m.

Respectfully submitted,

JANIS F. UWAINEN
Secretary

APPROVED AS SUBMITTED:

RAE M. LOUI
Deputy Director
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

April 15, 1996
Honolulu, Oahu

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

<table>
<thead>
<tr>
<th>APPLICANT(S):</th>
<th>LANDOWNER(S):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Well Nos. 1905-08,10) The Estate of James Campbell 1001 Kamokila Blvd. Kapolei, HI 96707</td>
<td>Same</td>
</tr>
<tr>
<td>(Well Nos. 2003-04,07) State of Hawaii, Housing Finance &amp; Development Corp. 7 Waterfront Plaza, Suite 300 500 Ala Moana Blvd. Honolulu, HI 96813</td>
<td>Same</td>
</tr>
<tr>
<td>(Well Nos. 1900-02,17 to 20 &amp; 1901-03) Hawaii Prince Golf Club 91-1200 Fort Weaver Rd. Ewa Beach, HI 96706</td>
<td>Same</td>
</tr>
<tr>
<td>(Well Nos. 2001-03,04,05,09,10,11) Gentry Development Co. P.O. Box 295 Honolulu, HI 96809</td>
<td>Same</td>
</tr>
<tr>
<td>(Well No. 2001-07) The Arbors Association 91-920 La‘aulu St., #1G Ewa Beach, HI 96706</td>
<td>Same</td>
</tr>
</tbody>
</table>
(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 Miliiani St., Suite 810
Honolulu, HI 96813

BACKGROUND:

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>NO PERMIT APPLICATION</th>
<th>WELL</th>
<th>PUMP</th>
<th>WATER USE</th>
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<tbody>
<tr>
<td></td>
<td>WCR</td>
<td>ELEV</td>
<td>PCR</td>
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<td>Hawaii Prince</td>
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<tr>
<td>1901-03</td>
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<td>1905-08</td>
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<td>1905-10</td>
<td>X</td>
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<tr>
<td>Gentry Development</td>
<td>WELL/PUMP**</td>
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<tr>
<td>2001-03</td>
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<td>2003-05</td>
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<tr>
<td>2003-07</td>
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</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
- **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, ie for 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,

W. Ray
RAEM. 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

[Signature]

[Signature]

[Signature]
### Monthly Groundwater Use Report

**GENTRY DEVELOPMENT CORP.**  
P.O. BOX 295  
HONOLULU, HI 96809

**Month of ________, 19____**  
**Date Measurement(s) Taken**

\[
\left\{ \begin{array}{c}
\text{Month} \\
\text{Day} \\
\text{Year}
\end{array} \right. 
\]

**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>
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</thead>
<tbody>
<tr>
<td>2001-10</td>
<td>GENTRY AREA 24</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Other comments or additional information:

Submitted by (print) ____________________  
Title ____________________  
Signature ____________________  
Date ____________________  

**EXHIBIT 1**
Ewa By Gentry Community Association
Soda Creek III (Well No. 2001-05)

EXHIBIT

- monthly values
- WUP
- Cl (mg/l)
- 12-MAV
EXHIBIT 3

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

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 data 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
       Ms. Lyann Mizuno
       Mr. Roy Hardy
       Mr. Eric Hirano
       Mr. Glenn Bauer
       Ms. Lenore Nakama
       Mr. Charley Ice
       Ms. Janis Uwaine

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

Garrick Iwamuro
E.A. Ho'oiipo 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:

   Item 1
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), HASEKO (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).
day of potable water for municipal use from Kahaluu Tunnel (Well No. 2651-01).

4. Require that the interim permits for Well nos. 2349-01, 2450-01, and 2651-01 be subject to the standard water use permit conditions listed in Attachment B and the following special conditions:

   a. The applicant may continue the existing use of ground water within the limits approved by the Commission, and any delay in receipt of the actual permit document shall not be a reason to interrupt the existing use.

   b. 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.

   c. Honolulu Board of Water Supply shall be exempt from the requirements of permit modifications as provided in §174C-57.

TESTIMONY BY APPLICANT:

Mr. Chester Lao of the Board of Water Supply was available to answer questions and stated that Haiku Tunnel is the only tunnel with a good chance of being bulkheaded.

TESTIMONIES:

Ms. Elizabeth Martin, of the Native Hawaiian Advisory Counsel, testified and questioned on the impact of the water use permit.

MOTION: (NOBRIGA/COX)

To approve staff’s recommendation.

UNANIMOUSLY APPROVED.

Chairperson Wilson called a recess at 11:00 a.m.

The meeting was reconvened at 11:35 a.m.

6. WEST BEACH ESTATES, DEFERRAL—WATER USE PERMIT APPLICATION, WEST BEACH NON-POTABLE WELL (WELL NO. 2006-17), TMK 9-1-56:13, FUTURE IRRIGATION USE FOR 1.636 MGD, EWAKUNIA GROUND WATER MANAGEMENT AREA, OAHU

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

STAFF’S RECOMMENDATION:

Staff recommends that the Commission defer action on the water use permit application for Well No. 2006-17 to the next regular meeting on Oahu.
install the pumps in the wells and do the tests that are required and that if the Commission wishes, the pumps could be pulled out after the test.

When questioned by the Commissioners about the applicant's failure to obtain a permit prior to the stream alteration, Mr. Ryan Imata, Civil Engineer for the Stream alteration project, stated that cost was the issue in determining to go ahead with the project. However, he further stated that the project has been halted and permits have been requested.

TESTIMONIES:

Mr. Chester Lao of the Board of Water Supply testified that the Board of Water Supply was notified in advance about the testing that was done, however, they were not notified for the second set of wells. He said that the Commission should be concerned about possible effect of pumping on streamflow.

Ms. Elizabeth Martin of the Native Hawaiian Advisory Counsel testified that the area has already been devegetated and if the area is not grassed, it will get worse due to rain. She said that there is erosion into Kaneohe Bay.

MOTION: (NOBRIGA/MIIKE)

To approve staff's recommendation.

APPROVED.

RESUBMITTAL - HONOLULU BOARD OF WATER SUPPLY, APPLICATIONS FOR WATER USE PERMITS, REQUESTS TO CONTINUE EXISTING MUNICIPAL USES FOR LULUKU TUNNEL (WELL NO. 2349-01) AT TMK 4-5-41:4, HAIKU TUNNEL (WELL NO. 2450-01) AT TMK 4-6-15:1, AND KAHALUU TUNNEL (WELL NO. 2651-01) AT TMK 4-7-8:2, Koolaupoko Ground Water Management Area, Oahu

PRESENTATION OF SUBMITTAL: Ms. Lenore Nakama

STAFF'S RECOMMENDATION:

1. Approve the issuance of an interim water use permit to Honolulu Board of Water Supply for the reasonable and beneficial use of 713,000 gallons per day of potable water for municipal use from Luluku Tunnel (Well No. 2349-01).

2. Approve the issuance of an interim water use permit to Honolulu Board of Water Supply for the reasonable and beneficial use of 1,340,000 gallons per day of potable water for municipal use from Haiku Tunnel (Well No. 2450-01).

3. Approve the issuance of an interim water use permit to Honolulu Board of Water Supply for the reasonable and beneficial use of 2,128,000 gallons per
MOTION: (RICHARDS/COX)
To approve staff's recommendation.
UNANIMOUSLY APPROVED.

7. HAWAII COUNTY DEPARTMENT OF WATER SUPPLY, KEONEPOKO IKI WELL (WELL NO. 2987-01), WELL CONSTRUCTION: 22-INCH DIAMETER, 760-FOOT DEEP FOR MUNICIPAL USE, TMK 1-5-8-6, KEONEPOKO IKI, HAWAII

PRESENTATION OF SUBMITTAL: Ms. Lyann Mizuno

STAFF'S RECOMMENDATION:

Staff recommended that the Commission approve the issuance of a well construction permit for Keonepoko Iki Well (Well No. 2987-01), subject to the standard well construction permit conditions in Exhibit 3 and the following special condition:

1. That the applicant provide the Commission with a copy of Department of Health's written approval for use of the well prior to the acceptance of a pump installation permit application.

AMENDMENT:

Commissioner Nobriga requested to include the following as part of the conditions:

The applicant is required to provide the Commission staff with either a geologic log or the cuttings upon completion of drilling.

MOTION: (RICHARDS/NOBRIGA)
To approve staff's recommendation as amended.
UNANIMOUSLY APPROVED AS AMENDED.

8. SACRED HALEAKALA REALTY TRUST, APPLICATION FOR WELL PERMIT, KIPAHULU-NICOLL WELL (WELL NO.3904-06), WELL CONSTRUCTION: 10-INCH DIAMETER, 348-FOOT DEEP, PUMP INSTALLATION: 40-GPM PUMP FOR DOMESTIC AND IRRIGATION USE, TMK 1-6-9:13 KIPAHULU, HANA, MAUI

PRESENTATION OF SUBMITTAL: Mr. Charley Ice

STAFF'S RECOMMENDATION:

Staff requested that the recommendation be amended as follows:

A. That the Commission approve the issuance of a well construction/pump installation permit for Kipahulu-Nicoll Well, subject to the standard permit conditions in Exhibit 3 and the following special conditions:
1. No permanent monitor tube is required.
2. The long-term continuous test shall be at least 8 hours.
3. No step-drawdown test is required.

B. That the Commission authorize the Chairperson to approve and issue a pump installation permit upon acceptance of aquifer pumping test results required in Condition 6e, subject to the standard permit conditions in Exhibit 3 and the following special conditions:

1. The well should not be used for drinking water unless it is properly tested and treated.
2. If potable water is used to supply both domestic and irrigation purposes in a single system, the permittee shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water.

AMENDMENT:

Commissioner Nobriga requested to include the following as part of the conditions:

The applicant is required to provide the Commission staff with either a geologic log or the cuttings upon completion of drilling.

MOTION: (NOBRIGA/RICHARDS)

To approve staff's recommendation as amended.

UNANIMOUSLY APPROVED AS AMENDED.

EDWARD T. AND MARY LEE ESTY, APPLICATION FOR WELL PERMIT, ULUPALAKUA-ESTY WELL (WELL NO. 3723-01). WELL CONSTRUCTION: 12-INCH DIAMETER, 1750-FOOT DEEP. PUMP INSTALLATION: 50-GPM PUMP FOR DOMESTIC AND IRRIGATION USE, TMK 2-1-4:8 ULUPALAKUA, MAKAWAO, MAUI

PRESENTATION OF SUBMITTAL: Charley Ice

STAFF'S RECOMMENDATION:

A. That the Commission approve the issuance of a well construction/pump installation permit for Ulupalakua-Esty Well, subject to the standard permit conditions in Exhibit 3 and the following special conditions:

1. No permanent monitor tube is required.
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 Puaniu St., #25R
Ewa Beach, HI 96706

(Well No. 1902-01)
Haseko (Ewa), Inc.
820 Millilani 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. Hawaii 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 modeling 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.
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.

1. 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 SUBMITAL:

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

HYDROLOGIC UNITS
Sustainable Yield / Aquifer Code

NORTH
91 MGD / 304

KAWAILOA
39 MGD / 30403

WAIALAIA
22 MGD / 30501

MOKULEIA
12 MGD / 30401

KEEAU
4 MGD / 30305

MAKAHA
4 MGD / 30304

WAIPAHU-WAIWAIWA
118 MGD / 30203

LUALUALEI
4 MGD / 30202

CENTRAL
23 MGD / 305

WAIALUA
46 MGD / 30402

WAHIWA
23 MGD / 30501

PEARL HARBOR
184 MGD / 302

KOOLAULOA
35 MGD / 30601

KAHANA
13 MGD / 30802
(DY = 6.14 MGD)

KOOLAUPOKO
43 MGD / 30803
(DY = 13.72 MGD)

WAIMANALO
8 MGD / 30804
(DY = 8.83 MGD)

WAIALAIE EAST
2 MGD / 30106

WAIALAIE WEST
2 MGD / 30106

HONOLULU
53 MGD / 301

MOANALUA
11 MGD / 30104

NUUANU
15 MGD / 30102

PALOLO
5 MGD / 30101

HONOLULU
53 MGD / 301

Map Projection: Universal Transverse Mercator
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

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 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 Puuoloa 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</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>Current (mgd)</th>
<th>Future (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honouliuli-Puuloa</td>
<td>10-15</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Kapolei-BPNAS</td>
<td>5</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Malakole</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 instantaneous 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 $1,000 \pm 1\text{mg/l}$. 

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.

- Ewa Pump 1
- Ewa Pump 9 (Well A)
- Ewa Pump 9 (Wells B,C,D)
- Ewa Pump 9 (Wells E,F)
- Ewa Pump 9 (Wells G,H)
Marginal EP Basal Sources
Chlorides and Pumpage

Ewa Plantation Pumps
3,4,5, & 6 supplied
marginal quality water.

FIGURE 2
- Ewa Pump 3  - Ewa Pump 4  - Ewa Pump 5  - Ewa Pump 6
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

Start 1937
Basal (low Cl) irrigation
Pumps 15, 16

Total imported basal water from Koolau ranged < 50-70 mgd

Average monthly pumpage (mgd)
Est. average yearly pumpage (12 mgd)

Stop 1994

Average monthly pumpage (mgd)

Supplemental Graphs

Ref: CWRM, BWS files, R-TB, & Stearna (1935, 1940)

Isochlor Map of Ewa Caprock Aquifer
September 1995
Isochlor Map of Ewa Caprock Aquifer
February 1996

FIGURE 8
Chloride and Pumpage of HPGC Well 1
Ewa Caprock, Oahu

FIGURE 9
HPGC 1 (Qave = .148 mgd)
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)
Chloride and Pumpage of HPGC Well EP22
Ewa Caprock, Oahu

Total caprock average monthly pumpage (mgd)

Basal (low Cl) irrigation

OSCo caprock pumpage ceased

Total Hawail Prince pumpage

Well EP-22 pumpage

--- EP-22 (Qave=1.021 mgd) ---

Ref: CWRM, BWS files & R-79
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

- Basal (low Cl) irrigation
- Total caprock average monthly pumpage (mgd)
- Palm Villa 1 pumpage
- Total Ewa Gentry pumpage
- Stop
- OSCo caprock pumpage ceased
- Gentry Palm Villa 1 (Qave=0.019 mgd)

FIGURE 12

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

Year

FIGURE 12a

Gentry Palm Villa 1 (Qave = 0.019 mgd)

Ref: CWRM, BWS files, & R-79
FIGURE 13

Gentry Palm Court (Qave= 0.025 mgd)
Chloride and Pumpage of Ewa
Gentry Wells, Ewa Caprock, Oahu

FIGURE 13a

Gentry Palm Court (Qave = .025 mgd)
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

Total caprock average monthly pumpage (mgd)
Basal (low Cl) irrigation
OSCo caprock pumpage ceased
Total Ewa Gentry pumpage
Palm Villa 2 pumpage

FIGURE 14a
* Gentry Palm Villa 2 (Qave=0.031 mgd)
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

FIGURE 15

* Honouliuli STP 1902-03  * Honouliuli STP 1902-04 (Qave=0.654 mgd)

- Basal (low Cl) irrigation
- OSCo caprock pumpage ceased
- Total caprock average monthly pumpage (mgd)
- Total Honouliuli STP pumpage

Ref: CWRM, BIVS files, A R-79
Chloride and Pumpage of Honouliuli STP Wells, Ewa Caprock, Oahu

FIGURE 15a

* 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

FIGURE 17

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

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PUULOA AQUIFER SYSTEM (mgd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable Yield Estimate</td>
<td>15.000</td>
</tr>
</tbody>
</table>
| Less: Other Existing Permits  
  (shown in Exhibit 8) | -17.170 |
| Current Available Allocation | -2.170 |
| Less: Expired Interim Permits | |
| Hawaii Prince Golf Club  
  (1900-02, 17 to 20, 1901-03) | 0.129 |
| Gentry Co.  
  (2001-03) | 0.030 |
|  
  (2001-04) | 0.040 |
|  
  (2001-05) | 0.020 |
|  
  (2001-09) | 0.023 |
|  
  (2001-10) | 0.022 |
|  
  (2002-15) | 0.130 |
| Haseko (Ewa), Inc. (1902-01) | 1.500 |
| Arbors Assoc. (2001-07) | 0.063 |
| Palm Villa II Assoc. (2001-08) | 0.048 |
| Palm Court Assoc. (2002-12) | 0.066 | -2.071 |
| Less: Pending Applications | |
| Hawaii Prince Golf Club  
  (1900-02, 17 to 20, 1901-03) | 0.371 |
| Gentry Development Co. (2001-11) | 0.172 |
| Haseko (Ewa), Inc. (Ewa Marina) | * | -0.543 |
| Available Allocation | -4.784 |

* 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>
<th>KAPOLEI AQUIFER SYSTEM (mgd)</th>
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<tr>
<td>Sustainable Yield Estimate</td>
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<td>Pu’u Makakilo (1904-02)</td>
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<td>Campbell Estate (1905-08,10)</td>
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<td>State HFDC (2003-01,02,04,05,07)</td>
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<td>Available Allocation</td>
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Central Oahu Projected Increase
In Population

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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>
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<td>Current Trend</td>
<td>130,526</td>
<td>177,758</td>
<td>47,212</td>
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NOTE: Baseline forecast for 1990-2020 Islandwide increase is 28%.

Central Oahu Projected Increase
In Housing Units

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NOTE: Baseline forecast for 1990-2020 Islandwide increase is 42%.

Central Oahu Projected Increase
In Civilian Non-Construction Jobs

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NOTE: Baseline forecast for 1990-2020 Islandwide increase is 49%.

Change in Resident Population
Central Oahu Development Plan Sub-Areas (1990-2020)

Change in Non-Construction Jobs
Central Oahu Development Plan Sub-Areas (1990-2020)
## ISLAND OF OAHU

### Aquifer System: PUULOA

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<tr>
<th>WUP NO</th>
<th>APPLICANT</th>
<th>WELL NO.</th>
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18 Permits Totaling 17.170

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EXHIBIT 8
**COMMISSION ON WATER RESOURCE MANAGEMENT**

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**SURVEY BRANCH**

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**REGULATION BRANCH**

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**PLANNING BRANCH**

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SEE FOLDER "GENTRY CAPROD 1902-07, 2001-03, 4, 5, 2002-02" FOR HISTORIC INFO/BACKGROUND
WATER USE PERMIT NO. 792

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

<table>
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<tr>
<th>Water User:</th>
<th>Ewa by Gentry Community Association 91-1076 Polea St., #19A Ewa Beach, HI 96706</th>
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<tbody>
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<td>Landowner of Source:</td>
<td>Ewa by Gentry Community Association 91-1076 Polea St., #19A Ewa Beach, HI 96706</td>
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<td>Permitted Withdrawal Rate:</td>
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<td>Water Management Area:</td>
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<td>Island:</td>
<td>Oahu</td>
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<td>Aquifer Sector/System:</td>
<td>Ewa Caprock/Puuloa</td>
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<td>System Sustainable Yield:</td>
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<td>Water Type:</td>
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<td>Original CWRM Date:</td>
<td>July 12th, 2006</td>
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<tr>
<td>Standard Conditions:</td>
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<td>Special Conditions:</td>
<td>1-2, 38, 40-44</td>
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Water Source

| State Well Number(s): | 2001-05 |
| Well Name: | Soda Creek III |
| Water Source TMK Number(s): | 1st Division, 9-1-070:132 |
| State Land Use Classification(s): | Urban |
| County Zoning Classification(s): | R-5 |
| Geographical Coordinates: | Latitude 21° 19' 53.5" North  Longitude 158° 01' 26.4" West |

End Use

| End Use TMK Number(s): | 1st Division, 9-1-Various |
| State Land Use Classification(s): | Various |
| County Zoning Classification(s): | Various |
Beneficial Use Explanation: Use for park, lawn, and roadway irrigation on 13.23 acres

Background Information

State Well No. 2001-05 was originally governed by Water Use Permit 303, which was approved in 1996 with a permitted allocation of 0.020 mgd. In 2001, Water Use Permit 303 was superseded by Water Use Permit 450 in order to increase the permitted allocation from 0.020 mgd to 0.066 mgd and transfer the water rights from Gentry Development to the Ewa by Gentry Community Association. In 2006, Water Use Permit 450 was superseded by Water Use Permit 792, which changed the permit status from interim to temporary.

Consistent water use reporting records are available for at least the past four years. The permittee’s 12-month moving average has not exceeded the permitted amount of 0.066 mgd during this time. Reference the permit file for additional information on reporting history.

Water Use Permit 792 was approved for transfer on July 12th, 2006 by the Commission on Water Resource Management. 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 final summary report to the Legislature for this 20-year Water Use Permit Review.

Field Investigation Information

Contact: Joseph Agustin
Site Address: Launaehele St./Laakona St.
Ewa Beach, HI 96706

Brown and Caldwell conducted a field investigation on March 4th, 2008 from 9:00 a.m. until 10:00 a.m. with Mr. Joseph Agustin. 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. 792

State Well No. 2001-05 is located on TMK parcel 9-1-070:132 at 21° 19' 53.5" N, 158° 01' 26.4" W, with a real time accuracy of ±14 feet. Water is currently being drawn from the well via a submersible sump pump and metered at the well site. Once metered, the water is pumped into the irrigation system that serves numerous common areas including parks and roadways. The irrigation system and well operation are controlled automatically. The permit file contains a complete list of all the TMK parcels supplied by this well. Reference the Appendix for photographs of the previously described system components.

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. Visual inspection also confirmed that the permitted end use TMK numbers should be updated to reflect the actual end use area. Water use is currently being reporting on a monthly basis with no recent evidence of overpumpage violations.

The permittee for Water Use Permit No. 792 appears to be in full compliance with all standard and special conditions listed in the permit file.

Recommendations

• Address the following discrepancies between the Commission's electronic database and actual field investigation findings:
  o End use TMK parcel numbers

• No disciplinary action required for this WUP since the permittee is in compliance with all standard and special conditions.
20-Year Water Use Permit Review
Water Use Permit No. 792

APPENDIX

Field Investigation Photographs
Figure 1 – State Well No. 2001-05

Figure 2 – System flowmeter
Figure 3 – Well head location

Figure 4 – System controls
Figure 5 – Typical park end use location

Figure 6 – Typical roadway 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
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 Waikele 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: 792

Well Number(s): 2001-0

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**Contact Information** (of the person who will be present at site visit):

Name: JOSEPH AGUADN

Phone (for phone interview): 330-0391/665-0111/28 Fax: 665-0114

Email: JAGUADN@KICA.NET

Best time to reach for phone interview: 8:00AM

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**Property Information** (of the water use/well location):

Address: LAUNAHELE ST. AT LA'AANOA ST.

City: WAIKIKI, HI

Well Location TMK (list all if multiple wells present): 9-178:132

Water Use TMK (list all if used on multiple lots):

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**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”):

LANDSCAPE IRRIGATION

---

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 ☐

If no, please explain:

---

**Field Investigations:**

A representative from Brown and Caldwell will be visiting wells in your area over the next several 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): 3-11-2008  
Time: 9:00 am ☐ 12:00 pm ☒ 3:00 pm ☐

Option #2  
Date (M-F): 3-12-2008  
Time: 9:00 am ☐ 12:00 pm ☒ 3:00 pm ☐

Option #3  
Date (M-F): 3-13-2008  
Time: 9:00 am ☐ 12:00 pm ☒ 3:00 pm ☐

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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 March 5th, 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

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Received: 3/3/08  
Information Updated: 3/26/08  
Phone Interview Complete: 3/26/08

Notes/Comments:
Phone Interview

WUP Number: 792
Well Number(s): 2021-05

Contact Name: Joseph Augustine
Phone Number: 330-0301/665-011 (x 28)

Attempt #1: Date/Time: 3/28/08 (9:03) Result: Reached
Attempt #2: Date/Time: N/A Result: N/A

Well Location TMK(s): 9-1-070.132
Water Use TMK(s):

Water Source Address: Jauanale St. & Lo'ikena St.
City: Ewa Beach Zip Code: 96706

Currently using water source? Yes ☑ No ☐
Notes/Comments: Use for landscape irrigation

How often is the water source being used? Daily ☑ Weekly ☐ Monthly ☐
Notes/Comments:

How long have you been using this water source?:
Has there been any rezoning of the water source/water use properties? Yes ☐ No ☑
Have you reported the rezoning to the State? Yes ☐ No ☐ N/A ☑
If no, explain:

Scheduled field investigation day/time: 4/4/08 @ 9:00 a.m.
Notes (Special directions, site conditions, potential hazards, general notes, etc.):
• Meet at Kalowara Dr., by Fountain
• Call before arrival

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.

Interviewed By: M.S. Date: 3/28/08 Time: 9:00 a.m.
Field Investigation Checklist

WUP Number: 792
Well Number(s): 2001-05

Water Source
Well Location TMK(s): 9-1-070: 132
Well Head GPS Coordinates: Latitude: 21° 19' 53.5" N Longitude: 156° 01' 264" W
Well Type: Submersible Pump
Currently using water source? Yes [x] No []
Notes/Comments: ___________________________________

Is there a flow meter installed? Yes [x] No []
Is the flow meter operational? Yes [x] No []
Notes/Comments: ___________________________________

Water Use
Water Use TMK(s): 9-1-070: 132 Others
What is the water being used for? [ ] Use for landscape irrigation

Is the water being used within the permitted boundaries? Yes [x] No []
If no, explain: _______________________________________

Is there any observed wasting of water or water loss? Yes [x] No []
If no, explain: _______________________________________

Are the permit conditions being complied with? Yes [x] No []
If no, explain: _______________________________________

Other

General Notes/Comments:
- See attached TMKs and use parcels (all common areas in the wellhead vicinity)

Investigated By: M S. Date: 4/1/06 Time: 9:30 a.m.
<table>
<thead>
<tr>
<th>Area</th>
<th>Tax Map Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 12 (Along FWR Park Lot)</td>
<td>9-1-61: 23</td>
</tr>
<tr>
<td></td>
<td>9-1-70: 42, 132</td>
</tr>
<tr>
<td></td>
<td>9-1-76: 174 &amp; Roadway</td>
</tr>
<tr>
<td></td>
<td>9-1-82: 9, 10, 11, 12, 13, 14-24, 61, 62, 63, 64</td>
</tr>
<tr>
<td></td>
<td>9-1-82: 73, 74, 75, 76, 77, 78, 118, 119</td>
</tr>
<tr>
<td></td>
<td>9-1-93: 25-32, 46-48, 75-89</td>
</tr>
</tbody>
</table>
Ref: ewacaprock wup conversion.act

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
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.
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.

Exhibit 4
Dear Mr. Floody:

Approval of Water Use Permit for Well No. 2001-05
Puuloa Ground Water Management Area, Oahu

This letter transmits your water use permit for Sun Terra Tot Lot Well (Well No. 2001-05) for use of 0.066 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. 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).

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. 450

PERMITTEE

Applicant/Water User
EWA BY GENTRY COMMUNITY ASSOC.
Address 91-1076 POLEA ST., #19A
EWA BEACH, HI 96706

Landowner of Source
EWA BY GENTRY COMMUNITY ASSOC.
Address 91-1076 POLEA ST., #19A
EWA BEACH, HI 96706

PERMITTED SOURCE INFORMATION

Island OAHU
Water Management Area PUULOA
Aquifer Sector EWA CAPROCK
Aquifer System PUULOA
System Sustainable Yield NA
Well Name SUN TERRA TOT LOTS
State Well No. 2001-05

PERMITTED USE INFORMATION

Reasonable beneficial use PARK, LAWN & ROADWAY LANDSCAPE IRRIGATION
Withdrawal (12 month moving ave.) 0.066 mgd
Chloride Cap 1,000 mg/l
Location of water use
TMK # 9-1-70:132
Address EWA BY GENTRY PROJECT
State land use classification URBAN
County zoning classification R-5

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 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 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 PUULOA Ground Water Management Area.

18. The water use permit granted shall be an interim water use permit, pursuant to HAR § 13-167-3(5). 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.

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management

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.

Attachment
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR PERMIT ISSUANCE 1/22/10

FROM:  RYAN
DATE:  1/22/10
SUSPENSE DATE:  

TO:  INIT.  TO:  INIT.  FOR:  PLEASE:

CHENG, C.  4 KAWAHARA, K. Approval See Me
CHONG, R.  KIMURA, J. Signature
DANBARA, S.  KUNIMURA, I. Information
ENGLAND, D.  CHYE, L. 
FUJII, N.  OSHIRO, K. 
1 HARDY, R.  UYENO, D. 
2 HOAGBIN, S.  YODA, K. 
ICE, C.  YOSHINAGA, M. 
5 IMATA, R.  

WELL NUMBER  2001-05  WELL NAME  Soda Creek III

application type  PUMP
1 WCP COVER LETTER  x pump only, not necessary
2 WCP  x pump only, not necessary
3 WELL CHECK PRINTOUT  x pump only, not necessary
proposed well section issues?

4 PIP COVER LETTER  
5 PIP  

COMMENTS:  
date rec'd  issues?  if checked, send to applicant

6 SDWB  
7 WWB  
8 CWB  
9 HEER  
10 LD  
11 HP  
12 LUC  
13 OCCL  
14 SMA  
15 BWS (Oahu)  

NOTES:  
DRILLER  Mel's
Mel's Water Works
18254
95-646 Lawena Street
Millilani  #N/A  #N/A

phone  0
fax  0

TMK  9-1-070:132
PUMP CAPACITY  200
WELL OWNER Ewa by Gentry Community Association
LAND OWNER  0
COMMENT DEADLINE  3/30/00
January 26, 2010

Ref: 2001-05.pip

Mr. Mel Lima
Mel's Water Works
95-626 Lawena Street
Mililani, HI 96789

Dear Mr. Lima:

Pump Installation Permit
Soda Creek III Well (Well No. 2001-05)

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 14:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

2. The permittee shall conduct aquifer pump tests in accordance with the Hawaii Well Construction and Pump Installation Standards (revised February 2004) on the latest aquifer pump test data forms, which are available by contacting staff or on the web at www.hawaii.gov/dlnr/cwrm/forms.htm.

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within sixty (60) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return one copy to the Commission office for our files.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255.

Sincerely,

LAURA H. THEILEN
Chairperson

Enclosure

c: Ewa by Gentry Community Association
    USGS
    Honolulu BWS
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 Soda Creek III Well (Well No. 2001-05) at TMK 9-1-070:132, Oahu, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) 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 (HAR).

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. The pump shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 200 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrm/resources_permits.htm for current form).

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

9. The pump installation permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.

10. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

11. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

12. 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 the date the permit expires.

13. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: January 20, 2010
Expiration Date: January 20, 2012

LAURA H. THIELEN, Chairperson
Commission on Water Resource Management

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 and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: C-57, C-57a, or A License #: C-18254 Date:

Printed Name: Mel Lima Firm or Title: Mel's Water Works

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

Attachments
STATE OF HAW
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
APPLICATION FOR A WELL CONSTRUCTION / PUMP INSTALLATION PERMIT
11-14-06
06-40

WELL LOCATION INFORMATION

WELL OPERATOR'S NAME/COMPANY: Ewa by Gentry Community Assoc
Well Operator's Mailing Address: 91-1196 Kaumualii Drive, Ewa Beach, HI 96706
Well Operator Phone: 685-0111 x26

WELL NUMBER: 2001-05
WELL NAME: Soda Creek III
STATE: Oahu
LAND OWNER'S NAME/COMPANY: Ewa by Gentry Community Assoc
LAND OWNER'S MAILING ADDRESS: 91-1196 Kaumualii Drive, Ewa Beach, HI 96706
LAND OWNER'S PHONE: 685-0111 x26
LAND OWNER'S EMAIL: manager@egyca.net

PROPOSED WELL CONSTRUCTION

- Proposed Well
  - Construction Type: None

- Completed Drawdown Well

- Pump Installation

PROPOSED PUMP INSTALLATION

- Proposed Pump
  - Initial Pump
  - Regulator Pump

- Proposed Pump Rating: 20 HP

- Proposed Pump Location: Ewa by Gentry Community Assoc

- Method of Well Measurement:
  - Flowmeter
  - Other (describe):

OTHER LEGAL REQUIREMENTS

- Requested, date approved:
  - Certification of Permit
  - Date approved:
  - Not Required
  - Required documentation:
  - SMA Permit
  - Date approved:
  - Not Required
  - Required documentation:
  - HPD Permit
  - Date approved:
  - Not Required
  - Required documentation:

- APPLICATION FOR A WELL CONSTRUCTION / PUMP INSTALLATION PERMIT

- License No. 1.5-029

- Proposed Surveyor name and license number:

- Surveyor:

- Road and Community Area Irrigation:

- Military

- Other:

- 21 Conservation District Use Permits (CDUP)
  - Requested, date approved:
  - Not Required

- Special Management Area Permit (SMAP)
  - Requested, date approved:
  - Not Required

- State Historic Preservation Division (SHPD)
  - Requested, date approved:

- Proposed, date approved:

- Changed to match WAP No. 762 application modification:

- Well Driller

- Pump Installer

NOTE: Signing below indicates that the signatures understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatures understand that upon permit approval: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion report within 60 days after the completion of the permitted work; 3) in the event the application is not completed correctly, any permit may be suspended until the item is brought into compliance and any work done while the permit is in suspension may result in fines of up to $5000 daily.

- Licensor business name

- License No.

- Signature

- Date

- Contractor name

- Contractor business name

- Signature

- Date

WCRI Application Form: 02/20/2007
January 27, 2009

Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Ewa Beach, HI 96706

Dear Mr. Brant:

Letter of Assurance for Well No. 2001-05, Pump Installation Permit

We have completed the review process for the captioned Pump Installation Permit application, which we accepted as complete on November 18, 2008. Your pump installation permit is ready to be issued. However, in accordance with the State Water Code, HRS § 174C-84(a), these permits can only be issued to a licensed contractor and, to date, one has not been identified for your pump installation work.

Once you have selected a licensed contractor, please have the contractor sign Item 25 of your application and return the signed application to the Commission for processing. Upon receiving a signed application for the captioned well, we will issue permits to your contractor provided that the following conditions are met:

1. The contractor has no outstanding issues with the Commission.
2. There are no significant changes to the application.
3. There have been no significant changes to applicable laws, rules or regulations since the application date.
4. There have been no significant changes to the local hydrogeologic conditions since the application date.

Also, on January 22, 2009, the Commission on Water Resource Management approved your application to modify the existing water use permit for this well. Your approved water use permit will be sent separately. As you know, we postponed issuance of this letter of assurance until the Commission acted on your water use permit application.

If you have any questions, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

DM:ss

c: Tom Nance Water Resource Engineering
December 2, 2008

TO: Morris Atta, Administrator
   Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
   Commission on Water Resource Management

SUBJECT: Pump Installation Permit Application
          Soda Creek III (Well No. 2001-05), TMK (1) 9-1-070:132

Transmitted for your review and comment is a copy of the captioned Pump Installation permit application submitted by the Ewa by Gentry Community Association. The subject well draws brackish water from the Ewa Caprock aquifer for irrigation uses. You recently reviewed the application to modify the water use permit for this well (WUPA No. 856); the proposed pump installation will increase the pump capacity in the well to match the quantity of water requested in WUPA No. 856.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by January 2, 2009. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Denise Mills of the Commission staff at 587-0251.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. ________.

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments: Original source of private title was issued prior to statehood.

Contact Person: Gary Martin

Phone: 587-0421

Signed: Gary Martin

Date: DEC 2 3 2008
Hi Greg,

Want to let you know that the Well Completion Report Pt II for the Ewa by Gentry well (2001-05) is in the file -- I found it. There are two detailed CADD drawings with the well, pump, and vault details.

--Denise
FROM: DENISE

DATE: 24-Nov-08

TO: CHING, F.

FUJII, N.

GOODING, K.

HARDY, R.

HIGA, D.

HOAGBIN, S.

IMATA, R.

KAWAHARA, K.

INIT: 1

2

3

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5

6

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8

9

FOR: Approval

Signature

Information

PLEASE:

See Me

Review & Comment

Take Action

Type Draft acknowledgment

Type Final, label file folder, update People.db

File

Xerox copies

WELL NUMBER 2001-05

WELL NAME Soda Creek III

WUP Number Old= 792 New= 294

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated

1 TRANS. LETTER

2 PERMIT PROCESS TABLE

3 CWRM MAP

4 APPL. FORM (11 COPIES)

5 USGS MAPS (11 COPIES)

6 TAX MAPS (11 COPIES)

7 PARCEL OWNER VERIF.

8 CONTRACTOR VERIF.

9 ALL INFO FILLED IN

10 BACKGROUND CHECK

11 $25 FEE DEPOSIT SLIP

12 DHP/CUP/SMA pre-screen

FOLDER:

☑ MADE NEW FILE FOLDER, ATTACHED

☐ FILE FOLDER ALREADY MADE, IN FILE CABINET - denise has

INCOMPLETE ACTION DATES:

DATE ACTION

11/25/08 they will need a WUPA to increase pumpage

Note: The WUP numbers shown on page 2 of PIPA are different from the WPI Index. I spoke with Greg Fukuimoto @ TNWRE and he said, the well was modified in 1997(?) for the pump installation. -- made subsurface & housed mid-fou valve. Well height / sol. casing length reduced by about 3 ft. We should update the WPI Index with the date on the PIPA. MN.
December 2, 2008

Ms. Suzanne Alawa
Ewa by Gentry Community Association
91-1795 Keaunui Drive
Honolulu, HI 96706

Dear Ms. Alawa:

Pump Installation Permit Application for Well No. 2001-05

We acknowledge receipt, on November 18, 2008, of your Pump Installation permit application and filing fee for Well No. 2001-05 (Soda Creek III). The Commission can only issue a permit to a contractor with an active C-57, C-57a or A license and who you have hired to perform the work [ref: State Water Code, §174C-84(a), HRS]. Your application will not be accepted as complete until an appropriately licensed contractor signs and completes Item 25 on the application. We will, however, process your incomplete application for review. For your information, the attached table describes the process, responsible parties, and deadline requirements for drilling or modifying a well and installing, modifying or replacing a pump.

If the review of your application supports issuance of a permit and you have not selected a contractor before the Commission acts on your application, we will issue a letter of assurance (LOA) in lieu of the permit. The LOA will state that a permit will be issued after a qualified contractor signs the application and the following conditions are met: (a) the contractor has no outstanding issues with the Commission; (b) there have been no significant changes to the application; (c) there have been no significant changes to applicable laws, rules or regulations; and (d) there have been no significant changes to hydrologic conditions at the proposed well site.

By this letter, we are also notifying you that upon acceptable completion of the pump installation work, we will issue a certificate pump installation completion to the Ewa by Gentry Community Association. Until we issue a certificate of pump installation completion, your pump installation contractor will be responsible for complying with all conditions of the permit. Your well is within a ground water management area, which requires a water use permit, pursuant to HRS §174C-48. As you know, we are currently processing an application to modify your existing water use permit (WUPA No. 856). We understand that you are proposing to replace the existing pump in the well to increase the capacity from 110 gallons per minute (gpm) to 200 gpm, which will enable you to pump up to 194,768 gallons per day—an amount equal to the quantity requested in WUPA No. 856.

If you have any questions about your application, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]

KEN C. KAWAHARA, P.E.
Deputy Director

DEM:ss
Attachment
c: Tom Nance
December 2, 2008

TO: Morris Atta, Administrator  
Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director  
Commission on Water Resource Management

SUBJECT: Pump Installation Permit Application  
Soda Creek III (Well No. 2001-05), TMK (1) 9-1-070:132

Transmitted for your review and comment is a copy of the captioned Pump Installation permit application submitted by the Ewa by Gentry Community Association. The subject well draws brackish water from the Ewa Caprock aquifer for irrigation uses. You recently reviewed the application to modify the water use permit for this well (WUPA No. 856); the proposed pump installation will increase the pump capacity in the well to match the quantity of water requested in WUPA No. 856.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by January 2, 2009. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Denise Mills of the Commission staff at 587-0251.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

[ ] A water lease/permit is not required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. ________________________

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
December 2, 2008

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

Dear Mr. Lum:

Pump Installation Permit Application Review
Soda Creek III (Well No. 2001-05), TMK (1) 9-1-070:132

Transmitted for your review and comment is a copy of the captioned Pump Installation permit application submitted by the Ewa by Gentry Community Association. The subject well draws brackish water from the Ewa Caprock aquifer for irrigation uses. You recently reviewed the application to modify the water use permit for this well (WUPA No. 856); the proposed pump installation will increase the pump capacity in the well to match the quantity of water requested in WUPA No. 856.

Please submit any comments on this application, if any, by January 2, 2009. If we do not hear from you by that date, we will assume you have no comments.

If you have any questions about this permit application, please contact Denise Mills of the Commission staff at 587-0251.

Sincerely,

[Signature]
LAURA H. THIELSEN
Chairperson

DEM:ss
Attachment
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REMARKS:
LINE (1) Soda Creek Ill Well
LINE (2)
LINE (3)
LINE (4)
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LINE (8)
LINE (9)
LINE (10)
Mr. Ken C. Kawahara  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809  

Dear Mr. Kawahara:

Pump Installation Permit Application for the  
Soda Creek III Well, State Well No. 2001-05 in Ewa, Oahu  

Attached is a Pump Installation Permit application, filing fee, and other attachments for the Soda Creek III Well, State Well No. 2001-05 in Ewa. Since the pump installation contractor has not been selected yet, we understand that a Letter of Assurance would be issued pending the contractor's selection. If you have any questions, please feel free to call me or Suzanne Alawa of Ewa by Gentry Community Association (EGCA) at 685-0111. Thank you for your attention to this matter.

Sincerely,

Tom Nance

cc: Suzanne Alawa - EGCA  
Attachments
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
APPLICATION FOR A WELL CONSTRUCTION / PUMP INSTALLATION PERMIT
11-14-08
08-40

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by 10 copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For information, call the Regulation Branch at 887-0225. For further information and updates to this application form, visit http://www.hawaii.gov/dlnr/cwrm.

WELL LOCATION INFORMATION
1. STATE WELL NO. (if already assigned) 2. WELL NAME 3. ISLAND 4. TIME
2001-05 Soda Creek III Oahu

The following must be attached before this application is accepted as complete:
• Portion of 7.5-Minute Series USGS topographic map (scale 1:24,000) with well location labeled and include the name of the quad map
• Property tax map, showing well location reference to established property boundaries
• Photograph of the proposed well site
• A schematic diagram showing the well site, access road and proposed well infrastructure
• For dug wells, attach a grading plan with cross section profiles showing existing and finish grades

5. WELL OPERATOR'S NAME/COMPANY Ewa by Gentry Community Assoc.
6. LANDOWNER'S NAME/COMPANY Ewa by Gentry Community Assoc.
7. WELL OPERATOR'S MAILING ADDRESS 91-1795 Keaunui Drive Honolulu, Hawaii 96706
8. LANDOWNER'S MAILING ADDRESS 91-1795 Keaunui Drive Honolulu, Hawaii 96706
9. WELL OPERATOR'S PHONE 685-0111 x26
10. WELL OPERATOR'S FAX 685-0114
11. WELL OPERATOR'S E-MAIL manager@egbca.net

PROPOSED WELL CONSTRUCTION
7. Proposed Work □ Construct New Well □ Modify Existing Well □ Abandon/Seal Well
8. Construction Type □ Drilled □ Dug □ Shaft □ Tunnel
9. Is this well part of a battery of wells? □ Yes □ No

PROPOSED PUMP INSTALLATION
10. Proposed Work □ Install New Pump □ Replace Pump
11. Proposed Pumping Rate, gpm (gallons per minute) 200
12. Proposed Amount of Withdrawal, gpd (gallons per day) 194,768
13. Method of flow measurement
Flowmeter
Other (explain)

PROPOSED USE
15. Municipal (water systems serving greater than 25 individuals or 15 service connections)
16. Domestic Number of units to be served:
17. Industrial (describe)
18. Irrigation (describe crop and no. of acres) Road and Common Area Irrigation, 31.3 Acres
19. Military (describe)
20. Other (describe)

OTHER LEGAL REQUIREMENTS
21. Conservation District Use Permit (CDUP) □ Yes □ No □ Required, CDUP # □ Required, CDUP # date approved □ Required
Not Required □ Required (attach documentation from OCCL)
□ I have not checked with OCCL about whether or not a CDUP is required. I understand that checking with OCCL prior to making this application will expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

□ Well is not in Conservation District (See Attached)
□ I have not checked if well is in or out of Conservation District. I understand that checking if the well is in a Conservation District may expedite my review. I further understand that issues raised may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

22. Special Management Area Permit (SMAP) □ Yes □ No □ Required □ Required, SMA # □ Required, SMA # date approved □ Required
Not Required □ Required (attach documentation from applicable County agency) (See Attached)
□ I have not checked with the county about whether or not an SMA Permit is required. I understand that checking with the County prior to making this application may expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

23. State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources □ Yes □ No □ I have consulted with the HPD regarding potential impacts of well construction activities on historic sites. I have attached applicable documentation from the HPD.
□ I have not consulted with the HPD regarding potential impacts of well construction activities on historic sites. I understand that checking with the HPD prior to making this application may expedite my review. I further understand that issues raised by this agency may delay or result in denial of the permit issuance, or revocation of the permit after it is issued.

Additional remarks, explanations, etc. (attach additional sheet if more space is needed)
Increase pump capacity from 110 to 200 GPM. Pump change to match WJP No. 792 application modification.

NOTE: Signing below indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that upon permit approval: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 60 days after the completion date of the permitted work; 3) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines of up to $500 per violation.

24. WELL DRILLER (Must be filled out if application is for Well Construction) Licensee business name C-57 License No.
Signature Print Date

25. PUMP INSTALLER (Must be filled out if application is for Pump Installation) Licensee business name C-57/C-57a/A License No.
Signature Print Date

For Official Use Only:
RECEIVED
NOV 18 A9:

STATE OF HAWAII
COMMISSION ON WATER RESOURCE MANAGEMENT
PUMP INSTALLATION PERMIT
11-14-08
08-40

WCPI Application Form 02/28/2007
PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

Elevation at top of casing 30.67 ft., msl*

Minimun of 2' Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.) Well is in a Vault

Ground Elevation: ft., msl*

Hole Diameter: 20 in.

Cement Grout: 26.87 ft. (min. 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Annular space between hole and casing (1.5" for positive displacement, 3" for other methods): 3 in.

Rock or Gravel Packing:
- 28 ft.
- Material:
  - Crushed Basalt
  - Rounded Gravel

Estimated Water Level Elevation:
- 1.0 ft., msl*

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
- Total Length: 29.87 ft.
- Nominal Diameter: 12 in.
- Wall Thickness: 0.687 in.
- Bottom Elevation: 0.8 ft., msl*

Open Casing: □ Perforated □ Screen
- Total Length: 25 ft.
- Nominal Diameter: 12 in.
- Wall Thickness: 0.687 in.
- Bottom Elevation: 24.2 ft., msl*

Note: Neither bentonite nor mud should be used in saturated zone during drilling

Gentry Soda Creek III

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

Bottom Elevation of Well Limit = \left(\text{Water Elevation} - \frac{1}{4} \times \text{Water Level Elevation}\right)

Example: Estimated + 2 ft. Water Level Elev. → Bottom Elevation of Well Limit = \left(2 - \frac{1}{4} \times 2\right) = 1.5 ft.

Solid Casing Material:
- Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
  □ Other
- Stainless Steel: (check one):
  □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one) □ Schedule 40 □ Schedule 80 □ Schedule 120
- Thermoset Plastic: (check one)
  □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
- Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
  □ Other
- Stainless Steel: (check one):
  □ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one) □ Schedule 40 □ Schedule 80 □ Schedule 120
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  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296
GENTRY SODA CREEK III WELL VAULT

GENTRY SODA CREEK WELL (SW# 2001-05)
Department of Planning and Permitting (DPP)

City & County of Honolulu

| Details |

**TMK:** 9-1-070:132

Historical TMK Sequence:
- Area (sq ft): 36987
- Area (acres): 0.849
- Lot Number: 7456
- Ohana: (None)

**LAND CONTROL CODES**

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**FACILITIES**

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Address List:

City and County of Honolulu
Department of Permitting & Planning
650 So. King St, Honolulu, HI 96813
Fax: (808) 527-6743
E-mail: info@honoluludpp.org
Ewa by Gentry
Water Supply Wells for Irrigation Master Plan
WUPA Nos. 855 through 859

Existing wells: 1901-05, 2001-12
New proposed wells: 1900-24, 1901-08, 2000-06

http://maps.google.com/maps?f=q&hl=en&geocode=&q=keaunui+drive,+ewa+beach&sl... 10/16/2008
Owner Information

Name: EWA BY GENTRY COMMNTY ASSC
Type: Fee Owner
Percent Owner:
Assessment Notice Address: 91-1795 A KEAUNUI DR
City: EWA BEACH
State: HI
Country: 
Zip: 96706

Property Info

Building Permit Info

Zoning Info


2/26/2004
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,

W. Ray Andry
RAE M. LOUI
Deputy Director

LN:ss
**STEP DRAWDOWN TEST**

<table>
<thead>
<tr>
<th>TIME</th>
<th>DRAWDOWN MEASUREMENTS</th>
<th>FLOWRATE CALCULATION</th>
<th>FLOWRATE (GPM)</th>
<th>CHLORIDES (PPM)</th>
<th>COMMENTS</th>
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<td>PRESSURE GAGE (PSI)</td>
<td>DRAWDOWN (FT)</td>
<td>GALLONS</td>
<td>TIME (SECS)</td>
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<td>7.30 AM</td>
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<td>6.325</td>
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<td>12.30 PM</td>
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<td></td>
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<tr>
<td>1.30 PM</td>
<td>6.250</td>
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<td>2.30 PM</td>
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<td>5.31 PM</td>
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</tbody>
</table>

A SEPARATE SOUNDED TUBE WAS NOT PROVIDED AND THEREFORE USE OF A WELL WATER LEVEL SOUNDER WAS NOT POSSIBLE. AN ATTEMPT WAS MADE BUT WATER IN THE WELL COLUMN PREVENTED THE SOUNDER FROM OPERATING PROPERLY AND THEREFORE REQUIRED USE OF THE AIR LINE AND PRESSURE GAGE.
Ms. Rae M. Loui - Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 821  
Honolulu, Hawaii 96809

Dear Ms. Loui:

Data Submittals For  
Wells 2001-03, -04, and -05 in Ewa by Gentry

This letter and its enclosures responds to your August 15, 1996 letter requesting additional information on Wells 2001-03, -04, and -05 in Ewa by Gentry. Submittals of the pump test by the drilling contractor for Wells 2001-04 and -05 reflected the data he collected with his own pressure gage. Our more accurate measurements are enclosed. Although we also used an airline and pressure gage, our gage has proven to be quite accurate, always being within 0.01 to 0.02 feet of simultaneous measurements with an electric sounder. However, vibration during pump testing with a diesel engine and right-angle drive creates water level variations of this magnitude and greater. Leakage of oil during the pump installation and during the test has also been a problem when using an electric sounder. The airline dampens engine vibrations and is not adversely affected by oil. If used with an accurate test gage designed specifically for such use, results have generally been more satisfactory than using an electric sounder.

Requested information for Well 2001-03 is also attached. If you have any questions or require additional information, please contact Greg Fukumitsu at 537-1141.

Sincerely,

Tom Nance

cc: Randy Ouye

Enclosures
Mr. Randolph K. Ouye  
Gentry Homes, Ltd.  
560 N. Nimitz Hwy.  
Honolulu, HI 96817

Dear Mr. Ouye:

Thank you for submitting the various items and documents required under the well construction and pump installation permit conditions for Well Nos. 2001-04, 05, 07, 08, 09 & 2002-12.

However, we note the pumping tests for Well Nos. 2001-04 & 2001-05 were not conducted according to our Aquifer (Pump) Test Procedure because the use of an airline was too coarse to measure drawdowns to 0.01 feet accuracy. Please provide a written explanation for this within thirty (30) days from the date of this letter.

With regard to Well No. 2001-03, we understand that this well was completed under the well construction permit that was issued by the Commission on March 23, 1989 (attached). As such, please provide the following items that were to be submitted to the Commission within thirty (30) days after completion of the well:

1. Well completion report (Part I - Well Construction)

2. Ground elevation (referenced to mean sea level) survey by a Hawaii-licensed surveyor.

3. Complete pumping test record (including time, pumping rate, drawdown, chloride content, and water quality data).

Please submit the above items for Well No. 2001-03 within thirty (30) days from the date of this letter. Be advised that failure to comply with the terms of your permit(s) may result in daily fines of up to $1000 per violation.

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

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

LN: ss  
Attachment(s)
DATE: April 12, 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 Development - Irrigation Well and Pump As-built Information

We herewith transmit the following:

1. Arbors Well #2001-07 - As-built well section
1. Palm Villa II # 2001-08 - As-built well section


1. Sun Terra Tot Lot Well #2001-05, Pump Installation Report, As-built irrigation pump plans C-2, C-3, and M-1.


Remarks:

We herewith transmit the above documents for your records.

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.
# WELL COMPLETION REPORT

4-11-96

95-19

**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 6211, Honolulu, Hawaii 96820. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 567-0225.

1. **STATE WELL NO.:** 2001-05  
   **WELL NAME:** Sun Terra Tot Lot  
   **ISLAND:** Oahu

2. **LOCATION:** Address: Ka'ahupahau Street, Ewa, Oahu  
   **Tax Map Key:** 9-1-70:132 ev

3. **DRILLING OR PUMP INSTALLATION CONTRACTOR:** Roscoe Moss Hawaii, Inc.

4. **CONTRACTOR'S C-57 LICENSE NUMBER:** C-16437

5. **NAME OF DRILLER WHO PERFORMED WORK:** Norman Messenger

6. **TYPE OF RIG/CONSTRUCTION:**

7. **DATE OF WELL DRILLING COMPLETION:** 11-94

8. **GROUND ELEVATION (msl)**  
   - Top of Drilling Platform (msl) **_____ ft.**  
   - Height of Drilling Platform above Ground surface **_____ ft.**  
   - Bench Mark and Method Used to Determine Ground Elevation **36.12 ft. (Top of)**

9. **DRILLER'S LOG:**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level</th>
<th>Rock Description, Remarks, Dates</th>
<th>Depth (ft.)</th>
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</table>

10. **TOTAL DEPTH OF WELL BELOW GROUND**  
    - 60 ft.

11. **HOLE SIZE:**  
    - 20 inch dia. from 0 ft. to 60 ft. below ground
    - 0 ft. to 60 ft. below ground
    - 0 ft. to 60 ft. below ground
    - 0 ft. to 60 ft. below ground

12. **CASING INSTALLED:**  
    - 11.37 in. I.D. x 0.687 in. wall solid section to 35 ft. below ground
    - 11.37 in. I.D. x 0.687 in. wall perforated section to 60 ft. below ground
    - Type of Perforation: Slotted Casing - 53.76 sq. in. per ft.

13. **ANNULUS:**  
    - Grouted from 0 ft. below ground to 32 ft. below ground
    - Gravel packed from 32 ft. below ground to 60 ft. below ground

14. **INITIAL WATER LEVEL**  
    - 34.8 ft. below ground  
    - Date and time of measurement

15. **INITIAL CHLORIDE**  
    - ppm  
    - Date and time of sampling

16. **INITIAL TEMPERATURE**  
    - °F  
    - Date and time of sampling

17. **DATE OF PUMP INSTALLATION**

18. **PUMP INSTALLATION:**  
    - Submersible Crown  
    - Pump Type, Make, Serial No.: #5HC-125, 7 Stage  
    - Capacity: 110 gpm  
    - Motor type, H.P., Voltage, rpm: Submersible Electric, 10 HP, 208 Volts, 3450 RPM  
    - Depth of Pump Intake Setting: 52.95 ft. below ground, which elevation is -16.83 ft.  
    - Depth of bottom of airline: 49.29 ft. below ground, which elevation is -13.17 ft.

19. **PUMPING TESTS:**  
    - Reference Point (R.P.) used: **_____**, which elevation is **_____** ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>End water level</th>
<th>Depth of well</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Temp. °F</th>
<th>Draw-down (ft.)</th>
<th>Temp. °F</th>
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<tr>
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<td>ft. below R.P.</td>
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**Remarks:**

(If more space is needed, continue on back.)

**Contractor (print):** Roscoe Moss Hawaii, Inc.  
**Title:** Project Manager  
**Signature:**

4-11-96
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
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</table>

19. (cont'd) PUMPING TESTS (cont'd):

<table>
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<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
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Remarks (cont'd):

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____________________________________________________________________________________
Mr. Randolph K. Ouye
Gentry Homes, Ltd.
560 N. Nimitz Hwy.
Honolulu, HI 96817

Dear Mr. Ouye:

At the March 13, 1996 meeting of the Commission on Water Resource Management (Commission), the Commission requested a report on permit violations in the Ewa Caprock Aquifer. Please find attached a copy of the staff's April 15, 1996 submittal, including a summary table of well construction and/or pump installation permit violations.

The "X" on the attached summary table indicates items or documents that are required under the terms of the permits. The "*" denotes items that were not clear conditions of the permits, but are needed by the Commission staff to carry out resource assessment and analytical work.

To be clear, listed below are the specific items and documents that are needed for each of your wells:

1. Well No. 2001-03
   a. After-the-fact well construction permit application
   b. After-the-fact pump installation permit application
   c. Monthly Water Use Reports (see discussion in Staff Submittal)

2. Well No. 2001-04
   a. Part II, Well Completion Report (attached)
   b. As-built sectional drawing of the pump

3. Well No. 2001-05
   a. Part II, Well Completion Report (attached)
   b. As-built sectional drawing of the pump
   c. Monthly Water Use Reports (see discussion in Staff Submittal)

4. Well No. 2001-07
   a. After-the-fact pump installation permit application
   b. As-built sectional drawing of the well
5. Well No. 2001-08
   a. After-the-fact pump installation permit application
   b. As-built sectional drawing of the well

6. Well No. 2001-09
   a. Elevation (referenced to mean sea level) survey by a Hawaii-licensed surveyor
   b. Part II, Well Completion Report (attached)
   c. As-built sectional drawing of the pump

7. Well No. 2002-12
   a. After-the-fact pump installation permit application

If you have already submitted one or more of the items requested above, please disregard the request for that particular item.

We request that the above items and documents be submitted no later than May 15, 1996. Be aware that you may be considered in willful violation and subject to fines imposed by the Commission if we do not receive the items required under the terms of your permits by the May 15, 1996 deadline.

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

Sincerely,

RAE M. LOUI
Deputy Director

LN: ss

Attachments
Attn: Mr. Jon Young, P. E.

Gentlemen:

On Friday, November 18, 1994 we completed the elevation survey of six (6) wells within the Ewa by Gentry Development at Honouliuli, Ewa, Oahu, Hawaii.

The origin of the benchmark for this project is the City and County Street Monument at the intersection of Farrington Highway and Makakilo Drive. The elevation being 115.79 msl. This datum has been used by Tom Nance, Water Resources Engineering for their studies of the Ewa Plain. We used a supplemental benchmark set by our firm during the original study for the Estate of James Campbell. Said benchmark is a "□" cut on the Waianae/makai end of the bridge south of the Ewa Municipal Golf Course on Fort Weaver Road.

The survey was run using a Wild NA3000 precise level with digital readout. The error of our run over 6 miles was 0.01 feet.

The results are as follows:

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<thead>
<tr>
<th>Description</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental benchmarks, &quot;□&quot; cut</td>
<td>29.07</td>
</tr>
<tr>
<td>on curb fronting guard shack on</td>
<td></td>
</tr>
<tr>
<td>Fort Weaver at Kolowaka</td>
<td></td>
</tr>
<tr>
<td>Sun Terr well (State No. 2001-05)</td>
<td></td>
</tr>
<tr>
<td>&quot;□&quot; top of vault</td>
<td>36.12</td>
</tr>
<tr>
<td>top of sounding tube</td>
<td>31.99</td>
</tr>
<tr>
<td>Sunrise Well (State No. 2001-04)</td>
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</tr>
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<td>&quot;□&quot; top of vault</td>
<td>38.14</td>
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<tr>
<td>top of sounding tube</td>
<td>34.06</td>
</tr>
<tr>
<td>Description</td>
<td>Elevation</td>
</tr>
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<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Arbors Well (State No. 2001-07)</td>
<td>33.29 msl</td>
</tr>
<tr>
<td>&quot;D&quot; top of vault</td>
<td>28.93 msl</td>
</tr>
<tr>
<td>top of sounding tube</td>
<td></td>
</tr>
<tr>
<td>Palm Villa I Well (State No. 2001-06)</td>
<td>40.45 msl</td>
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<tr>
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<td>37.43 msl</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Palm Villa II Well (State No. 2001-08)</td>
<td>35.94 msl</td>
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<tr>
<td>&quot;D&quot; top of vault</td>
<td>31.96 msl</td>
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<tr>
<td>top of sounding tube</td>
<td></td>
</tr>
<tr>
<td>Palm Court Well (State No. 2002-12)</td>
<td>40.11 msl</td>
</tr>
<tr>
<td>&quot;D&quot; top of vault</td>
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</tr>
<tr>
<td>top of sounding tube</td>
<td>35.89 mls</td>
</tr>
</tbody>
</table>

Please call, should you have any questions on this matter.

Very truly yours,

WALTER P. THOMPSON, INC.

[Signature]

James R. Thompson
President
COMMISSION ON WATER RESOURCE MANAGEMENT

FROM: ___________________________ DATE: ___________________________ SUSPENSE DATE: ___________________________

TO: INIT: TO: INIT: FOR: PLEASE:

R. LOUI                        E. SAKODA
J. UWAINNE                    D. HIGA
F. CHING                       L. NAKAMA
S. SUBIA                       C. ICE
K. YODA

REGULATION BRANCH

E. SAKODA
D. HIGA
L. NAKAMA
C. ICE
R. JINNAI
S. SWANSON

APPROVAL SIGNATURE
INFORMATION

See Me
Review & Comment
Take Action
Type Draft
Type
File
Xerox

REGULATION BRANCH

E. SAKODA
D. HIGA
L. NAKAMA
C. ICE
R. JINNAI
S. SWANSON

PLANING BRANCH

S. EDMUNDS
L. MIZUNO

SURVEY BRANCH

E. HIRANO
G. BAUER
R. HARDY
N. FUJII
M. OHYE
I. KUNIMURA

FOR HISTORIC INFO/BACKGROUND

SEE FOLDER 1902-02, 2001-03-05, 2002-02

FOR HISTORIC INFO !

BACKGROUND
**WELL COMPLETION REPORT**

**State of Hawaii**
**COMMISSION ON WATER RESOURCE MANAGEMENT**
**Department of Land and Natural Resources**

**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 221, Honolulu, Hawaii 96814. An as-buil drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0325.

<table>
<thead>
<tr>
<th>1. STATE WELL NO.</th>
<th>WELL NAME</th>
<th>ISLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-05</td>
<td>SOU LAKE III Well</td>
<td>Oahu</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. LOCATION: Address</th>
<th>Ka'ahupahau</th>
<th>Tax Map Key</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>9-2-61-05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. DRILLING OR PUMP INSTALLATION CONTRACTOR</th>
<th>Rosie Moss Hawaii, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9-1-070:152</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. CONTRACTOR'S C-57 LICENSE NUMBER</th>
<th>C-16437</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>5. NAME OF DRILLER WHO PERFORMED WORK</th>
<th>Tom Lehel</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. TYPE OF RIG/CONSTRUCTION</th>
<th>Core Barrel, Auger</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. DATE OF WELL DRILLING COMPLETION</th>
<th>01/17/94</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>8. GROUND ELEVATION (msl)</th>
<th>35.8 ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>9. DRILLER'S LOG: Water Level</th>
<th>Water Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Description, Remarks, Dates</td>
<td>Rock Description, Remarks, Dates</td>
</tr>
<tr>
<td>Depth (ft.)</td>
<td>0 to 15 Semi Loose Brown Coral to</td>
</tr>
<tr>
<td>15 to 20 Solid Brown Coral</td>
<td>to</td>
</tr>
<tr>
<td>20 to 35 Solid White Coral</td>
<td>to</td>
</tr>
<tr>
<td>35 to 50 Loose Gray Coral</td>
<td>to</td>
</tr>
<tr>
<td>35 to 60 Loose Tan &amp; White Coral</td>
<td>to</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. TOTAL DEPTH OF WELL BELOW GROUND</th>
<th>ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>11. HOLE SIZE:</th>
<th>20 inch dia. from 0 ft. to 65 ft. below ground</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12. CASING INSTALLED:</th>
<th>11.37 in. I.D. x .687 in. wall solid section to 35 ft. below ground</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>13. ANNULUS:</th>
<th>Grouted from 0 ft. below ground to 32 ft. below ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel packed from 32 ft. below ground to 60 ft. below ground</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. INITIAL WATER LEVEL</th>
<th>34.8 ft. below ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and time of measurement</td>
<td>01/05/94</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. INITIAL CHLORIDE</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and time of sampling</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. INITIAL TEMPERATURE</th>
<th>°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and time of sampling</td>
<td></td>
</tr>
</tbody>
</table>

| 17. DATE OF PUMP INSTALLATION | |
|-------------------------------||

<table>
<thead>
<tr>
<th>18. PUMP INSTALLATION:</th>
<th>Capacity ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump Type, Make, Serial No.</td>
<td></td>
</tr>
<tr>
<td>Motor type, H.P., Voltage, rpm</td>
<td></td>
</tr>
<tr>
<td>Depth of Pump Intake Setting</td>
<td>ft. below ground</td>
</tr>
<tr>
<td>Depth of bottom of airline</td>
<td>ft. below ground</td>
</tr>
<tr>
<td>Pumping Head is</td>
<td>ft. below ground</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19. PUMPING TESTS:</th>
<th>Reference Point (R.P.) used:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>01/13/94</td>
</tr>
<tr>
<td>Start water level</td>
<td>34.8 ft. below R.P.</td>
</tr>
<tr>
<td>End water level</td>
<td>34.8 ft. below R.P.</td>
</tr>
<tr>
<td>Depth of well</td>
<td>60 ft. below R.P.</td>
</tr>
<tr>
<td>Rate (ppm)</td>
<td>Draw- down (ft.)</td>
</tr>
<tr>
<td>Time (hours)</td>
<td>AVE G</td>
</tr>
<tr>
<td>to</td>
<td>to</td>
</tr>
<tr>
<td>0740 to 1731</td>
<td>5.20</td>
</tr>
</tbody>
</table>

| (If more space is needed, continue on back.) |

**Remarks:**

**Contractor (print):** ROSECO MOSS HAWAII, INC.
**Title:** Field Superintendent

**Signature:** [Signature]
**Date:** 2/1/94

**For Official Use:**
**Well No.:** 2001-05
**Latitude:** 21 20 06
**Longitude:** 158 01 35

**For Druer’s Use:**
**Job Name:** [Job Name]
**Job No.:** [Job No.]
Approximate deviation at time of filing application.
Ground elevation above mean sea level (msl) by a surveyed licensed by the State must be appended.
Final deviations of well components shall be submitted in the well completion well abandonment report.

WELL SECTION

- Total Depth: 60 ft
- Hole Diameter: 20 in
- Rock Packing: 28 ft
- Cement: 32 ft

Equation at top of casing

Remarks, Explanations (cont.)
**PUMPING TEST RECORD**

for  

Soda Creek III

Gentry (Name)

Roll Island 33-93 R Project or Job No. 1113 1994

**Description of Well—**

1. Elevation: ground surface ft., top of casing ft., rotary table __ ft., referenced to ______ benchmark.
2. Total depth of well __ ft.; or __ ft. elevation, msl
3. __ in. solid casing to __ ft. depth, perforated to __ ft. depth
4. Static water level on 11/10/1994 __ ft. below ground surface, top of casing; or __ ft. elevation, msl measured __ method

**Description of Pump and Pump Setting—**

5. __ type pump with __ stage bowl assembly
6. Gasoline (diesel), electric, power with __ horsepower
7. Shaft speed: __ rpm at __ gpm flow
8. Depth of pump intake: __ ft. below ground; or __ ft. elev. msl
9. Depth of airline bottom: __ ft. below ground; or __ ft. elev. msl
10. Center of gage: __ ft. elev., msl. Flow measured with ______
11. Test conducted by ____________

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Sample No.</th>
<th>Pumping rate (gpm)</th>
<th>Airline PSI (feet)</th>
<th>Drawdown (feet)</th>
<th>Chlorides (ppm)</th>
<th>Temp. (°F)</th>
<th>Cond. (mmhos 25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td></td>
<td>0</td>
<td>6.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:40 AM</td>
<td></td>
<td>started pumping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7:50 AM</td>
<td></td>
<td>135</td>
<td>6.325</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00 AM</td>
<td></td>
<td>244</td>
<td>6.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:05 AM</td>
<td></td>
<td>347</td>
<td>6.275</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:15 AM</td>
<td></td>
<td>469</td>
<td>6.250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:40 AM</td>
<td></td>
<td>675</td>
<td>6.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:25 AM</td>
<td></td>
<td>545</td>
<td>6.225</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30 AM</td>
<td></td>
<td>switched on gagea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:45 AM</td>
<td></td>
<td>545</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00 AM</td>
<td></td>
<td>550</td>
<td>6.25 sample #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td></td>
<td>550</td>
<td>6.25 sample #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00 AM</td>
<td></td>
<td>550</td>
<td>6.25 sample #3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM</td>
<td></td>
<td>550</td>
<td>6.25 sample #4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00 AM</td>
<td></td>
<td>550</td>
<td>6.25 sample #5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:30 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:00 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:30 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:00 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #13</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5:30 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:00 PM</td>
<td></td>
<td>550</td>
<td>6.25 sample #15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Conducted by:** Thomas Lebel

11/10/94

Did not film return conditions, why?
Use of an airline was too close to measure drawdown 0.015

4:00 P.M. 11/10/94

Shut down recovery 6:30 instant
December 28, 1993

Mr. Keith W. Ahue  
Chairperson  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Soda Creek III Well ~ Well No. 2001-05

Enclosed please find a signed permit for the above well that was issued on December 21, 1993, by the Commission.

Please be advised that Gentry Development Company will be commencing construction and testing of the new well and installation of the pump within the next thirty days. Our contractor will be Roscoe Moss, Ltd. and our engineer is Tom Nance Water Resource Engineering.

We will submit the necessary reports to the Commission after completion of testing.

Very truly yours,

GENTRY HAWAI'I, LTD.

Randolph K. Ouyè,  
Senior Vice President

RKO: sacm
cc: T. Nance

/sc3well-ewa
WELL CONSTRUCTION/PUMP INSTALLATION PERMIT

for

Soda Creek III Well
Well No. 2001-05
Ewa Caprock Ground Water Management Area, Oahu

TO: Gentry Development Company
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 Soda Creek III Well (Well No. 2001-05), 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 permit shall be for construction, testing, and installation of a pump in the well. 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 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 approval.
7. The following shall be submitted to the Commission within 30 days after completion of the work:
   a. Well Completion Report.
   b. Elevation (referenced to mean sea level) 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 record; including time, pumping rate, drawdown, chloride content, and water quality data.

8. The permit application and staff submittal approved by the Commission at its meeting on November 17, 1993 shall be incorporated herein by reference.

KEITH W. AHUE, Chairperson
Commission on Water Resource Management

Date of Issuance: DEC 21, 1993

Applicant's Signature: __________ Date: 11/27/93
Printed Name: Randolph K. Ouye
Firm or Title: Sr. Vice President, Gentry Hawaii, Ltd.

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.

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
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Application for Well Construction Permit, Wells 2001-04 and 2001-05 (Gentry Development Company)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-61: 5, 8

HISTORIC PRESERVATION PROGRAM CONCERNS:

A review of our records shows that there are unlikely to be significant historic sites at these parcels, as they have for many years been planted in sugarcane. Therefore, we believe that well construction at these parcels will have "no effect" on historic sites.

TD: jen
Mr. Clayton H. W. Hee  
Chairman & Trustee At Large  
Office of Hawaiian Affairs  
711 Kapiolani Blvd., Suite 500  
Honolulu, Hawaii 96813-5249  

Attn: Ms. Linda Delaney, Land & Natural Resources Division.

Dear Mr. Hee:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

<table>
<thead>
<tr>
<th>Island</th>
<th>Well Name</th>
<th>Well No.</th>
<th>Application Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kauai</td>
<td>Hanapepe Well 4</td>
<td>5634-02</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Kauai</td>
<td>Wailua-Smith Well</td>
<td>0323-01</td>
<td>Well Construction</td>
</tr>
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<td>Gentry-Geiger Rd. Apts.</td>
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<td>Well Construction</td>
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<td>Oahu</td>
<td>Gentry-Soda Creek 3</td>
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</tr>
<tr>
<td>Hawaii</td>
<td>Opihihali Well</td>
<td>1652-01</td>
<td>Well Construction</td>
</tr>
</tbody>
</table>

Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, ten (10) working days from date of this letter.

Should you have any questions, please contact Rae M. Loui, Deputy Director at 587-0214.

Very truly yours,

[Signature]

WILLIAM W. PATY

Enc.
Honorable Hoaliku L. Drake  
Director  
Department of Hawaiian Home Lands  
State of Hawaii  
P.O. Box 1879  
Honolulu, Hawaii  
96805

Dear Mrs. Drake:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

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Should you have any questions, please contact Rae M. Loui, Deputy Director at 587-0214.

Very truly yours,

WILLIAM W. PATY

Enc.
Mr. Kazu Hayashida  
Manager and Chief Engineer  
Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

Well Construction and Pump Installation Permit Application(s)

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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

NF:ky  
Enc.
Ms. Marjorie Ziegler  
Sierra Club Legal Defense Fund, Inc.  
212 Merchant Street, Room 202  
Honolulu, Hawaii 96813

Dear Ms. Ziegler:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your information are copies of recent well permit application(s):

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</tbody>
</table>

Should you have questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI  
Deputy Director

NF:ky  
Enc.
MEMORANDUM

TO:        Don Hibbard, Director
           Historic Preservation Program

FROM:      Rae M. Loui, Deputy Director
           Commission on Water Resource Management

SUBJECT:   Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

<table>
<thead>
<tr>
<th>Island</th>
<th>Well Name</th>
<th>Well No.</th>
<th>Application Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kauai</td>
<td>Hanapepe Well 4</td>
<td>5634-02</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Kauai</td>
<td>Wailua-Smith Well</td>
<td>0323-01</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Oahu</td>
<td>Gentry-Geiger Rd. Apts.</td>
<td>2001-04</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Oahu</td>
<td>Gentry-Soda Creek 3</td>
<td>2001-05</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Opihihali Well</td>
<td>1652-01</td>
<td>Well Construction</td>
</tr>
</tbody>
</table>

Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, ten (10) working days from date of this memo.

Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Enc.
Mr. Thomas Arizumi, Chief
Environmental Management Division
State Department of Health
Five Waterfront Plaza
500 Ala Moana Blvd., Suite 250
Honolulu, Hawaii 96813

Attn: Mr. William Wong

Dear Mr. Arizumi:

Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application(s):

<table>
<thead>
<tr>
<th>Island</th>
<th>Well Name</th>
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</tr>
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<tr>
<td>Kauai</td>
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<td>5634-02</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Kauai</td>
<td>Wailua-Smith Well</td>
<td>0323-01</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Oahu</td>
<td>Gentry-Geiger Rd. Apts.</td>
<td>2001-04</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Oahu</td>
<td>Gentry-Soda Creek 3</td>
<td>2001-05</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Opihihali Well</td>
<td>1652-01</td>
<td>Well Construction</td>
</tr>
</tbody>
</table>

Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, ten (10) working days from date of this letter.

Should you have any questions, please contact the Commission on Water Resource Management staff 587-0225.

Sincerely,

[Signature]

RAE M. LOUI
Deputy Director

NF:ky
Enc.
Mr. Randolph Ouye  
Gentry-Pacific, Ltd.  
P.O. Box 295  
Honolulu, Hawaii 96809

Dear Mr. Ouye:

We have received your applications and filing fees for permits to construct two wells (Well Nos. 2001-04,05) at Ewa, Oahu, (TMKs 9-1-61:08,05). We are reviewing the applications for completeness.

Should you have questions, please call the Commission on Water Resource Management staff at 587-0225.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director
CHECKLIST

Reapplication

\( \checkmark \) WELL CONSTRUCTION PERMIT

\( \checkmark \) PUMP INSTALLATION PERMIT

WELL NAME or LOCATION: Gentry Soda Creek 3

ISLAND: Oahu

WELL NUMBER: 2001-04-05

Tax Map Key: 9-1-61:08

OWNER/OPERATOR:
Firm Name: Gentry-Pacific, Ltd.
Contact Person: Randolph Ouye
Address: P.O. Box 295
Honolulu, HI 96809
Phone: 599-8283

LANDOWNER:
Firm Name: same
Contact Person:
Address:
Phone:

Date application received: 2-19-92

Date acknowledged receipt/request more info: 2-18-92

Date application accepted: 

Suspense date (90 days): 

Date filing fee deposited: 

Application sent to following:

<table>
<thead>
<tr>
<th>Dept. of Hawn Home Lands</th>
<th>Date sent</th>
<th>Comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. of Health</td>
<td>3-12-92</td>
<td></td>
</tr>
<tr>
<td>Office of Hawn. Affairs</td>
<td>3-12-92</td>
<td></td>
</tr>
<tr>
<td>State Hist Pres Div</td>
<td>2-18-92</td>
<td></td>
</tr>
<tr>
<td>Dept/Bd of Water Supply</td>
<td>5-13-92</td>
<td></td>
</tr>
<tr>
<td>Sierra Club L. D. F.</td>
<td>2-18-92</td>
<td></td>
</tr>
<tr>
<td>Koolauloa NB #28 (Oahu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dept./Pub. WRKS (Hawaii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional List (Moiki)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date agenda due: 

Date submittal due: 

Date submittal sent to applicant: 

Date application approved or disapproved: 

Date applicant notified of decision: 

REMARKS: Re-application
February 18, 1992
92TN-020 (054-34)

Mr. Manabu Tagomori
Commission on Water Resource Management
Department of Land & Natural Resources
State of Hawaii
P. O. Box 373
Honolulu, Hawaii 96809

Dear Manabu:

Well Drilling Permit Applications for the
Ewa by Gentry Project

The enclosed two well drilling permit applications and check for the filing fees are submitted on behalf of Gentry-Pacific, Ltd. These wells would be drilled, cased, and pump tested for their ultimate use to irrigate the landscaping at the Geiger Road Apartments and Soda Creek 3 projects within Ewa by Gentry. These wells would have State Nos. 2001-04 and 2001-05.

Also included is a map showing the six wells which have been completed and the two for which we are seeking a permit.

If you have any questions, please contact me or Randy Ouye at Gentry-Pacific (599-8283).

Sincerely,

[Signature]

Tom Nance

TN:It

cc: Randy Ouye

Enclosures
Locations of the Ewa by Gentry Wells
<table>
<thead>
<tr>
<th>Invoice</th>
<th>Date</th>
<th>Description</th>
<th>Gross Amt</th>
<th>Adjusts</th>
<th>Net Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>00324</td>
<td>01/31/1992</td>
<td>Well Const Permit Fee</td>
<td>50.00</td>
<td>0.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

for Well Nos: 2001-04 ($25.00)  
2001-05 ($25.00)

---

Received  
Feb 7, 1992  
GENTRY HAWAII, LTD.

---

Check Subtotal: 50.00  
Net Amount: 50.00

---

GENTRY DEVELOPMENT COMPANY  
P.O. BOX 295  
HONOLULU, HAWAII 96809

Date: 02/07/1992

Pay: 50 DOLLARS AND 00 CENTS

TO THE ORDER OF:  
Dept of Land & Natural  
Resources - Div Water/Land Dev  
P.O. Box 373  
Honolulu HI 96809

Signature: Victoria L. Beers
APPLICATION FOR

PUMP INSTALLATION PERMIT

GENTRY HAWAII, LTD.

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water Resource Management, P.O. Box 375, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $55.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7542, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island: Oahu

Address: Ewa by Gentry Construction Site, Well to be No. 2001-05 (Soda Creek 3)

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER

Firm Name: Gentry-Pacific, Ltd.
Contact Person: Randolph Ouye
Address: P. O. Box 295
Honolulu, Hawaii 96809
Phone: 599-8283

3. PROPOSED CONTRACTOR FOR:

Name: Roscoe Moss Company
Address: 830 Ahua Street
Honolulu, Hawaii 96819
Phone: 839-6888
Contractor's License No.: 16437

4. PROPOSED WORK

- Drill New Well
- Deepen
- Alter
- Install New Pump
- Seal
- Replace Pump
- Redrill
- Abandon
- Modify Pump

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

- Municipal (including hotels, stores, etc.)
- Domestic (individual, noncommercial water systems)
- Irrigation (specify) Landscape at Soda Creek #3
- Military
- Industrial
- Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL

Approx. 80,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: Submersible
Motor: Diesel
Rated Pump Capacity: 130 gallons per minute (gpm)

GENTRY DEVELOPMENT COMPANY
Well Owner (print): GENTRY PACIFIC LTD.

GENTRY DEVELOPMENT COMPANY
Land Owner (print): GENTRY PACIFIC LTD.
Briefly describe the proposed work:

The well will be drilled, cased, and pump tested for its possible use to irrigate landscaping at Gentry's Soda Creek 3 project.

PROPOSED SECTION OF WELL

Elevation at top of casing 37 ft., msl.

Cement Grout 30 ft.

Hole Dia. 16 in.

Total Depth 57 ft.

Rock Packing 0 ft.

Ground Elevation 35 ft., msl*

Solid Casing:
Material ASTM A-242 (Corten) Steel
Length 35 ft.
Diameter 12 in.
Wall thickness 0.3125 in.

Casing: /X/Perforated / /Screen
Material ASTM A-242 (Corten) Steel
Length 20 ft.
Diameter 12 in.
Wall thickness 0.3125 in.
Openings 60 sq. in./L.F.

Open Hole:
Length 2
Diameter 16 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
To: Dowald  
Attention: Ed Sakoda  
From: Greg Fukumitsu  
Subject: Eva Gentry Irrigation Wells

If you do not receive all pages, please telephone immediately.

We are trying to confirm if a water use permit for Irrigation Well - 2002-12 has been submitted. The well has been completed and will be outfitted with a irrigation pump system.

Greg - The following wells require both water use & pump installation permits from the Commission:

1902-02, 2001-03 to 05, 2002-11 & 12

Also see attached letter of Jul 17, 1990 concerning submittal of a water use plan.

Ed
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name: Greg Fukumitsu
Company: INWRE
From: Ed Sakeda
Date: 5-17-91  Time: 4:15 pm

Message:


Total number of pages (Including Transmittal Page): 3

If you do not receive all of the pages legibly, please call back: (808) 548-7819

Sending Facsimile Number: (808) 548-0032
Receiving Facsimile Number: ( ) 538-7819

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE) WAS SENT

** COUNT **
# 3

*** SEND ***

<table>
<thead>
<tr>
<th>NO</th>
<th>REMOTE STATION I.D.</th>
<th>START TIME</th>
<th>DURATION</th>
<th>#PAGES</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>808 538 7819</td>
<td>5-17-91</td>
<td>4:13PM</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 0:01'42" 3  XEROX TELECOPIER 7020
Mr. Ronald Uemura, PE  
Director of Engineering  
Gentry Development Company  
P.O. Box 295  
Honolulu, HI 96809

Dear Mr. Uemura:

Thank you for your letter and the report prepared by Tom Nance Water Resources Engineering concerning your plans to use non-potable caprock water for the Ewa by Gentry project.

We agree with the report that anticipated draft and recharge for the project area, after its completion, will be substantially lower than Oahu Sugar Company's pre-existing land use. However, draft will continue to exceed recharge by irrigation return flow, causing increasing salinization of the aquifer.

A condition of the Palm Villa Irrigation Well (Well No. 2002-13) permit and a similar condition of the well construction permits for the Ewa-Gentry Caprock Wells (Well Nos. 1902-02, 2001-03 to 05, 2002-11,12) requires a water use plan, to be approved by the Chairperson, "recommending possible measures to prevent or minimize saltwater contamination and establish courses of action to prevent the aquifer from becoming too saline to use". The purpose of the water use plan is to anticipate and identify future problems and to begin the search for practical solutions to those problems. Upon approval by the Chairperson, the plan will satisfy the conditions of the Palm Villa Well water use permit and pump installation permit, and the well construction permits for the Ewa-Gentry Caprock Wells.

Please submit the water use plan at your earliest convenience. Call Manabu Tagomori at 548-7533 if you have any questions.

Very truly yours,

WILLIAM W. PATY
May 4, 1990

Mr. William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Paty:

Subject: Ewa by Gentry - Non-Potable Water Use Plan

We are pleased to submit this report prepared by Tom Nance Water Resources Engineering dated April 26, 1990 regarding the effect on the caprock aquifer by our project. Also included is a preliminary land use plan with the proposed non-potable water uses shown and proposed dates when the projects are expected to be occupied (start of closings).

I am hopeful that this information should adequately address your concerns on the projects effect on the caprock aquifer.

Sincerely,

GENTRY DEVELOPMENT COMPANY

Ronald M. Uemura, PE
Director of Engineering

RMU:me

Enclosures
Mr. Norm Dyer  
The Gentry Companies  
P. O. Box 295  
Honolulu, Hawaii 96809  

Dear Norm:  

Evaluation of the Effect of the Ewa by Gentry Project  
on the Honolulu-Puuloa Sector of the Ewa Limestone Aquifer  

As requested, I have made an assessment of expected changes to the Ewa limestone aquifer as a result of converting the 1000-acre Ewa by Gentry site from sugarcane to residential, golf course, and other urban land uses. This letter report summarizes my analysis. Information it contains responds to concerns raised by the State Water Commission regarding your water use permit application for the Palm Villa irrigation well.

Oahu Sugar Company's pre-existing land use on the 1000-acre site is summarized on Table 1. Prior to urbanization, Oahu Sugar Company had 964 acres in cane and the balance was open and unused. Of the 964 cane acres, 340 were irrigated by basalt aquifer wells; most of this land has already been taken down by Gentry. The other 624 acres in cane, most of which is still being cultivated, are irrigated by wells drawing from the limestone aquifer. Takedowns of the remaining cane lands are scheduled in three increments: December 1990, 1993, and 1994.

Table 2 is a capsule summary of OSCO's draft from limestone wells and recharge to the aquifer by irrigation return flow over the 1000-acre site. (The basis of irrigation application rates, plant evapotranspiration, and all other details of the analysis can be found in an enclosure to this letter.) The net draft from the aquifer is 2.065 MGD, representing the excess of its draft from wells over the irrigation return flow. The basalt-irrigated fields are a significant benefit in this regard; they contribute to irrigation return flow with water brought in from sources outside the limestone aquifer.

Table 3 is a similar summary of anticipated draft and recharge for the Ewa by Gentry project after its completion. Draft by wells and recharge by irrigation return flow will both be substantially reduced in comparison to the pre-existing land use. More significantly, the excess of draft over recharge would be just 0.429 MGD or 21 percent of the net draft that occurred during full use of the land for cane cultivation.

Sincerely,

Tom Nance

TN:lt

cc: Ron Uemura  
  TH, PT, RO  
  J. Burns

Enclosures
Table 1

Land Use by Oahu Sugar Company Prior to the Ewa by Gentry

<table>
<thead>
<tr>
<th>General Area</th>
<th>Land Use</th>
<th>Field Number</th>
<th>Area (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Geiger, West of Fort Weaver</td>
<td>Basalt-Irrigated Sugarcane</td>
<td>49</td>
<td>33.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>67 (Portion)</td>
<td>80.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>69</td>
<td>105.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72</td>
<td>79.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>73</td>
<td>41.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.0</td>
</tr>
<tr>
<td>Below Geiger, West of Fort Weaver</td>
<td>Limestone-Irrigated Sugarcane</td>
<td>74 (Portion)</td>
<td>57.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>92</td>
<td>76.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>93 (Portion)</td>
<td>116.4</td>
</tr>
<tr>
<td>Above Iroquois, East of Fort Weaver</td>
<td>Limestone-Irrigated Sugarcane</td>
<td>64 (Portion)</td>
<td>116.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>66 (Portion)</td>
<td>109.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.0</td>
</tr>
<tr>
<td>Below Iroquois, East of Fort Weaver</td>
<td>Limestone-Irrigated Sugarcane</td>
<td>75</td>
<td>96.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>89 (Portion)</td>
<td>51.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7.0</td>
</tr>
</tbody>
</table>
Table 2
Oahu Sugar Company's Limestone Aquifer Draft and Recharge on the 1000-Acre Ewa by Gentry Site

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Area (Acres)</th>
<th>Draft by Limestone Wells (MGD)</th>
<th>Recharge to Limestone Aquifer (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarcane: Irrigated by Basalt Aquifer Wells</td>
<td>340</td>
<td>0.000</td>
<td>1.142</td>
</tr>
<tr>
<td>Sugarcane: Irrigated by Limestone Aquifer Wells</td>
<td>624</td>
<td>4.680</td>
<td>1.473</td>
</tr>
<tr>
<td>Open and Unused</td>
<td>36</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1000</strong></td>
<td><strong>4.680</strong></td>
<td><strong>2.615</strong></td>
</tr>
</tbody>
</table>

Table 3
Anticipated Limestone Aquifer Draft and Recharge After Completion of the Ewa by Gentry Project

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Area (Acres)</th>
<th>Draft by Limestone Wells (MGD)</th>
<th>Recharge to Limestone Aquifer (MGD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential: Single Family</td>
<td>611</td>
<td>0.000</td>
<td>0.291</td>
</tr>
<tr>
<td>Residential: Multi-Family</td>
<td>191</td>
<td>0.286</td>
<td>0.201</td>
</tr>
<tr>
<td>Golf Course: Irrigated Area</td>
<td>182</td>
<td>0.910</td>
<td>0.340</td>
</tr>
<tr>
<td>Golf Course: Clubhouse and Parking</td>
<td>6</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>Park</td>
<td>24</td>
<td>0.096</td>
<td>0.021</td>
</tr>
<tr>
<td>School</td>
<td>6</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>Commercial</td>
<td>11</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>Industrial</td>
<td>30</td>
<td>0.000</td>
<td>0.006</td>
</tr>
<tr>
<td>Drainage Sumps</td>
<td>39</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1000</strong></td>
<td><strong>1.292</strong></td>
<td><strong>0.863</strong></td>
</tr>
</tbody>
</table>
Basis of Computed Draft by Wells and Recharge by Irrigation Return Flow Rates for Various Land Uses

**Sugarcane Fields Irrigated by Basalt Aquifer Wells**

1. The only fields irrigated by basalt aquifer wells are 49, a portion of 67, 69, 72, and 73 and these total 340 acres (all are mauka of Geiger Road and west of Fort Weaver Road).

2. Average irrigation is 0.85 MGD per 100 acres, the approximate application rate in the 1980s.

3. Sugarcane evapotranspiration is equivalent to 100 percent of the pan evaporation rate or 90 inches per year (Figure 14 in DLNR Report R74, "Pan Evaporation: State of Hawaii, 1894–1983").

4. Average rainfall, based on the long-term records of gages 741 and 744, is 21 inches per year.

5. Recharge by irrigation return is irrigation application plus rainfall minus evapotranspiration:

<table>
<thead>
<tr>
<th>Flow Component</th>
<th>Inches per Year</th>
<th>MGD/100 Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation Application</td>
<td>114</td>
<td>0.850</td>
</tr>
<tr>
<td>Rainfall</td>
<td>21</td>
<td>0.156</td>
</tr>
<tr>
<td>Total Inflow</td>
<td>135</td>
<td>1.006</td>
</tr>
<tr>
<td>Evapotranspiration</td>
<td>90</td>
<td>0.670</td>
</tr>
<tr>
<td>Net Recharge</td>
<td>45</td>
<td>0.336</td>
</tr>
</tbody>
</table>

**Sugarcane Fields Irrigated by Limestone Aquifer Wells**

1. Fields within the 1000-acre Ewa by Gentry site irrigated by limestone aquifer wells are as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Field No.</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makai of Geiger, West of Fort Weaver</td>
<td>74 (portion)</td>
<td>57.8</td>
</tr>
<tr>
<td></td>
<td>92</td>
<td>76.8</td>
</tr>
<tr>
<td></td>
<td>93 (portion)</td>
<td>116.4</td>
</tr>
<tr>
<td>Makai of Iroquois, East of Fort Weaver</td>
<td>75</td>
<td>96.4</td>
</tr>
<tr>
<td></td>
<td>89 (portion)</td>
<td>51.6</td>
</tr>
<tr>
<td>Mauka of Iroquois, East of Fort Weaver</td>
<td>64 (portion)</td>
<td>108.5</td>
</tr>
<tr>
<td></td>
<td>66 (portion)</td>
<td>116.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>624.0</td>
</tr>
</tbody>
</table>
(2) Average irrigation in the 1980s was approximately 0.75 MGD per 100 acres, slightly less than on the basalt-irrigated fields.

(3) Evapotranspiration and rainfall are the same as for basalt-irrigated fields.

(4) Recharge by irrigation return is computed as follows:

<table>
<thead>
<tr>
<th>Flow Component</th>
<th>Inches per Year</th>
<th>MGD/100 Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow: Irrigation Application</td>
<td>101</td>
<td>0.750</td>
</tr>
<tr>
<td>Rainfall</td>
<td>21</td>
<td>0.156</td>
</tr>
<tr>
<td>Total Inflow</td>
<td>122</td>
<td>0.906</td>
</tr>
<tr>
<td>Loss to Evapotranspiration</td>
<td>90</td>
<td>0.670</td>
</tr>
<tr>
<td>Net Recharge</td>
<td>32</td>
<td>0.236</td>
</tr>
</tbody>
</table>

**Golf Course Irrigated by Caprock Aquifer Wells**

(1) The irrigation application rate will average 5000 gallons per day per acre.

(2) Evapotranspiration from turfgrass will be 70 percent of the pan evaporation rate.

(3) Computed recharge to the limestone aquifer is as follows:

<table>
<thead>
<tr>
<th>Flow Component</th>
<th>Inches per Year</th>
<th>MGD/100 Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow: Irrigation Application</td>
<td>67</td>
<td>0.500</td>
</tr>
<tr>
<td>Rainfall</td>
<td>21</td>
<td>0.156</td>
</tr>
<tr>
<td>Total Inflow</td>
<td>88</td>
<td>0.656</td>
</tr>
<tr>
<td>Loss to Evapotranspiration</td>
<td>63</td>
<td>0.469</td>
</tr>
<tr>
<td>Net Recharge</td>
<td>23</td>
<td>0.187</td>
</tr>
</tbody>
</table>

**Parks Dedicated to the City and County**

(1) Irrigation will be by limestone aquifer wells at 4000 GPD per acre.

(2) All other parameters are the same as for golf courses.

(3) Computed recharge is as follows:

<table>
<thead>
<tr>
<th>Flow Component</th>
<th>Inches per Year</th>
<th>MGD/100 Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow: Irrigation Application</td>
<td>54</td>
<td>0.400</td>
</tr>
<tr>
<td>Rainfall</td>
<td>21</td>
<td>0.156</td>
</tr>
<tr>
<td>Total Inflow</td>
<td>69</td>
<td>0.556</td>
</tr>
<tr>
<td>Loss to Evapotranspiration</td>
<td>63</td>
<td>0.469</td>
</tr>
<tr>
<td>Net Recharge</td>
<td>6</td>
<td>0.087</td>
</tr>
</tbody>
</table>
Multi-Family Development with Caprock-Irrigated Landscaping

(1) Irrigation will be by limestone aquifer wells at 3000 GPD per irrigated acre; half of each MF site will be landscaped and irrigated.

(2) Evapotranspiration for the range of plant materials will average 0.6 times the pan evaporation rate.

(3) Computed recharge is as follows:

<table>
<thead>
<tr>
<th>Flow Component</th>
<th>Inches per Year</th>
<th>MGD/100 Gross Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflow: Irrigation Application</td>
<td>20</td>
<td>0.150</td>
</tr>
<tr>
<td>Rainfall</td>
<td>21</td>
<td>0.156</td>
</tr>
<tr>
<td>Total Inflow</td>
<td>42</td>
<td>0.306</td>
</tr>
<tr>
<td>Loss to Evapotranspiration</td>
<td>27</td>
<td>0.201</td>
</tr>
<tr>
<td>Net Recharge</td>
<td>15</td>
<td>0.105</td>
</tr>
</tbody>
</table>

Single-Family Residential and Other Urban Land Uses

(1) All other urban land uses will be irrigated through the BWS potable water system.

(2) Net recharge will be small but will definitely occur. Data from Dames & Moore test holes in the Seibu/Myers golf course site and from testing of the Puuloa Golf Course well, all next to existing Ewa beach residential development, confirm this.

(3) Recharge is estimated using "Land Use Effects on the Water Balance of a Tropical Island" by Thomas W. Giambelluca, National Geographic Research 2(2):125–151 (1986) as follows:

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Net Recharge Inches/Year</th>
<th>MGD/100 Ac.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Residential</td>
<td>7.7</td>
<td>0.057</td>
</tr>
<tr>
<td>Commercial</td>
<td>2.5</td>
<td>0.019</td>
</tr>
<tr>
<td>School</td>
<td>3.0</td>
<td>0.022</td>
</tr>
<tr>
<td>Industrial</td>
<td>2.5</td>
<td>0.019</td>
</tr>
<tr>
<td>Drainage Sumps</td>
<td>0.0</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Project
8/91 Start of Closings

- PROPOSED NON-POTABLE WELl SITE
PEARL HARBOR WATER MANAGEMENT AREA

WELL CONSTRUCTION PERMIT
for
Ewa-Gentry Caprock Well
Well No. 2001-05
Ewa, Oahu

TO: Gentry Development Company
P.O. Box 295
Honolulu, Hawaii 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 and test Well No. 2001-05 for multi-family common area landscape irrigation within Tax Map Key: 9-1-12 is approved subject to the following conditions:

1. The Division of Water and Land Development (DOWALD), Geology-Hydrology Section, shall be notified at 548-7619, before any work covered by this permit commences.

2. The permit shall be for construction and testing only. No permanent pump may be installed and no water used from the well without the necessary water use and pump installation permits from the Commission.

3. The issuance of the well construction permit shall in no way prejudice any future consideration by the Commission on the issuance or non-issuance of a water use permit for the well.

4. The following shall be submitted to DOWALD within 30 days after completion of the well:
   a. Well Completion Report form.
   b. Elevation (referenced to mean sea level) 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 record; including time, pumping rate, drawdown, chloride content, and water quality data.

5. Following drilling and testing of the well, the applicant shall develop and submit a water use plan summarizing the results of the testing, recommending possible measures preventing or minimizing saltwater contamination, and establishing courses of action to follow should the aquifer become too saline to use.

6. The applicant shall comply with all applicable laws, rules, and ordinances.

7. This permit may be revoked if work is not started within six months of date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

MAY 24 1989

Date of Issuance

cc: USGS
Department of Health,
Drinking Water Program
Ground Water Protection Program
Honolulu Board of Water Supply

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management
March 15, 1989

The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

SUBJECT: WELL CONSTRUCTION PERMIT APPLICATIONS
EWA-GENTRY EXPLORATORY CAPROCK WELLS
STATE WELL NOS. 1902-02, 2001-03 TO 05, AND 2002-11 TO 13
EWA, OAHU

Thank you for the opportunity to review and comment on the subject
applications.

Since the proposed wells are intended to be used only for irrigating a
golf course and common areas in a multi-family housing development, the
Department's Administrative Rules, Title 11, Chapter 20, "Potable Water
Systems," are not applicable. However, should the well's use be modified to
include domestic uses, then the source shall be regulated under Chapter 20.

If you should have any questions, please contact the Drinking Water
Program at 548-2235.

Very truly yours,

JOHN C. LEWIN, M.D.
Director of Health
Mr. Manabu Tagomori  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Tagomori:

Subject: Your Letter Dated February 21, 1989 Regarding the Well Construction Permit Applications for State Well Nos. 1902-02, 2001-03 to 05, 2002-11 to 13

We have no objections to the construction of the caprock wells to provide irrigation water. The development and use of non-potable water for irrigation is in accordance with our directives to the developer to install a dual water system to conserve potable water supplies in that area.

If you have any questions, please contact Chester Lao at 527-5276.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer
February 21, 1989

E. Randolph P. Davis, Manager
Engineering & Industrial Development
Wiley, Pacific, R.C.
Box 3864
San Diego, California 92107

I am Crony receipt of your application and filing fee for
construction permits for the enclosed copies of the Caprock
application. Your application is currently under review. A
representative of my staff is reviewing the applications and will contact your staff
and there are any questions.

[Signature]
Representative
January 31, 1989

Mr. William Paty, Chairman
Commission on Water Resource Management
Division of Water Resource Management
Department of Land and Natural Resources
P. O. Box 373
Honolulu, Hawaii 96809

Dear Mr. Paty:

Well Construction Permit Applications for Ewa by Gentry

Enclosed are seven well construction permit applications and a check for $175.00 for the filing fees. All wells are expected to be brackish. The five wells which are to be used for multi-family irrigation will be developed to meet the Board of Water Supply's requirement to install a dual water system, thereby preserving the limited supply of potable water. Pumping capacities have been tentatively set at four times the expected average irrigation rate to allow automated, night time irrigation. The other two wells will be used to irrigate the golf course. The combined draft of all seven wells is expected to be approximately 1.39 MGD.

Development of the portion of Ewa by Gentry on the west side of Fort Weaver Road will displace 470 acres of sugar cane. The 150 acres of cane land below Geiger Road are irrigated with caprock water (fields mauka of Geiger are irrigated with basalt aquifer sources). Reduction of sugar's caprock water use will be 1.3 to 1.4 MGD, offsetting Gentry's proposed use. In the future when Ewa by Gentry develops 400 acres of caprock-irrigated sugar cane land on the east side of Fort Weaver Road, the net reduction of caprock use may approach three million gallons per day.

If there are any questions, please call Mr. Tom Nance at Belt Collins & Associates at 521-5361.

Thank you for your consideration.

Sincerely,

GENTRY PACIFIC, LTD.

Randolph K. Ouye, Manager
Engineering and Industrial Development

Enclosures: (7) Applications and Check

cc: Belt Collins & Associates (Tom Nance)

Gentry-Pacific, Ltd. P.O. Box 295 Honolulu, Hawaii 96809 (808) 671-5484 FAX (808) 677-8855
APPLICATION FOR

WELL CONSTRUCTION PERMIT
PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 273, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $125.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7432. Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island Oahu
Address Ewa, Oahu; to be Well No. 2001-04-05
(Tax Map Key 9-1-1275)

2. WELL OWNER

Firm Name Gentry Development Company
Contact Person Mr. Norman Dyer
Address P.O. Box 295
Honolulu, Hawaii 96809
Phone 599-8344

3. PROPOSED CONTRACTOR FOR:

Well Drilling
Pump Installation

4. PROPOSED WORK

Drill New Well
Deepen
Alter
Install New Pump
Seal
Replace Pump
Redrill
Abandon
Modify Pump
Replace Pump

5. PROPOSED USE

Municipal (including hotels, stores, etc.)
Domestic (individual, noncommercial water systems)
Irrigation (specify)
Multi-Family Common Area
Industrial
Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL

68,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: Vertical Turbine
Submersible
Centrifugal
Motor: Diesel
Gas
Electric: 15
Rated Horsepower
Rated Pump Capacity: 200 gallons per minute (gpm)

GENTRY DEVELOPMENT COMPANY
a Hawaii limited partnership
By Gentry-Pacific, Ltd.
Its General Partner

Well Owner (print) Signature Date JAN 31 1989

Landowner (print) Signature Date JAN 31 1989

For Official Use Only:
Field Checked By Latitude
Date Longitude

Hydrologic Unit

GENTRY DEVELOPMENT COMPANY
a Hawaii limited partnership
By Gentry-Pacific, Ltd.
Its General Partner
Briefly describe the proposed work:

PROPOSED SECTION OF WELL

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation at top of casing</td>
<td>34 ft., msl</td>
</tr>
<tr>
<td>Cement Grout</td>
<td>33 ft.</td>
</tr>
<tr>
<td>Hole Dia.</td>
<td>16 in.</td>
</tr>
<tr>
<td>Total Depth</td>
<td>48 ft.</td>
</tr>
<tr>
<td>Rock Packing</td>
<td>0 ft.</td>
</tr>
<tr>
<td>Ground Elev.</td>
<td>33 ft., msl</td>
</tr>
</tbody>
</table>

- **Solid Casing:**
  - Material: PVC Schedule 80
  - Length: 33 ft.
  - Diameter: 12 in.
  - Wall thickness: 0.687 in.

- **Casing:** /X/Perforated / /Screen
  - Material: PVC
  - Length: 15 ft.
  - Diameter: 12 in.
  - Wall thickness: 0.687 in.
  - Openings: 60 sq. in./L.F.

- **Open Hole:**
  - Length: 0
  - Diameter: 0 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
APPLICATION FOR

**WELL CONSTRUCTION PERMIT**

**PUMP INSTALLATION PERMIT**

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $15.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 544-7413. Hydrology/Geology Section for assistance.

1. **WELL LOCATION**

<table>
<thead>
<tr>
<th>Island</th>
<th>Tax Map Key</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oahu</td>
<td>9-1-12:5</td>
<td>Ewa, Oahu; to be Well No. 2001-04-05</td>
</tr>
</tbody>
</table>

   (Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. **WELL OWNER**

   | Firm Name       | Gentry Development Company |
   | Contact Person  | Mr. Norman Dyer            |
   | Address         | Honolulu, Hawaii 96809    |
   | Phone           | 599-8344                  |

3. **PROPOSED CONTRACTOR FOR:**

   | Name                  | Will Be Competitively Bid |
   | Contact Person        |                             |
   | Address               |                             |
   | Phone                 |                             |

4. **PROPOSED WORK**

<table>
<thead>
<tr>
<th>Drill New Well</th>
<th>Alter</th>
<th>Install New Pump</th>
<th>Deepen</th>
<th>Seal</th>
<th>Redrill</th>
<th>Abandon</th>
<th>Modify Pump</th>
</tr>
</thead>
</table>

   (Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. **PROPOSED USE**

   | Municipal (including hotels, stores, etc.) | Military |
   | Domestic (individual, noncommercial water systems) | Industrial |
   | Irrigation (specify) Multi-Family Common Area | Other (specify) |

6. **PROPOSED AMOUNT OF WITHDRAWAL**

   | 68,000 gallons per day |

7. **PROPOSED PUMP INFORMATION**

   | Pump Type: | Vertical Turbine | Submersible |
   | Motor:     | Diesel           | Gas         |
   | Rated Pump Capacity | 200 gallons per minute (gpm) |

   | Electric: 15 | Centrifugal |
   | Rated Horsepower | |

---

**GENTRY DEVELOPMENT COMPANY**

a Hawaii limited partnership

By Gentry-Pacific, Ltd.

Its General Partner

**LANDOWNER**

| Firm Name       | Gentry Development Company |
| Contact Person  | Mr. Norman Dyer            |
| Address         | Honolulu, Hawaii 96809    |
| Phone           | 599-8344                  |

---

For Official Use Only:

Field Checked By

Signature Date: JAN 31 1989

Latitude

Hydrologic Unit

Longitude

---

By Gentry-Pacific, Ltd.

Its General Partner

Signature Date: JAN 3 1989

**GENTRY DEVELOPMENT COMPANY**

a Hawaii limited partnership

By Gentry-Pacific, Ltd.

Its General Partner
Briefly describe the proposed work:

PROPOSED SECTION OF WELL

Elevation at top of casing 34 ft., msl.

Cement Grout 33 ft.

Hole Dia. 16 in.

Total Depth 48 ft.

Ground Elev. 33 ft., msl*

Solid Casing:
- Material: PVC Schedule 80
- Length: 33 ft.
- Diameter: 12 in.
- Wall thickness: 0.687 in.

Casing: /X/Perforated / /Screen
- Material: PVC
- Length: 15 ft.
- Diameter: 12 in.
- Wall thickness: 0.687 in.
- Openings: 60 sq. in./L.F.

Open Hole:
- Length: 0
- Diameter: 0 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.