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

1/3/01
SENDERS:

- Complete items 1 and/or 2 if additional services.
- Complete items 3, 4a, and 4b.
- 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.

3. Article Addressed to:

Mr. David Gilliland
Agrigenetics, Inc.
Kaunakakai, HI 96748

Well No.: 0705-05 CI:ky

4a. Article Number
Z 066 768 220

4b. Service Type

- ☑Certified
- ☐Registered
- ☐Express Mail
- ☐Insured
- ☐Return Receipt for Merchandise
- ☐COD

7. Date of Delivery
3/01

5. Received By: (Print Name)

DAVID GILLILAND

6. Signature: (Address of Agent)

X

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

POB 701
KAUNAKAKAI, HI 96748

Thank you for using Return Receipt Service.
| WELL NUMBER | 0705-05 | WELL NAME | Nairwa |

**WELL CONSTRUCTION**

**ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:**
1. COVER LETTER
2. PERMIT (2x)
3. PUMP TEST
4. DOH COMMENTS
5. LAND DIV. COMMENTS
6. WCR FORM

**TO BE SENT TO APPLICANT**
- cover ltr
- permit
- sitecond
- WURS
- shortage
- plan

<table>
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<tr>
<th>FOR OFFICE USE ONLY</th>
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</thead>
</table>

**PUMP INSTALLATION**

**ATTACHMENTS FOR PUMP INSTALLATION PERMIT:**
1. COVER LETTER
2. PERMIT (2x)
3. DOH COMMENTS
4. LAND DIV. COMMENTS
5. WCR FORM
6. WUR FORM

| FOR OFFICE USE ONLY |
GROUND WATER USE PERMIT
WUP NO. 583

PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
<th>Agrigenetics, Inc.</th>
<th>Landowner of Use</th>
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PERMITTED SOURCE INFORMATION

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<tr>
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<tr>
<td>Water Management Area</td>
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<td>Aquifer Sector</td>
<td>Central</td>
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<td>Aquifer System</td>
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<td>Well Name</td>
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<td>State Well No.</td>
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PERMITTED USE INFORMATION

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<th>Reasonable beneficial use</th>
<th>Agriculture (Irrigation of 75 acres of seed corn)</th>
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<tbody>
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<td>0.012 mgd</td>
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<td>Address</td>
<td>Naiwa</td>
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<tr>
<td>State land use classification</td>
<td>Agriculture</td>
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<td>County zoning classification</td>
<td>Agriculture</td>
</tr>
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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 April 14, 1994 meeting are incorporated into this permit by reference.

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

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Manawainui 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 Manawainui 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 Manawainui 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.

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management
# COMMISSION ON WATER RESOURCE MANAGEMENT

**FROM:** Roy  
**DATE:** 12/01/00  
**SUSPENSE DATE:**

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November 27th, 2000

State of Hawaii
Department of Natural Resources
P.O. Box 821
Honolulu, HI 96809

Reference Permit to Pump Well Water #0705-05

Dear Sir or Madam:

As of November 1st, 2000, the assets of the Seed Division of Cargill, Incorporated were sold to Agrigenetics, Inc. d/b/a Mycogen Seeds. Cargill, Incorporated currently holds an Permit to Pump Well Water (#0705-05) at its Molokai, Hawaii location that was issued by your office. This letter is to request that the Permit be transferred to or reissued in the name of Agrigenetics, Inc. d/b/a Mycogen Seeds.

If you have any questions, please contact me.

Sincerely,

Dave Gilliland
Location Manager
Tel:(808)-567-6871
Fax(808)-567-9426
Email DJGilliland@dow.com

(210613v17)
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Charlie, assigned new WUP No. 583, let me know when you issue it. Can update database. Also, still coded interim in db. Let me know if you issue permanent (ie, waiving, load 18).
November 27th, 2000

State of Hawaii
Department of Land and Natural Resources
P.O. Box 821
Honolulu, HI 96809

Reference: Water Use Permit #339

Dear Sir or Madam:

As of November 1st, 2000 the assets of the Seed Division of Cargill, Incorporated were sold to Agrigenetics, Inc. d/b/a Mycogen Seeds. Cargill, Incorporated currently holds Water Use Permit ("Permit") at its Molokai, HI location that was issued by your office. This letter is to request that the Permit be transferred to or reissued in the name of Agrigenetics, Inc. d/b/a Mycogen Seeds.

If you have any questions, please contact me.

Sincerely,

Dave Gilliland
Location Manager
Tel:(808)-567-6871
Fax:(808)-567-9426
Email DJGilliland@dow.com

Mycogen Seeds is an affiliate of Dow AgroSciences LLC
Ms. Kelly A. Staack  
Cargill, Incorporated Law Department  
P.O. Box 5624  
Minneapolis, MN 55440-5624

Dear Ms. Staack:

**Transfer of Water Use Permit No. 339**

The State Water Code, Chapter 174C, provides for transfer of a water use permit provided that:

1. The conditions of use of the permit, including, but not limited to, place, quantity, and the purpose of the use, remain the same; and

2. The Commission is informed of the transfer within ninety days. §174C-59 Haw. Rev. Stat.

Pursuant to the above statute, please inform us, within ninety days after the transfer has occurred, of the actual date of the transfer. In addition, we need a contact name, address, and phone number for the new permittee so that we may update our records and re-issue the water use permit to the new permittee.

If you have any questions, please contact Lenore Nakama at (808) 587-0218.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

LN:ss
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not sure where the permit #339 is.

need to cut new WWP (# WWP No.?) for Aphigenetics, Inc.
Transfer has not occurred yet. Need more info on new permitted so that we can re-issue
VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
Honolulu, HI 96813

Dear Sir or Madam:

Cargill, Incorporated has entered into an agreement to sell substantially all of the assets of its North American Seed business to Agrigenetics, Inc. (hereinafter "Buyer"). The anticipated closing date is October 26, 2000. At closing, we would like to assign our Ground Water Use Permit #339 ("Agreement") with you dated April 29, 1998 to the Buyer.

Please indicate your consent to this assignment by signing below and returning this letter to me by fax immediately at (952) 742-6349, then mail the original to me in the enclosed self-addressed stamped envelope. If you have any questions or concerns, please do not hesitate to contact me. Thank you.

Very truly yours,

Kelly A. Staack
Senior Paralegal

KAS:tip
Enclosure
207694v60(00466)

State of Hawaii, Dept. of Land and Natural Resources hereby consents to the assignment of the aforementioned Agreement to Buyer in connection with the sale of Cargill, Incorporated’s North American Seed business to Buyer.
# GROUND WATER USE PERMIT

**WUP NO. 339**

## PERMITTEE

<table>
<thead>
<tr>
<th>Applicant/Water User</th>
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<tbody>
<tr>
<td>Address: CARGILL, INCORPORATED</td>
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<td>P.O. BOX 701</td>
<td>P.O. BOX 701</td>
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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 ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANA WAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

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

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: [Signature] Date: 4-29-98

Printed Name: [Printed Name] Firm or Title: [Firm or Title]

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

Attachment
Mr. Adolph Helm  
Cargill, Incorporated  
P.O. Box 701  
Kaunakakai, HI 96748  

Dear Mr. Helm:

Water Shortage Plan  
Naiwa Well (Well No. 0705-05)

Thank you for transmitting your water shortage plan, which we received on April 20, 1998. We also have on file the as-built drawing, pump assembly drawing, pump test curves, and geologist’s report. We look forward to receiving a signed copy of your permit to validate it, and monthly water use reports.

If you have any questions, please call Charley Ice at 587-0251 or toll-free at 1-800-468-4644, extension 70251.

Sincerely,

[Signature]

EDWIN T. SAKODA  
Acting Deputy Director
TO:  
MR. MIKE WILSON
CHAIRMAN DLNR STATE OF HAWAII
COMMISSION OF WATER RESOURCE MANAGEMENT
P. O BOX 621 HONOLULU, HAWAII 96809

SUBJECT:  
SPECIAL CONDITION WATER SHORTAGE PLAN
TMK: 5-2-11: 07 WELL NO. 0705-05

DEAR MR. WILSON:

Cargill Seeds have been on Molokai for 30 years working in the research and production of seed corn. Recently Cargill purchased a 102 acre farm lot with a well and infrastructure in place. Existing field and irrigation layout is set up for the growing of corn and other crops. Ground water from our well source and the Molokai Irrigation System both serve as our source of irrigation.

Water requirement for corn is approximately 2 inches an acre per week applied 75% of a 102 day grow period. Mainly overhead sprinkler and some drip irrigation are used to irrigate.

We are in the process of making the transition to rely on drip irrigation as our main source of watering. Initially this will help us to conserve water. If a temporary reduction in pumping is required due to water shortage, the following can be implemented.
1. Irrigate at night to conserve moisture
2. Use moisture sensors, irrigate when needed
3. Refrain from overhead sprinkler application, use only drip irrigation
4. Direct water from filter flushing to plants (windbreak, field crop, etc)

We are still in the process of identifying some of our short and long range goals. It is our hope that Cargill can continue to develop and implement water conservation plans and work towards becoming better stewards of our resource. Please feel free to write or call (808 567-6871) if you have any questions.

Yours truly,

[Signature]
Adolph Helm
Farm Manager
Mr. Adolph Helm  
Cargill, Incorporated  
P.O. Box 701  
Kaunakakai, HI 96748

Dear Mr. Helm:

Approval and Transfer of Water Use Permit No. 339 (Well No. 0705-05)  
Manawainui Ground Water Management Area, Molokai

We have received documentation from Novartis Seeds, Inc. verifying the transfer of interest in the captioned well from Ciba-Geigy Corporation to Novartis Seeds, Inc. and subsequently to Cargill, Incorporated.

This letter notifies you that Water Use Permit No. 339 has been transferred from Ciba Seeds to Cargill, Incorporated pursuant to §174C-59, Hawaii Revised Statutes.

This letter transmits your water use permit for Nalwa Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. As part of the Commission’s approval, the following special condition was added and is part of your permit under Standard Permit Condition 20:

Special Condition

1. As-built drawings of the well and pump and complete pumping test record shall be submitted within sixty (60) days.

This condition was met by transmittal of November 6, 1997.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form
GROUND WATER USE PERMIT
WUP NO. 339

PERMITTEE

Applicant/Water User
Address: CARGILL INCORPORATED
P.O. BOX 701
KAUNAKAKAI, HI 96748

Landowner of Source
Address: CARGILL INCORPORATED
P.O. BOX 701
KAUNAKAKAI, HI 96748

PERMITTED SOURCE INFORMATION

Island: MOLOKAI
Water Management Area: MANAWAINUI
Aquifer Sector: CENTRAL
Aquifer System: MANAWAINUI
System Sustainable Yield: 2 mgd
Well Name: NAIWA
State Well No.: 0705-05

PERMITTED USE INFORMATION

Reasonable beneficial use: AGRIC (based on IRRIGATION OF 75 ACRES OF SEED CORN)
Withdrawal (12 month moving ave.): 0.012 mgd

Location of water use

TMK #: 5-2-11- 7
Address: NAIWA, MOLOKAI
State land use classification: AG
County zoning classification: AG

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 ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. If the ground water source does not presently exist, the new well shall be completed, i.e. able to withdraw water for the proposed use on a regular basis, within twenty-four (24) months from the date the water use permit is approved.

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance the Commission's September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission's periodic review of the applicable aquifer's sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANAWAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies' permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

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

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.
DATE: February 20, 1998

TO: Charley Ice – Hawaii Commission on Water Resource Mgmt.

FROM: Edward C. Resler

SUBJECT: Water Use Permit #339 For Naiwa Well No. 0705-05

NUMBER OF PAGES: 1 (Including cover page)

In response to your fax of February 19 regarding transfer of the above referenced permit, I would like to clarify that the permit should indeed be transferred to Cargill, Incorporated since the Molokai property was sold by Novartis Seeds, Inc. (as successor in interest to Ciba-Geigy Corporation) to Cargill, Incorporated.

Because a letter from Ciba-Geigy Corporation was requested in support of Cargill’s transfer request, the purpose of my letter was simply to outline the fact that Novartis Seeds, Inc. (as successor to Ciba-Geigy’s interest in the water use permit) supported Cargill’s request to transfer Water Use Permit #339 for Naiwa Well No. 0705-05.

If you have any further questions, please advise.

Thank you for your assistance in this matter.

CONFIDENTIALITY NOTICE
THE DOCUMENTS ACCOMPANYING THIS FACSIMILE TRANSMISSION CONTAIN INFORMATION FROM NOVARTIS SEEDS, INC. WHICH ARE CONFIDENTIAL OR PRIVILEGED. THIS INFORMATION IS INTENDED FOR THE USE OF THE RECIPIENT NAMED ABOVE ONLY. IF YOU ARE NOT THE INTENDED RECIPIENT, BE AWARE THAT ANY DISCLOSURE, COPYING, DISTRIBUTION OR USE OF THE CONTENTS OF THIS INFORMATION IS PROHIBITED. IF YOU HAVE RECEIVED THIS TRANSMISSION IN ERROR, PLEASE NOTIFY US BY TELEPHONE SO WE MAY ARRANGE FOR RETRIEVAL OF THE DOCUMENTS AT NO COST TO YOU.

If you do not receive all pages, please notify sender by telephone (612) 593-7399 or FAX (612) 593-7218.
FAX: Transmitting 2 pages, including this one; call 587-0251 with any reception problems.

TO:       Ed Resler
FROM:  Charley Ice
Date: 19 Feb 98   Time:  

We are prepared to transfer the Water Use Permit #339 for Naiwa Well (Well No. 0705-05) located on the island of Moloka'i.

Your letter of 19 Feb 98 (p. 2 of this transmittal) is attached to several documents verifying the transfer of assets from Ciba-Geigy (the current permit holder) to Novartis Seeds, Inc.

However, the letter requests that the transfer be made to Cargill, Incorporated. We apologize for some confusion as to why this should be so.

Please clarify this, and we shall proceed without further ado.

Return Fax: 587-0219
Return Post: P.O. Box 621, Honolulu 96809
February 10, 1998

Edwin Sakodo
Deputy Director
Water Resource Commission
P. O. Box 621
Honolulu, HI. 96809

RE: Well No. 0705-05

Dear Mr. Sakodo:

We have recently been informed by Cargill, Incorporated that you have requested a letter from Ciba-Geigy Corporation in support of transferring the permit for the above referenced well to Cargill. The permit for pumping 4,380,000 gallons/year or 12,000 gallons/day is held in the name of Ciba-Geigy Corporation.

I respectfully request that you proceed with Cargill's request to transfer the above referenced permit from the name of Ciba-Geigy Corporation to Cargill, Incorporated based on the following information.

By means of a General Indenture of Conveyance, Assignment and Transfer of Assets and Assumption of Liabilities, Novartis Corporation (formerly known as Ciba-Geigy Corporation) transferred to Novartis Seeds Inc. "Any and all real estate or rights in real estate..." which belonged to the Ciba-Geigy Seeds Division. The Molokai property was subsequently transferred from the name of Ciba-Geigy Corporation to Novartis Corporation and then conveyed to Novartis Seeds, Inc. via a Quitclaim Deed. Copies of the applicable documents are enclosed for your review.

If you have any questions or need further information, please feel free to contact me.

Thank you for your consideration of this request.

Very truly yours,

Edward C. Resler

CC: Denise C. Clark, Senior Paralegal
    Cargill, Incorporated
GENERAL INDENTURE OF CONVEYANCE, ASSIGNMENT AND TRANSFER OF ASSETS AND ASSUMPTION OF LIABILITIES

THIS GENERAL INDENTURE OF CONVEYANCE, ASSIGNMENT AND TRANSFER OF ASSETS AND ASSUMPTION OF LIABILITIES ("General Indenture"), is made and entered and delivered effective as of the 1st day of January, 1997, from NOVARTIS CORPORATION, a New York corporation, formerly known as CIBA-GEIGY CORPORATION, a New York corporation ("Grantor"), having offices located at 556 Morris Avenue, Summit, New Jersey 07901 and doing business, in part, as and through its CIBA-GEIGY SEEDS DIVISION (referred to herein as the "Seeds Division"), to Grantor's wholly-owned subsidiary NOVARTIS SEEDS, INC., a Delaware corporation, formerly known as NORTHRUP KING CO. ("Grantee"), having its address at 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427.

WITNESSETH:

WHEREAS, pursuant to a Certificate of Merger filed with the Secretary of State of New York on December 31, 1996 and effective January 1, 1997, Sandoz Corporation, a New York corporation, has been merged into Grantor (the "Merger"), with Grantor being the surviving corporation, and pursuant to the Merger, Grantee, a former wholly-owned subsidiary of Sandoz Corporation, became a wholly-owned subsidiary of Grantor; and

WHEREAS, pursuant to a plan of reorganization to be implemented in connection with and immediately following the Merger, and pursuant to resolutions duly adopted by the Boards of Directors of the Grantor and the Grantee, it has been authorized and agreed that Grantor shall contribute all of the assets (other than certain excluded intellectual property assets) and liabilities of Grantor's Seeds Division as a capital contribution to its wholly-owned subsidiary, Grantee;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein:

1. As a contribution to capital of Grantor's wholly-owned subsidiary, Grantee, the Grantor does by these presents GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER and DELIVER unto Grantee, and unto its successors and assigns forever, all of the following:

All of the assets, properties, and business as a going concern, of the Seeds Division, excluding only the intellectual property listed on Schedule D attached hereto (the "Excluded Assets"), but including without limitation the following assets, properties and elements of the business as a going concern of the Seeds Division:

(a) Any and all cash, securities and other liquid or current assets;
(b) All notes and accounts receivable;
(c) Any and all real estate or rights in real estate, as described in the deeds of conveyance as to such properties, if any, delivered to Grantee;
(d) All furniture and fixtures;
(e) All machinery and equipment;
(f) Grantor's entire interest in and to any and all other tangible and intangible assets (except for the Excluded Assets) used by the Seeds Division or in the Seeds Division's business, including without limitation: all personal property, insurance policies; all contracts, agreements or arrangements; all customer or client lists and all right to pursue the Seeds Division's business with such clients or others; all leases and licenses; all trademarks, trade names, trade secrets, service marks, patents, plant variety protection certificates, and all other intellectual property rights, if any, not among the Excluded Assets; all claims or demands under contracts or otherwise; all choses in action, rights, causes of action, deposits, bank accounts and deferred assets; all rights to monies due or to become due; all rights to the use of the name of the Seeds Division, or any variation thereof, if desired,
and to carry on the business in the name of the Seeds Division or in such other name as Grantee may choose; and any and all other assets, rights, or properties of or used by the Seeds Division or in the Seeds Division's business, tangible or intangible, and of any nature, description or kind; and

(g) Without limiting the foregoing, any such assets of the Seeds Division as may be listed and identified in a Schedule A attached hereto and identified as the "Included Assets Schedule", if any,

TO HAVE AND TO HOLD all of the foregoing assets, properties and rights (hereinafter referred to as the "Assets"), with all of the appurtenances thereto, subject to all liabilities of Grantor doing business as the Seeds Division and all liabilities of Grantor arising out of or in connection with the Seeds Division or the business of the Seeds Division which are assumed by Grantee pursuant to this General Indenture, unto Grantee, its successors and assigns, for its and their use forever.

2. This General Indenture is made with full substitution and subrogation of Grantee in and to all covenants and warranties by others heretofore given or made in respect of any or all of the Assets, the business of the Seeds Division, or any part thereof.

3. Grantor shall, whenever reasonably requested to do so by Grantee, execute, acknowledge and deliver such other instruments of conveyance and transfer and take such other action as reasonably may be required more effectively to convey, transfer to and vest in Grantee, and to put Grantee in possession of any property conveyed, transferred and delivered hereunder, and in the case of contracts or any other assets that cannot be transferred effectively without the consent of third parties to cooperate with Grantee to obtain such consents and to take such other action as may be reasonably necessary to assure Grantee all rights and benefits thereof.

4. Grantor hereby constitutes and appoints Grantee the true and lawful attorney of Grantor, with full power of substitution, in the name of Grantee or in the name of Grantor but on behalf of and for the benefit of Grantee, to demand, receive and collect for the account of Grantee any and all monies, credits, claims or rights due or to become due relating to the Assets or business of the Seeds Division; to collect, for the account of Grantee, all receivables and other items of Grantor transferred to Grantee as provided herein, and to endorse in the name of Grantor, the Seeds Division or Grantee any checks received on account of such receivables or other items; to institute and prosecute in the name of Grantor or the Seeds Division, but at the expense and for the benefit of Grantee, any and all proceedings at law, in equity or otherwise which Grantee may deem proper; to collect, assert, protect, defend or enforce any claim, right, title, debt, account or interest of any kind in or to any of the Assets of the business of the Seeds Division, and to defend, compromise, settle and release or otherwise proceed with respect to any and all claims, actions, suits or proceedings in relation thereto; to execute, acknowledge, deliver, swear to, file, and record at the appropriate public offices, any and all such other confirmatory instruments and documents as may be necessary or appropriate to perfect or evidence Grantee's title or interest in and to any of the Assets and business of the Seeds Division as a going concern; and to do all such acts and things in relation to the Assets and/ or business of the Seeds Division as a going concern as Grantee shall deem desirable.

5. In consideration of the foregoing, Grantee hereby assumes and agrees to pay, perform and discharge all liabilities and obligations of Grantor, incurred in the name of or for or on behalf of the Seeds Division, and/or relating to or arising out of or in connection with the Assets or the business of the Seeds Division, of every nature, description and kind, whether fixed, contingent, known or unknown, and including, without limitation to the foregoing, all of the liabilities, if any, listed and identified in a Schedule B attached hereto and identified as the "Assumed Liabilities Schedule" (collectively, the "Assumed Liabilities").

6. Grantee further agrees to record the foregoing transfer of Assets and assumption of the Assumed Liabilities as a contribution to capital on the books of Grantee, and the transfer shall be completed and booked consistent with the parties intention that the conveyance and transfer of Assets and assumption of Assumed
Liabilities reflected by this General Indenture shall be a tax-free transaction for purposes of United States Federal and State income taxes.

7. Nothing herein shall be deemed or construed to prejudice the right of Grantee to contest any claim or demand as fully as Grantor or the Seeds Division might have done or as fully as Grantee may choose, or to deprive Grantee of any and all benefits, rights, defenses or counterclaims which Grantor or the Seeds Division may have had at any time or which Grantee shall have with respect to any of the Assumed Liabilities.

8. This General Indenture may be executed in any number of counterparts, each of which shall for all purposes be deemed to be an original, and all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have caused this General Indenture to be duly executed, signed, sealed and delivered effective as of the date and year first above written.

NOVARTIS CORPORATION

ATTEST:

[Corporate Seal]

By: Robert L. Thompson, Jr.
Name: ROBERT L. THOMPSON, JR.
Title: EXECUTIVE VICE PRESIDENT

GRANTOR

NOVARTIS SEEDS, INC.

ATTEST

[Corporate Seal]

By: Edward T. Shonsey
Name: Edward T. Shonsey
Title: President & CEO

GRANTEE
STATE OF New Jersey §
COUNTY OF Morris §

On this 2nd day of May, 1997, before me, the undersigned authority, a Notary Public in and for the State of New Jersey, personally appeared Edward T. Shonsey, known to me to be the person whose name is subscribed to the foregoing instrument, and by me duly sworn, did depose and say that (s)he is the VP of NOVARTIS CORPORATION, the corporation described in and which executed the foregoing instrument, as Grantor, that (s)he executed the same for, on behalf of and in the name of said corporation upon due authorization of the corporation by order of its board of directors and by all requisite corporate action, for the purposes and consideration therein expressed, as the act and deed of said corporation.

LORRAINE F. WILLIAMS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Aug. 28, 1997

STATE OF MINNESOTA §
COUNTY OF HENNEPIN §

On this 8th day of May, 1997, before me, the undersigned authority, a Notary Public in and for the State of Minnesota, personally appeared Edward T. Shonsey, known to me to be the person whose name is subscribed to the foregoing instrument, and by me duly sworn, did depose and say that (s)he is the Pres. & CEO of NOVARTIS SEEDS, INC., the corporation described in and which executed the foregoing instrument, as Grantee, that (s)he executed the same for, on behalf of and in the name of said corporation upon due authorization of the corporation by order of its board of directors and by all requisite corporate action, for the purposes and consideration therein expressed, as the act and deed of said corporation.

TIMOTHY M. BANGASSER
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My Commission Expires Jan. 31, 2000
PETITION FOR AMENDMENT OF LAND COURT CERTIFICATE OF TITLE NUMBER 298,966 AND ORDER
IN THE LAND COURT OF THE STATE OF HAWAII

In the Matter of the Application (Application No. 1861)
of
Molokai Ranch, Limited
to register and confirm title to
land situate at Naiwa, Molokai, County
of Maui, State of Hawaii

PETITION FOR AMENDMENT OF LAND COURT CERTIFICATE OF TITLE NUMBER 298,966 AND ORDER

COMES NOW, Novartis Corporation ("Petitioner"), a New York corporation, and hereby states as follows:

1. Pursuant to a Certificate of Merger filed with the Secretary of State of New York on December 31, 1996 and effective January 1, 1997, Sandoz Corporation, a New York corporation, has been merged into Petitioner, formerly known as Ciba-Geigy Corporation, and with Petitioner being the surviving corporation. A certified copy of the Certificate of Merger of Sandoz Corporation into Ciba-Geigy Corporation under Section 904 of the Business Corporation Law ("Certificate of Merger") is attached hereto as Exhibit "A" and made a part hereof (return of the original certification is hereby requested upon the substitution of a copy therefore);

2. Pursuant to the Certificate of Merger, the name of Ciba-Geigy Corporation was changed to Petitioner's name (Novartis Corporation);

3. Land Court Certificate of Title No. 298,966 is registered in the name of Ciba-Geigy Corporation;

A TRUE COPY, ATTEST WITH
THE SEAL OF SAID COURT.

JANNIS SHIROMA
Clerk
WHEREFORE, Petitioner respectfully prays that an Order be made amending Land Court Certificate of Title Number 298,966 to change the name of Ciba-Geigy Corporation to Novartis Corporation.

DATED: Morris, New Jersey, this 13th day of August, 1997.

NOVARTIS CORPORATION,

a New York corporation

By Wayne P. Mathieson
Its VP + Assoc. Gen. Counsel

By Robert Thomp-N.
Its Exec. VP + General Counsel
On this 13th day of August, 1997, before me personally appeared ___________ Wayne P. Mendelson ________________ and ________________ Peter D. Thompson ________________ to me personally known, who, being by me duly sworn, did say that they are the ________________ VP AD ________________ and ________________ Exec VP ________________, ________________ respectively, of NOVARTIS CORPORATION, a New York Corporation, and that the said ________________ instrument was signed on behalf of said corporation by authority of its Board of Directors, and that said officer acknowledged said instrument to be the free act and deed of said corporation.

LORRAINE F. WILLIAMS
Notary Public, State of New Jersey

My commission expires: LORRAINE F. WILLIAMS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Aug. 28, 1997
ORDER

Upon the record and evidence herein, the prayer of the foregoing Petitioner is hereby granted, and the Assistant Registrar of this Court is so ordered.


KATHLEEN HANAWAHINE

Acting Registrar for the Judge of the Land Court
State of New York
Department of State

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

Witness my hand and seal of the Department of State on JUN 03 1997

Special Deputy Secretary of State
CERTIFICATE OF MERGER
OF
SANDOX CORPORATION
INTO
CIBA-GEIGY CORPORATION
UNDER SECTION 904 OF THE BUSINESS CORPORATION LAW

We, the undersigned, Jeff Benjamin and Bruce J. Brumberg, being respectively Vice President, General Counsel and Secretary, and Assistant Secretary of Ciba-Geigy Corporation and Robert L. Thompson, Jr. and Wayne F. Wirkelson, being respectively Vice President, General Counsel and Secretary, and Vice President, Associate General Counsel and Assistant Secretary of Sandox Corporation hereby certify:

FIRST: The name of the constituent corporation which is to be the surviving corporation is Ciba-Geigy Corporation and the name under which it was formed is Ardsley Chemical Corporation. The date upon which its Certificate of Incorporation was filed by the Department of State is November 18, 1966.

SECOND: The name of the other constituent corporation which is being merged into the surviving corporation is Sandox Corporation, and the name under which it was formed is Zodnas Holdings, Inc. The date upon which its Certificate of Incorporation was filed by the Department of State is December 22, 1976.

THIRD: The Board of Directors of each of the constituent corporations has duly adopted a Plan of Merger setting forth the terms and conditions of the merger of said corporations.

FOURTH: As to each constituent corporation, the designation and number of outstanding shares of each class and series and the voting rights therefor are as follows:

(a) Designation, voting rights and number of shares in each class or series outstanding:

(1) For Ciba-Geigy Corporation:
   (i) Common Stock, $1.00 par value;
       voting; 72,230,756 shares outstanding
   (ii) Common Stock, nonvoting; 5,304 shares outstanding

(2) For Sandox Corporation:
   Common Stock, $1.00 par value;
   voting; 1,000 shares outstanding
(b) Shares entitled to vote as a class or series:
(1) For Ciba-Geigy Corporation: None
(2) For Sandor Corporation: None

FIFTH: The merger was adopted by each constituent corporation in the following manner:

(a) As to Sandor Corporation, by the written consent of the sole shareholder.
(b) As to Ciba-Geigy Corporation, by the written consent of the sole shareholder.

SIXTH: The Certificate of Incorporation of Ciba-Geigy Corporation is hereby amended as follows:

(a) Article 1 (concerning the name of the corporation) of the Certificate of Incorporation is hereby deleted in its entirety and replaced with:

"The name of the corporation shall be Novartis Corporation."

SEVENTH: The effective date of the merger shall be January 1, 1997.

IN WITNESS WHEREOF, we have signed this certificate on the 26th day of December, 1996, and we affirm the statements contained therein as true under penalties of perjury.

CIBA-GEIGY CORPORATION
By: ________________________________
Name: ________________
Title: ________________

By: ________________________________
Name: ________________
Title: ________________

SANDOR CORPORATION
By: ________________________________
Name: ________________
Title: ________________

By: ________________________________
Name: ________________
Title: ________________
CERTIFICATE OF MERGER
OF
SANDOS CORPORATION
INTO
GIRA-GRIGY CORPORATION
UNDER SECTION 904 OF THE BUSINESS CORPORATION LAW

CURTIS, MALLET-REVOST, COLT &
101 PARK AVE.
SUITE 3500
NEW YORK, NY 10178

GIR

STATE OF NEW YORK
DEPARTMENT OF STATE
FILES DEC 90 1996

BILLED

961231000562

Exhibit "A"
Page 4 of 4
QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That NOVARTIS CORPORATION (formerly known as CIBA-GEIGY CORPORATION), a New York corporation, whose mailing and post office address is 556 Morris Avenue, Summit, New Jersey 07901 hereinafter called the "Grantor," in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) paid by NOVARTIS SEEDS, INC., a Delaware corporation, whose business and post office address is 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427, hereinafter called "Grantee," the receipt whereof is hereby acknowledged, does hereby remise, release and forever quitclaim all of the property described in Exhibit "A" attached hereto and expressly incorporated herein by this reference, unto Grantee as TENANT IN SEVERALTY, its successors and permitted assigns;

AND the reversions, remainders, rents, issues and profits thereof, and all of the estate, right, title and interest of the Grantor, both at law and in equity, therein and thereto.

TO HAVE AND TO HOLD the same, together with all buildings, improvements, tenements, hereditaments, rights, easements, privileges and appurtenances, if any, thereon and thereunto belonging or appertaining or held and enjoyed therewith, unto the Grantee according to the tenancy hereinbefore set forth, absolutely and forever.
The terms "Grantor" and "Grantee," as and when used herein or any pronouns used in place thereof, shall mean and include the masculine, feminine or neuter, the singular or plural number, individuals, or corporations, and their and each of their respective successors, estates, heirs, personal representatives and assigns, according to the context thereof. All obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention shall be clearly expressed elsewhere herein.

IN WITNESS WHEREOF, the Grantor has executed these presents this 13th, day of August, 1997.

NOVARTIS CORPORATION,
a New York Corporation

By /s/ Wayne P. McGuire
Its VP, Asst. Gen Counsel

By /s/ Robert J. Touron, Jr.
Its Exec. VP & General Counsel

"Grantor"
STATE OF New Jersey SS.
CITY AND COUNTY OF Menlo Park

On this 13th day of August, 1997, before me appeared Wayne P. Mertelson and James McLaughlin, to me personally known, who, being by me duly sworn, did say that they are the VP, Sales, and Executive VP, respectively, of NOVARTIS CORPORATION, a New York corporation, and that the foregoing instrument was signed on behalf of said corporation by authority of its Board of Directors, and said officers acknowledged said instrument to be the free act and deed of said corporation.

Lorraine F. Williams
Notary Public, State of New Jersey

My Commission Expires Aug. 28, 1997
EXHIBIT "A"

All of that certain parcel of land situate at Naiwa and Kahanui, Island of Molokai, County of Maui, State of Hawaii, described as follows:

LOT 222, area 102.738 acres, as shown on Map 26, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1861 of Molokai Ranch, Limited;

Together with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "111" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Together also with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "112" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Being the premises described in Transfer Certificate of title No. 298,966 issued to CIBAGEIGY CORPORATION, a New York corporation.
Commission on Water Resource Management (01/98)

FROM: Richard
DATE: 1/20
SUSPENSE DATE

TO: BAUER, G.  
    CHING, F.  
    FUJII, N.  
    HARDY, R.  
    HIGA, D.  
    HIRANO, E.  
    ICE, C.  
    IMATA, R.  
    JINNAI, R.  

INIT.

TO: KUNIMURA, I.  
    NAKAMA, L.  
    NAKANO, D.  
    NAYE, M.  
    SAKODA, E.  
    SUBIA, S.  
    SWANSON, S.  
    UWAIN, S.  
    YODA, K.

INIT.

FOR:  
2 Approval  
5 Signature Information

PLEASE:

See Me
Review & Comment
Take Action
Type Draft
Type Final
File
Xerox ___ copies

Roy No Need REPORT OF TERMINATION
Because was NOT DECLARED IN '89
was DRILLED IN '90
Richard, be sure to include toll-free #s in our correspondence.
Mr. Adolph Helm, Manager
Cargill Inc.
P.O. Box 701
Kaunakakai, Hawaii 96748

Dear Mr. Helm:

Transfer Ownership of Naiwa Well (Well No. 0705-05)

As requested from your January 19, 1998 letter, our files and data bases will be corrected to reflect the change of ownership.

If you have any questions, please contact Roy Hardy of the Commission staff at 587-0274 or toll-free at 1-800-468-4644, extension 70274 as soon as possible.

Sincerely,

[Signature]
EDWIN T. SAKODA
Acting Deputy Director

RJ:ss
LIMITED WARRANTY DEED

KNOW BY ALL MEN THESE PRESENTS:

THAT NOVARTIS SEEDS, INC., a Delaware corporation, whose post office address is 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427 ("Grantor"), in consideration of TEN AND NO/100 UNITED STATES DOLLARS (U.S. $10.00) and other valuable consideration paid by CARGILL, INCORPORATED, a Delaware corporation, whose post office address is 15407 McGinty Road, Wayzata, Minnesota 55391 ("Grantee"), receipt whereof is hereby acknowledged, does hereby grant, bargain, sell and convey all of that certain real property more particularly described in Exhibit "A" attached hereto and expressly incorporated herein by this reference, unto Grantee, as Tenant in Severalty, in fee simple.

AND the reversions, remainders, rents, issues and profits thereof and all of the estate, right, title and interest of Grantor, both at law and in equity, therein and thereto;

TO HAVE AND TO HOLD the same, as to the undivided interest in said premises, together with all rights, easements, privileges and appurtenances thereon and thereto belonging or appertaining or held and enjoyed therewith, unto Grantee, absolutely and forever, according to the tenancy set forth hereinabove;
AND Grantor, in consideration of the premises, does hereby covenant and agree with Grantee that Grantor is lawfully seized in fee simple of said real property and rights; that the same are free and clear of and from all encumbrances, except as described herein, and except for the lien of real property taxes not yet by law required to be paid; that Grantor does have good right and title to sell and convey said real property as aforesaid; and that Grantor will WARRANT AND DEFEND the same unto Grantee forever against any and all encumbrances made or suffered by Grantor.

AND Grantee hereby understands and agrees that said real property is being conveyed "AS IS, WHERE IS AND WITH ALL FAULTS," except for: (1) the warranty of title set forth herein; (2) the warranty that Grantor has not violated and is presently in compliance with all Environmental Requirements pertaining to or otherwise impacting the Property and that no Hazardous Substances have been manufactured, used, stored, released, buried, disposed of on or off site from, or located on said real property as aforesaid by Grantor, or to Grantor's knowledge, by any predecessor owner/operator of same, except in compliance with all applicable federal, state, or local laws or regulations. SUBJECT TO THE FOREGOING, GRANTOR HAS NOT MADE AND DOES NOT MAKE ANY REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THE CONDITION OF SAID REAL PROPERTY INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

AND subject to the warranty relating to compliance with Environmental Requirements in the foregoing paragraph, Grantee hereby acknowledges that Grantor is not responsible for any patent condition affecting the said real property in any way, whether or not known or discoverable or hereafter discovered by Grantee.

AND Cargill, Incorporated hereby understands and agrees to give up, waive and relinquish all rights to assert any claim, demand, proceeding or lawsuit of any kind against Novartis Seeds, Inc. with respect to the condition of the land, improvements and any personal property, except for claims which are based upon a breach of the warranties provided hereinabove or Novartis Seed's concealment of material facts and defects, which Novartis Seeds is required to disclose by law.

AND the parties hereto also agree that:

1. The term "Environmental Requirements" means all applicable present and future statutes, regulations, rules, ordinances, codes, licenses, permits, orders, approvals, plans, authorizations, concessions, franchises, and similar items, of all governmental agencies, departments, commissions, boards, bureaus, or instrumentalities of the United States, states and political subdivisions thereof and all applicable judicial, administrative, and regulatory decrees, judgments, and orders relating to the protection of human health or the environment, including, without limitation: (a) any and all applicable federal and/or State of Hawaii environmental laws including, without limitation the Water Pollution Control Act (33 U.S.C. § 1321 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. § 9601 et seq.), Subchapter IX of the
Solid Waste Disposal Act (Regulation of Underground Storage Tanks (42 U.S.C. § 6991 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), the Clean Water Act (33 U.S.C. § 1251 et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), the Safe Drinking Water Act (42 U.S.C. § 300f et seq.), Hawaii Revised Statutes ("H.R.S.") § 321-21 (Management and Disposal of Infectious Waste), H.R.S. Chapter 340A (Solid Waste), H.R.S. Chapter 340E (Safe Drinking Water), H.R.S. Chapter 342B (Air Pollution), H.R.S. Chapter 342D (Water Pollution), H.R.S. Chapter 342H (Solid Waste Pollution), H.R.S. Chapter 342I (Lead Battery Recycling), H.R.S. Chapter 342J (Hazardous Waste), H.R.S. Chapter 342L (Underground Storage Tanks), H.R.S. Chapter 342N (Used Oil Transport, Recycling and Disposal), H.R.S. Chapter 342P (Asbestos), H.R.S. Chapter 128D (Hawaii Environmental Response Law), or any similar federal, State of Hawaii, or County of Maui laws, ordinances, rules, regulations or guidelines now existing or hereafter adopted, published and/or promulgated pursuant thereto; (b) all requirements pertaining to reporting, licensing, permitting, investigation, and remediation of emissions, discharges, releases, or threatened releases of Hazardous Substances; and (c) all requirements pertaining to the protection of the health and safety of employees or the public.

2. The term "Hazardous Substance(s)" means any substance, element, compound, mixture, solution, materials or waste, hazardous, toxic, or otherwise which are or may become regulated by the United States Government, the State of Hawaii, and/or the County of Maui, including any department, agency, or political subdivision thereof. Without limitation to the generality of the foregoing sentence, the term "hazardous substance", includes any material or substances that is: (a) petroleum; (b) asbestos; (c) a flammable explosive; (d) radio-active material; (e) organic substance known as polychlorinated biphenyls; (f) any material known to cause cancer or reproductive toxicity, (g) infectious; (h) carcinogenic; (i) mutagenic; (j) corrosive; (k) any material or substance which is (or may become) regulated by applicable federal and/or State of Hawaii environmental laws including, without limitation the Water Pollution Control Act (33 U.S.C. § 1321 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. § 9601 et seq.), Subchapter IX of the Solid Waste Disposal Act (Regulation of Underground Storage Tanks (42 U.S.C. § 6991 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), the Clean Water Act (33 U.S.C. § 1251 et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), the Safe Drinking Water Act (42 U.S.C. § 300f et seq.), Hawaii Revised Statutes ("H.R.S.") § 321-21 (Management and Disposal of Infectious Waste), H.R.S. Chapter 340A (Solid Waste), H.R.S. Chapter 340E (Safe Drinking Water), H.R.S. Chapter 342B (Air Pollution), H.R.S. Chapter 342D (Water Pollution), H.R.S. Chapter 342H (Solid Waste Pollution), H.R.S. Chapter 342I (Lead Battery Recycling), H.R.S. Chapter 342J (Hazardous Waste), H.R.S. Chapter 342L (Underground Storage Tanks), H.R.S. Chapter 342N (Used Oil Transport, Recycling and Disposal), H.R.S. Chapter 342P (Asbestos), H.R.S. Chapter 128D (Hawaii Environmental Response Law), or any similar federal, State of Hawaii, or County of Maui laws, ordinances, rules, regulations or guidelines now existing or hereafter adopted, published and/or promulgated pursuant thereto; or (l) the presence of which on the demised premises causes or threatens to cause a nuisance upon the demised premises or to adjacent
properties or poses or threatens to pose a hazard to the health or safety of persons, to property or to the environment, on or about the demised premises.

3. The terms "Grantor" and "Grantee" as and when used herein or any pronouns used in place thereof, shall mean and include the masculine, feminine or neuter, the singular or plural number, individuals, partnerships or corporations, and their and each of their respective successors, heirs, personal representatives and assigns, according to the context thereof. All obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention shall be clearly expressed elsewhere herein.

4. This instrument may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same instrument, binding all of the parties hereto, notwithstanding that all of the parties are not signatories to the original or the same counterparts. For all purposes, including, without limitation, recordation, filing and delivery of this instrument, duplicate, unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

IN WITNESS WHEREOF, the parties hereto have executed these presents this 13 day of November, 1997.

NOVARTIS SEEDS, INC,
a Delaware corporation

By Edward C. Resler
Its Vice President and General Counsel

"Grantor"

CARGILL, INCORPORATED,
a Delaware corporation

By Brian F. Hill
Its President, Worldwide Seed

"Grantee"
STATE OF MINNESOTA
COUNTY OF Hennepin

On this 13th day of November, 1997, before me personally appeared EDWARD C. RESLER, to me personally known, who, being by me duly sworn, did say that he is the Vice President and General Counsel of NOVARTIS SEEDS, INC., a Delaware corporation and that said instrument was signed on behalf of said corporation by authority of its Board of Directors, and the said officer acknowledged said instrument to be the free act and deed of said corporation.

[Signature]
NANCY A. WEST
Notary Public, State of Minnesota

My commission expires: Jan 31, 2000
EXHIBIT "A"

All of that certain parcel of land situate at Naiwa and Kahanui, Island of Molokai, County of Maui, State of Hawaii, described as follows:

LOT 222, area 102.738 acres, as shown on Map 26, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii ("Office") with Land Court Application No. 1861 of Molokai Ranch, Limited;

Together with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "111" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Together also with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "112" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Being the premises described in that certain Quitclaim Deed dated August 13, 1997, made by and between Novartis Corporation, a New York corporation, as Grantor and Novartis Seeds, Inc., a Delaware corporation, as Tenant in Severalty, as Grantee, recorded in said Office as Document No. 24D2809, and duly noted on Land Court Certificate of Title No. 497, S65.

END OF EXHIBIT "A"
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October 24, 1997

Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Naiwa Well (Well No. 0705-05); Manawainui Ground Water Management Area

Dear Sir/Madame:

The following documents are hereby submitted to fulfill the special conditions to the issuance of an interim water use permit to Ciba Seeds for the reasonable and beneficial use of 12,000 gallons per day of brackish water from the Naiwa Well (Well No. 0705-05) for agricultural irrigation use on 75 acres:

1. Ciba-Geigy Pump Cross-Section As-Built Drawing;
2. Ciba-Geigy Pump Curve;
3. Ciba-Geigy Well Cross-Section As-Built Drawing; and

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Very truly yours,

DWYER IMANAKA SCHRAFF KUDO MEYER & FUJIMOTO

Stacy E. Uehara

cc: Dennis Steele

Enclosures
CIBA-GEIGY WELL CROSS-SECTION AS BUILT

WELL NO. 0705-05 MOLAKAI

APPROX. GROUND EL. 254'

---ASTM A-53 CASING
12" I.D. X 3/8"

---GROUT

---5' SAND

---GRAVEL PACK
3/8" BASALT GRAVEL

---SCREEN
12" ASTM A-53
1/4" LOUVER SLOTS

NOT TO SCALE
EVALUATION OF DRILLING AND TESTING
CIBA-GEIGY WELL
MOLOKAI, HAWAII 1990

PREPARED BY: CHESTER LAO
HYDROLOGIST-GEOLOGIST
JULY 15, 1990
EVALUATION OF DRILLING AND TESTING OF CIDA GEIGY WELL 
MOLOKAI, HAWAII 1990

SUMMARY
This report presents the hydrogeological evaluation of the recently completed well located on the Molokai Research Farm with recommendations for sizing of pump and for use of the well water. The well was completed satisfactorily by the drilling contractor Fred Page International and was successfully test pumped. As pointed out in my report of 1989, the chances of finding the freshest water was by the highway rather than at this location. With due consideration, however, of the primary purpose of the well to be able to bring in crops already in the ground and budgetary limits, the site selected was still considered favorable. Testing the well for yield and drawdown shows a capacity of 400 gallons per minute with a drawdown of slightly over 7 feet is possible. For a diesel powered pumping unit working against a total dynamic head of 445 feet including 60 pounds per square inch delivery pressure, a power unit of 120 horsepower is recommended.

Water quality improved slightly over the 78 hours of test pumping from an initial 3360 micromhos to 3260 micromhos field conductivity. Calibration to a known standard reduces the values to 3125 micromhos and 3032 micromhos, respectively. Salinity of the water should be satisfactory to complete a season of crops. Dilution with low salinity state water could easily double the available water for expanded normal operations.

WELL DRILLING

Unfortunately through miscommunication, well cutting samples were not saved for the first 100 feet of drilling for determination of lithologic character. Although regrettable from the viewpoint of recording data, the loss is not considered important to this well. According to the driller, this interval consisted of soil and weathered rock. The remaining 181 feet of formations is compiled and attached as "Formation Log for Ciba Geigy Molokai Well". Nothing of an unusual geologic nature in the formations was noted. The formations for the most part are rather thick dense aa type lava flows with associated clinkers and dense pahoehoe flows that are probably transitional to aa. The lavas are from the Upper Member of the East Molokai Volcanic Series of the East Molokai volcanic shield. The dense massive nature of the flows were difficult to drill. The most important interval of the well which is below the water table consisted mostly of a several massive flows with a few associated thin clinker
beds. Nevertheless, the well is considered a good producer with moderate drawdown.

TEST PUMPING

Test pumping of the well was performed with a diesel powered unit driving a line shaft multistage turbine pump through a right angle drive head with an in-out ratio of 1:2. A 4-inch flow meter and gate valve were located in the discharge line for the purpose of measuring rate and gallons pumped and to insure a full pipe of water passing the meter. An air line was attached to the pump column to measure drawdown. Following installation of the pump in the well, surging was performed to cleanse the well of cuttings. The well was then allowed to recover and rest 3 days before the actual test began. Testing was divided into two phases consisting of a yield-drawdown test and a 72-hour sustained test.

YIELD-DRAWDOWN TEST. This test required 6 hours for completion because it was not known beforehand how sensitive the well was to pumping and a slow and sure approach was better than rash and sorry which could have set matters back considerably. The results of this testing are presented as the attachment titled "Ciba Geigy Well Yield-Drawdown Test".

The rates pumped ranged from 100 gpm to the maximum output of the test pump at 344 gpm. The drawdown at 100 gpm was not measurable as a pressure loss on the gage. The maximum indicated drawdown was 5.54 feet at 344 gpm. Some variation of drawdown was noted in testing but these were the results of well improvement and to a minor extent from tidal effects on the aquifer. Plotting of the data on log-log paper and fitting the points to a straight line permits the drawdown at rates not tested to be determined. For the rate of 400 gpm which presently best fits the irrigation practice on the farm, drawdown would be approximately 7 feet. A linear regression analysis with an r of .979 predicts a drawdown of 7.17 feet which corroborates the log-log plot.

SUSTAINED TEST. After completion of the yield-drawdown test, the sustained test began one and one-half hours later and continued uninterrupted for 72 hours. The purpose of this testing is detect changes of drawdown which indicate aquifer boundaries and to detect changes of water quality with time, both essential to determining whether a well is likely to meet the test of time for yield and utility. From previously gathered data from the yield-drawdown test on water quality and rate-drawdown and equipment limitations, a rate of 300 gpm was selected. The rate selection corresponds to an engine speed of slightly over 1700 rpm to insure completion of the test without interruption due equipment failure. These data
are presented as the attachment titled "72 Hour Uninterrupted Test Pumping".

The sustained test indicates water quality improved slightly over the duration of the test based on field measurements of specific conductance which is a measure of total dissolved solids or salinity of the water. Although a field kit was used by the farm manager Daryl Leer to titrate for chloride concentration, a more controlled analysis by a qualified lab should be made. Depending upon the chloride ratio to the other ions contributing to specific conductance of the water, chloride content could range from about 750 to 1000 ppm. Total dissolved solids (TDS) could range from approximately 2000 to 2300 ppm.

PLUMBNESS TEST. A test of the plumbness of the 12-inch I.D. well casing and louvered screen was made to a depth of 295 feet. This was performed by lowering a plummet with a minimum circumferential clearance of the sidewall on a stainless steel cable suspended over a pulley centered over the casing. Owing to the strong gusty winds at time of the test, the pulley was suspended at a height of 65.5 inches rather than the usual 10 feet or more. Despite the shortened pulley height which tends to increase the angular error, the well easily meets the American Water Works specification for drift of no more than 2/3 rds the inside diameter of the casing for any 100 feet interval or 8 inches per 100 feet. The maximum drift of 6.25 inches occurred in the 100 feet interval between 160 and 260 feet. The actual drift values are probably smaller because of difficulty in getting readings on a constantly swinging cable and the shortened pulley height. The well is quite straight, as can be verified by looking down the well, and has only a small drift to the northeast. Construction of the well more than meets specifications.

The data for the plumbness test were processed in a computer and the results are indicated in the attachment titled "Plumbness Test for Ciba Geigy Molokai Well.

PUMP RECOMMENDATIONS

The results of the extended test pumping allow a measure of confidence in sizing the permanent pump for the well, especially if it is recognized that actual output may have to be reduced. In contrast to constant speed electric power, the diesel powered unit can be regulate pump output by simply reducing engine speed. Partially closing down the valve on discharge line will serve the same purpose with either type of unit.

Because the central Molokai basal ground water body is
not well known except for the failures of the sugar plantation wells that had huge excess capacities and the potable county well near Kalae. Although this writer's prediction of the likelihood of this well being in an expanded transition zone was accurate, it is not possible to state unequivocally that this well can maintain forever its present salinity at a pumping rate of 400 gpm because of delayed reaction to pumping or adverse effects from future competitive wells.

On the other hand, more well capacity is available from the well for uses that tolerate higher salinity. For example, the well could supply 1000 gpm with a drawdown of approximately 22.8 feet for a brackish shrimp farm operation.

Based on an initial 400 gpm capacity against a total dynamic head of 445 feet with a discharge pressure of 60 psi, the following parameters have been calculated for your information:

- Water Horsepower: 45
- Brake Horsepower: 64
- Diesel Horsepower: 107 say, 110 to 125
- Est. fuel costs: 13.2 cents per dollar per gallon for each 1000 gallons of water

The actual number of stages for the pump will depend on the bowl design. Trimming of impellers may be required to match the desired discharge pressure.

DISCUSSION AND RECOMMENDATIONS

For the purposes of insuring a crop can brought to harvest with water from a well on the Molokai Research Farm, the Ciba Geigy well results are positive. Some of the unknowns presently not determined are: 1). crop tolerance to this well water, 2). long term stability of salinity of the well water to pumping especially if there are future competitors for ground water, and 3). presence in the well water of pesticides used on pineapple formerly grown on these lands.

The tolerance of corn to water of the salinity found in the well is already assured by the present successful experiences of the competing corn seed farms using water from shallow wells excavated along the coastline. The Molokai soils are well drained and should minimize salt or sodium buildup. Normal rainfall should assist in flushing of salts in the soil. Long term use for irrigation is expected to
cause an salinity increase of the well water from applied water in excess of plant requirements that percolate beyond the root zone. Continued availability of low salinity State water will minimize degradation of the ground water. Location of the well at the uppermost edge of the property and fields will tend to minimize the influence of return irrigation water.

Despite the slight improvement of salinity of the well water indicated in the 72-hour test, the stability of salinity over a 100 days of pumping at rate 25% greater remains to be determined and will only come from operational experience with this well. The uncertainty is based on the estimated low flux of ground water in this area derived from recharge. Thin basal lenses are sensitive to pumping and the fact that this well has not shown this behavior so far is positive encouragement, but there must be willingness to scale back pumpage to preserve usable water quality if required. Even if this well proves out a 400 gpm capacity with a steady salinity, a likely future scenario is a cutback due to quality changes brought about by new wells, particularly those in upland locations that could intercept ground water flow and place this well in an unfavorable back water position.

Under the present practices of the Department of Land and Natural Resources Commission on Water Resource Management the owner of a well that is not used to its permitted value will have his permitted use reduced. Permitted uses are reviewed every five years. Although the Commission granted Ciba Geigy 0.5 mgd, the well permit requested this amount in the unlikely event the well showed this potential. The present permitted use is probably safe for a while, but the State will be aware of who is using what since pumpage must be reported annually. The more use can be made of the potential of this well, the greater will be the future permitted use. The strategy to protect this well from future encroachment is to lodge a written statement against future proposed wells that appear to threaten the Ciba Geigy well at the times the permit applications are reviewed by the Commission on Water Resource Management. The threats are from three sources: firstly, from exceeding sustainable yield of the aquifer; secondly, from wells that too close; and finally, from upland wells of excessive capacity that would be using poorly quality water that would affect the quality of the underlying aquifer.

Use of this well for domestic water has been discussed with Mr. Leer and some of the administrative and quality requirements were discussed. Because of the brackishness of the well water, it presently fails to meet Department of Health requirements for drinking water. With dilution of one
part well water to two parts State water, the mineralogical standards could be met. The water also would have to be tested for EDB, DBCP, and TCP, which are soil fumigants formerly widely used for controlling nematodes in the pineapple industry. A scan for other pesticides, herbicide, and chemical on the Environmental Protection Agency list is also required. Simple dilution with pesticide free State water could possibly reduce the pesticides to acceptable limits; otherwise, costly removal of the contaminants would be required. Use of the well water for human consumption will further require that an Engineering Report as mandated by Section 29 must be submitted to and accepted by the Department of Health.

For all the above reasons, it is recommended that Ciba-Geigy plan using the well extensively for a test period after which decisions can be made as to the sale of water to other farms for off season use or for dilution to extend potable supplies. In this way, a prioritized beneficial use will be established to secure future access to this water.
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<th>Description</th>
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Ciba Geigy Well Yield-Drawdown Test  
June 29, 1990

Personnel Present: Fred Page, Daryl Leer, Chester Lao

Equipment: Diesel Powered Line Shaft Pump, Flow Meter,  
276.9 feet of Air Line, Conductivity-Temperature Meter.

Beginning Reading of Flow Meter: 878700

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* Ciba Geigy Instrument Readings

++++++

72-Hour Uninterrupted Test Pumping

Rate: Nominal 300 gpm rate, engine speed 1700 rpm
Duration: 1830 June 29, 1990 to 1830 July 2, 1990

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Recalibrate
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End of Test July 2, 1990

End Meter Reading
Total Water Pumped
Plumbness Test for Ciba Geigy Molokai Well

Date of test: July 8, 1990
Personnel: Fred Page, Daryl Leer, Chester Iao
Equipment: Plummel diameter 3/8 inch less than casing I.D.
Double sheaves, 1/8 inch aircraft cable
Pulley height 65.5 inches

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## ANNUAL GROUND WATER USE REPORT

**Agrigenetics, Inc.**  
P.O.Box 701  
Kaunakakai, Moloka'i HI 96748

### State Well No. 0705-05  
Well Name Naiwa Well  
Year

**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0285.

<table>
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- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is NOT running just prior to a pumping cycle;
  if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g. method of chloride measurements; how pumpage amounts are estimated; etc...):

---

**Submitted by (print)__________________________**  
**Title__________________________**  
**Signature__________________________**  
**Date__________________________**  
**Phone No.__________________________**

Form wur-ann-gw.doc.doc (3/99)
Mr. Darryl Yagodich, representing the DHHL, presented testimony supporting additional water reservation from the Kualapuu Aquifer System for uses on Hawaiian home lands (see file).

David Craddick of the Maui Department of Water Supply, Noelani Joy, DeGray Vanderbilt, William Kaleimomi, and Judy Caparida, all supported the reservation of water for DHHL/homesteader use.

Mr. Duncan Annandale, Operations Director for Molokai Ranch, supported the water needs of DHHL to the extent that it is determined that this petition is for water which is government-owned or surplus water from private sources as defined in Subsection 221(A) of the Hawaiian Homes Commission Act. Mr. Annandale added that the petition should be granted subject to the rights of all property owners to obtain their allocations of water from the Kualapuu Aquifer for reasonable future use (see file).

Ms. Toni Bissen of Native Hawaiian Advisory Council (NHAC) supported DHHL's petition but felt that the additional 2 mgd should come from within the 5 mgd planning figure (see file).

Mr. Cox commented that there is obvious need to coordinate the various water needs for Molokai - DHHL, agriculture, county, and economic development. Staff's public hearing process would resolve a lot of these questions.

Unanimously approved (Lewin/Ing).

ITEM 4  
DAVID W. CURTIS, APPLICATION FOR A WATER USE PERMIT. KAMALO-G WELL (WELL NO: 0352/10), KAWELA GROUND WATER MANAGEMENT AREA, MOLOKAI

Unanimously approved (Ing/Cox).

ITEM 5  
CIBA SEEDS, APPLICATION FOR A WATER USE PERMIT. NAIIWA WELL (WELL NO: 1705-05), MANAWAINUI GROUND WATER MANAGEMENT AREA, MOLOKAI

Mr. Walter Ritte asked if there would be any impact on the Hoolehua/Kalamaula area. Ms. Nakama stated that the long-term impact is not known, but that this rate of pumpage would not have a great impact on the aquifer.

Ms. Joy supported the use of brackish water for agriculture production as opposed to potable water and asked the Commission's support of the applicant's request.

Unanimously approved (Cox/Ing).

ITEM 6  
KUKUI (MOLOKAI), INC. APPLICATION FOR A WATER USE PERMIT, NAIIWA WELL (WELL NO: 0295-05), KUALAPUU GROUND WATER MANAGEMENT AREA, MOLOKAI

Ms. Nakama presented amended recommendations for Commission action. After discussions the following was recommended:
1. That the Commission find that there was just cause for the applicant's failure to file within the specified one-year period, and that this late filing of a water use permit application be allowed.

2. That the Commission approve the issuance of an interim water use permit to Kukui (Molokai), Inc. for the reasonable and beneficial use of 928,000 gallons per day of potable water for municipal, domestic, and irrigation uses at the Kaluakoi Resort Hotel, condominiums, residences, and golf course from Well #17 (Well No. 0901-01), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:
   a. The applicant may continue this existing use 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.
   b. The filing of an application for future uses in excess of 2.0 mgd shall be just cause for re-evaluation of this interim permit.
   c. Upon completion of a new transmission line for the transport of the water used by Well #17, the permitted use of Well #17 shall be reduced by 10% to 918,800 gallons per day.

3. That the Commission defer action on the remaining observed usage of 240,200 gallons per day, for a period not to exceed 90 days, pending the following:
   a. Justification for additional allocation for existing uses in excess of 918,800 gallons per day.
   b. Development of a conservation plan or program that shall address, but not be limited to, the following:
      (1) Identifying and using efficient plants and drought tolerant plants for landscaping and quantifying their demands (xeriscape).
      (2) Use of efficiently designed landscaping and irrigation systems.

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.

5. Defer other requests for future uses.

Mr. Ron Hedani of Kukui (Molokai), Inc. presented testimony on their application for water use (see file). He explained that their current usage of 1.2 mgd is based on the currently depressed occupancy rates in the hotel and resort condominiums. Testimonies objecting to the application were filed by Kaiwi Naki, Sara Sykes, NHAC, Noelani Joy, Rachel Kamakana, DeGray Vanderbilt, and Judy Caparida (see file). Ms. Sykes asked that a public hearing be held. Mr. Matthew Adolpho requested a contested case hearing.

Chairperson Ahue stated that due to the request for a contested case, action was deferred to determine if Mr. Adolpho has standing. In the next ten days,
Mr. Adolpho must submit information to verify his standing for a contested case hearing. Ms. Sykes asked if her request for a public hearing still stands since Mr. Adolpho requested a contested case hearing. Chairperson Ahue suggested both could be looked at because the public hearing could resolve the issue and a contested case hearing may not be needed.

Additional testimonies were heard for informational purposes only.

Unanimously approved for deferral (Cox/Nakata).

**ITEM 7**

**APPLICATIONS FOR WATER USE PERMITS. KAWELEA GROUND WATER MANAGEMENT AREA, MOLOKAI**

Mr. Ing suggested the following amendment be made to Condition 2:

"That the Commission approve the issuance of an interim water use permit to T.T. Meyer, Inc. for the reasonable and beneficial use of 28,800 gallons per day of brackish water for the domestic needs of five residences and any existing subsistence farming on 15.5 acres from the Meyer, Inc. #1 Well (Well No. 0354-01), subject to the standard water use permit conditions listed in Attachment B.

Unanimously approved as amended (Ing/Lewin).

**ITEM 8**

**LOKO PA KALO AFTER-THE-FACT APPLICATION FOR STREAM CHANNEL ALTERATION PERMIT, STREAM DIVERSION WORKS PERMIT, AND AMENDMENT TO THE INTERIM INSTREAM FLOW STANDARD, HONOLULU STREAM, MOLOKAI**

Mr. Higa recommended the following amendments to the Recommendations:

"The permit application and the staff submittal approved by the Commission at its meeting of [March 16] April 14, 1994 shall be incorporated herein by reference."

5. "[The applicant shall install an appropriate water meter subject to the approval of the Chairperson.] The applicant shall report monthly water usage for one year after the meter is installed, or as required by the Commission."

Also, Mr. Eddie Tanaka's name should be added to the list of corporate members.

The applicant indicated that the requirement for a water meter would cause an excessive financial burden since the project is not a large aquacultural farming operation. Staff understood that the cost of the water meter would be over $500 and did not object to the deletion of this condition provided there are no objections from other competing users.

Unanimously approved as amended (Nakata/Cox).
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Ciba Seeds
Application for a Water Use Permit
Naiwa Well (Well No. 0705-05)
Manawaimui Ground Water Management Area, Molokai

Applicant: Ciba Seeds
Landowner: Same
P.O. Box 830
Kaunakakai, HI 96748

Background

The applicant submitted a completed water use permit application to the Commission on December 3, 1993. Specific information regarding the source, use, notification, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

Analysis & Issues

This existing source uses brackish water from the Manawainui Aquifer System to irrigate approximately 75 acres of seed corn, cotton, sorghum, and soy beans. A connection to the Molokai Irrigation System allows surface water to be used as needed for the dilution of salt in the soil zone.

By the following analysis, staff finds that this proposed use meets each of the seven (7) criteria set forth in HRS 174-C(a) Conditions for a permit:

(1) Water availability - Existing permits total 1.555 million gallons per day (mgd). Assuming a sustainable yield of 2 mgd for the system, about 78% of the water resource has been allocated. If the Commission were to grant the full amount requested by the applicant, an additional 0.105 mgd (5% of the sustainable yield) would be allocated. This can be accommodated by the available water source. The latest 12-moving average of actual water usage (0.05 mgd) shows that existing withdrawals may be substantially less. However, some of the water has been allocated for future uses that have not come on line as yet.

(2) Reasonable-beneficial - The quantity requested appears to be excessive, in light of the reported actual withdrawals and the augmentation by the MIS. Staff finds that an allocation of 12,000 gallons per day is a more reasonable estimate of existing needs (Exhibit 1).

(3) Interference with other existing legal uses - There are no streams nearby that would be affected by the current level of use. Also, this use was in existence prior to the effective date of the interim instream flow standards. There is only one other well within a mile of this well, but this well has been "lost".

Agenda 1
ITEM 5
(4) **Public interest** - Use of water for agricultural purposes is considered to be in the public interest.

(5) **State & county general plans and land use designations** - This proposed use has been shown to be consistent with the state and county general plans and land use designations. No objections to this application were raised by the Office of Conservation and Environmental Affairs and The Office of the Mayor, County of Maui.

(6) **County land use plans and policies** - This proposed use has been shown to be consistent with the county land use plans and policies.

(7) **Interference with Hawaiian home lands rights** - The Dept. of Hawaiian Home Lands (DHHL) has reviewed this application and has no comments at this time. DHHL had requested that water be reserved from the Kualapuu Aquifer System to meet the current and future needs of Hawaiian homesteaders. To date, 0.905 mgd of water has been reserved for DHHL. Recently, DHHL filed another request for additional reserves from the Kualapuu Aquifer System. No action has been taken on this request. Although the Hawaiian Homes Commission administers significant tracts of land located in the Manawaiulii Aquifer System, the water needs on these lands are not expected to be derived from the Aquifer System. Much of these lands are slated for service by the proposed expansion of the Molokai Irrigation System, which diverts significant quantities of surface water from the streams in the Northeast Sector of the island.

The proposed use does not appear to violate any of the recommendations made by the Molokai Working Group, and no objections have been filed with the Commission.

This application, submitted on November 17, 1993, was not made within a period of one year from the July 15, 1992 effective date of designation. As such, it should be considered a late filing, pursuant to §174C-50. Staff finds that there is just cause for the late filing, as the applicant was not served two notices, one of which should be sent by registered mail, to file for an application to continue an existing use, as required by §174C-50(c). Because the well did not exist at the time that the Administrative Rules of the State Water Code went into effect, this well has not been registered with the Commission. As a result, the mailing lists of existing users that were created through the use of the well registration database did not include the applicant’s name or address. Staff has mailed the applicant the appropriate forms to register his well.

A final issue is that the applicant has not submitted an as-built sectional drawing of the installed pump and well and a complete pumping test record. These conditions of the pump installation permit, issued on May 29, 1991, and the well construction permit, issued on September 27, 1989, should be fulfilled prior to the issuance of any water use permit for this source.

**RECOMMENDATION**

Staff recommends:

1. That the Commission find that there was just cause for the applicant’s failure to file within the specified one-year period, and that this late filing of a water use permit application be allowed.

2. That the Commission approve the issuance of an interim water use permit to Ciba Seeds for the reasonable and beneficial use of 12,000 gallons per day of brackish water from the Naiwa Well (Well No. 0705-05) for agricultural irrigation use on 75 acres, subject to the standard water use permit conditions listed in Attachment B and the following special conditions:
a. The applicant shall submit the following within 60 days from the date of this submittal:

1. As-built sectional drawing of the installed pump.
2. As-built sectional drawing of the well.
3. Complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER:
Manawainui System, Central Sector, Molokai
Sustainable Yield: 2,000 mgd
Existing Water Use Permits: 1,555 mgd
Available Allocation: 0.445 mgd
Total of other pending allocations: 0 mgd

WELL:
Naiwa Well (Well No. 0705-05)
Location: Naiwa, Molokai, TMK:5-2-11:7
Year Drilled: 1990
Casing Diameter: 12 in.
Elevations (msl = 0 ft.)
Water Level:
Ground: 3.2 ft.
254 ft.
Bottom of Solid Casing:
3 ft.
-27 ft.
Bottom of Perforated:
Bottom of Open Hole:
-27 ft.
Total Depth: 281 ft.
Grouted Annulus Depth: NA ft.
Pump Capacity: 500 gpm

Use Information

Quantity Requested: 105,000 gallons per day.
Existing Type of Water Use: Irrigation of 75 acres of seed corn
Place of Water Use: Naiwa, Molokai at TMK: 5-2-11:7

Reported Water Usage: NA gpd
Nearby Similar Water Usage:
Manawainui Aquifer System: 0.050 gpd
Current 12-Month Moving Average Withdrawal: (3% of SY)

ATTACHMENT A
Nearby Surrounding Wells and Other Registered Ground Water Use

There is only one other well within a mile of the well (see Exhibit 2). However, this well is "lost" and has no current or expected future use. Information from the registration program indicates there are possibly 47 existing wells in the Manawaimui Aquifer System. Several of these wells have been initially field checked but many of the declarants have not been completely field verified. Several are not in use or are rights claims. The 1992 Draft of the Maui Water Use and Development Plan, Island of Molokai did not provide an estimate for 1990 water use. The Final Report of the Molokai Working Group estimated the actual use from the Manawainui Aquifer System to be 0.56 mgd.

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on December 23, 1993 and December 30, 1993 and copies of the notice were sent to the Mayor's office and the Board of Water Supply. Additional notice copies were sent to the County Council and Department of Water Supply. Copies of the completed application were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by January 13, 1994.

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 January 13, 1994. No objections were filed with the Commission.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

The water source and existing use was investigated on February 8, 1994. The investigation verified the applicants' request for water use permit.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

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

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

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

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance with the Commission's September 16, 1992 action on reporting requirements.

12. The water use permit shall be subject to the Commission's periodic review of the applicable aquifer's sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANAWAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies' permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

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

ATTACHMENT B
CIBA SEEDS PUMPAGE
NAIWA WELL (WELL NO. 0705-05)

DATE (Latest Data 7/93)

PUMPAGE (mg/d)

MONTHLY PUMPAGE --- REQUESTED AMOUNT
Mr. Darryl Leer
Ciba Seeds
P.O. Box 830
Kaunakakai, HI 96748

Dear Mr. Leer:

Commission Submittal for your Water Use Permit
Manawainui Ground Water Management Area, Molokai

The Commission on Water Resource Management will be acting on your water use permit application for your Naiwa Well (Well No. 0705-05) at its April 14, 1994 meeting at 10:30 a.m. at the Mitchell Pauole Center on Molokai.

A copy of the submittal for action on your water use application is enclosed for your information and review. You may wish to attend the meeting in case the Commissioners have questions regarding your application. Otherwise, we will notify you of the Commission’s decision soon thereafter.

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

Sincerely,

RAE M. LOUI
Deputy Director

LN:fc

Attach.
February 8, 1994

MEMORANDUM FOR THE RECORDS

TO: Lenore Nakama
FROM: Richard JInnai
SUBJECT: Water Use Inspection of applicant Ciba Seeds
PRESENT: Richard Jinnai, Darryl Leer (Ciba Seed)

BACKGROUND: Ciba Seed applied for a Water Use Permit of Well 0705-05 Naiwa. Located in Molokai. Ciba Seed is a Mainland Company which solely produce and test plant seeds before being sold in the Mainland.

SOURCE:

1. Well consist of a 12" casing, Total depth 281', Pump Brand, Peerless, Serial No ET257, 125 HP Capacity at 1760 RPM. Outlet from pump, 6" cast iron pipe.
2. Engine that runs the pump is a John Deere engine serial no. T06059T322466. No other information.
3. Pumpage is metered and is being reported monthly to our office.
4. Uses water from well 6 days a month and pumps 24 hrs a day. Chloride ppm from well ranges in the 700's.
5. Since chloride count from the well is high, water from the Kualapuu Reservoir is use on other days to dilute salt in soil.
6. Location of well Latitude 21°07'59" Long. 157°05'18" Quad Map Mo2.

USE:

1. Irrigates approximately 150 acres.
2. Type of crops: corn, sorghum, cotton and soy bean.
3. Ciba uses reverse osmosis on the well water for domestic use in their office. Ciba employs 12 full time employee and 5 temporary.
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
          Water Use Permit Application
          Manawaiinui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Response: Contact person: Phone: 243-5352

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed:

Date: 1/7/94
January 10, 1994

MEMORANDUM

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

FROM:  Don Hibbard, Administrator
       State Historic Preservation Division

SUBJECT: Historic Preservation Review of a Water Use Permit
         Application for Ciba Seeds for Well No. 0705-05
         Naiwa, Molokai
         TMK: 5-2-11: 7

We believe that this application will have "no effect" on historic sites. This existing well facility and the irrigated seed corn operation are located in former pineapple fields. It is highly unlikely that historic sites are present.

Please contact our office at 587-0047 if you have any questions.

AG: jen
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
    Water Use Permit Application
    Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: BRIAN MISKA Phone: 243-7731

We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed:

Date: 1/3/94
TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands

Dr. John C. Lewin, M.D., Director
Department of Health

Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs

Mr. Goro Hokama, Chair
County Council
County of Maui

Mr. Byron S. Walters, Chair
Board of Water Supply
County of Maui

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: Luis A. Iturbide

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________ Date: 12/29/93
Mr. Darryl Leer  
P.O. Box 830  
Kaunakakai, HI 96748

Application for a Water Use Permit  
Manawainui Ground Water Management Area, Molokai

Dear Mr. Leer:

We acknowledge receipt, on December 3, 1993, of your completed water use permit application for the Naiwa Well (Well No. 0705-05).

We will be sending you a copy of the public notice for your application and any further information regarding the status of your application. In addition, we may need to visit and verify your proposed water source and use sites if we have not done so already under our registration program.

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

Sincerely,

RAE M. LOUI  
Deputy Director

LN:fc
Mr. Keith W. Ahue, Chairperson
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

RE: Application for Water Use Permit for Wells 0354-03 and 0705-05

We have reviewed the applications and have no objections to the issuance of Water Use Permits for these two existing applications.

Sincerely,

LINDA CROCKETT LINGLE
Mayor, County of Maui

NP:jso
c:\letter\884
MEMORANDUM

TO: Mrs. Hoaliku L. Drake, Director
   Department of Hawaiian Home Lands

   Dr. John C. Lewin, M.D., Director
   Department of Health

   Mr. Clayton H. W. Hee, Chairperson
   Office of Hawaiian Affairs

   Mr. Goro Hokama, Chair
   County Council
   County of Maui

   Mr. Byron S. Walters, Chair
   Board of Water Supply
   County of Maui

FROM: Keith W. Ahue, Chairperson
      Commission on Water Resource Management

SUBJECT: Water Use Permit Application
         Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: Ben Henderson, Administrator Phone: 586-3836
Planning Office

☐ We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Ben Henderson Date: 12/02/93
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
    Water Use Permit Application
    Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: [Signature]
Date: [12/24/93]
Mr. Darryl Leer  
Ciba Seeds  
P.O. Box 830  
Kaunakakai, HI 96748

Dear Mr. Leer:

Enclosed is a copy of the public notice for your water use permit application for Well No. 0705-05 which will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

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:ky  
Encl.
PUBLIC NOTICE

Applications for Water Use Permit
Ground Water Management Areas

Applications for the following 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."

Well #3 (Well No. 0354-03)
Applicant: Kanukuawa Ranch
P.O. Box 707
Kaunakakai, HI 96748
Date Completed Application Received: December 3, 1993
Aquifer: Kawela System, Southeast Sector, Molokai
Well Source: Well #3 Well, Well No. 0354-03, at Kapuaokoolau, Molokai at Tax Map Key: 5-5-1:12
Quantity Requested: 5,000 gallons per day.
Existing Water Use: Domestic supply for 7 residences and irrigation of 30 acres of orchard
Place of Water Use: Kapuaokoolau, Molokai at Tax Map Key: 5-5-1:12

Naiva (Well No. 0705-05)
Applicant: Ciba Seeds
P.O. Box 830
Kaunakakai, HI 96748
Date Completed Application Received: December 3, 1993
Aquifer: Manawanui System, Central Sector, Molokai
Well Source: Naiva Well, Well No. 0705-05, at Naiva, Molokai at Tax Map Key: 5-2-11:7
Quantity Requested: 105,000 gallons per day.
Existing Water Use: Irrigation of 75 acres of seed corn
Place of Water Use: Naiva, Molokai at Tax Map Key: 5-2-11:7

Written objections or comments on the applications for water use permits 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 permits. Send written objections by January 14, 1994 to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) a copy of the objection letter(s) to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

KEITH W. AHUE
Chairperson

Dated: DEC 17 1993

DEC 20 1993

MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
          Water Use Permit Application
          Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: ___________________________ Phone: ____________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: ____________
MEMORANDUM

TO: Mrs. Hoaliku L. Drake, Director  
   Department of Hawaiian Home Lands

Dr. John C. Lewin, M.D., Director  
   Department of Health

Mr. Clayton H. W. Hee, Chairperson  
   Office of Hawaiian Affairs

Mr. Goro Hokama, Chair  
   County Council  
   County of Maui

Mr. Byron S. Walters, Chair  
   Board of Water Supply  
   County of Maui

FROM: Keith W. Ahue, Chairperson  
   Commission on Water Resource Management

SUBJECT: Water Use Permit Application  
   Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: ___________________________ Phone: ________________

( ) We have no comments  
( ) We have no objections  
( ) Comments attached  
( ) Additional information requested  
( ) Extended review period requested

Signed: ___________________________ Date: ________________
Honorable Linda Crockett Lingle, Mayor  
County of Maui  
200 South High Street  
Wailuku, HI 96793  

Dear Mayor Lingle:

Notice of an Application for a Water Use Permit  
Manawainui Ground Water Management Area, Molokai

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 Ciba Seeds for Well No. 0705-05, 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."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

KEITH W. AHUE  
Chairperson

KEITH W. AHUE  
Chairperson

John C. Lewin, M.D.  
Robert S. Nakata  
J. Douglas Pang, Esq.  
Richard H. Cox, P.E.  
Guy K. Fujimura  
Rae M. Loui, P.E.

December 20, 1993  

Enc.
MEMORANDUM

TO:

TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development
Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

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We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: ___________________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: __________
APPLICATION FOR WATER USE PERMIT

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

APPLICATION FOR WATER USE PERMIT

Ground Water [X] or Surface Water [ ]

PERMITTEE INFORMATION

1. (a) APPLICANT

Name: Ciba Seeds
Phone: 567-6146
Address: P.O. Box 1830
             Nawai, HI 96743

(b) LANDOWNER OF SOURCE

Name: Ciba Seeds
Phone: 567-6146
Address: P.O. Box 1830
             Kauai, HI 96743

SOURCE INFORMATION

2. WATER MANAGEMENT AREA: West Molokai MANAWAIIU Island: Molokai

3. (a) EXISTING WELL/DIVERSION NAME AND STATE NUMBER: 4-0705-05 Naiwa Well

(b) PROPOSED (NEW) WELL/DIVERSION NAME: 

(c) LOCATION: Address: Naiwa, Molokai

(Attach a U.S. map, scale 1" = 2000', and a property tax map showing source location referenced to established property boundaries.)

(d) Current Land Use District: Agriculture

(e) Current County Zoning Code: 

USE INFORMATION

6. LOCATION OF PROPOSED WATER USE: If possible, show on same maps as source location. Otherwise, attach similar maps

(a) Proposed use of water is: New [ ] Existing [ ] Both existing & new uses [ ]

(b) Tax Map Key: 5-2-011-007

(c) Address: Naiwa, Molokai

(d) Current Land Use District: Agriculture

(e) Current County Zoning Code: 

7. QUANTITY OF WATER REQUESTED: 105,000 gallons per day (averaged over 1 year)

8. METHOD OF MEASUREMENT:

[ ] Flowmeter [ ] Open-pipe [ ] Weir [ ] Office [ ] Other [ ]

9. QUALITY OF WATER REQUESTED:

[ ] Fresh [ ] Backwash [ ] Salt [ ] Potable [ ] Non-Potable [ ]

10. PROPOSED USE:

[ ] Municipal (including hotels, stores, etc.) [ ] Industrial [ ] Irrigation [ ]

[ ] Individual Domestics [ ] Military [ ] Other [ ]

11. TOTAL NUMBER OF RESIDENCES TO BE SERVED: 15

12. TOTAL ACRES TO BE IRRIGATED AND TYPE OF CROP: (acre) Seed Corn

13. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: 24 hours Drip Irrigation

(days/day hours of operation, ex: 7 a.m. to 11 p.m.)

14. APPLICANT MUST BRIEFLY DESCRIBE FOLLOWING POTENTIAL RESTRICTIONS ON WATER USE:

(a) Impact on Sustainable Yield:

(b) Instream Flow Standards affected:

(c) Hawaiian Home Lands use affected:

(d) Other existing legal uses affected:

(e) Other (pending permits, EIS, etc.):

15. REMARKS, EXPLANATIONS:

Irrigation of Seed Corn Operation on Molokai since 1970

Well water supplements state surface water system from Kauai reservoir.

APPLICANT (print): Ciba Seeds

Landowner (print): Ciba Seeds

Signature: [ ]

Date: 11/14/93

For Official Use Only: Date Received: Hydrologic Unit No. Date Accepted: 12/3/93

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES

8/19/93 WUPA Form
### TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

<table>
<thead>
<tr>
<th>PROJECT NAME</th>
<th>TMK</th>
<th>CURRENT COUNTY ZONING CODE</th>
<th>UNITS AS NET ACRES</th>
<th>GPD/UNIT</th>
<th>TOTAL GPD</th>
<th>% OF TOTAL TO BE USED OVER NEXT 4 YEARS</th>
</tr>
</thead>
</table>

...
CONTOUR INTERVAL 50 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN EA LEVEL

FIGURE 2

SKE 1/2
Coral
MEMORANDUM

TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development
Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

If you have any questions regarding this application, please contact Leonee Nakama at 587-0218.

Response: Contact person: ___________________________ Phone: ___________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: ___________
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
          Water Use Permit Application
          Manawainui Ground Water Management Area, Molokai

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We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky

Attachments

Response: Contact person: ____________________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________________ Date: __________

THE SUBJECT WELL SITE IS NOT WITHIN THE STATE AND USE CONSERVATION DISTRICT. WE THEREFORE HAVE NO COMMENTS ON THIS MATTER.
Dear Applicant:

The Commission on Water Resource Management will be acting on your permit application(s) at its meeting on May 15, 1991, at 9:00 a.m., at the Wailuku Community Center, Wailuku, Maui.

The agenda and submittal(s) concerning your application(s) are enclosed for your information.

You or your representative are invited to attend the meeting.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:fc
Encl.
WELL NUMBER 0705-05 WELL NAME Nariwa

☐ WELL CONSTRUCTION

ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:
1 COVER LETTER 2 PERMIT (2x) 3 PUMP TEST 4 DOH COMMENTS 5 LAND DIV. COMMENTS 6 WCR FORM

TO BE SENT TO APPLICANT
cover letter permit

☐ PUMP INSTALLATION

ATTACHMENTS FOR PUMP INSTALLATION PERMIT:
1 COVER LETTER 2 PERMIT (2x) 3 DOH COMMENTS 4 LAND DIV. COMMENTS 5 WCR FORM 6 WUR FORM

TO BE SENT TO APPLICANT
cover letter permit

FOR OFFICE USE ONLY

WUP transfer
cover letter
permit
WURS
shortage (earlier)
Certified mail - return receipt requested

Dave Gilliland
Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

Dear Mr. Gilliland:

Approval of Water Use Permit for Well No. 0705-05
Manawainui Ground Water Management Area, Molokai

This letter transmits your water use permit for NAIWA Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. Please note that as a matter of current policy, a new water use permit number has been assigned to mark the transfer. The conditions of the permit remain unchanged. As part of the Commission's approval, the following special condition was added and is part of your permit under Standard Permit Condition 18:

**Special Conditions**

1. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days. [This condition has been satisfied.]

Enclosed with this letter of approval are the following

1. Your water use permit
2. Your official annual monthly water use report form
3. Your current water shortage plan.

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

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

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

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

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Attachments
WATER USE PERMIT NO. 583

This report has been prepared in accordance with 13-171-22(b) of the Hawaii Revised Statutes requiring a 20-year review of issued water use permits to determine permit compliance. Following is a summary of permit information, site characteristics, methodology, findings, and recommendations for this State permit file.

Permit Information

Water User: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

Landowner of Source: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

Permitted Withdrawal Rate: 0.012 mgd (Based upon a 12-month moving average)

Water Management Area: Manawainui

Island: Molokai

Aquifer Sector/System: Central/Manawainui

System Sustainable Yield: 2 mgd

Water Type: Brackish

Original CWRM Date: April 14th, 1994

Standard Conditions: 1-19,

Special Conditions: 7

Water Source

State Well Number(s): 0705-05

Well Name: Naiwa

Water Source TMK Number(s): 2nd Division, 5-2-011:007

State Land Use Classification(s): Agriculture

County Zoning Classification(s): Agriculture

Geographical Coordinates: Latitude 21° 07' 47.7” North
Longitude 157° 04' 53.4” West

End Use

End Use TMK Number(s): 2nd Division, 5-2-011:007

State Land Use Classification(s): Agriculture

County Zoning Classification(s): Agriculture
Figure 4 - System flowmeter
Figure 5 – End use area
Water Use Permit Survey
(Please complete one survey form for each WUP)

Well Number: 583
Well Number(s): WELL NO. 0705-05

Contact information of the person who will be present at the visit:
Name: Adele Helen
Phone (for phone interview): 808 567-9421 Fax: 808 567-9426
Email: MLM.lmc.daw.com
Best time to reach for phone interview: 9:00 a.m. M-F

Property information (specify water source/well location):
Address: 19 Huiapi Road
City: Kealakekua Zip: 96749
Well Location TMK: (include multiple wells present): 5-2-11107
Water Use TMK (list all wells on multiple lots): ________________

Water Use/Well Information:
Is the water source currently in use? Yes □ No □
If no, please explain: ________________

What are you currently using this water for? (example: "Use for 42 acres of diversified agriculture and 3 residences.
mainly used for approx. 100 acres seed corn, windbreaks and other row crops.

Is a flow meter installed and working properly? Yes □ No □
If no, please explain: ________________

Do you submit 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 visit 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 (MM/DD): [ ]
Time: 9:00 am [ ] 12:00 pm [ ] 3:00 pm [ ]
Option #2: Date (MM/DD): [ ]
Time: 9:00 am [ ] 12:00 pm [ ] 3:00 pm [ ]
Option #3: Date (MM/DD): [ ]
Time: 9:00 am [ ] 12:00 pm [ ] 3:00 pm [ ]

Once this survey is returned, a Brown and Caldwell representative will be contacting you to conduct a phone interview and finalize the exact date and time of your field investigation. Please fax/mail completed surveys by March 5th, 2008 and direct any questions related to this survey to Mr. Michael Smith of Brown and Caldwell at:
1959 Auakea Street, Suite #2-400
Honolulu, HI 96813
Tel: (808) 203-266
Fax: (808) 333-0226
m.smith@browninc.com

Received: 7/21/08 Information Updated: 7/21/08 Phone Interview Complete:

Notes/Comments: ________________
Phone Interview

WUP Number: 583  
Well Number(s): 0705-05

Contact Name: Adolph Helm  
Phone Number: 567-9421

Attempt #1: Date/Time:  
Result: _______________________

Attempt #2: Date/Time:  
Result: _______________________

Well Location TMK(s): 5-2-011:007

Well Location TMK(s): _______________________

Water Source Address: 19 Huaai Road

City: Hoolehua  
Zip Code: 96729

Currently using water source?  Yes [ ]  No [ ]

Notes/Comments: Pump is broken, someone will come & fix this month

How often is the water source being used?  Daily [ ]  Weekly [X]  Monthly [ ]

Notes/Comments: 3XWeek

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: Thursday Aug 21st 08 9:00 am

Notes (Special directions, site conditions, potential hazards, general notes, etc.):

1st Rd on left West of Airport  
Hula Rd go all the way down

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: __________________________  Date: 3/15/08  Time: 10:50
Field Investigation Checklist

WUP Number: 583
Well Number(s): 0705-05

Water Source
Well Location TMK(s): 5-2-011:007
Well Head GPS Coordinates: Latitude: 21^07' 47.7" N Longitude: 157^04' 55.4" N

Currently using water source? Yes ☑ No ☐

Is there a flow meter installed? Yes ☑ No ☐
Is the flow meter operational? Yes ☑ No ☐
Notes/Comments: Pump is currently broken will fix by end of August

Water Use
Water Use TMK(s):

What is the water being used for? Landscape Care

Is the water being used within the permitted boundaries? Yes ☑ No ☐
If no, explain:

Is there any observed wasting of water or water loss? Yes ☐ No ☑
If no, explain:

Are the permit conditions being complied with? Yes ☑ No ☐
If no, explain:

Other
Photographs of: Water Source ☑ Water Meter ☑ Usage Area ☑ Pump/Motor ☑

General Notes/Comments:
- P£ of brack flow in drain & pipes to distribution for fields
- 2500 gal storage tank
- 36x30 gal field
- grass care

Investigated By: GJ Date: 8/21/02 Time: 9:10
Standard Conditions List

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

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

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

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

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

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

7. The water use permit application and submittal, as amended, approved by the Commission at its <Insert Date> meeting are incorporated into this permit by reference.

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

Variations of Standard Condition (8) are as follows:
   i. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

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

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

Variations of Standard Condition (10) are as follows:
   i. The applicant shall keep monthly pumpage estimates to be submitted annually to the Commission.
   ii. An approved flowmeter(s) need not be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).
   iii. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance with the Commission's September 16, 1992 action on reporting requirements.
   iv. Approved flowmeters must be installed to measure monthly withdrawals and a monthly record of withdrawals must be kept and reported to the Commission on Water Resource Management on a monthly basis.
   v. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a quarterly/yearly basis (attached).
   vi. An approved flowmeter shall be installed to measure water withdrawals
   vii. An approved flowmeter(s) must be installed to measure withdrawals; and a record of the withdrawals must be kept and reported to the Department of
Land and Natural Resources, Division of Water and Land Development, P.O. Box 373, Honolulu, HI 96809, on a monthly basis.

viii. Although not stated as a condition of the permit §13-168-7 HAR requires you to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form.

ix. An approved flowmeter shall be installed and the withdrawal from Well 1851-73 shall be recorded and reported to DLNR on a monthly basis by the owner and/or operator of the well.

x. The withdrawals from these wells shall be recorded and reported to the DLNR on a monthly basis by the BWS.

xi. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting water usage on a monthly basis.

xii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

xiii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission along with water level and salinity measurements.

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

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

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

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

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

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

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

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

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

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

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

Variations of Standard Condition (20) are as follows:

i. The permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within two years from the date of permit issuance.

21. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of Chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission's prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

22. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five (5) years of the filing of the application to continue the existing use.

23. The water use permit shall be issued only after agricultural review.

24. That scheduled adjustments to Oahu Sugar Co. permitted use shall be initiated upon discontinuance of agricultural uses.
25. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on <Insert Date>.

26. The permit shall be subject to the review by the Attorney General.

27. The permit holder may be required to relinquish this permit at any time or specified time after issuance to the Board of Land and Natural Resources in accordance with Chapter 166 of Title 13.

28. The applicant shall obtain the necessary land acquisition documents from the Hawaii Housing Authority.
Special Conditions List

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

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

3. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning “GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII” date <Insert Date & Version #>.

4. Standard Condition 10 is emphasized, to report consumption on a regular basis.

5. The applicant may continue this existing use of ground water within the limits approved by the Commission, and the actual issuance of the interim permit shall not be a reason to interrupt this existing use.

6. This interim water use permit shall cease to become interim and shall be subject to HRS § 174C-55 upon administrative review of the quantity within five (5) years, provided that all conditions of the use (including the review of the quantity which shall not be greater than the amount initially granted) remain the same. Enforcement of the allocation limit shall be stayed pending staff’s review and issuance of a permanent water use permit.

7. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days.

8. In the event the pump tests show that aquifer boundary conditions do not support the requested withdrawals, the Commission reserves the right to amend this permit, after a hearing, to a level that is supported by the pump tests.

9. The existing use may be continued within the levels approved by the Commission, and the actual issuance of the permit document shall not be a reason to interrupt the approved level of use.

10. The filing of an application by Kukui, Inc. for a new or modified water use permit for the Kualapuu Aquifer in excess of 2.0 mgd (total system withdrawal) shall be just cause for re-consideration of this interim permit by the Commission.

11. Upon completion of a new transmission line for the transport of water use by Well #17, the permit shall be modified to reduce the allocation amount by the additional 79,220 gallons per day allocated for use of the Molokai Irrigation System.

12. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall conduct a feasibility study and submit a report describing
alternative sources of nonpotable water for irrigation uses at the resort area. It is suggested that the developer consider use of dual lines in the subdivisions so that effluent may be used in the existing reuse system. Another consideration is the development of brackish water wells in the Kaluakoi Aquifer system for mixing with the effluent generated at the resort.

13. Within six (6) months from the date of approval of a water use permit for the well, the application shall evaluate the filter back discharges into Kakaako Gulch to determine if excessive preventable waste is occurring and identify possible measures to eliminate or reduce such waste. The evaluation shall be conducted in cooperation with the Commission staff and staff of the Department of Health’s Safe Drinking Water Branch, which regulates the drinking water system.

14. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall 1) implement a leakage control and detection system and compete repairs to prevent such leakage and 2) implement use of xeriscaping and low-flow fixtures.

15. Action on the future use portion of the water use permit application for Well #17 (Well No. 0901-01) is deferred pending the establishment of existing uses in the aquifer. Kukui Inc.’s application for uses in excess of those uses existing on July 15, 1992 will be considered “new” uses and will be taken up by the Commission as soon as other existing use applications have been decided. In the interim,
   a. The Commission shall recognize that there is disagreement between the applicant’s staff calculations of reasonable-beneficial existing use
   b. The Applicant will have the burden of proof to show within six (6) months reasonable-beneficial existing use calculations that support the applicant’s request as opposed to staff’s calculations.
   c. The Commission’s enforcement of the approved existing use allocation will be suspended for six (6) months.

16. The permittee shall submit a notice of intent and written request to continue the use at least ninety (90) days prior to the expiration of the interim five-year permit.

17. The Commission shall delegate to Maui Department of Water Supply the authority to allocate the use of water for municipal purposes, as provided in §174C-48(b).

18. Maui Department of Water Supply shall be exempt from the requirements for permit modifications, as provided in §174C-57(c).

19. The permittee must meter water use and monitor chloride concentrations on a monthly basis and submit monthly reports of water use and chloride concentrations to the Commission.

20. Standard Condition 16 is waived for saltwater wells.

21. The permit will be revoked if (1) stream monitoring shows that pumping the well reduces stream flow, or (2) the electromagnetic resistivity survey indicates that the
well was drilled into a dike compartment, unless the applicant submits a petition for an amendment to the interim instream flow standard with the well completion report. However, no use of the water may be made without a Pump Installation Permit, which cannot be issued during consideration of the amendment of the interim instream flow standard.

22. The applicant shall present the results of the electromagnetic resistivity survey, pump tests, and stream monitoring to a community meeting as well as to the Commission.

23. A final determination of water use quantity shall be made within five (5) years of the filing date of the application (<Insert Date>) to continue existing use.

24. The applicant shall implement, by December 31, 1995, a biological and hydraulic monitoring program for a minimum 2-year period that: 1) documents the existing operating procedure, 2) seeks to identify the impacts of all operating alternatives on Waikolu Stream, and 3) seeks to identify the effectiveness of weir modifications (Dam No. 1). This program shall incorporate the three new wells, Wells #4-6 (Well Nos. 0855-06, -05, & -04, respectively), which may be pumped within the approved limits, for monitoring and testing purposes only. Further, semi-annual reports summarizing data and preliminary findings shall be submitted to the Commission. It is suggested that the Department of Agriculture work with the State Division of Aquatic Resources and other affected agencies to prepare the monitoring program in light of the difficult technical questions raised by this application. A particular concern is the coordination of this monitoring program with the ongoing National Park Service study by Anne Brasher. A draft of this plan shall be submitted to the Commission staff within ninety (90) days for technical review and comment. Results of the monitoring program shall be used to make recommendations to the Commission on any additional use of the wells, and shall be made readily available to all interested parties.

25. That the Commission approves the well construction permit for the Kamiloloa-Waiola Well (Well No. 0759-01), subject to the standard well construction conditions and the special conditions for the pumping well for the aquifer tests.

26. That the Commission authorizes the Chairperson to approve and issue a pump installation permit upon acceptance of adequate pump test result, subject to the standard pump installation conditions.

27. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

28. The applicant shall follow the agreed monitoring plan.

29. If pesticides used by the applicant are found in ground or surface water and can be traced to the applicant's use, the CWRM may revoke the permit immediately upon such finding.
30. Issuance of the interim permit shall be withheld until the reservation of water for DHHL is set by rule. Applicant may continue this existing use within the approved limits.

31. The applicant shall submit well modification and pump installation permit applications for administrative approval by chairperson prior to beginning any work required to complete well.

32. Should any stream flow impacts result from use, petition to amend interim instream flow standards shall be submitted.

33. Should any dewatering result from use, pumping shall cease immediately.

34. Shall submit accurate schematic diagram of distribution system for the battery of 5 wells.

35. Shall be subject to a 6-month independent audit & monitoring.

36. Final pump capacity shall be determined from pump test results & approved administratively by signature of chair.

37. The permittee shall seek and submit to the Commission within ninety (90) days written confirmation from the Department of Land Utilization of the non-conforming use.

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

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

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

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

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

43. Require adherence to the Conservation Conditions.
44. In the event a water shortage is declared by the Commission, permittees in the <Insert Aquifer System> shall comply with the <Insert Aquifer System> water shortage plan adopted by the Commission.

45. The permittee shall contact the Department of Health, Clean Water Branch and obtain the necessary discharge permit(s).

46. Permit shall be interim and replaces existing WUP for 2051-07 & 11.

47. Applicant shall submit an acceptable archaeological inventory survey report to DHP. If historic sites affected, a plan to mitigate these affects must be accepted by DHP and completed by applicant.

48. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

49. (The permittee) may report monthly pumpage on yearly basis.

50. Prior to issuance of any permits, must submit filing fee for after-the-fact pump installation permit.

51. The term of this permit shall be twenty years from the date of issuance of the permit with a five-year Board review to determine compliance with the provisions of the permit.

52. The amount of water to be withdrawn under this permit shall be 0.19 mgd, averaged annually, for irrigation use. This permitted use of 0.19 mgd when added to a preserved use of 0.27 mgd amounts to a total of 0.46 mgd, averaged annually, which may be withdrawn from well 1646-01.

53. The use authorized by the permit must not interfere 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 inform the Commission as to the nature of the emergency and the expected duration of the emergency. A water
59. Note DOH’s requirements related to non-potable water systems (attached to original permit).

60. Standard Condition 16 requiring the submittal of a water shortage plan is waived.

61. All non-potable spigots and piping shall be clearly labeled as “DO NOT DRINK, NON-POTABLE” to prevent direct human consumption.

62. Standard Condition 10 is modified. Due to the inability to take water level measurements, the requirement to measure monthly water levels is waived. In addition, as long as the U.S. Geological Survey is collecting and analyzing the chloride content of the well water, the requirement for the permittee to measure and report chlorides is also waived.

63. Well elevation components must be surveyed by a licensed surveyor and this information must be submitted to commission prior to issuance of permanent permit.

64. The permittee shall obtain approvals from the Department of Health and the U.S. Environmental Protection Agency prior to use of the water.

65. This water use permit, WUP No. <Insert #>, shall supersede WUP No. <Insert #>.

66. WUP No. <Insert #> is revoked

67. Standard Condition 17 is waived.

68. Standard Condition 22 for interim water use permits shall not apply.

69. To supplement our records, we request that you provide a map of the Galbraith Est. lands west of Wahiawa (2100 ac+) and the associated TMK’s for use area.

70. Deferred action on portion requested for golf course irrigation pending further refinement of irrigation requirement and a feasibility study for utilization of surface water sources, including Wahiawa Reservoir.

71. Written justification be provided for any 'cushion' of 0.5 mgd.

72. The water use permit shall be an interim permit. The duration of the interim permit shall be until treated wastewater is available and acceptable for use. The permittee shall continue discussions with Honolulu Board of Water Supply regarding the use of reclaimed water.

73. The permittee is put on notice that this is a qualified approval in that this permit may be modified or revoked prior to the expiration of the interim permit if the
Commission decides that the use of additional basal ground water for dust control and landscape irrigation is not reasonable-beneficial use.

74. The permittee encouraged to use drought-tolerant landscaping to conserve water.

75. Should the applicant provide written evidence that the county DHCD approves a 201E exemption for the elderly affordable housing project then the applicant may modify a corresponding portion of their existing aquacultural use to be used by the exemption approved project within the Commission approved water use permit limits under recommendation 5.

76. The applicant shall obtain a water lease/permit from Land Division prior to actual use of the well water.

77. Require the permittee to sign a contract by May 14, 1998 with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20, and 1901-03.

78. Standard Condition 9 is waived.

79. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

80. Standard Condition 10 is waived.

81. Applicant must seek a determination from BLNR and Land Mgt Div as to whether water license required. If required, license must be obtained prior to issuance of permit. If not, permit will be issued w/out further action.

82. Commission defers action on use in excess of 452,000 gpd pending additional info from BWS and further staff analysis.

83. The permit shall be subject to the Commission’s sustainable yield review by December 1990.

84. The Commission shall delegate to the Honolulu Board of Water Supply the authority to allocate the use of water for municipal purposes, in accordance with §174C-48(b) HRS.

85. Honolulu Board of Water Supply shall be exempt from the requirements of permit modifications as provided in §174C-57.

86. BWS must participate in discussions, to be coordinated by Commission Staff, regarding a monitoring program to address impacts to Kaneohe Bay water quality, prior to any action on applications for future municipal uses.

87. A pump installation permit application must be made and approved prior to the installation of a permanent pump.
88. The water withdrawn shall be 0.7 mgd for municipal use.

89. The installed pump capacity of the well shall not be more than 700 gpm or 1.01 mgd.

90. The term of permit shall automatically expire twelve months from the date of issuance.

91. The Honolulu Board of Water Supply may continue to submit monthly water data on their own form, provided that the data are submitted in a format that is acceptable to the Commission staff.

92. Standard Condition 7 shall not apply.

93. Standard Condition 22 shall not apply.

94. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

95. This permit shall be subject to conditions providing for stream restoration if the Commission determines that additional water should be returned to the streams.

96. HECO 1 mgd for industrial use

97. Campbell Estate 1 mgd for municipal use through BWS, by separate agreement with HECO

98. BWS 1 mgd for municipal use.

99. The permit shall be subject to the Commission's sustainable yield review by <Insert Date>.

100. The applicant shall obtain the current version of the Department of Health's Guidelines Applicable to Golf Courses in Hawaii. Where relevant and viable, items of the guidelines should be implemented and sustained appropriately. To obtain the current version, contact the Safe Drinking Water Branch, Environmental Management Division at 808-586-4258 (Honolulu).

101. The future use portion of the application shall be deferred until existing uses in the Koolauloa area are established.

102. The water to be withdrawn under this permit shall be a total of 0.03 mgd (0.02 mgd preserved plus an additional 0.01 mgd permitted use), averaged annually, for domestic and irrigation use

103. Existing well 1851-09 shall be properly sealed by a licensed drilling contractor. A well modification permit application, enclosed, shall be submitted to the Department for approval of the well sealing. A filing fee for sealing the well will not be required.
104. The permittee is required to test the source using a certified private laboratory and submit the test results to the Commission within three (3) months. The Commission will then forward the results to the Department of Health for their review. The Department of Health recommends that the well be routinely tested for microbiological and chemical parameters thereafter.

105. The permittee is required to submit a completed Registration of Well and Declaration of Water use by <Insert Date>.

106. The permittee shall contact the Department of Health for a written determination on the status of their water system and comply with any Department of Health requirements for monitoring and testing.

107. In the event that the original spring source decontaminates, the new well authorized will be shut down.

108. That within each aquifer the total permitted use shall not exceed the sustainable yield.

109. That any water available for allocation shall be for in-district use.

110. That scheduled reductions to Oahu Sugar Co. permitted use shall be initiated upon final termination of an Osco lease or sub-lease, whichever occurs later.

111. That permits for water use issued in accordance with the proposed schedule shall be interim permits subject to review and adjustment by 1995.

112. That the permit shall be an interim permit for a new use which is afforded to existing users as specified in §13-171-20.

113. That the original allocation of 0.200 mgd shall be taken to hearing for possible revocation at a later date to complete the transfer of the water use permit entirely to Well No. 3407-02. This revocation would reduce the current allocation afforded to the Kunihiro Well (Well No. 3406-06) to zero.

114. This allocation incorporates the unspecified domestic needs of the applicant and therefore necessitates a single meter be installed at the well.

115. Should any impacts to nearby wells or streams be established by the use of this well, the applicant shall address these issues to the satisfaction of the Commission.

116. If an economically feasible nonpotable source is identified, the applicant shall convert to the alternative nonpotable source.

117. The permit shall be subject to the Chairperson’s approval of a water use plan recommending possible measures to prevent or minimize saltwater contamination and establish courses of action to follow should the aquifer become to saline to use.
118. Permittee shall provide the necessary end-use information on the 10th residence to allow regulation of the use under Chapter 174C.

119. Standard Conditions 10 & 18 shall not apply.

120. Standard Condition 10 is modified to exempt the permittee from the requirement to install a flowmeter. Salt water withdrawals may instead be estimated based on pumping capacity and run time.

121. The applicant shall review the existing year long period of pumpage and streamflow data and provide analysis on ground and surface water interaction. Deadline is January 25, 1994.

122. The water use permit for Well Nos. 2301-27 to -32 for 0.75 mgd (WUP No. 419) shall be revoked upon issuance of a pump installation permit for the well.

123. The permittee shall use mulching to decrease evaporative losses and manage irrigation scheduling to minimize water demand.

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

125. If not already obtained, the permittee shall seek and obtain any necessary permits from the Department of Health for the proposed discharge to Malaekahana Stream.

126. Standard Condition 10 is modified to waive the requirement for installing a water meter on Well Nos. 2358-21, 22, and 29. The permittee shall install a water meter on Well No. 2358-26 to measure total monthly flow through the discharge line. This quantity should then be assumed to be the rate of natural flow from the other three wells for monthly reporting purposes.

127. The permit shall be effective upon submittal of documentation by Navy that it has met the DOH requirements for a public system.

128. This WUP shall be subject to Army's application for a WUP to reduce the permitted use of the Army's Schofield Shaft (2901-02 to 04, 10) by 0.208 mgd to a new total of 5.648 mgd. The Army's application shall be submitted within 60 days after the approval of this WUP or this WUP shall be void. Approval of the modification request shall be obtained from the CWRM prior to use of Well No. 3100-02 and issuance of this WUP.

129. Navy shall submit an after-the-fact PIPA, and approval of the permit shall be obtained prior to use of the well.

130. The well shall not be used for drinking water purposes unless it is properly tested and treated.
131. This permit is approved subject to reclaimed water becoming a practical alternative and provided that the Department of Health approves the reuse application.

132. Should any opae ula be recovered in the well water, the permittee shall notify the Division of Aquatic Resources and provide specimens to the Division of Aquatic Resources for analysis.

133. If a single meter at the well is used, the Commission shall allow an additional 1,000 gallons per day to the water use permit amount for the domestic needs of two residences, although a permit for individual domestic consumption is not required. Otherwise, the applicant must provide a meter to separately measure the irrigation consumption.

134. This permit is approved under the requirement that conversion to either: 1) treated wastewater becoming available for reuse as an alternative supply source, provided that Department of Health concerns over the use of treated effluent over the potable water aquifer have been addressed; and/or 2) other nonpotable source becoming available will occur in a timely manner.

135. These permits shall be subject to a review of actual use within four years for possible modification of the permitted amount.

136. The permit shall be reviewed in two (2) years for possible additional revocation due to nonuse.

137. The allocation is based on the projects listed in Exhibit 5 (of Item 10 of the May 20, 1998 Staff Submittal), except for the Queen’s Beach GC (TMK 139-11-2,3), Lot 9 (TMK 139-17-51), and Varsity Place (TMK 128-24-35).

138. Kamehameha Schools Bishop Estate/Honolulu Board of Water Supply shall transfer the water use permit within ninety (90) days of the effective date of the transfer of the pump station to the Honolulu Board of Water Supply, pursuant to §174C-59 Hawaii Revised Statutes.

139. The permittee shall ensure that the water is recycled by either directing it into the Waiahole Ditch for use by downstream farmers (subject to the approval of the Agribusiness Development Corporation’s Board) or into Waiekele Farm’s existing irrigation system.

140. The permittee shall file a completed application to modify WUP No. 758 to reduce the allocation by 0.100 mgd within 60 days. If a completed water use permit modification application is not received within 60 days from this submittal’s date, then the subject water use permit application (WUPA No. 767) shall be deemed denied without prejudice without the need for another hearing.

141. The water withdrawn shall be for municipal use. No improvements to the existing sources are required as the existing source capacities are greater than the increase.
142. Water license must be determined through LM.

143. Proposed other uses will be considered at a later date.
Well ID: 4-0705-005 | Well Name: Naiwa | WUP MGD: 0.012 | Beginning: 1/1/1999 | Ending: 1/31/2007

12 Month Moving Average

MDG

- MGD
- MAV12
- WUP

Thursday, September 06, 2007
Dear Mr. Gilliland:

Approval of Water Use Permit for Well No. 0705-05
Manawainui Ground Water Management Area, Molokai

This letter transmits your water use permit for NAIWA Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. Please note that as a matter of current policy, a new water use permit number has been assigned to mark the transfer. The conditions of the permit remain unchanged. As part of the Commission's approval, the following special condition was added and is part of your permit under Standard Permit Condition 18:

Special Conditions

1. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days. [This condition has been satisfied.]

Enclosed with this letter of approval are the following

1. Your water use permit
2. Your official annual monthly water use report form
3. Your current water shortage plan.

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

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

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

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

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 583

PERMITTEE

Applicant/Water User: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

Landowner of Use: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

PERMITTED SOURCE INFORMATION

Island: Molokai
Water Management Area: Manawainui
Aquifer Sector: Central
Aquifer System: Manawainui
System Sustainable Yield: 2 mgd
Well Name: Naiwa
State Well No.: 0705-05

PERMITTED USE INFORMATION

Reasonable beneficial use: Agriculture (Irrigation of 75 acres of seed corn)
Withdrawal (12 month moving ave.): 0.012 mgd
Location of water use:
TMK #: 5-2-11:7
Address: Naiwa
State land use classification: Agriculture
County zoning classification: Agriculture

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 April 14, 1994 meeting are incorporated into this permit by reference.

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

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Manawainui 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 Manawainui 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 Manawainui 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.

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

See attachments.

Mel Naiwa Well Air line.jpg  Naiwa Well Meter.jpg

Charley,

See attachment.

Mel Well Motor and Engine 004.jpg

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awarting WCR 2
EDWCP 6/30/88

CHECKLIST

WELL CONSTRUCTION and PUMP INSTALLATION PERMITS

| WELL NAME or LOCATION: Naiwa - CIBA-GEIGY Irrigation Well |
| WELL NUMBER: 0705-05 |
| OWNER or OPERATOR: CIBA-GEIGY Seed Division |
| ADDRESS: P.O. Box 1830 Kaunakakai, Hawaii 96748 |
| TELEPHONE: 587-6146 (Daryl Leer) |

| Date application received | 7/10/89 |
| Date acknowledged receipt |  |
| Date of request for more information fee | 7/24/89 |
| Date application accepted |  |
| Suspense date (90 days) |  |
| Date filing fee deposited | 6/8/89 |
| Date sent to DOH for comments |  |
| Date comments received from DOH | 8/21/89 |
| Date application approved or disapproved | 9/27/89 issued |
| Date applicant notified of decision |  |

REMARKS:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
CHECKLIST

WELL CONSTRUCTION PERMIT

PUMP INSTALLATION PERMIT

WELL NAME or LOCATION: NAIWA-CIBA-GEIGY IRR. WELL ISLAND: MOLOKA'I

WELL NUMBER: 0705-05 Tax Map Key: 5-2-11:07

OWNER/OPERATOR:
Firm Name: CIBA-GEIGY SEED DIVISION
Contact Person: DARENL LEER
Address: P.O. BOX 19390
KAUAI KAUAI, HI 96748
Phone: (808) 647-6146

LANDOWNER:
Firm Name: SAME
Contact Person: 
Address: 
Phone: 

Date application received: 2-20-91
Date acknowledged receipt/request more info: 3-5-91
Date application accepted: 
Suspense date (90 days): 
Date filing fee deposited: ($25)

Application sent to following:
Department of Health
Department of Hawaiian Home Lands
Department of Water Supply
Historic Preservation Program
Koolauloa CRNB #28 (Oahu)
Department of Public Works (Hawaii)
Office of Hawaiian Affairs
Molokai Others (5)

Date sent: 4-19-91
Comments received:

Date agenda due: 
Date submittal due: 
Date submittal sent to applicant: 
Date application approved or disapproved: 
Date applicant notified of decision: 

REMARKS: 5 March 91 - mailed letter requesting 1) pump test record and 2) well completion report - Requested well completion report 19 March 1991
CIBA-GEIGY WELL CROSS-SECTION AS BUILT

WELL NO. 0705-05 MOLAKAI

APPROX. GROUND EL. 254'

- ASTM A-53 CASING
  12" I.D. X 3/8"

- GROUT

- 5' SAND

- GRAVEL PACK
  3/8" BASALT GRAVEL

- SCREEN
  12" ASTM A-53
  1/4" LOUVER SLOTS

NOT TO SCALE
EVALUATION OF DRILLING AND TESTING

CIBA-GEIGY WELL

MOLOKAI, HAWAII 1990

PREPARED BY: CHESTER LAO
HYDROLOGIST-GEOLOGIST
JULY 15, 1990
EVALUATION OF DRILLING AND TESTING OF CIBA GEIGY WELL
MOLOKAI, HAWAII 1990

SUMMARY

This report presents the hydrogeological evaluation of the recently completed well located on the Molokai Research Farm with recommendations for sizing of pump and for use of the well water. The well was completed satisfactorily by the drilling contractor Fred Page International and was successfully test pumped. As pointed out in my report of 1989, the chances of finding the freshest water was by the highway rather than at this location. With due consideration, however, of the primary purpose of the well to be able to bring in crops already in the ground and budgetary limits, the site selected was still considered favorable. Testing the well for yield and drawdown shows a capacity of 400 gallons per minute with a drawdown of slightly over 7 feet is possible. For a diesel powered pumping unit working against a total dynamic head of 445 feet including 60 pounds per square inch delivery pressure, a power unit of 120 horsepower is recommended.

Water quality improved slightly over the 78 hours of test pumping from an initial 3360 micromhos to 3260 micromhos field conductivity. Calibration to a known standard reduces the values to 3125 micromhos and 3032 micromhos, respectively. Salinity of the water should be satisfactory to complete a season of crops. Dilution with low salinity state water could easily double the available water for expanded normal operations.

WELL DRILLING

Unfortunately through miscommunication, well cutting samples were not saved for the first 100 feet of drilling for determination of lithologic character. Although regrettable from the viewpoint of recording data, the loss is not considered important to this well. According to the driller, this interval consisted of soil and weathered rock. The remaining 181 feet of formations is compiled and attached as "Formation Log for Ciba Geigy Molokai Well". Nothing of an unusual geologic nature in the formations was noted. The formations for the most part are rather thick dense aa type lava flows with associated clinkers and dense pahoehoe flows that are probably transitional to aa. The lavas are from the Upper Member of the East Molokai Volcanic Series of the East Molokai volcanic shield. The dense massive nature of the flows were difficult to drill. The most important interval of the well which is below the water table consisted mostly of a several massive flows with a few associated thin clinker
beds. Nevertheless, the well is considered a good producer with moderate drawdown.

TEST PUMPING

Test pumping of the well was performed with a diesel powered unit driving a line shaft multistage turbine pump through a right angle drive head with an in-out ratio of 1:2. A 4-inch flow meter and gate valve were located in the discharge line for the purpose of measuring rate and gallons pumped and to insure a full pipe of water passing the meter. An air line was attached to the pump column to measure drawdown. Following installation of the pump in the well, surging was performed to cleanse the well of cuttings. The well was then allowed to recover and rest 3 days before the actual test began. Testing was divided into two phases consisting of a yield-drawdown test and a 72-hour sustained test.

YIELD-DRAWDOWN TEST. This test required 6 hours for completion because it was not known beforehand how sensitive the well was to pumping and a slow and sure approach was better than rash and sorry which could have set matters back considerably. The results of this testing are presented as the attachment titled "Ciba Geigy Well Yield-Drawdown Test".

The rates pumped ranged from 100 gpm to the maximum output of the test pump at 344 gpm. The drawdown at 100 gpm was not measurable as a pressure loss on the gage. The maximum indicated drawdown was 5.54 feet at 344 gpm. Some variation of drawdown was noted in testing but these were the results of well improvement and to a minor extent from tidal effects on the aquifer. Plotting of the data on log-log paper and fitting the points to a straight line permits the drawdown at rates not tested to be determined. For the rate of 400 gpm which presently best fits the irrigation practice on the farm, drawdown would be approximately 7 feet. A linear regression analysis with an r of .979 predicts a drawdown of 7.17 feet which corroborates the log-log plot.

SUSTAINED TEST. After completion of the yield-drawdown test, the sustained test began one and one-half hours later and continued uninterrupted for 72 hours. The purpose of this testing is detect changes of drawdown which indicate aquifer boundaries and to detect changes of water quality with time, both essential to determining whether a well is likely to meet the test of time for yield and utility. From previously gathered data from the yield-drawdown test on water quality and rate-drawdown and equipment limitations, a rate of 300 gpm was selected. The rate selection corresponds to an engine speed of slightly over 1700 rpm to insure completion of the test without interruption due equipment failure. These data
are presented as the attachment titled "72 Hour Uninterrupted Test Pumping".

The sustained test indicates water quality improved slightly over the duration of the test based on field measurements of specific conductance which is a measure of total dissolved solids or salinity of the water. Although a field kit was used by the farm manager Daryl Leer to titrate for chloride concentration, a more controlled analysis by a qualified lab should be made. Depending upon the chloride ratio to the other ions contributing to specific conductance of the water, chloride content could range from about 750 to 1000 ppm. Total dissolved solids (TDS) could range from approximately 2000 to 2300 ppm.

PLUMBNESS TEST. A test of the plumbness of the 12-inch I.D. well casing and louvered screen was made to a depth of 295 feet. This was performed by lowering a plummet with a minimum circumferential clearance of the sidewall on a stainless steel cable suspended over a pulley centered over the casing. Owing to the strong gusty winds at time of the test, the pulley was suspended at a height of 65.5 inches rather than the usual 10 feet or more. Despite the shortened pulley height which tends to increase the angular error, the well easily meets the American Water Works specification for drift of no more than 2/3 rds the inside diameter of the casing for any 100 feet interval or 8 inches per 100 feet. The maximum drift of 6.25 inches occurred in the 100 feet interval between 160 and 260 feet. The actual drift values are probably smaller because of difficulty in getting readings on a constantly swinging cable and the shortened pulley height. The well is quite straight, as can be verified by looking down the well, and has only a small drift to the northeast. Construction of the well more than meets specifications.

The data for the plumbness test were processed in a computer and the results are indicated in the attachment titled "Plumbness Test for Ciba Geigy Molokai Well.

PUMP RECOMMENDATIONS

The results of the extended test pumping allow a measure of confidence in sizing the permanent pump for the well, especially if it is recognized that actual output may have to be reduced. In contrast to constant speed electric power, the diesel powered unit can be regulate pump output by simply reducing engine speed. Partially closing down the valve on discharge line will serve the same purpose with either type of unit.

Because the central Molokai basal ground water body is
not well known except for the failures of the sugar plantation wells that had huge excess capacities and the potable county well near Kalae. Although this writer's prediction of the likelihood of this well being in an expanded transition zone was accurate, it is not possible to state unequivocably that this well can maintain forever its present salinity at a pumping rate of 400 gpm because of delayed reaction to pumping or adverse effects from future competitive wells.

On the other hand, more well capacity is available from the well for uses that tolerate higher salinity. For example, the well could supply 1000 gpm with a drawdown of approximately 22.8 feet for a brackish shrimp farm operation.

Based on an initial 400 gpm capacity against a total dynamic head of 445 feet with a discharge pressure of 60 psi, the following parameters have been calculated for your information:

- Water Horsepower: 45
- Brake Horsepower: 64
- Diesel Horsepower: 107 say, 110 to 125
- Est. fuel costs: 13.2 cents per dollar per gallon for each 1000 gallons of water

The actual number of stages for the pump will depend on the bowl design. Trimming of impellers may be required to match the desired discharge pressure.

DISCUSSION AND RECOMMENDATIONS

For the purposes of insuring a crop can brought to harvest with water from a well on the Molokai Research Farm, the Ciba Geigy well results are positive. Some of the unknowns presently not determined are: 1). crop tolerance to this well water, 2). long term stability of salinity of the well water to pumping especially if there are future competitors for ground water, and 3). presence in the well water of pesticides used on pineapple formerly grown on these lands.

The tolerance of corn to water of the salinity found in the well is already assured by the present successful experiences of the competing corn seed farms using water from shallow wells excavated along the coastline. The Molokai soils are well drained and should minimize salt or sodium buildup. Normal rainfall should assist in flushing of salts in the soil. Long term use for irrigation is expected to
cause an salinity increase of the well water from applied water in excess of plant requirements that percolate beyond the root zone. Continued availability of low salinity State water will minimize degradation of the ground water. Location of the well at the uppermost edge of the property and fields will tend to minimize the influence of return irrigation water.

Despite the slight improvement of salinity of the well water indicated in the 72-hour test, the stability of salinity over a 100 days of pumping at rate 25% greater remains to be determined and will only come from operational experience with this well. The uncertainty is based on the estimated low flux of ground water in this area derived from recharge. Thin basal lenses are sensitive to pumping and the fact that this well has not shown this behavior so far is positive encouragement, but there must be willingness to scale back pumpage to preserve usable water quality if required. Even if this well proves out a 400 gpm capacity with a steady salinity, a likely future scenario is a cutback due to quality changes brought about by new wells, particularly those in upland locations that could intercept ground water flow and place this well in an unfavorable back water position.

Under the present practices of the Department of Land and Natural Resources Commission on Water Resource Management the owner of a well that is not used to its permitted value will have his permitted use reduced. Permitted uses are reviewed every five years. Although the Commission granted Ciba Geigy 0.5 mgd, the well permit requested this amount in the unlikely event the well showed this potential. The present permitted use is probably safe for a while, but the State will be aware of who is using what since pumpage must be reported annually. The more use can be made of the potential of this well, the greater will be the future permitted use. The strategy to protect this well from future encroachment is to lodge a written statement against future proposed wells that appear to threaten the Ciba Geigy well at the times the permit applications are reviewed by the Commission on Water Resource Management. The threats are from three sources: firstly, from exceeding sustainable yield of the aquifer; secondly, from wells that too close; and finally, from upland wells of excessive capacity that would be using poorly quality water that would affect the quality of the underlying aquifer.

Use of this well for domestic water has been discussed with Mr. Leer and some of the administrative and quality requirements were discussed. Because of the brackishness of the well water, it presently fails to meet Department of Health requirements for drinking water. With dilution of one
part well water to two parts State water, the mineralogical standards could be met. The water also would have to be tested for EDB, DBCP, and TCP, which are soil fumigants formerly widely used for controlling nematodes in the pineapple industry. A scan for other pesticides, herbicide, and chemical on the Environmental Protection Agency list is also required. Simple dilution with pesticide free State water could possibly reduce the pesticides to acceptable limits; otherwise, costly removal of the contaminants would be required. Use of the well water for human consumption will further require that an Engineering Report as mandated by Section 29 must be submitted to and accepted by the Department of Health.

For all the above reasons, it is recommended that Ciba Geigy plan using the well extensively for a test period after which decisions can be made as to the sale of water to other farms for off season use or for dilution to extend potable supplies. In this way, a prioritized beneficial use will be established to secure future access to this water.
Formation Log for Ciba Geigy Molokai Well

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0 to 100</td>
<td>Samples not saved for inspection</td>
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<tr>
<td>101 to 120</td>
<td>Massive, dense aa w/olivine and plagioclase crystals, bit of augite</td>
</tr>
<tr>
<td>123 to 127</td>
<td>Massive pahoehoe w/few round vesicles</td>
</tr>
<tr>
<td>127 to 134</td>
<td>Massive, dense</td>
</tr>
<tr>
<td>134 to 142</td>
<td>Less dense, reddish particles</td>
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<tr>
<td>142 to 145</td>
<td>Finer cuttings of same</td>
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<tr>
<td>145 to 153</td>
<td>Dense flat chips</td>
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<td>153 to 157</td>
<td>Aa, porous clinkers</td>
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<tr>
<td>157 to 160</td>
<td>Fine sand sized cuttings, dense dark</td>
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<tr>
<td>160 to 165</td>
<td>Aa, porous, some clinkers</td>
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<tr>
<td>165 to 184</td>
<td>Dark, dense fine cuttings</td>
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<tr>
<td>184 to 189</td>
<td>Dense pahoehoe</td>
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<td>224 to 236</td>
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<td>236 to 239</td>
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<td>Pahoehoe</td>
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<td>272 to 279</td>
<td>Dense chips, no vesicles</td>
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<tr>
<td>279 to 281</td>
<td>Red clinkers</td>
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Ciba Geigy Well Yield-Drawdown Test
June 29, 1990

Personnel Present: Fred Page, Daryl Leer, Chester Lao

Equipment: Diesel Powered Line Shaft Pump, Flow Meter, 276.9 feet of Air Line, Conductivity-Temperature Meter.

Beginning Reading of Flow Meter: 878700

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<th>GPM</th>
<th>PSI</th>
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<th>Temp</th>
<th>Micromhos</th>
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### Sample Data

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* Ciba Geigy Instrument Readings

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### 72-Hour Uninterrupted Test Pumping

Rate: Nominal 300 gpm rate, engine speed 1700 rpm
Duration: 1830 June 29, 1990 to 1830 July 2, 1990

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End of Test July 2, 1990

End Meter Reading
Total Water Pumped

3260
Plumbness Test for Ciba Geigy Molokai Well

Date of test: July 8, 1990
Personnel: Fred Page, Daryl Leer, Chester Iao
Equipment: Plummel diameter 3/8 inch less than casing J.D.
Double sheaves, 1/8 inch aircraft cable
Pulley height 65.5 inches

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</table>
NOV 18 1997

Ms. Stacy E. Uehara  
Dwyer Imanaka Schraff Kudo Meyer & Fujimoto  
900 Fort Street Mall  
Honolulu, Hawaii 96813

Dear Ms. Uehara:

Pump Installation Report  
Naiwa Well (Well No. 0705-05)

Thank you for transmitting well section as-built drawing, pump assembly drawing, pump test curves, and geologist’s report, received here October 27, 1997. These meet the special conditions approved with the Water Use Permit for Ciba-Geigy Seeds on April 14, 1994, except for slightly exceeding the specified 60-day deadline.

If you have any questions, please call Charley Ice at 587-0251.

Sincerely,

[Signature]
RAE M. LOUI  
Deputy Director

CL: ss
State of Hawaii  
DLNR  
Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii  86809  

April 14, 1992  

Dear Mr. Paty,  

Well No. 0705-05 pump installation was completed as per application pump permit of May 29, 1991. A copy of requested pump installation plans were sent to your office to obtain pump installation permits. All construction & installation of pump was completed in October 1991 by Rosco Moss. I have contacted Ed Sakota for forms and information to keep state required pump logs. We appreciate your patience and cooperation on this matter.

Thankyou,  

Darryl Leer  
Research Station Supervisor  
CIBA-Geigy Seed Division  

cc: Ed Sakota
State of Hawaii
DLNR
Water Resource Management
P.O. Box 621
Honolulu, Hawaii 86809

April 14, 1992

Dear Mr. Paty,

Well No. 0705-05 pump installation was completed as per application pump permit of May 29, 1991. A copy of requested pump installation plans were sent to your office to obtain pump installation permits. All construction & installation of pump was completed in October 1991 by Rosco Moss. I have contacted Ed Sakota for forms and information to keep state required pump logs. We appreciate your patience and cooperation on this matter.

Thankyou,

Darryl Leer
Research Station Supervisor
CIBA-Geigy Seed Division

cc: Ed Sakota
Darryl Leer
CIBA-Geigy Seed Division
P.O. Box 1830
Kaunakakai, Molokai 96748

State of Hawaii
Dept of Land & Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

December 27, 1991

Dear Mr. Paty:

I am notifying you in regards according to pump installation permit well No. 0705-05.

As per our permit, a pump was installed in October of 1991 by Rosco Moss. As yet the work has not been completed and we are waiting for some speciality parts to complete the system. We hope to have the completion of the pump system within the next 90 days. Rosco Moss will then furnish necessary reports.

Sincerely,

Darryl Leer
PUMP INSTALLATION PERMIT

for

Naiwa-CIBA-GEIGY Irrigation Well
Well No. 0705-05
Naiwa, Molokai

TO: CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, HI 96748

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 install a pump in Naiwa-CIBA-GEIGY Irrigation Well (Well No. 0705-05) within Tax Map Key: 5-2-11:07, for seed corn and commercial crop irrigation use, is approved subject to the following conditions:

1. The Division of Water Resource Management (DWRM), P.O. Box 373, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The proposed pump installation 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.

3. The permit shall be for installation of a 500 gallons per minute capacity pump in the well.

4. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage on a monthly basis.
5. The following shall be submitted to DWRM within 30 days after completion of the work:

a. Well Completion Report.

b. As-built sectional drawing of the installed pump.

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 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 24 months from the date of permit issuance.

MAY 29 1991

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

Date of Issuance

cc: USGS
    Department of Health
    Safe Drinking Water Branch
    Ground Water Protection Program
    Maui Department of Water Supply
Mr. Darryl Leer  
CIBA-GEIGY Seed Division  
P.O. Box 1830  
Kaunakakai, Hawaii 96748  

Dear Mr. Leer:

We have received your application and filing fee for a permit to install a pump in your irrigation well (Well No. 0705-05) at Naiwa, Hawaii (TMK: 5-2-11:07). We are reviewing the application for completeness.

As prescribed in your well construction permit, please send us 1) the complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data and 2) the completed Well Completion Report, form enclosed.

Should you have any questions, please call the Regulation Branch of the Division of Water Resource Management at 548-7541.

Sincerely,

MANABU TAGOMORI  
Deputy Director

NF:mh  
Encl.
## WELL COMPLETION REPORT

### INSTRUCTIONS:
Please print or type and submit completed report within 30 days of well completion to the Division of Water & Land Development, P.O. Box 313, Honolulu, HI 96809. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 548-7542, Hydrology, Geology Section for assistance.

### A. STATE WELL NO. 0705-05  WELL NAME  Natwa

### ISLAND  Molokai

### TAX MAP KEY  5-2-011-0007-0222

### B. LOCATION  Molokai

### C. WELL OWNER  CIBA-GEIGY Seed Division

### D. DRILLING OR PUMP INSTALLATION CONTRACTOR  Roscoe Moss

### E. TYPE OF RIG  Cable Tool

### F. DATE OF WELL COMPLETION  08/29/90  DATE OF PUMP INSTALLATION

### G. GROUND ELEVATION (masl)  254 ft.

- Top of Drilling Platform (masl)  254 ft.
- Height of drilling platform above ground surface  4 ft.

### H. TOTAL DEPTH OF WELL BELOW GROUND

- HOLE SIZE:  16 inch dia. from 0 ft. to 281 ft. below ground
- Hole depth:  281 ft. below ground

### J. CASING INSTALLED:

- 12 in. I.D. x 3/8 in. wall solid section to 251 ft. below ground
- 12 in. I.D. x 5/16 in. wall perforated section to 281 ft. below ground

### K. ANNUAL:

- Grouted from 0 ft. to 100 ft. below ground
- Gravel packed from 100 ft. to 281 ft. below ground

### L. PERMANENT PUMP INSTALLATION:

- Pump type, make, serial No.  Peerless
- Motor type, H.P. voltage, r.p.m.  Diesel 160 HP 1800 RPM
- Depth of pump intake setting  275 ft. below Top Well Case
- Depth of bottom of airline  2.52 ft. below

### M. PROPOSED USE

- Irrigation-Domestic

### N. INITIAL WATER LEVEL  3.2 ft. below ground  Date and time of measurement  06/29/90 / 10:00 a.m.

### O. INITIAL CHLORIDE  990 ppm  Date and time of sampling  06/29/90 / 10:10 a.m.

### P. PUMPING TESTS:

- Reference point (R.P.) used: Ground which elevation is 254 ft.

#### Date  06/29/90

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### REMARKS:

CIBA-GEIGY Seed Division

submitted by  (print)  By Agent, Darrell K. Leer

signature  Darryl Sun

Title  Research Station Supervisor

Date  2/15/91
May 6, 1991

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: PUMP INSTALLATION PERMIT APPLICATION
NAIWA-CIBA-GEIGY IRRIGATION WELL
STATE WELL NO. 0705-05
KAUNAKAKAI, MOLOKAI

Thank you for the opportunity to review the subject document. We have reviewed the application and have the following comments to offer:

1. The application indicates that the subject well will be for domestic use. If the well is to serve 25 or more individuals at least 60 days per year or will have a minimum of 15 service connections, the applicant will be required to comply with the Department's Administrative Rules, Title 11, Chapter 20, "Potable Water Systems."

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

3. The application indicates that the subject well will also be used for the irrigation of seed corn and commercial crops. Thus, adequate measures must be taken to eliminate cross-connections and backflow conditions. The potable and non-potable (irrigation) water systems shall be clearly labeled and physically separated by an air gap or an approved backflow preventer to avoid contaminating the potable water supply.
4. While the subject well is situated immediately below the Underground Injection Control (UIC) line, the well should have a concrete well pad and full grouting to prevent seepage or floodwaters from migrating down the well shaft.

If you should have any questions, please contact the Safe Drinking Water Branch at 543-8258.

Sincerely,

THOMAS E. ARIZUMI, P.E., Chief
Environmental Management Division

cc: Darryl Leer
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Molokai, HI 96748
The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Well Construction and Pump Installation Applications
Stream Alteration Permit

Thank you for the opportunity to comment on the following permit applications:

Kohanaiki 1 & 2 (4458-01, 02) Well and Pump
Puako 4-6 (5748-01, 5648-04, 5549-02) Well and Pump
HCEOC-Milolii (1154-01) Well and Pump
DHHL-Kawaihae (6448-02) Exploratory Well
Fern Grotto 2 (0221-02) Well
Anahola C (0818-03) Well and Pump
Moloka'i Golf 1 & 2 (0901-02, 1001-02) Well and Pump
Naiwa-Ciba/Geigy Irrigation (0705-05) Pump
and Kihei Gulch No. 2 Stream Alteration Permit

Our comments are directed to two projects with positive impact on Hawaiian home lands -- Kawaihae and Anahola wells; and the Moloka'i Golf resubmittal, for which we prepared comments at an earlier time.

The Kawaihae Well is being drilled and tested for the Department of Hawaiian Home Lands by the Division of Water Resource Management; it will directly benefit new native Hawaiian lessees at Kawaihae, a major anticipated growth area and development priority. We anticipate potable results from the well testing, and request your approval of this project.

The Anahola Well will supplement the system on Hawaiian home lands in Anahola operated by Kaua'i County, which serves
Hawaiian homesteaders and other members of this old community. The system is currently at capacity. Anahola is the Department's primary development area on the island of Kaua'i. We request your approval of this project.

The Moloka'i Golf resubmittal appears to be the same as the previous request, and we are attaching our prior comments, which are still relevant. That letter requests the project be denied.

The other captioned projects do not affect Hawaiian home lands, and we do not have comments at this time.

Warmest aloha,

Hoailau L. Drake, Chairman
Hawaiian Homes Commission

HLD:DCY:CI
May 1, 1991

The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Well Construction and Pump Installation Applications
Stream Alteration Permit

Thank you for the opportunity to comment on the following permit applications:

- Kohanaiki 1 & 2 (4458-01, 02) Well and Pump
- Puako 4-6 (5748-01, 5648-04, 5549-02) Well and Pump
- HCEOC-Milolii (1154-01) Well and Pump
- DHHL-Kawaihae (6448-02) Exploratory Well
- Fern Grotto 2 (0221-02) Well
- Anahola C (0818-03) Well and Pump
- Moloka'i Golf 1 & 2 (0901-02, 1001-02) Well and Pump
- Naiwa-Ciba/Geigy Irrigation (0705-05) Pump
- and Kihei Gulch No. 2 Stream Alteration Permit

Our comments are directed to two projects with positive impact on Hawaiian home lands -- Kawaihae and Anahola wells; and the Moloka'i Golf resubmittal, for which we prepared comments at an earlier time.

The Kawaihae Well is being drilled and tested for the Department of Hawaiian Home Lands by the Division of Water Resource Management; it will directly benefit new native Hawaiian lessees at Kawaihae, a major anticipated growth area and development priority. We anticipate potable results from the well testing, and request your approval of this project.

The Anahola Well will supplement the system on Hawaiian home lands in Anahola operated by Kaua'i County, which serves
Hawaiian homesteaders and other members of this old community. The system is currently at capacity. Anahola is the Department's primary development area on the island of Kaua'i. We request your approval of this project.

The Moloka'i Golf resubmittal appears to be the same as the previous request, and we are attaching our prior comments, which are still relevant. That letter requests the project be denied.

The other captioned projects do not affect Hawaiian home lands, and we do not have comments at this time.

Warmest aloha,

Ho'ali'i L. Duke, Chairman
Hawaiian Homes Commission

HLD:DCY:CI
Dear Mr. Paty,

Moloka'i Golf Inc.
Request for Extension of Well Construction Permits
Moloka'i Golf Wells 1 & 2, Kualapuu, Moloka'i

The Department of Hawaiian Home Lands appreciates the opportunity to comment on the request to extend well construction permits to serve a golf course in Kualapuu.

These wells draw from the Kualapuu Aquifer, which underlies Hawaiian home lands and is a major source of water for homestead development. By our estimates, Moloka'i Ranch's reasonable share of this aquifer, based upon its proportion of overlying land, is perhaps 1.25 Mgd. Moloka'i Ranch has already sold its interest in an existing well tapping this aquifer, one yielding a little over 1 Mgd. The Department of Hawaiian Home Lands respectfully submits that the proposed golf course wells exceed the amount that might be withdrawn from this aquifer to serve Moloka'i Ranch lands.

We understand that developers expect to find brackish water in these wells. We appreciate that this approach aims to protect potable sources. Any approval to use brackish water should be based on an adequate understanding of the aquifer such that potable sources are not endangered. Should only potable water be found, it should only be used by overlying land owners for reasonable potable uses, in proportion to their rights to the aquifer.

We still have concerns about the appropriateness of golf course development in this location, first because its use of fertilizers, pesticides, and brackish irrigation water may pose a threat to groundwater, and second because the Moloka'i Community Plan confines resort activities to the West End of Moloka'i.
Finally, we wish to express concern over very short notice to prepare comments. The agenda for the Commission on Water Resource Management appears barely a week before the scheduled meeting. This does not allow much preparation time, either to prepare comments or to schedule attendance, as necessary. While most other agenda items have been processed well in advance, this one appeared without prior notice. We are anticipating other issues that are critical to the Hawaiian home lands programs, and would like to have adequate time to make an appropriate response.

A decision on designation of all or parts of Moloka'i as a Water Management Area is one issue in which we have great interest. Even without this designation, the Commission's authority to issue a permit in its trustee capacity is a regulatory function, and the clear potential of the subject request to create a legal conflict as well as a water quality threat should be sufficient to act accordingly.

In light of considerable activity since the initial request, the Commission is within its authority to review the current request from a larger perspective. We do not believe it meets the reasonable and beneficial standard to be applied as the Commission's trust responsibility, and we ask you to deny this request.

Thank you again for this opportunity to present our position.

Warmest aloha,

Hawaiian Homes Commission
April 29, 1991

Mr. Manabu Tagomori  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Tagomori:

Re: Well Construction and Pump Installation Permit Application  
NAIWA-CIBA-GEIGY, Well No. 0705-05, Molokai, Hawaii

Please be advised that we would not have any objections if the pump installation permit is issued.

Sincerely,

Rae M. Shikuma  
Director

cc: engineering  
    planning

"By Water All Things Find Life"
April 23, 1991

MEMORANDUM

TO: Manabu Tagomori, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Pump Installation Permit for the CIBA-GEIGY Seed Corporation (Well No. 0705-05)
Naiwa, Molokai
TMK 5-2-11: 7

HISTORIC PRESERVATION PROGRAM CONCERNS:

We believe that this application will have "no effect" on significant historic sites. There are no known historic sites in the well site. An archaeological survey conducted by Environmental Impact Study Corporation on the makai portion of this parcel noted that the parcel has undergone intensive ground disturbance from agricultural activities. Therefore, it is not likely that historic sites are still present.

If you have any questions, please contact Ms. Annie Griffin at 587-0013.
Mr. Thomas K. Kaulukukui, Sr.
Chairman & Trustee-At-Large
Office of Hawaiian Affairs
1600 Kapiolani Blvd., Suite 1500
Honolulu, Hawaii 96814

Attn: Ms. Linda Delaney, Land & Natural Resources Division

Dear Mr. Kaulukukui:

Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application:

<table>
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Please review the application pursuant to your area of concern and submit your comments to us, orally or in writing, by ten (10) working days from date of letter.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

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  

Transmitted for your review and comment is a copy of the following permit application:  

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Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.  

Very truly yours,  

WILLIAM W. PATY  

Enc.
Honorable John C. Lewin, M.D.
Director
Department of Health
State of Hawaii
1250 Punchbowl Street
Honolulu, Hawaii 96813

Attn: Mr. William Wong, Drinking Water Branch

Dear Dr. Lewin:

Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application:

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Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

[Signature]

WILLIAM W. PATY

Enc.
Ms. Rae Shikuma, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Ms. Shikuma:

Well Construction and Pump Installation Permit Application

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

NF:bm
Enc.
Ms. Noelani Joy  
Farrington Ave.  
Kaunakakai, Hawaii 96748  

Dear Ms. Joy:  

Well Construction and Pump Installation Permit Application  

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director  

NF:bm  
Enc.
Ms. Rachel Kamakana  
P.O. Box 145  
Kaunakakai, Hawaii 96748

Dear Ms. Kamakana:

Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application:

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

MANABU TAGOMORI  
Deputy Director

NF:bm  
Enc.
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Water Resource Management  
Honolulu, Hawaii

APR 17 1991

MEMORANDUM

TO: Don Hibbard, Director  
   Historic Preservation Program

FROM: Manabu Tagomori, Deputy Director  
      Commission on Water Resource Management

SUBJECT: Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application:

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Should you have any questions, please contact our Regulation Branch at 548-7541.

NF:bm  
Enc.
Mr. Matthew Adolpho
Moomomi Ave.
Kaunakakai, Hawaii 96748

Dear Mr. Adolpho:

**Well Construction and Pump Installation Permit Application**

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

NF:bm
Enc.
Mr. Wayne Meyer  
P.O. Box 454  
Kaunakakai, Hawaii  96748  

Dear Mr. Meyer:  

Well Construction and Pump Installation Permit Application  

Transmitted for your review and comment is a copy of the following permit application:  

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Should you have any questions, please contact our Regulation Branch at 548-7541.  

Sincerely,  

[Signature]  
MANABU TAGOMORI  
Deputy Director  

NF:bm  
Enc.
Ms. Sarah E. Sykes  
P.O. Box 370  
Kaunakakai, Hawaii 96748

Dear Ms. Sykes:

Well Construction and Pump Installation Permit Application

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Please review the application pursuant to your area of concern and submit your comments to us, orally or in writing, by ten (10) working days from date of letter.

Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director

NF:bm  
Enc.
Mr. Darryl Leer
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Dear Mr. Leer:

We have received your application and filing fee for a permit to install a pump in your irrigation well (Well No. 0705-05) at Naiwa, Hawaii (TMK: 5-2-11:07). We are reviewing the application for completeness.

As prescribed in your well construction permit, please send us 1) the complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data and 2) the completed Well Completion Report, form enclosed.

Should you have any questions, please call the Regulation Branch of the Division of Water Resource Management at 548-7541.

Sincerely,

MANABU TAGOMORI
Deputy Director

NF: mh

Encl.
APPLICATION FOR

WELL CONSTRUCTION PERMIT
X 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 $25.00 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.

NAHWA - CIBA-GEIGY IRRIGATION WELL

1. WELL LOCATION

Island MOLOKAI Tax Map Key 5-2-011-0007-0222

Address ________________________________

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER

Firm Name CIBA-GEIGY Seed Division

Contact Person DARRYL LER

Address P.O. BOX 1830
KAINA KAKAI, HI 96748

Phone (808)567-6146

LANDOWNER

Firm Name SAME

Contact Person ____________________________

Address ________________________________

Phone ____________________________

3. PROPOSED CONTRACTOR FOR: ☐ Well Drilling ☑ Pump Installation

Name ROSCOE MOSS COMPANY

Address 830 Ahua St.
HONOLULU, HI 96819

Contractor's License No. C-2101

Phone 839-6888

4. PROPOSED WORK

☐ Drill New Well ☐ Deepen ☐ Alter ☐ Seal ☐ Redrill
☐ Install New Pump ☐ Replace Pump ☐ 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.) ☐ Military
☐ Domestic (individual, noncommercial water systems) ☐ Industrial
☐ Irrigation (specify) SEED CORN & COMMERCIAL CROPS ☐ Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 375,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: ☑ Vertical Turbine ☐ Submersible ☐ Centrifugal
Motor: ☑ Diesel ☐ Gas ☐ Electric: __________________________
Rated Pump Capacity 500 gallons per minute (gpm)

Well Owner (print) CIBA-GEIGY Seed Division

Signature ____________________________ Date 1/31/90

Landowner (print) CIBA-GEIGY Seed Corporation

Signature ____________________________ Date ____________________________

For Official Use Only:

Field Checked By ____________________________ Latitude ____________

Date ____________________________ Hydrologic Unit ____________________________

State Well No. 0735-05

------------------------------

------------------------------
Briefly describe the proposed work:

Install pump in existing well

PROPOSED SECTION OF WELL

Elevation at top of casing

256 ft., msl.

Cement Grout 100 ft.

Hole Dia. 16 in.

Total Depth 281 ft.

Rock Packing 105 ft.

Ground Elev. 254 ft., msl*

Solid Casing:

Material STEEL

Length 251 ft.

Diameter 12" in.

Wall thickness 3/8 in.

Casing: / /Perforated /x/Screen

Material Steel Louvered

Length 30 ft.

Diameter 12" in.

Wall thickness 3/8 in.

Openings 1/4" slots sq. in./L.F.

Open Hole:

Length

Diameter 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.
AY TO THE

ORDER OF

Department of Land and Natural Resources

Twenty five and no/100 DOLLARS

Filing fee. Tax map key

0705-05 - PUMP INST.

Doris Elizabeth Johnson
ELEVATION CERTIFICATION

FOR: CIBA-GEIGY, Seed Division
Naiwa, Molokai, Hawaii

TMK: 5-2-11:7(POR)

I CERTIFY THAT THE WELLHEAD ON THE ABOVE CAPTIONED PROPERTY IS AT AN ELEVATION OF 254 Feet Referenced to MEAN SEA LEVEL.

Charles M. Busby P.E.

CIVIL ENGINEERING: Design & Construction Supervision.
SURVEYING SERVICES: Geodetic & Control Surveys.
LAND SURVEYING under the direct supervision of JAMES F. FOSTER L.S.
WELL CONSTRUCTION PERMIT
for
Naiwa-CIBA-GEIGY Irrigation Well
Well No. 0705-05
Naiwa, Molokai

TO: CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

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. 0705-05 within Tax Map Key: 5-2-11:7 for irrigation use 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 pump installation permit from the Commission.

3. The grouted annulus of the well shall be a minimum of from 0 to 200 ft. instead of from 0 to 100 ft. as proposed.

4. The following shall be submitted to DOWALD within 30 days after completion of the well:
   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.
5. The applicant shall comply with all applicable laws, rules, and ordinances.

6. 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.

SEP 27 1989
Date of Issuance

cc: USGS
Department of Health,
Drinking Water Program
Ground Water Protection Program
Maui Department of Water Supply
Dear Mr. Paty:

SUBJECT: WELL CONSTRUCTION PERMIT APPLICATION
NAIWA-CIBA-GEIGY IRRIGATION WELL
STATE WELL NO. 0705-05
NAIWA, MOLOKAI

Thank you for the opportunity to comment on the well construction permit for the Naiwa-CIBA-GEIGY Irrigation Well. We offer the following comments:

1. Because the well will be for irrigation purposes, the State's Potable Water Systems Regulations, Chapter 20, Title 11, Administrative Rules, are not applicable.

2. The well will be located below the UIC line and thus is not expected to impact underground sources of drinking water. In addition, there appear to be no existing drinking water wells located downgradient of the proposed site.

If you have any questions, please contact the Safe Drinking Water Branch at 548-2235.

Very truly yours,

John C. Lewin, M.D.
Director of Health

cc: Mr. Daryl Leer
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748
September 8, 1989

CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

The Commission on Water Resource Management will be acting on your permit application for Naiwa-CIBA-GEIGY Irrigation Well at their meeting on September 13, 1989, at 2:00 p.m. Please note that the meeting will take place in Lihue, Kauai, at the State Office Building, Conference Rooms A and B, 3060 Ewa Street.

Your application will be included on the agenda as Item 7 (attached).

You or your representative are invited to attend the meeting.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

ES:bm
Attach.
August 9, 1989

Mr. Manabu Tagomori
Deputy Director
Commission on Water Resource Management
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Tagomori:

Re: Well Construction Permit Application
Naiwa-CIBA-GEIGY Irrigation Well (0705-05)
TMK 5-2-11:07, Naiwa, Molokai

We are concerned over the impact that proposed wells at this approximate location will have on the groundwater capacity and upon each other. Aside of this well permit application, a non-potable groundwater source is proposed at this approximate location by Kukui, Molokai to serve the non-potable needs of West-end Molokai.

Before the State Commission on Water Resources Management approve this application, there should be some assurance of adequate water supply for proposed usage. There should also be some assurance that the quality of the aquifier in the sector will not be degraded or threatened in any way.

Sincerely,

Vince G. Bagoyo, Jr.
Director

ab
xc: Engineer file

"By Water All Things Find Life"
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

We acknowledge receipt of your application to construct a well at Naiwa, Molokai, Tax Map Key: 5-2-11:7.

Department of Land and Natural Resources administrative rules require a $25.00 filing fee to accompany each permit application. Please send a $25.00 check, payable to the Department of Land and Natural Resources, to P.O. Box 373, Honolulu, Hawaii 96809.

Sincerely,

MANABU TAGOMORI
Deputy Director

Expense Code
9675 0000

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<td>REC'D JUL 27 1989</td>
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<td>CK</td>
<td>[Signature]</td>
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</tbody>
</table>
Honorable John C. Lewin, M.D.
Director Of Health
Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Attention: Mr. Thomas Arizumi, Drinking Water Program

Dear Dr. Lewin:

Well Construction Permit Applications

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-188-12(c), we are sending you a copy of the following permit applications:

- Makakilo Golf Course Well (1904-02)
- Leiwa-CIBA-GEIGY Irrigation Well (0705-05)
- Kauku-Kuailima Resort Well
- Port Allen Power Station Salt Water Well (5435-06)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Manabu Tagomori at 548-7533.

Very truly yours,

WILLIAM W. PATY
July 28, 1989

Mr. Vince Bagoyo
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui 96793-0343

Dear Mr. Bagoyo:

Well Construction Permit Application

We are sending you a copy of the following permit application for your review and comments:

Naiwa-CIBA-GEIGY Irrigation Well (0705-05)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Dan Lum at 548-7643.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

ES:bm
Enc.
July 24, 1989

CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

We acknowledge receipt of your application to construct a well at Nalwa, Molokai, Tax Map Key: 5-1-11:7.

Department of Land and Natural Resources administrative rules require a $25.00 filing fee to accompany each permit application. Please send a $25.00 check, payable to the Department of Land and Natural Resources, to P.O. Box 373, Honolulu, Hawaii 96809.

Sincerely,

[signature]

MANABU TAGOMORI
Deputy Director

ES:ko
APPLICATION FOR

XX WELL CONSTRUCTION PERMIT
XX 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 317, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7543, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island: Molokai
Tax Map Key 5-2-11-7
Address: Naiwa

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER

Firm Name: CIBA-GEIGY Seed Division
Contact Person: Daryl Leer
Address: P.O. Box 1830
Kaunakakai, Hawaii 96748
Phone: 567-6146

3. PROPOSED CONTRACTOR FOR:

Name: Fred Page International
Address: P.O. Box 2838
Kailua-Kona, Hawaii 96745
Phone: 326-5699

4. PROPOSED WORK

Drill New Well
Deepen
Redrill

Alter
Seal
Abandon

Install New Pump
Replace Pump
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.)
Military

Domestic (individual, noncommercial water systems)
Industrial

 Irrigation (specify) Seed Corn
Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL

500,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: Vertical Turbine
Submersible
Centrifugal

Motor: Diesel
Gas
Electric
Rated Horsepower
Rated Pump Capacity 350 gallons per minute (gpm)

For Official Use Only:
Field Checked By ____________________
Latitude ____________________
Hydrologic Unit ____________________

State Well No. 0705-05

Well Owner (print) CIBA-GEIGY Seed Division
Landowner (print) Same

Signature ____________________
Date ____________________

Signature ____________________
Date ____________________
Briefly describe the proposed work:

Drill new well for the purpose of irrigating corn and other seed crops. Install pump for the purpose of lifting water.

PROPOSED SECTION OF WELL

Elevation at top of casing 232 ± ft., msl.

Cement Grout 100 ft.

Hole Dia. 16 in.

Total Depth 290 ft.

Rock Packing 160 ft.

Ground Elev. 230 ± ft., msl

Solid Casing:
Material Mild Steel
Length 230 ft.
Diameter 12 in.
Wall thickness 3/8 in.

Casing: / /Perforated /X/Screen
Material Mild Steel
Length 30 ft.
Diameter 12 in.
Wall thickness 5/16 in.
Openings 100 sq. in./L.F.

Open Hole:
Length 30
Diameter 11 1/2 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.
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
Division of Water Resource Management

APPLICATION FOR

XX WELL CONSTRUCTION PERMIT
XX 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 $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 568-7743, Hydrology/Geology Section for assistance.

1. WELL LOCATION
Island Molokai Tax Map Key 5-2-11:7
Address Naiwa
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name CIBA-GEIGY Seed Division
Contact Person Daryl Leer
Address P.O. Box 1830
Kaunakakai, Hawaii 96748
Phone 567-6146

3. PROPOSED CONTRACTOR FOR: ☑ Well Drilling ☑ Pump Installation
Name Fred Page International
Address P.O. Box 2838
Kailua-Kona, Hawaii 96745
Phone 326-5699
Contractor's License No. C-10838

4. PROPOSED WORK
☐ Drill New Well ☐ Deepen ☐ Redrill
☐ Alter ☐ Seal ☐ Abandon
☐ Install New Pump ☐ Replace Pump ☐ 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.) ☐ Military
☐ Domestic (individual, noncommercial water systems) ☐ Industrial
☐ Irrigation (specify) ☐ Seed Corn ☐ Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 500,000 gallons per day

7. PROPOSED PUMP INFORMATION
Pump Type: ☑ Vertical Turbine ☐ Submersible ☐ Centrifugal
Motor: ☐ Diesel ☐ Gas ☐ Electric: _________
Rated Pump Capacity 350 gallons per minute (gpm)

Well Owner (print) CIBA-GEIGY Seed Division Landowner (print) Same
Signature _______ Signature _______
Date 3/20/79 Date 3/20/79

For Official Use Only:
Field Checked By ___________________ Latitude ______________ Hydrologic Unit _______
Date ______________ Longitude __________ State Well No. _______
Briefly describe the proposed work:

Drill new well for the purpose of irrigating corn and other seed crops. Install pump for the purpose of withdrawing water.

PROPOSED SECTION OF WELL

Elevation at top of casing 232 ± ft., msl.

Cement Grout 100 ft.

Hole Dia. 16 in.

Total Depth 290 ft.

Rock Packing 160 ft.

Ground Elev. 230 ± ft., msl

Solid Casing:
Material Mild steel
Length 230 ft.
Diameter 12 in.
Wall thickness 3/8 in.

Casing: / /Perforated /X/Screen
Material Mild Steel
Length 30 ft.
Diameter 12 in.
Wall thickness 5/16 in.
Openings 100 sq. in./L.F.

Open Hole:
Length 30
Diameter 11 1/2 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.
SENDERS:

Complete items 1 and/or 2 for additional services.
Complete items 3, 4a, and 4b.
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:

Mr. David Gilliland
Agrigenetics, Inc.
Kaunakakai, HI 96748

Well No. 0705-05 CI:ky

4a. Article Number
Z 066 768 220

4b. Service Type

- [ ] Registered
- [ ] Certified
- [ ] Express Mail
- [ ] Insured
- [ ] Return Receipt for Merchandise
- [ ] COD

5. Received By: (Print Name)

DAVID GILLILAND

6. Signature: (Addressed or Agent)

DAVID GILLILAND

7. Date of Delivery

3/01

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

POB 701

KAUNAKAKAI, HI 96748

Thank you for using Return Receipt Service.

Domestic Return Receipt 102595-98-B-0229
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<td></td>
<td>4 Information</td>
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<td>Higa, D.</td>
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<td>Type Draft</td>
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<td>Hirano, E.</td>
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<td>Type Final</td>
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<td>Ice, C.</td>
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WELL NUMBER: 0705-05

WELL NAME: Nairwa

WELL CONSTRUCTION

WUP transfer

ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:
1. COVER LETTER
2. PERMIT (2x)
3. PUMP TEST
4. DOH COMMENTS
5. LAND DIV. COMMENTS
6. WCR FORM

TO BE SENT TO APPLICANT:
- cover ltr
- permit
- site plans
- WURS
- shortage plan (earlier)

FOR OFFICE USE ONLY

PUMP INSTALLATION

ATTACHMENTS FOR PUMP INSTALLATION PERMIT:
1. COVER LETTER
2. PERMIT (2x)
3. DOH COMMENTS
4. LAND DIV. COMMENTS
5. WCR FORM
6. WUR FORM

TO BE SENT TO APPLICANT:

FOR OFFICE USE ONLY

DATE: 22 Dec 00

SUSPENSE DATE: 14-01
GROUND WATER USE PERMIT
WUP NO. 583

PERMITTEE

Applicant/Water User: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

Landowner of Use: Agrigenetics, Inc.
P.O. Box 701
Kaunakakai, HI 96748

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>Molokai</th>
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<tr>
<td>Water Management Area</td>
<td>Manawainui</td>
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<tr>
<td>Aquifer Sector</td>
<td>Central</td>
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<tr>
<td>Aquifer System</td>
<td>Manawainui</td>
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<tr>
<td>System Sustainable Yield</td>
<td>2 mgd</td>
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<tr>
<td>Well Name</td>
<td>Naiwa</td>
</tr>
<tr>
<td>State Well No.</td>
<td>0705-05</td>
</tr>
</tbody>
</table>

PERMITTED USE INFORMATION

| Reasonable beneficial use | Agriculture (Irrigation of 75 acres of seed corn) |
| Withdrawal (12 month moving ave.) | 0.012 mgd |
| Location of water use | 5-2-11:7 |
| TMK # | Naiwa |
| Address | Agriculture |
| State land use classification | Agriculture |
| County zoning classification | Agriculture |

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 April 14, 1994 meeting are incorporated into this permit by reference.

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

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

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.
10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Manawainui 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 Manawainui 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 Manawainui 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.

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management
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<td>CHING, F.</td>
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<td>Information</td>
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<td>KUNIMURA, I.</td>
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DATE: 10/00

FROM: Roy

SUSPENSE DATE: __________________________

COMMISSION ON WATER RESOURCE MANAGEMENT

(10/99)
November 27th, 2000

State of Hawaii
Department of Natural Resources
P.O. Box 821
Honolulu, HI 96809

Reference Permit to Pump Well Water #0705-05

Dear Sir or Madam:

As of November 1st, 2000, the assets of the Seed Division of Cargill, Incorporated were sold to Agrigenetics, Inc. d/b/a Mycogen Seeds. Cargill, Incorporated currently holds an Permit to Pump Well Water (#0705-05) at its Molokai, Hawaii location that was issued by your office. This letter is to request that the Permit be transferred to or reissued in the name of Agrigenetics, Inc. d/b/a Mycogen Seeds.

If you have any questions, please contact me.

Sincerely,

[Signature]

Dave Gilliland
Location Manager
Tel:(808)-567-6871
Fax(808)-567-9426
Email DJGilliland@dow.com

(210613v17)

```
COMMISSION ON WATER RESOURCE MANAGEMENT

FROM: LINNEL                         DATE: DEC - 4 2000

TO:  INIT. TO: INIT. FOR: PLEASE:
____ BAUER, G.  _______ LUM, A.    _____ Approval  _____ See Me
____ CHING, F.  _______ NAKAMA, L.  _____ Signature  _____ Review & Comment
____ DANBARA, S. _______ NAKANO, D. _______ Information  _____ Take Action
____ FUJII, N. _______ NISHIOKA, L.  _______ Type Draft
____ HARDY, R. _______ OHYE, M.      _______ Type Final
____ HIGA, D. _______ SAKODA, E.     _______ File
____ HIRANO, E. _______ SUBIA, S.     _______ update database
____ ICE, C. _______ SWANSON, S.     _______ Xerox ___ copies
____ IMATA, R. _______ UYENO, D.     _______  
____ JINNAI, R. _______ YODA, K.     _______  
____ KUNIMURA, I. _______  _______  

-Cheryl, assigned new wrp No. 583, let me know when you issue it can update database. Also, still coded interim in db, let me know if you issue permanent (ie waiving, code 18)
November 27th, 2000

State of Hawaii
Department of Land and Natural Resources
P.O. Box 821
Honolulu, HI 96809

Reference: Water Use Permit #339

Dear Sir or Madam:

As of November 1st, 2000 the assets of the Seed Division of Cargill, Incorporated were sold to Agrigenetics, Inc. d/b/a Mycogen Seeds. Cargill, Incorporated currently holds Water Use Permit ("Permit") at its Molokai, HI location that was issued by your office. This letter is to request that the Permit be transferred to or reissued in the name of Agrigenetics, Inc. d/b/a Mycogen Seeds.

If you have any questions, please contact me.

Sincerely,

Dave Gilliland
Location Manager
Tel:(808)-567-6871
Fax(808)-567-9426
Email DJGilliland@dow.com

(210613v27)
Ms. Kelly A. Staack  
Cargill, Incorporated Law Department  
P.O. Box 5624  
Minneapolis, MN 55440-5624  

Dear Ms. Staack:  

Transfer of Water Use Permit No. 339  

The State Water Code, Chapter 174C, provides for transfer of a water use permit provided that:  

1. The conditions of use of the permit, including, but not limited to, place, quantity, and the purpose of the use, remain the same; and  

2. The Commission is informed of the transfer within ninety days. §174C-59 Haw. Rev. Stat.  

Pursuant to the above statute, please inform us, within ninety days after the transfer has occurred, of the actual date of the transfer. In addition, we need a contact name, address, and phone number for the new permittee so that we may update our records and re-issue the water use permit to the new permittee.  

If you have any questions, please contact Lenore Nakama at (808) 587-0218.  

Sincerely,  

LINNEL T. NISHIOKA  
Deputy Director  

LN:ss
<table>
<thead>
<tr>
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<td>IMATA, R.</td>
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<td>UYENO, D.</td>
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<td>JINNAI, R.</td>
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<td>YODA, K.</td>
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<td>KUNIMURA, I.</td>
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Not sure where the permit #339 is.

Need to cut new WVP (if WVP no. ?) for Agirgenetics, Inc. 

Transfer has not occurred yet. Need more info on new permitted so that we can re-issue
VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED

October 2, 2000

State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
Honolulu, HI 96813

Dear Sir or Madam:

Cargill, Incorporated has entered into an agreement to sell substantially all of the assets of its North American Seed business to Agrigenetics, Inc. (hereinafter "Buyer"). The anticipated closing date is October 26, 2000. At closing, we would like to assign our Ground Water Use Permit #339 ("Agreement") with you dated April 29, 1998 to the Buyer.

Please indicate your consent to this assignment by signing below and returning this letter to me by fax immediately at (952) 742-6349, then mail the original to me in the enclosed self-addressed stamped envelope. If you have any questions or concerns, please do not hesitate to contact me.

Thank you.

Very truly yours,

Kelly A. Staack
Senior Paralegal

State of Hawaii, Dept. of Land and Natural Resources hereby consents to the assignment of the aforementioned Agreement to Buyer in connection with the sale of Cargill, Incorporated's North American Seed business to Buyer.

By: ____________________
Title: ____________________
Its: ____________________
GROUND WATER USE PERMIT
WUP NO. 339

PERMITTEE

Applicant/Water User: CARGILL, INCORPORATED
Address: P.O. BOX 701, KAUNAKAKAI, HI 96748

Landowner of Source: CARGILL, INCORPORATED
Address: P.O. BOX 701, KAUNAKAKAI, HI 96748

PERMITTED SOURCE INFORMATION

Island: MOLOKAI
Water Management Area: MANAWAINUI
Aquifer Sector: CENTRAL
Aquifer System: MANAWAINUI
System Sustainable Yield: 2 mgd
Well Name: NAIWA
State Well No.: 0705-05

PERMITTED USE INFORMATION

Reasonable beneficial use: AGRIC (based on IRRIGATION OF 75 ACRES OF SEED CORN)
Withdrawal (12 month moving ave.): 0.012 mgd
Location of water use:
   TMK #: 5-2-11-7
   Address: NAIWA, MOLOKAI
   State land use classification: AG
   County zoning classification: AG

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 ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commissions'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 withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANAWAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

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

Signed: [Signature]
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: [Signature] Date: 4-29-98

Printed Name: [Name] Firm or Title: [Firm or Title]

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

Attachment
Mr. Adolph Helm  
Cargill, Incorporated  
P.O. Box 701  
Kaunakakai, HI 96748  

Dear Mr. Helm:  

Water Shortage Plan  
Naiwa Well (Well No. 0705-05)  

Thank you for transmitting your water shortage plan, which we received on April 20, 1998. We also have on file the as-built drawing, pump assembly drawing, pump test curves, and geologist's report. We look forward to receiving a signed copy of your permit to validate it, and monthly water use reports.

If you have any questions, please call Charley Ice at 587-0251 or toll-free at 1-800-468-4644, extension 70251.

Sincerely,

EDWIN T. SAKODA  
Acting Deputy Director  

CI:ss
TO:  
MR. MIKE WILSON  
CHAIRMAN DLNR STATE OF HAWAII  
COMMISSION OF WATER RESOURCE MANAGEMENT  
P. O BOX 621 HONOLULU, HAWAII 96809

SUBJECT:  
SPECIAL CONDITION WATER SHORTAGE PLAN  
TMK: 5-2-11: 07  
WELL NO. 0705-05

DEAR MR. WILSON:

Cargill Seeds have been on Molokai for 30 years working in the research and production of seed corn. Recently Cargill purchased a 102 acre farm lot with a well and infrastructure in place. Existing field and irrigation layout is set up for the growing of corn and other crops. Ground water from our well source and the Molokai Irrigation System both serve as our source of irrigation.

Water requirement for corn is approximately 2 inches an acre per week applied 75% of a 102 day grow period. Mainly overhead sprinkler and some drip irrigation are used to irrigate.

We are in the process of making the transition to rely on drip irrigation as our main source of watering. Initially this will help us to conserve water. If a temporary reduction in pumping is required due to water shortage, the following can be implemented.

...
1. Irrigate at night to conserve moisture
2. Use moisture sensors, irrigate when needed
3. Refrain from overhead sprinkler application, use only drip irrigation
4. Direct water from filter flushing to plants (windbreak, field crop, etc)

We are still in the process of identifying some of our short and long range goals. It is our hope that Cargill can continue to develop and implement water conservation plans and work towards becoming better stewards of our resource. Please feel free to write or call (808 567-6871) if you have any questions.

Yours truly,

Adolph Helm
Farm Manager
Mr. Adolph Helm  
Cargill, Incorporated  
P.O. Box 701  
Kaunakakai, HI 96748

Dear Mr. Helm:

Approval and Transfer of Water Use Permit No. 339 (Well No. 0705-05)  
Manawainul Ground Water Management Area, Molokai

We have received documentation from Novartis Seeds, Inc. verifying the transfer of interest in the captioned well from Ciba-Geigy Corporation to Novartis Seeds, Inc. and subsequently to Cargill, Incorporated.

This letter notifies you that Water Use Permit No. 339 has been transferred from Ciba Seeds to Cargill, Incorporated pursuant to §174C-59, Hawaii Revised Statutes.

This letter transmits your water use permit for Nalwa Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. As part of the Commission’s approval, the following special condition was added and is part of your permit under Standard Permit Condition 20:

Special Condition

1. As-built drawings of the well and pump and complete pumping test record shall be submitted within sixty (60) days.

This condition was met by transmittal of November 6, 1997.

Enclosed with this letter of approval are the following:

1. Your water use permit
2. Your official monthly water use report form
GROUND WATER USE PERMIT
WUP NO. 339

PERMITTEE

Applicant/Water User                  Landowner of Source
Address  CARGILL INCORPORATED          Address  CARGILL INCORPORATED
         P.O. BOX 701                      P.O. BOX 701
         KAUNAKAKAI, HI 96748             KAUNAKAKAI, HI 96748

PERMITTED SOURCE INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>MOLOKAI</th>
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</thead>
<tbody>
<tr>
<td>Water Management Area</td>
<td>MANAWAINUI</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>CENTRAL</td>
</tr>
<tr>
<td>Aquifer System</td>
<td>MANAWAINUI</td>
</tr>
<tr>
<td>System Sustainable Yield</td>
<td>2 mgd</td>
</tr>
<tr>
<td>Well Name</td>
<td>NAIWA</td>
</tr>
<tr>
<td>State Well No.</td>
<td>0705-05</td>
</tr>
</tbody>
</table>

PERMITTED USE INFORMATION

<table>
<thead>
<tr>
<th>Reasonable beneficial use</th>
<th>AGRIC (based on IRRIGATION OF 75 ACRES OF SEED CORN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawal (12 month moving ave.)</td>
<td>0.012 mgd</td>
</tr>
<tr>
<td>Location of water use</td>
<td></td>
</tr>
<tr>
<td>TMK #</td>
<td>5-2-11-7</td>
</tr>
<tr>
<td>Address</td>
<td>NAIWA, MOLOKAI</td>
</tr>
<tr>
<td>State land use classification</td>
<td>AG</td>
</tr>
<tr>
<td>County zoning classification</td>
<td>AG</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 ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

9. The water use permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect water sources in quantity, quality, or both;
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June 1987, shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Homes, if applicable; or
   g. Carry out such other necessary and proper exercise of the State's and the Commissions'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 withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANAWAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

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

---

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
In response to your fax of February 19 regarding transfer of the above referenced
permit, I would like to clarify that the permit should indeed be transferred to Cargill,
Incorporated since the Molokai property was sold by Novartis Seeds, Inc. (as successor
in interest to Ciba-Geigy Corporation) to Cargill, Incorporated.

Because a letter from Ciba-Geigy Corporation was requested in support of Cargill's
transfer request, the purpose of my letter was simply to outline the fact that Novartis
Seeds, Inc. (as successor to Ciba-Geigy's interest in the water use permit) supported
Cargill's request to transfer Water Use Permit #339 for Naiwa Well No. 0705-05.

If you have any further questions, please advise.

Thank you for your assistance in this matter.
We are prepared to transfer the Water Use Permit #339 for Nai'ana Well (Well No. 0705-05) located on the island of Moloka'i.

Your letter of 10 Feb 98 (p.2 of this transmittal) is attached to several documents verifying the transfer of assets from Ciba-Geigy (the current permit holder) to Novartis Seeds, Inc.

However the letter requests that the transfer be made to Cargill, Incorporated. We apologize for some confusion as to why this should be so.

Please clarify this, and we shall proceed without further ado.
February 10, 1998

Edwin Sakodo  
Deputy Director  
Water Resource Commission  
P. O. Box 621  
Honolulu, HI. 96809

RE: Well No. 0705-05

Dear Mr. Sakodo:

We have recently been informed by Cargill, Incorporated that you have requested a letter from Ciba-Geigy Corporation in support of transferring the permit for the above referenced well to Cargill. The permit for pumping 4,380,000 gallons/year or 12,000 gallons/day is held in the name of Ciba-Geigy Corporation.

I respectfully request that you proceed with Cargill's request to transfer the above referenced permit from the name of Ciba-Geigy Corporation to Cargill, Incorporated based on the following information.

By means of a General Indenture of Conveyance, Assignment and Transfer of Assets and Assumption of Liabilities, Novartis Corporation (formerly known as Ciba-Geigy Corporation) transferred to Novartis Seeds Inc. "Any and all real estate or rights in real estate..." which belonged to the Ciba-Geigy Seeds Division. The Molokai property was subsequently transferred from the name of Ciba-Geigy Corporation to Novartis Corporation and then conveyed to Novartis Seeds, Inc. via a Quitclaim Deed. Copies of the applicable documents are enclosed for your review.

If you have any questions or need further information, please feel free to contact me.

Thank you for your consideration of this request.

Very truly yours,

Edward C. Resler

Edward C. Resler

ECR/nw  
Enclosures  
cc: Denise C. Clark, Senior Paralegal  
Cargill, Incorporated
GENERAL INDENTURE OF CONVEYANCE,
ASSIGNMENT AND TRANSFER OF ASSETS AND
ASSUMPTION OF LIABILITIES

THIS GENERAL INDENTURE OF CONVEYANCE, ASSIGNMENT AND TRANSFER OF ASSETS AND ASSUMPTION OF LIABILITIES ("General Indenture"), is made and entered and delivered effective as of the 1st day of January, 1997, from NOVARTIS CORPORATION, a New York corporation, formerly known as CIBA-GEIGY CORPORATION, a New York corporation ("Grantor"), having offices located at 556 Morris Avenue, Summit, New Jersey 07901 and doing business, in part, as and through its CIBA-GEIGY SEEDS DIVISION (referred to herein as the "Seeds Division"), to Grantor’s wholly-owned subsidiary NOVARTIS SEEDS, INC., a Delaware corporation, formerly known as NORTRUP KING CO. ("Grantee"), having its address at 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427.

WITNESSETH:

WHEREAS, pursuant to a Certificate of Merger filed with the Secretary of State of New York on December 31, 1996 and effective January 1, 1997, Sandoz Corporation, a New York corporation, has been merged into Grantor (the "Merger"), with Grantor being the surviving corporation, and pursuant to the Merger, Grantee, a former wholly-owned subsidiary of Sandoz Corporation, became a wholly-owned subsidiary of Grantor; and

WHEREAS, pursuant to a plan of reorganization to be implemented in connection with and immediately following the Merger, and pursuant to resolutions duly adopted by the Boards of Directors of the Grantor and the Grantee, it has been authorized and agreed that Grantor shall contribute all of the assets (other than certain excluded intellectual property assets) and liabilities of Grantor’s Seeds Division as a capital contribution to its wholly-owned subsidiary, Grantee;

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein:

1. As a contribution to capital of Grantor’s wholly-owned subsidiary, Grantee, the Grantor does by these presents GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER and DELIVER unto Grantee, and unto its successors and assigns forever, all of the following:

All of the assets, properties, and business as a going concern, of the Seeds Division, excluding only the intellectual property listed on Schedule D attached hereto (the "Excluded Assets"), but including without limitation the following assets, properties and elements of the business as a going concern of the Seeds Division:

(a) Any and all cash, securities and other liquid or current assets;
(b) All notes and accounts receivable;
(c) Any and all real estate or rights in real estate, as described in the deeds of conveyance as to such properties, if any, delivered to Grantee;
(d) All furniture and fixtures;
(e) All machinery and equipment;
(f) Grantor’s entire interest in and to any and all other tangible and intangible assets (except for the Excluded Assets) used by the Seeds Division or in the Seeds Division’s business, including without limitation: all personal property, insurance policies; all contracts, agreements or arrangements; all customer or client lists and all right to pursue the Seeds Division’s business with such clients or others; all leases and licenses; all trademarks, trade names, trade secrets, service marks, patents, plant variety protection certificates, and all other intellectual property rights, if any, not among the Excluded Assets; all claims or demands under contracts or otherwise; all choses in action, rights, causes of action, deposits, bank accounts and deferred assets; all rights to monies due or to become due; all rights to the use of the name of the Seeds Division, or any variation thereof, if desired,
and to carry on the business in the name of the Seeds Division or in such other name as Grantee may choose; and any and all other assets, rights, or properties of or used by the Seeds Division or in the Seeds Division's business, tangible or intangible, and of any nature, description or kind; and

(g) Without limiting the foregoing, any such assets of the Seeds Division as may be listed and identified in a Schedule A attached hereto and identified as the "Included Assets Schedule", if any,

TO HAVE AND TO HOLD all of the foregoing assets, properties and rights (hereinafter referred to as the "Assets"), with all of the appurtenances thereto, subject to all liabilities of Grantor doing business as the Seeds Division and all liabilities of Grantor arising out of or in connection with the Seeds Division or the business of the Seeds Division which are assumed by Grantee pursuant to this General Indenture, unto Grantee, its successors and assigns, for its and their use forever.

2. This General Indenture is made with full substitution and subrogation of Grantee in and to all covenants and warranties by others heretofore given or made in respect of any or all of the Assets, the business of the Seeds Division, or any part thereof.

3. Grantor shall, whenever reasonably requested to do so by Grantee, execute, acknowledge and deliver such other instruments of conveyance and transfer and take such other action as reasonably may be required more effectively to convey, transfer to and vest in Grantee, and to put Grantee in possession of any property conveyed, transferred and delivered hereunder, and in the case of contracts or any other assets that cannot be transferred effectively without the consent of third parties to cooperate with Grantee to obtain such consents and to take such other action as may be reasonably necessary to assure Grantee all rights and benefits thereof.

4. Grantor hereby constitutes and appoints Grantee the true and lawful attorney of Grantor, with full power of substitution, in the name of Grantor or in the name of Grantor but on behalf of and for the benefit of Grantee, to demand, receive and collect for the account of Grantee any and all monies, credits, claims or rights due or to become due relating to the Assets or business of the Seeds Division; to collect, for the account of Grantee, all receivables and other items of Grantor transferred to Grantee as provided herein, and to endorse in the name of Grantor, the Seeds Division or Grantee any checks received on account of such receivables or other items; to institute and prosecute in the name of Grantor or the Seeds Division, but at the expense and for the benefit of Grantee, any and all proceedings at law, in equity or otherwise which Grantee may deem proper; to collect, assert, protect, defend or enforce any claim, right, title, debt, account or interest of any kind in or to any of the Assets of the business of the Seeds Division, and to defend, compromise, settle and release or otherwise proceed with respect to any and all claims, actions, suits or proceedings in relation thereto; to execute, acknowledge, deliver, swear to, file, and record at the appropriate public offices, any and all such other confirmatory instruments and documents as may be necessary or appropriate to perfect or evidence Grantee's title or interest in and to any of the Assets and business of the Seeds Division as a going concern; and to do all such acts and things in relation to the Assets and/ or business of the Seeds Division as a going concern as Grantor shall deem desirable.

5. In consideration of the foregoing, Grantee hereby assumes and agrees to pay, perform and discharge all liabilities and obligations of Grantor, incurred in the name of or for or on behalf of the Seeds Division, and/or relating to or arising out of or in connection with the Assets or the business of the Seeds Division, of every nature, description and kind, whether fixed, contingent, known or unknown, and including, without limitation to the foregoing, all of the liabilities, if any, listed and identified in a Schedule B attached hereto and identified as the "Assumed Liabilities Schedule" (collectively, the "Assumed Liabilities").

6. Grantee further agrees to record the foregoing transfer of Assets and assumption of the Assumed Liabilities as a contribution to capital on the books of Grantee, and the transfer shall be completed and booked consistent with the parties intention that the conveyance and transfer of Assets and assumption of Assumed Liabilities is consistent with the parties intention or relating to or arising out of the foregoing, all of the liabilities, if any, listed and identified in a Schedule B attached hereto and identified as the "Assumed Liabilities Schedule", if any,
Liabilities reflected by this General Indenture shall be a tax-free transaction for purposes of United States Federal and State income taxes.

7. Nothing herein shall be deemed or construed to prejudice the right of Grantee to contest any claim or demand as fully as Grantor or the Seeds Division might have done or as fully as Grantee may choose, or to deprive Grantee of any and all benefits, rights, defenses or counterclaims which Grantor or the Seeds Division may have had at any time or which Grantee shall have with respect to any of the Assumed Liabilities.

8. This General Indenture may be executed in any number of counterparts, each of which shall for all purposes be deemed to be an original, and all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have caused this General Indenture to be duly executed, signed, sealed and delivered effective as of the date and year first above written.

NOVARTIS CORPORATION

ATTEST:

By: [Signature]
Name: ROBERT L. THOMPSON, JR.
Title: EXECUTIVE VICE PRESIDENT

GRANTOR

[Corporate Seal]

NOVARTIS SEEDS, INC.

ATTEST

By: [Signature]
Name: EDWARD T. SHONSEY
Title: PRESIDENT & CEO

GRANTEE

[Corporate Seal]
STATE OF New Jersey § SS:
COUNTY OF Morris §

On this 22nd day of May, 1997, before me, the undersigned authority, a Notary Public in and for the State of New Jersey, personally appeared Edward T. Shonsey, known to me to be the person whose name is subscribed to the foregoing instrument, and by me duly sworn, did depose and say that (s)he is the VP of NOVARTIS CORPORATION, the corporation described in and which executed the foregoing instrument, as Grantor, that (s)he executed the same for, on behalf of and in the name of said corporation upon due authorization of the corporation by order of its board of directors and by all requisite corporate action, for the purposes and consideration therein expressed, as the act and deed of said corporation.

LorrainE F. Williams
Notary Public

Commission Number: NA

STATE OF Minnesota § SS:
COUNTY OF Hennepin §

On this 8th day of May, 1997, before me, the undersigned authority, a Notary Public in and for the State of Minnesota, personally appeared Edward T. Shonsey, known to me to be the person whose name is subscribed to the foregoing instrument, and by me duly sworn, did depose and say that (s)he is the Pres. & CEO of NOVARTIS SEEDS, INC., the corporation described in and which executed the foregoing instrument, as Grantee, that (s)he executed the same for, on behalf of and in the name of said corporation upon due authorization of the corporation by order of its board of directors and by all requisite corporate action, for the purposes and consideration therein expressed, as the act and deed of said corporation.

My Commission Number: NA
FTL1-229848

TimothY M. Bangasser
Notary Public

Page 4 of 4 Pages
OFFICE OF THE
ASSISTANT REGISTRAR, LAND COURT
STATE OF HAWAII
(Bureau of Conveyances)

The original of this document was recorded as follows:

LCO
DOCUMENT NO. 12345
DATE 3-5-97 TIME 10:45

LAND COURT SYSTEM REGULAR SYSTEM

AFTER RECORDATION, RETURN BY MAIL () PICK UP ()

To: Dwyer Imanaka Schraff Kudo Meyer & Fujimoto
(808) 524-8000
Attn: Stacy E. Uehara

Tax Map Key No. (2)5-2-011:007

Total Pages: 9

PETITION FOR AMENDMENT OF LAND COURT CERTIFICATE OF TITLE NUMBER 298,966 AND ORDER
IN THE LAND COURT OF THE STATE OF HAWAII

In the Matter of the Application Application No. 1861

of

Molokai Ranch, Limited

to register and confirm title to
land situate at Naiwa, Molokai, County of Maui, State of Hawaii

PETITION FOR AMENDMENT OF LAND COURT CERTIFICATE OF TITLE NUMBER 298,966 AND ORDER

COMES NOW, Novartis Corporation ("Petitioner"), a New York corporation, and hereby states as follows:

1. Pursuant to a Certificate of Merger filed with the Secretary of State of New York on December 31, 1996 and effective January 1, 1997, Sandoz Corporation, a New York corporation, has been merged into Petitioner, formerly known as Ciba-Geigy Corporation, and with Petitioner being the surviving corporation. A certified copy of the Certificate of Merger of Sandoz Corporation into Ciba-Geigy Corporation under Section 904 of the Business Corporation Law ("Certificate of Merger") is attached hereto as Exhibit "A" and made a part hereof (return of the original certification is hereby requested upon the substitution of a copy therefore);

2. Pursuant to the Certificate of Merger, the name of Ciba-Geigy Corporation was changed to Petitioner's name (Novartis Corporation);

3. Land Court Certificate of Title No. 298,966 is registered in the name of Ciba-Geigy Corporation;
WHEREFORE, Petitioner respectfully prays that an Order be made amending Land Court Certificate of Title Number 298,966 to change the name of Ciba-Geigy Corporation to Novartis Corporation.

DATED: Morris, New Jersey, this 13th day of August, 1997.

NOVARTIS CORPORATION,
a New York corporation

By Wayne L. Matthews
Its VP & Assoc. Gen. Counsel

By Robert K. Thompson, Jr.
Its Exec. VP & Gen. Counsel
On this 13th day of August, 1997, before me personally appeared ______________________
_________________________ and ______________________ to me personally known, who, being by
me duly sworn, did say that they are the ______________________ and ______________________
_________________________ , respectively, of NOVARTIS CORPORATION, a New York corporation, and that the said
instrument was signed on behalf of said corporation by authority of its Board of Directors, and
that said officer acknowledged said instrument to be the free act and deed of said corporation.

LORRAINE F. WILLIAMS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Aug. 28, 1997
ORDER

Upon the record and evidence herein, the prayer of the foregoing Petitioner is hereby granted, and the Assistant Registrar of this Court is so ordered.

DATED: Honolulu, Hawaii, AUG 28 1997

KATHLEEN HANAWAHINE

Acting Registrar for the Judge of the Land Court
State of New York
Department of State

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

Witness my hand and seal of the Department of State on JUN 03 1997

[Signature]

Special Deputy Secretary of State

Exhibit "A"
Page 1 of 4
CERTIFICATE OF MERGER
OF
SANDOX CORPORATION
INTO
CIBA-GEIGY CORPORATION
UNDER SECTION 904 OF THE BUSINESS CORPORATION LAW

We, the undersigned, Jeff Benjamin and Bruce J. Brumberg, being respectively Vice President, General Counsel and Secretary, and Assistant Secretary of Ciba-Geigy Corporation and Robert L. Thompson, Jr. and Wayne F. Merkelson, being respectively Vice President, General Counsel and Secretary, and Vice President, Associate General Counsel and Assistant Secretary of Sandox Corporation hereby certify:

FIRST: The name of the constituent corporation which is to be the surviving corporation is Ciba-Geigy Corporation and the name under which it was formed is Ardsley Chemical Corporation. The date upon which its Certificate of Incorporation was filed by the Department of State is November 18, 1966.

SECOND: The name of the other constituent corporation which is being merged into the surviving corporation is Sandox Corporation, and the name under which it was formed is Zodnas Holdings, Inc. The date upon which its Certificate of Incorporation was filed by the Department of State is December 22, 1976.

THIRD: The Board of Directors of each of the constituent corporations has duly adopted a Plan of Merger setting forth the terms and conditions of the merger of said corporations.

FOURTH: As to each constituent corporation, the designation and number of outstanding shares of each class and series and the voting rights therefor are as follows:

(1) For Ciba-Geigy Corporation:
   (i) Common Stock, $1.00 par value; voting; 72,230,756 shares outstanding.
   (ii) Common Stock, $1.00 par value; nonvoting; 5,304 shares outstanding.

(2) For Sandox Corporation:
   Common Stock, $1.00 par value; voting; 1,000 shares outstanding.
(b) Shares entitled to vote as a class or series:
   (1) For Ciba-Geigy Corporation: None
   (2) For Sandos Corporation: None

FIFTH: The merger was adopted by each constituent corporation in the following manner:

   (a) As to Sandos Corporation, by the written consent of the sole shareholder.
   (b) As to Ciba-Geigy Corporation, by the written consent of the sole shareholder.

SIXTH: The Certificate of Incorporation of Ciba-Geigy Corporation is hereby amended as follows:

(a) Article 1 (concerning the name of the corporation) of the Certificate of Incorporation is hereby deleted in its entirety and replaced with:

"The name of the corporation shall be Novartis Corporation."

SEVENTH: The effective date of the merger shall be January 1, 1997.

IN WITNESS WHEREOF, we have signed this certificate on the 26th day of December, 1996, and we affirm the statements contained therein as true under penalties of perjury.

CIBA-GEIGY CORPORATION

By: [Signature]
Name: [Name]
Title: [Title]

By: [Signature]
Name: [Name]
Title: [Title]

SANDOS CORPORATION

By: [Signature]
Name: [Name]
Title: [Title]

By: [Signature]
Name: [Name]
Title: [Title]
OFFICE OF THE
ASSISTANT REGISTRAR, LAND COURT
STATE OF HAWAI'I
(Bureau of Conveyances)

The original of this document was
recorded as follows:

DOCUMENT NO. 2402809
DATE 12-5-97 TIME 11:15
CT 497,505

LAND COURT SYSTEM
AFTER RECORDATION, RETURN BY MAIL ( ) PICK UP (X)

REGULAR SYSTEM

To: Dwyer Imanaka Schraff Kudo Meyer & Fujimoto
900 Fort Street Mall, Suite 1800
Honolulu, Hawaii 96813
ATTN: Benjamin A. Kudo/Stacy E. Uehara

Phone: (808) 524-8000

Total Pages: 4

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS:

That NOVARTIS CORPORATION (formerly known as CIBA-GEIGY CORPORATION), a New York corporation, whose mailing and post office address is 556 Morris Avenue, Summit, New Jersey 07901 hereinafter called the "Grantor," in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) paid by NOVARTIS SEEDS, INC., a Delaware corporation, whose business and post office address is 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427, hereinafter called "Grantee," the receipt whereof is hereby acknowledged, does hereby remise, release and forever quitclaim all of the property described in Exhibit "A" attached hereto and expressly incorporated herein by this reference, unto Grantee as TENANT IN SEVERALTY, its successors and permitted assigns;

AND the reversions, remainders, rents, issues and profits thereof, and all of the estate, right, title and interest of the Grantor, both at law and in equity, therein and thereto.

TO HAVE AND TO HOLD the same, together with all buildings, improvements, tenements, hereditaments, rights, easements, privileges and appurtenances, if any, thereon and thereunto belonging or appertaining or held and enjoyed therewith, unto the Grantee according to the tenancy hereinbefore set forth, absolutely and forever.

0731970102620.01
The terms "Grantor" and "Grantee," as and when used herein or any pronouns used in place thereof, shall mean and include the masculine, feminine or neuter, the singular or plural number, individuals, or corporations, and their and each of their respective successors, estates, heirs, personal representatives and assigns, according to the context thereof. All obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention shall be clearly expressed elsewhere herein.

IN WITNESS WHEREOF, the Grantor has executed these presents this 13th, day of August, 1997.

NOVARTIS CORPORATION,
a New York Corporation

By Wayne P. Fickes
Its VP & Assc. Gen. Counsel

By Robert D. Vally, Jr.
Its Exec. VP & General Counsel

"Grantor"
On this 3rd day of August, 1997, before me appeared Wayne P. Hertlein and Thomas J. Thompson, to me personally known, who, being by me duly sworn, did say that they are the VP, General Counsel and VP, Finance, respectively, of NOVARTIS CORPORATION, a New York corporation, and that the foregoing instrument was signed on behalf of said corporation by authority of its Board of Directors, and said officers acknowledged said instrument to be the free act and deed of said corporation.

Lorraine F. Williams
Notary Public, State of New Jersey

LORRAINE F. WILLIAMS
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Aug. 28, 1997
EXHIBIT "A"

All of that certain parcel of land situate at Naiwa and Kahanui, Island of Molokai, County of Maui, State of Hawaii, described as follows:

LOT 222, area 102.738 acres, as shown on Map 26, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 1861 of Molokai Ranch, Limited;

Together with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "111" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Together also with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "112" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Being the premises described in Transfer Certificate of title No. 298,966 issued to CIBAGEIGY CORPORATION, a New York corporation.
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**Date:** 1/20

**Suspense Date:**

**Approval**

**Signature**

**Information**

**PLEASE:**
- See Me
- Review & Comment
- Take Action
- Type Draft
- Type Final
- File
- Xerox ___ copies

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Roy No Need REPORT OF TERMINATION
Because was NOT DECLARED IN '89
was DRILLED IN '90

Richard, be sure to include toll-free in correspondence.
Mr. Adolph Helm, Manager
Cargill Inc.
P.O. Box 701
Kaunakakai, Hawaii 96748

Dear Mr. Helm:

Transfer Ownership of Naiwa Well (Well No. 0705-05)

As requested from your January 19, 1998 letter, our files and data bases will be corrected to reflect the change of ownership.

If you have any questions, please contact Roy Hardy of the Commission staff at 587-0274 or toll-free at 1-800-468-4644, extension 70274 as soon as possible.

Sincerely,

Edwin T. Sakoda
Acting Deputy Director

RJ: ss
I hereby certify that this is a true copy from the records of the Bureau of Conveyances, as
Registrar of Conveyances
Assistant Registrar, Land Court
State of Hawaii  NOV 20 1997

LAND COURT SYSTEM  REGULAR SYSTEM
AFTER RECORDATION, RETURN BY MAIL X PICK UP ()

To: Dwyer Imanaka Schraff Kudo Meyer & Fujimoto  200891 FNTIC
Phone: 524-8000
Attn: Stacy E. Uehara

Tax Map Key No. (2) 5-2-011:007
Total Pages: 7

LIMITED WARRANTY DEED

KNOW BY ALL MEN THESE PRESENTS:

THAT NOVARTIS SEEDS, INC., a Delaware corporation, whose post office address
is 7500 Olson Memorial Highway, Golden Valley, Minnesota 55427 ("Grantor"), in
consideration of TEN AND NO/100 UNITED STATES DOLLARS (U.S. $10.00) and other
valuable consideration paid by CARGILL, INCORPORATED, a Delaware corporation, whose
post office address is 15407 McGinty Road, Wayzata, Minnesota 55391 ("Grantee"), receipt
whereof is hereby acknowledged, does hereby grant, bargain, sell and convey all of that certain
real property more particularly described in Exhibit "A" attached hereto and expressly
incorporated herein by this reference, unto Grantee, as Tenant in Severalty, in fee simple.

AND the reversion, remainders, rents, issues and profits thereof and all of the estate,
right, title and interest of Grantor, both at law and in equity, therein and thereto;

TO HAVE AND TO HOLD the same, as to the undivided interest in said premises, together
with all rights, easements, privileges and appurtenances thereon and thereunto belonging or
pertaining or held and enjoyed therewith, unto Grantee, absolutely and forever, according to
the tenancy set forth hereinabove:
AND Grantor, in consideration of the premises, does hereby covenant and agree with Grantee that Grantor is lawfully seized in fee simple of said real property and rights; that the same are free and clear of and from all encumbrances, except as described herein, and except for the lien of real property taxes not yet by law required to be paid; that Grantor does have good right and title to sell and convey said real property as aforesaid; and that Grantor will WARRANT AND DEFEND the same unto Grantee forever against any and all encumbrances made or suffered by Grantor.

AND Grantee hereby understands and agrees that said real property is being conveyed "AS IS, WHERE IS AND WITH ALL FAULTS," except for: (1) the warranty of title set forth herein; (2) the warranty that Grantor has not violated and is presently in compliance with all Environmental Requirements pertaining to or otherwise impacting the Property and that no Hazardous Substances have been manufactured, used, stored, released, buried, disposed of on or off site from, or located on said real property as aforesaid by Grantor, or to Grantor's knowledge, by any predecessor owner/operator of same, except in compliance with all applicable federal, state, or local laws or regulations. SUBJECT TO THE FOREGOING, GRANTOR HAS NOT MADE AND DOES NOT MAKE ANY REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THE CONDITION OF SAID REAL PROPERTY INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

AND subject to the warranty relating to compliance with Environmental Requirements in the foregoing paragraph, Grantee hereby acknowledges that Grantor is not responsible for any patent condition affecting the said real property in any way, whether or not known or discoverable or hereafter discovered by Grantee.

AND Cargill, Incorporated hereby understands and agrees to give up, waive and relinquish all rights to assert any claim, demand, proceeding or lawsuit of any kind against Novartis Seeds, Inc. with respect to the condition of the land, improvements and any personal property, except for claims which are based upon a breach of the warranties provided herein above or Novartis Seed's concealment of material facts and defects, which Novartis Seeds is required to disclose by law.

AND the parties hereto also agree that:

1. The term "Environmental Requirements" means all applicable present and future statutes, regulations, rules, ordinances, codes, licenses, permits, orders, approvals, plans, authorizations, concessions, franchises, and similar items, of all governmental agencies, departments, commissions, boards, bureaus, or instrumentalities of the United States, states and political subdivisions thereof and all applicable judicial, administrative, and regulatory decrees, judgments, and orders relating to the protection of human health or the environment, including, without limitation: (a) any and all applicable federal and/or State of Hawaii environmental laws including, without limitation the Water Pollution Control Act (33 U.S.C. § 1321 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. § 9601 et seq.), Subchapter IX of the
Solid Waste Disposal Act (Regulation of Underground Storage Tanks (42 U.S.C. § 6991 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), the Clean Water Act (33 U.S.C. § 1251 et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), the Safe Drinking Water Act (42 U.S.C. § 300f et seq.), Hawaii Revised Statutes ("H.R.S.") § 321-21 (Management and Disposal of Infectious Waste), H.R.S. Chapter 340A (Solid Waste), H.R.S. Chapter 340E (Safe Drinking Water), H.R.S. Chapter 342B (Air Pollution), H.R.S. Chapter 342D (Water Pollution), H.R.S. Chapter 342H (Solid Waste Pollution), H.R.S. Chapter 342I (Lead Battery Recycling), H.R.S. Chapter 342J (Hazardous Waste), H.R.S. Chapter 342L (Underground Storage Tanks), H.R.S. Chapter 342N (Used Oil Transport, Recycling and Disposal), H.R.S. Chapter 342P (Asbestos), H.R.S. Chapter 128D (Hawaii Environmental Response Law), or any similar federal, State of Hawaii, or County of Maui laws, ordinances, rules, regulations or guidelines now existing or hereafter adopted, published and/or promulgated pursuant thereto; (b) all requirements pertaining to reporting, licensing, permitting, investigation, and remediation of emissions, discharges, releases, or threatened releases of Hazardous Substances; and (c) all requirements pertaining to the protection of the health and safety of employees or the public.

2. The term "Hazardous Substance(s)" means any substance, element, compound, mixture, solution, materials or waste, hazardous, toxic, or otherwise which are or may become regulated by the United States Government, the State of Hawaii, and/or the County of Maui, including any department, agency, or political subdivision thereof. Without limitation to the generality of the foregoing sentence, the term "hazardous substance", includes any material or substances that is: (a) petroleum; (b) asbestos; (c) a flammable explosive; (d) radio-active material; (e) organic substance known as polychlorinated biphenyls; (f) any material known to cause cancer or reproductive toxicity, (g) infectious; (h) carcinogenic; (i) mutagenic; (k) any material or substance which is (or may become) regulated by applicable federal and/or State of Hawaii environmental laws including, without limitation the Water Pollution Control Act (33 U.S.C. § 1321 et seq.), the Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. § 9601 et seq.), Subchapter IX of the Solid Waste Disposal Act (Regulation of Underground Storage Tanks (42 U.S.C. § 6991 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. § 1801 et seq.), the Clean Water Act (33 U.S.C. § 1251 et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), the Safe Drinking Water Act (42 U.S.C. § 300f et seq.), Hawaii Revised Statutes ("H.R.S.") § 321-21 (Management and Disposal of Infectious Waste), H.R.S. Chapter 340A (Solid Waste), H.R.S. Chapter 340E (Safe Drinking Water), H.R.S. Chapter 342B (Air Pollution), H.R.S. Chapter 342D (Water Pollution), H.R.S. Chapter 342H (Solid Waste Pollution), H.R.S. Chapter 342I (Lead Battery Recycling), H.R.S. Chapter 342J (Hazardous Waste), H.R.S. Chapter 342L (Underground Storage Tanks), H.R.S. Chapter 342N (Used Oil Transport, Recycling and Disposal), H.R.S. Chapter 342P (Asbestos), H.R.S. Chapter 128D (Hawaii Environmental Response Law), or any similar federal, State of Hawaii, or County of Maui laws, ordinances, rules, regulations or guidelines now existing or hereafter adopted, published and/or promulgated pursuant thereto; or (l) the presence of which on the demised premises causes or threatens to cause a nuisance upon the demised premises or to adjacent
properties or poses or threatens to pose a hazard to the health or safety of persons, to property or to the environment, on or about the demised premises.

3. The terms "Grantor" and "Grantee" as and when used herein or any pronouns used in place thereof, shall mean and include the masculine, feminine or neuter, the singular or plural number, individuals, partnerships or corporations, and their and each of their respective successors, heirs, personal representatives and assigns, according to the context thereof. All obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention shall be clearly expressed elsewhere herein.

4. This instrument may be executed in counterparts, each of which shall be deemed an original, and said counterparts shall together constitute one and the same instrument, binding all of the parties hereto, notwithstanding that all of the parties are not signatories to the original or the same counterparts. For all purposes, including, without limitation, recitation, filing and delivery of this instrument, duplicate, unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.

IN WITNESS WHEREOF, the parties hereto have executed these presents this 13 day of November, 1997.

NOVARTIS SEEDS, INC, a Delaware corporation

By Edward C. Riesler
Its Vice President and General Counsel

"Grantor"

CARGILL, INCORPORATED, a Delaware corporation

By Brian F. Hill
Its President, Worldwide Seed

"Grantee"
STATE OF MINNESOTA

COUNTY OF Hennepin

On this 13th day of November, 1997, before me personally appeared EDWARD C. RESLER, to me personally known, who, being by me duly sworn, did say that he is the Vice President and General Counsel of NOVARTIS SEEDS, INC., a Delaware corporation and that said instrument was signed on behalf of said corporation by authority of its Board of Directors, and the said officer acknowledged said instrument to be the free act and deed of said corporation.

NANCY A. WEST

Notary Public, State of Minnesota

My commission expires: Jan 31, 2000
EXHIBIT "A"

All of that certain parcel of land situate at Naiwa and Kahanui, Island of Molokai, County of Maui, State of Hawaii, described as follows:

LOT 222, area 102.738 acres, as shown on Map 26, filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii ("Office") with Land Court Application No. 1861 of Molokai Ranch, Limited;

Together with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "111" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Together also with a perpetual nonexclusive easement, to be exercised with all others entitled thereto, to use Easement "112" for roadway and utility purposes, within Lot 221, as shown on Map 26, filed with Land Court Application No. 1861, as granted to Cooke Land Company, Inc., a Hawaii corporation, by Molokai Ranch, Limited, a Hawaii corporation, by Grant of Easements for Roadway and Utility Purposes dated June 22, 1987, filed as Document No. 1476887;

Being the premises described in that certain Quitclaim Deed dated August 13, 1997, made by and between Novartis Corporation, a New York corporation, as Grantor and Novartis Seeds, Inc., a Delaware corporation, as Tenant in Severalty, as Grantee, recorded in said Office as Document No. 24D2809, and duly noted on Land Court Certificate of Title No. 497505.

END OF EXHIBIT "A"
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<td>JINNAI, R.</td>
<td></td>
<td>YODA, K.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KUNIMURA, I.</td>
<td></td>
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</table>
October 24, 1997

Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

Re: Naiwa Well (Well No. 0705-05); Manawainui Ground Water Management Area

Dear Sir/Madam:

The following documents are hereby submitted to fulfill the special conditions to the issuance of an interim water use permit to Ciba Seeds for the reasonable and beneficial use of 12,000 gallons per day of brackish water from the Naiwa Well (Well No. 0705-05) for agricultural irrigation use on 75 acres:

(1) Ciba-Geigy Pump Cross-Section As-Built Drawing;
(2) Ciba-Geigy Pump Curve;
(3) Ciba-Geigy Well Cross-Section As-Built Drawing; and

Should you have any questions regarding the above, please do not hesitate to contact the undersigned.

Very truly yours,

DWYER IMANAKA SCHRAFF KUDO MEYER & FUJIMOTO

Stacy E. Uehara

SEU:ay

cc: Dennis Steele

Enclosures
CIBA-GEIGY WELL CROSS-SECTION AS BUILT

WELL NO. 0705-05 MOLAKAI

APPROX. GROUND EL. 254'

ASTM A-53 CASING
12" I.D. X 3/8"

GROUT

5' SAND

GRAVEL PACK
3/8" BASALT GRAVEL

SCREEN
12" ASTM A-53
1/4" LOUVER SLOTS

NOT TO SCALE
EVALUATION OF DRILLING AND TESTING
CIBA-GEIGY WELL
MOLOKAI, HAWAII 1990

PREPARED BY: CHESTER LAO
HYDROLOGIST-GEOLOGIST
JULY 15, 1990
SUMMARY

This report presents the hydrogeological evaluation of the recently completed well located on the Molokai Research Farm with recommendations for sizing of pump and for use of the well water. The well was completed satisfactorily by the drilling contractor Fred Page International and was successfully test pumped. As pointed out in my report of 1989, the chances of finding the freshest water was by the highway rather than at this location. With due consideration, however, of the primary purpose of the well to be able to bring in crops already in the ground and budgetary limits, the site selected was still considered favorable. Testing the well for yield and drawdown shows a capacity of 400 gallons per minute with a drawdown of slightly over 7 feet is possible. For a diesel powered pumping unit working against a total dynamic head of 445 feet including 60 pounds per square inch delivery pressure, a power unit of 120 horsepower is recommended.

Water quality improved slightly over the 78 hours of test pumping from an initial 3360 micromhos to 3260 micromhos field conductivity. Calibration to a known standard reduces the values to 3125 micromhos and 3032 micromhos, respectively. Salinity of the water should be satisfactory to complete a season of crops. Dilution with low salinity state water could easily double the available water for expanded normal operations.

WELL DRILLING

Unfortunately through miscommunication, well cutting samples were not saved for the first 100 feet of drilling for determination of lithologic character. Although regrettable from the viewpoint of recording data, the loss is not considered important to this well. According to the driller, this interval consisted of soil and weathered rock. The remaining 181 feet of formations is compiled and attached as "Formation Log for Ciba Geigy Molokai Well". Nothing of an unusual geologic nature in the formations was noted. The formations for the most part are rather thick dense aa type lava flows with associated clinkers and dense pahoehoe flows that are probably transitional to aa. The lavas are from the Upper Member of the East Molokai Volcanic Series of the East Molokai volcanic shield. The dense massive nature of the flows were difficult to drill. The most important interval of the well which is below the water table consisted mostly of a several massive flows with a few associated thin clinker.
beds. Nevertheless, the well is considered a good producer with moderate drawdown.

TEST PUMPING

Test pumping of the well was performed with a diesel powered unit driving a line shaft multistage turbine pump through a right angle drive head with an in-out ratio of 1:2. A 4-inch flow meter and gate valve were located in the discharge line for the purpose of measuring rate and gallons pumped and to insure a full pipe of water passing the meter. An air line was attached to the pump column to measure drawdown. Following installation of the pump in the well, surging was performed to cleanse the well of cuttings. The well was then allowed to recover and rest 3 days before the actual test began. Testing was divided into two phases consisting of a yield-drawdown test and a 72-hour sustained test.

YIELD-DRAWDOWN TEST. This test required 6 hours for completion because it was not known beforehand how sensitive the well was to pumping and a slow and sure approach was better than rash and sorry which could have set matters back considerably. The results of this testing are presented as the attachment titled "Ciba Geigy Well Yield-Drawdown Test".

The rates pumped ranged from 100 gpm to the maximum output of the test pump at 344 gpm. The drawdown at 100 gpm was not measurable as a pressure loss on the gage. The maximum indicated drawdown was 5.54 feet at 344 gpm. Some variation of drawdown was noted in testing but these were the results of well improvement and to a minor extent from tidal effects on the aquifer. Plotting of the data on log-log paper and fitting the points to a straight line permits the drawdown at rates not tested to be determined. For the rate of 400 gpm which presently best fits the irrigation practice on the farm, drawdown would be approximately 7 feet. A linear regression analysis with an r of .979 predicts a drawdown of 7.17 feet which corroborates the log-log plot.

SUSTAINED TEST. After completion of the yield-drawdown test, the sustained test began one and one-half hours later and continued uninterrupted for 72 hours. The purpose of this testing is detect changes of drawdown which indicate aquifer boundaries and to detect changes of water quality with time, both essential to determining whether a well is likely to meet the test of time for yield and utility. From previously gathered data from the yield-drawdown test on water quality and rate-drawdown and equipment limitations, a rate of 300 gpm was selected. The rate selection corresponds to an engine speed of slightly over 1700 rpm to insure completion of the test without interruption due equipment failure. These data
are presented as the attachment titled "72 Hour Uninterrupted Test Pumping".

The sustained test indicates water quality improved slightly over the duration of the test based on field measurements of specific conductance which is a measure of total dissolved solids or salinity of the water. Although a field kit was used by the farm manager Daryl Leer to titrate for chloride concentration, a more controlled analysis by a qualified lab should be made. Depending upon the chloride ratio to the other ions contributing to specific conductance of the water, chloride content could range from about 750 to 1000 ppm. Total dissolved solids (TDS) could range from approximately 2000 to 2300 ppm.

PLUMBNESS TEST. A test of the plumbness of the 12-inch I.D. well casing and louvered screen was made to a depth of 295 feet. This was performed by lowering a plummet with a minimum circumferential clearance of the sidewall on a stainless steel cable suspended over a pulley centered over the casing. Owing to the strong gusty winds at time of the test, the pulley was suspended at a height of 65.5 inches rather than the usual 10 feet or more. Despite the shortened pulley height which tends to increase the angular error, the well easily meets the American Water Works specification for drift of no more than 2/3 rds the inside diameter of the casing for any 100 feet interval or 8 inches per 100 feet. The maximum drift of 6.25 inches occurred in the 100 feet interval between 160 and 260 feet. The actual drift values are probably smaller because of difficulty in getting readings on a constantly swinging cable and the shortened pulley height. The well is quite straight, as can be verified by looking down the well, and has only a small drift to the northeast. Construction of the well more than meets specifications.

The data for the plumbness test were processed in a computer and the results are indicated in the attachment titled "Plumbness Test for Ciba Geigy Molokai Well.

PUMP RECOMMENDATIONS

The results of the extended test pumping allow a measure of confidence in sizing the permanent pump for the well, especially if it is recognized that actual output may have to be reduced. In contrast to constant speed electric power, the diesel powered unit can be regulate pump output by simply reducing engine speed. Partially closing down the valve on discharge line will serve the same purpose with either type of unit.

Because the central Molokai basal ground water body is
not well known except for the failures of the sugar plantation wells that had huge excess capacities and the potable county well near Kalae. Although this writer's prediction of the likelihood of this well being in an expanded transition zone was accurate, it is not possible to state unequivocally that this well can maintain forever its present salinity at a pumping rate of 400 gpm because of delayed reaction to pumping or adverse effects from future competitive wells.

On the other hand, more well capacity is available from the well for uses that tolerate higher salinity. For example, the well could supply 1000 gpm with a drawdown of approximately 22.8 feet for a brackish shrimp farm operation.

Based on an initial 400 gpm capacity against a total dynamic head of 445 feet with a discharge pressure of 60 psi, the following parameters have been calculated for your information:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Horsepower</td>
<td>45</td>
</tr>
<tr>
<td>Brake Horsepower</td>
<td>64</td>
</tr>
<tr>
<td>Diesel Horsepower</td>
<td>107 say, 110 to 125</td>
</tr>
<tr>
<td>Est. fuel costs</td>
<td>13.2 cents per dollar per gallon</td>
</tr>
</tbody>
</table>

The actual number of stages for the pump will depend on the bowl design. Trimming of impellers may be required to match the desired discharge pressure.

DISCUSSION AND RECOMMENDATIONS

For the purposes of insuring a crop can be brought to harvest with water from a well on the Molokai Research Farm, the Ciba Geigy well results are positive. Some of the unknowns presently not determined are: 1). crop tolerance to this well water, 2). long term stability of salinity of the well water to pumping especially if there are future competitors for ground water, and 3). presence in the well water of pesticides used on pineapple formerly grown on these lands.

The tolerance of corn to water of the salinity found in the well is already assured by the present successful experiences of the competing corn seed farms using water from shallow wells excavated along the coastline. The Molokai soils are well drained and should minimize salt or sodium buildup. Normal rainfall should assist in flushing of salts in the soil. Long term use for irrigation is expected to
cause an salinity increase of the well water from applied water in excess of plant requirements that percolate beyond the root zone. Continued availability of low salinity State water will minimize degradation of the ground water. Location of the well at the uppermost edge of the property and fields will tend to minimize the influence of return irrigation water.

Despite the slight improvement of salinity of the well water indicated in the 72-hour test, the stability of salinity over a 100 days of pumping at rate 25% greater remains to be determined and will only come from operational experience with this well. The uncertainty is based on the estimated low flux of ground water in this area derived from recharge. Thin basal lenses are sensitive to pumping and the fact that this well has not shown this behavior so far is positive encouragement, but there must be willingness to scale back pumpage to preserve usable water quality if required. Even if this well proves out a 400 gpm capacity with a steady salinity, a likely future scenario is a cutback due to quality changes brought about by new wells, particularly those in upland locations that could intercept ground water flow and place this well in an unfavorable back water position.

Under the present practices of the Department of Land and Natural Resources Commission on Water Resource Management the owner of a well that is not used to its permitted value will have his permitted use reduced. Permitted uses are reviewed every five years. Although the Commission granted Ciba Geigy 0.5 mgd, the well permit requested this amount in the unlikely event the well showed this potential. The present permitted use is probably safe for a while, but the State will be aware of who is using what since pumpage must be reported annually. The more use can be made of the potential of this well, the greater will be the future permitted use. The strategy to protect this well from future encroachment is to lodge a written statement against future proposed wells that appear to threaten the Ciba Geigy well at the times the permit applications are reviewed by the Commission on Water Resource Management. The threats are from three sources: firstly, from exceeding sustainable yield of the aquifer; secondly, from wells that too close; and finally, from upland wells of excessive capacity that would be using poorly quality water that would affect the quality of the underlying aquifer.

Use of this well for domestic water has been discussed with Mr. Leer and some of the administrative and quality requirements were discussed. Because of the brackishness of the well water, it presently fails to meet Department of Health requirements for drinking water. With dilution of one
part well water to two parts State water, the mineralogical standards could be met. The water also would have to be tested for EDB, DBCP, and TCP, which are soil fumigants formerly widely used for controlling nematodes in the pineapple industry. A scan for other pesticides, herbicide, and chemical on the Environmental Protection Agency list is also required. Simple dilution with pesticide free State water could possibly reduce the pesticides to acceptable limits; otherwise, costly removal of the contaminants would be required. Use of the well water for human consumption will further require that an Engineering Report as mandated by Section 29 must be submitted to and accepted by the Department of Health.

For all the above reasons, it is recommended that Ciba-Geigy plan using the well extensively for a test period after which decisions can be made as to the sale of water to other farms for off season use or for dilution to extend potable supplies. In this way, a prioritized beneficial use will be established to secure future access to this water.
## Formation Log for Ciba Geigy Molokai Well

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 100</td>
<td>Samples not saved for inspection</td>
</tr>
<tr>
<td>101 to 120</td>
<td>Massive, dense aa w/olivine and plagioclase crystals, bit of augite</td>
</tr>
<tr>
<td>123 to 127</td>
<td>Massive pahoehoe w/few round vesicles</td>
</tr>
<tr>
<td>127 to 134</td>
<td>Massive, dense</td>
</tr>
<tr>
<td>134 to 142</td>
<td>Less dense, reddish particles</td>
</tr>
<tr>
<td>142 to 145</td>
<td>Finer cuttings of same</td>
</tr>
<tr>
<td>145 to 153</td>
<td>Dense flat chips</td>
</tr>
<tr>
<td>153 to 157</td>
<td>Aa, porous clinkers</td>
</tr>
<tr>
<td>157 to 160</td>
<td>Fine sand sized cuttings, dense dark</td>
</tr>
<tr>
<td>160 to 165</td>
<td>Aa, porous, some clinkers</td>
</tr>
<tr>
<td>165 to 184</td>
<td>Dark, dense fine cuttings</td>
</tr>
<tr>
<td>184 to 189</td>
<td>Dense pahoehoe</td>
</tr>
<tr>
<td>189 to 198</td>
<td>Fine sand sized cuttings of dense</td>
</tr>
<tr>
<td>198 to 200</td>
<td>Coarse cuttings of brown-gray pahoehoe</td>
</tr>
<tr>
<td>200 to 204</td>
<td>Dark fine cuttings</td>
</tr>
<tr>
<td>204 to 224</td>
<td>reddish brown clinkers</td>
</tr>
<tr>
<td>224 to 236</td>
<td>Dense dark aa cuttings</td>
</tr>
<tr>
<td>236 to 239</td>
<td>Fist-sized red clinker, feldspar crystals</td>
</tr>
<tr>
<td>239 to 249</td>
<td>Dark sand sized cuttings</td>
</tr>
<tr>
<td>249 to 252</td>
<td>Large red clinkers</td>
</tr>
<tr>
<td>252 to 262</td>
<td>Large red clinkers</td>
</tr>
<tr>
<td>257 to 264</td>
<td>Aa w/plagioclase crystals</td>
</tr>
<tr>
<td>264 to 270</td>
<td>Aa dense</td>
</tr>
<tr>
<td>Depth</td>
<td>Description</td>
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<tr>
<td>-------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>270 to 272</td>
<td>Pahoehoe</td>
</tr>
<tr>
<td>272 to 279</td>
<td>Dense chips, no vesicles</td>
</tr>
<tr>
<td>279 to 281</td>
<td>Red clinkers</td>
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</table>
Ciba Geigy Well Yield-Drawdown Test
June 29, 1990

Personnel Present: Fred Page, Daryl Leer, Chester Lao

Equipment: Diesel Powered Line Shaft Pump, Flow Meter,
276.9 feet of Air Line, Conductivity-Temperature
Meter.

Beginning Reading of Flow Meter: 878700

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<tr>
<th>Time</th>
<th>GPM</th>
<th>PSI</th>
<th>Drawdown</th>
<th>Temp</th>
<th>Micromhos</th>
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<td>11.3</td>
<td>0.0</td>
<td>--</td>
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<tr>
<td>1017</td>
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<td>3330(3380)*</td>
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<td>Temp</td>
<td>Micromhos</td>
</tr>
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<td>Stop</td>
<td>Pump</td>
</tr>
<tr>
<td>1600</td>
<td>--</td>
<td>11.3</td>
<td>0.00</td>
<td></td>
<td>Recovery completed in 60 seconds.</td>
</tr>
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* Ciba Geigy Instrument Readings

72-Hour Uninterrupted Test Pumping

Rate: Nominal 300 gpm rate, engine speed 1700 rpm
Duration: 1830 June 29, 1990 to 1830 July 2, 1990

<table>
<thead>
<tr>
<th>Time</th>
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<td>3.00</td>
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Recalibrate
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Plumbness Test for Ciba Geigy Molokai Well

Date of test: July 8, 1990
Personnel: Fred Page, Daryl Leer, Chester Iao
Equipment: Plummel diameter 3/8 inch less than casing I.D.
Double sheaves, 1/8 inch aircraft cable
Pulley height 65.5 inches

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

ANNUAL GROUND WATER USE REPORT

Agrigenetics, Inc.
P.O.Box 701
Kaunakakai, Moloka’i HI 96748

<table>
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<th>Naiwa Well</th>
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**INSTRUCTIONS:** Please TYPE OR PRINT CLEARLY. Complete this form to report total monthly ground water use, and, if required, other information from each of your well sources. Mail to: Commission on Water Resource Management, P.O. Box 821, Honolulu HI 96809. For assistance, please call (808) 587-0265.

<table>
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<th>Period Start Date (immediaty)</th>
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- Flow meter, electrical consumption, weir of flume, not metered (estimated).
- Measurement should be taken while pump is **NOT** running just prior to a pumping cycle; if measurement is taken while pump is running, please indicate so.

Other comments or additional information (e.g., method of chloride measurements; how pumpage amounts are estimated; etc...):
Mr. Darryl Yagodich, representing the DHHL, presented testimony supporting additional water reservation from the Kualapuu Aquifer System for uses on Hawaiian homelands (see file).

David Craddick of the Maui Department of Water Supply, Noelani Joy, DeGray Vanderbilt, William Kaleimomi, and Judy Caparida, all supported the reservation of water for DHHL homesteader use.

Mr. Duncan Annandale, Operations Director for Molokai Ranch, supported the water needs of DHHL to the extent that it is determined that this petition is for water which is government-owned or surplus water from private sources as defined in Subsection 221(A) of the Hawaiian Homes Commission Act.

Mr. Annandale added that the petition should be granted subject to the rights of all property owners to obtain their allocations of water from the Kualapuu Aquifer for reasonable future use (see file).

Ms. Toni Bissen of Native Hawaiian Advisory Council (NHAC) supported DHHL’s petition but felt that the additional 2 mgd should come from within the 5 mgd planning figure (see file).

Mr. Cox commented that there is obvious need to coordinate the various water needs for Molokai - DHHL, agriculture, county, and economic development. Staff’s public hearing process would resolve a lot of these questions.

Unanimously approved (Lewin/Ing).

**ITEM 4**

**DAVID W. CURTIS, APPLICATION FOR A WATER USE PERMIT. KAMALO-C WELL (WELL NO. 0352-10), KAWELA GROUND WATER MANAGEMENT AREA, MOLOKAI**

Unanimously approved (Ing/Cox).

**ITEM 5**

**CIBA SEEDS, APPLICATION FOR A WATER USE PERMIT. NAiWA WELL (WELL NO. 0705-05), MANAWAINUI GROUND WATER MANAGEMENT AREA, MOLOKAI**

Mr. Walter Ritte asked if there would be any impact on the Hoolehua/Kalamaula area. Ms. Nakama stated that the long-term impact is not known, but that this rate of pumpage would not have a great impact on the aquifer.

Ms. Joy supported the use of brackish water for agriculture production as opposed to potable water and asked the Commission’s support of the applicant’s request.

Unanimously approved (Cox/Ing).

**ITEM 6**

**KUKUI (MOLOKAI), INC., APPLICATION FOR A WATER USE PERMIT. NAiWA WELL (WELL NO. 0245-05), KUALAPUU GROUND WATER MANAGEMENT AREA, MOLOKAI**

Ms. Nakama presented amended recommendations for Commission action. After discussions the following was recommended:
1. That the Commission find that there was just cause for the applicant's failure to file within the specified one-year period, and that this late filing of a water use permit application be allowed.

2. That the Commission approve the issuance of an interim water use permit to Kukui (Molokai), Inc. for the reasonable and beneficial use of 928,000 gallons per day of potable water for municipal, domestic, and irrigation uses at the Kaluakoi Resort Hotel, condominiums, residences, and golf course from Well #17 (Well No. 0901-01), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:
   a. The applicant may continue this existing use 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.
   b. The filing of an application for future uses in excess of 2.0 mgd shall be just cause for re-evaluation of this interim permit.
   c. Upon completion of a new transmission line for the transport of the water used by Well #17, the permitted use of Well #17 shall be reduced by 10% to 918,500 gallons per day.

3. That the Commission defer action on the remaining observed usage of 240,200 gallons per day, for a period not to exceed 90 days, pending the following:
   a. Justification for additional allocation for existing uses in excess of 918,800 gallons per day.
   b. Development of a conservation plan or program that shall address, but not be limited to, the following:
      (1) Identifying and using efficient plants and drought tolerant plants for landscaping and quantifying their demands (xeriscape).
      (2) Use of efficiently designed landscaping and irrigation systems.

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.

5. Defer other requests for future uses.

Mr. Ron Hedani of Kukui (Molokai), Inc. presented testimony on their application for water use (see file). He explained that their current usage of 1.2 mgd is based on the currently depressed occupancy rates in the hotel and resort condominiums. Testimonies objecting to the application were filed by Kaiwi Naki, Sara Sykes, NHAC, Noelani Joy, Rachel Kamakana, DeGray Vanderbilt, and Judy Caparida (see file). Ms. Sykes asked that a public hearing be held. Mr. Matthew Adolpho requested a contested case hearing.

Chairperson Ahue stated that due to the request for a contested case, action was deferred to determine if Mr. Adolpho has standing. In the next ten days,
Mr. Adolpho must submit information to verify his standing for a contested case hearing. Ms. Sykes asked if her request for a public hearing still stands since Mr. Adolpho requested a contested case hearing. Chairperson Ahue suggested both could be looked at because the public hearing could resolve the issue and a contested case hearing may not be needed.

Additional testimonies were heard for informational purposes only.

Unanimously approved for deferral (Cox/Nakata).

ITEM 7 APPLICATIONS FOR WATER USE PERMITS, KAWELA GROUND WATER MANAGEMENT AREA, MOLOKAI

Mr. Ing suggested the following amendment be made to Condition 2:

"That the Commission approve the issuance of an interim water use permit to T.T. Meyer, Inc. for the reasonable and beneficial use of 28,800 gallons per day of brackish water for the domestic needs of five residences and any existing subsistence farming on 15.5 acres from the Meyer, Inc. #1 Well (Well No. 0354-01), subject to the standard water use permit conditions listed in Attachment B.

Unanimously approved as amended (Ing/Lewin).

ITEM 8 LOKO PA KALO AFTER-THE-FACT APPLICATION FOR STREAM CHANNEL ALTERATION PERMIT, STREAM DIVERSION WORKS PERMIT, AND AMENDMENT TO THE INTERIM INSTREAM FLOW STANDARD, HONOLULUWAI STREAM, MOLOKAI

Mr. Higa recommended the following amendments to the Recommendations:

"The permit application and the staff submittal approved by the Commission at its meeting of [March 16] April 14, 1994 shall be incorporated herein by reference."

5. "[The applicant shall install an appropriate water meter subject to the approval of the Chairperson.] The applicant shall report monthly water usage for one year after the meter is installed, or as required by the Commission."

Also, Mr. Eddie Tanaka's name should be added to the list of corporate members.

The applicant indicated that the requirement for a water meter would cause an excessive financial burden since the project is not a large aquacultural farming operation. Staff understood that the cost of the water meter would be over $500 and did not object to the deletion of this condition provided there are no objections from other competing users.

Unanimously approved as amended (Nakata/Cox).
Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Ciba Seeds
Application for a Water Use Permit
Naiwa Well (Well No. 0705-05)
Manawaimui Ground Water Management Area, Molokai

Applicant: Ciba Seeds
Landowner: Same

P.O. Box 830
Kaunakakai, HI 96748

Background

The applicant submitted a completed water use permit application to the Commission on December 3, 1993. Specific information regarding the source, use, notification, objections, and field investigation(s) are described in Attachment A and the attached exhibits.

Analysis & Issues

This existing source uses brackish water from the Manawainui Aquifer System to irrigate approximately 75 acres of seed corn, cotton, sorghum, and soy beans. A connection to the Molokai Irrigation System allows surface water to be used as needed for the dilution of salt in the soil zone.

By the following analysis, staff finds that this proposed use meets each of the seven (7) criteria set forth in HRS 174-C(a) Conditions for a permit:

(1) Water availability - Existing permits total 1.555 million gallons per day (mgd). Assuming a sustainable yield of 2 mgd for the system, about 78% of the water resource has been allocated. If the Commission were to grant the full amount requested by the applicant, an additional 0.105 mgd (5% of the sustainable yield) would be allocated. This can be accommodated by the available water source. The latest 12-moving average of actual water usage (0.05 mgd) shows that existing withdrawals may be substantially less. However, some of the water has been allocated for future uses that have not come on line as yet.

(2) Reasonable-beneficial - The quantity requested appears to be excessive, in light of the reported actual withdrawals and the augmentation by the MIS. Staff finds that an allocation of 12,000 gallons per day is a more reasonable estimate of existing needs (Exhibit 1).

(3) Interference with other existing legal uses - There are no streams nearby that would be affected by the current level of use. Also, this use was in existence prior to the effective date of the interim instream flow standards. There is only one other well within a mile of this well, but this well has been "lost".

Agenda 1
ITEM 5
Chairperson and Members  
Commission on Water Resource Management  
April 14, 1994

(4) **Public interest** - Use of water for agricultural purposes is considered to be in the public interest.

(5) **State & county general plans and land use designations** - This proposed use has been shown to be consistent with the state and county general plans and land use designations. No objections to this application were raised by the Office of Conservation and Environmental Affairs and The Office of the Mayor, County of Maui.

(6) **County land use plans and policies** - This proposed use has been shown to be consistent with the county land use plans and policies.

(7) **Interference with Hawaiian home lands rights** - The Dept. of Hawaiian Home Lands (DHHL) has reviewed this application and has no comments at this time. DHHL had requested that water be reserved from the Kualapuu Aquifer System to meet the current and future needs of Hawaiian homesteaders. To date, 0.905 mgd of water has been reserved for DHHL. Recently, DHHL filed another request for additional reserves from the Kualapuu Aquifer System. No action has been taken on this request. Although the Hawaiian Homes Commission administers significant tracts of land located in the Manawainui Aquifer System, the water needs on these lands are not expected to be derived from the Aquifer System. Much of these lands are slated for service by the proposed expansion of the Molokai Irrigation System, which diverts significant quantities of surface water from the streams in the Northeast Sector of the island.

The proposed use does not appear to violate any of the recommendations made by the Molokai Working Group, and no objections have been filed with the Commission.

This application, submitted on November 17, 1993, was not made within a period of one year from the July 15, 1992 effective date of designation. As such, it should be considered a late filing, pursuant to §174C-50. Staff finds that there is just cause for the late filing, as the applicant was not served two notices, one of which should be sent by registered mail, to file for an application to continue an existing use, as required by §174C-50(c). Because the well did not exist at the time that the Administrative Rules of the State Water Code went into effect, this well has not been registered with the Commission. As a result, the mailing lists of existing users that were created through the use of the well registration database did not include the applicant's name or address. Staff has mailed the applicant the appropriate forms to register his well.

A final issue is that the applicant has not submitted an as-built sectional drawing of the installed pump and well and a complete pumping test record. These conditions of the pump installation permit, issued on May 29, 1991, and the well construction permit, issued on September 27, 1989, should be fulfilled prior to the issuance of any water use permit for this source.

**RECOMMENDATION**

Staff recommends:

1. That the Commission find that there was just cause for the applicant's failure to file within the specified one-year period, and that this late filing of a water use permit application be allowed.

2. That the Commission approve the issuance of an interim water use permit to Ciba Seeds for the reasonable and beneficial use of 12,000 gallons per day of brackish water from the Naiwa Well (Well No. 0705-05) for agricultural irrigation use on 75 acres, subject to the standard water use permit conditions listed in Attachment B and the following special conditions:
The applicant shall submit the following within 60 days from the date of this submittal:

1. As-built sectional drawing of the installed pump.
2. As-built sectional drawing of the well.
3. Complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data.

Respectfully submitted,

RAE M. LOUI
Deputy Director

APPROVED FOR SUBMITTAL:

KEITH W. AHUE, Chairperson
WATER USE PERMIT DETAILED INFORMATION

Source Information

AQUIFER: Manawainui System, Central Sector, Molokai
Sustainable Yield: 2.000 mgd
Existing Water Use Permits: 1.555 mgd
Available Allocation: 0.445 mgd
Total of other pending allocations: 0 mgd

WELL: Naiwa Well (Well No. 0705-05)
Location: Naiwa, Molokai, TMK: 5-2-11:7
Year Drilled: 1990
Casing Diameter: 12 in.
Elevations (msl = 0 ft.)
Water Level:
Ground: 3.2 ft.
Bottom of Solid Casing: 254 ft.
Bottom of Perforated: -27 ft.
Bottom of Open Hole: -27 ft.
Total Depth: 281 ft.
Grouted Annulus Depth: NA ft.
Pump Capacity: 500 gpm

Use Information

Quantity Requested: 105,000 gallons per day.
Existing Type of Water Use: Irrigation of 75 acres of seed corn
Place of Water Use: Naiwa, Molokai at TMK: 5-2-11:7

Reported Water Usage: NA gpd
Nearby Similar Water Usage: NA gpd
Manawainui Aquifer System Current 12-Month Moving Average Withdrawal: 0.050 gpd
(3% of SY)

ATTACHMENT A
Nearby Surrounding Wells and Other Registered Ground Water Use

There is only one other well within a mile of the well (see Exhibit 2). However, this well is "lost" and has no current or expected future use. Information from the registration program indicates there are possibly 47 existing wells in the Manawainui Aquifer System. Several of these wells have been initially field checked but many of the declarants have not been completely field verified. Several are not in use or are rights claims. The 1992 Draft of the Maui Water Use and Development Plan, Island of Molokai did not provide an estimate for 1990 water use. The Final Report of the Molokai Working Group estimated the actual use from the Manawainui Aquifer System to be 0.56 mgd.

Public Notice

In accordance with HAR §13-171-17, a public notice was published in the Star-Bulletin on December 23, 1993 and December 30, 1993 and copies of the notice were sent to the County’s office and the Board of Water Supply. Additional notice copies were sent to the Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, Aquatic Resources & Historic Preservation Divisions of the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by January 13, 1994.

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 January 13, 1994. No objections were filed with the Commission.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

Field Investigation

The water source and existing use was investigated on February 8, 1994. The investigation verified the applicants request for water use permit.
STANDARD WATER USE PERMIT CONDITIONS

1. The ground water described in the water use permit may only be taken from the location described, used for the reasonable-beneficial use described, and at the location described above and in the attachments. Reasonable-beneficial use means "the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is not wasteful and is both reasonable and consistent with the state and county land use plans and the public interest." (HAR §13-171-2).

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

3. The water use must at all times meet the requirements set forth in HAR §13-171-13 which means that it:
   a. Can be accommodated with the available water source;
   b. Is a reasonable-beneficial use as defined in section §13-171-2;
   c. Will not interfere with any existing legal use of water;
   d. Is consistent with the public interest;
   e. Is consistent with state and county general plans and land use designations;
   f. Is consistent with county land use plans and policies; and
   g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and 174C-101(a), HRS.

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

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

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

7. The water use permit application and staff submittal approved by the Commission at its April 14, 1994 meeting are incorporated into the permit by reference.

8. Any modification of the permit terms, conditions, or uses can only be made with the express written consent of the Commission on Water Resource Management.

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

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

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

11. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a yearly basis in accordance with the Commission’s September 16, 1992 action on reporting requirements;

12. The water use permit shall be subject to the Commission’s periodic review of the applicable aquifer’s sustainable yield. The amount of ground water use authorized by the permit may be reduced by the Commission if the sustainable yield of the MANAWAINUI Aquifer System, or relevant modified aquifer, is reduced;

13. The water use permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HAR §13-171-25 and the requirements of Chapter 174C, the Commission has the authority to allow the transfer of the permit and the use rights granted by the permit in a manner consistent with HAR §13-171-25. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

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

15. The permittee shall comply with all applicable laws, rules, ordinances, and other agencies’ permits and conditions pertaining to water use or the water resource.

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

17. The water use permit granted shall be an interim water use permit, pursuant to HAR §13-171-21. The final determination of the water use quantity shall be made within five years of the filing of the application to continue the existing use.

18. The water use permit shall be issued only after AG review.

19. The water use permit shall be subject to the Commission’s establishment of instream standards and policies to Stream Protection and Management (SPAM), as well as legislative mandates to protect stream resources.
CIBA SEEDS PUMPAGE
NAIWA WELL (WELL NO. 0705-05)

DATE (Latest Data 7/93)

MONTHLY PUMPAGE  REQUESTED AMOUNT

JAN 93  JUN 93

PUMPAGE (mgd)
Mr. Darryl Leer  
Ciba Seeds  
P.O. Box 830  
Kaunakakai, HI 96748

Dear Mr. Leer:

Commission Submittal for your Water Use Permit  
Manawainui Ground Water Management Area, Molokai

The Commission on Water Resource Management will be acting on your water use permit application for your Naiwa Well (Well No. 0705-05) at its April 14, 1994 meeting at 10:30 a.m. at the Mitchell Pauole Center on Molokai.

A copy of the submittal for action on your water use application is enclosed for your information and review. You may wish to attend the meeting in case the Commissioners have questions regarding your application. Otherwise, we will notify you of the Commission's decision soon thereafter.

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

Sincerely,

RAE M. LOUI  
Deputy Director

LN:fc  
Attach.
February 8, 1994

MEMORANDUM FOR THE RECORDS

TO: Lenore Nakama
FROM: Richard JInnai
SUBJECT: Water Use Inspection of applicant Ciba Seeds
PRESENT: Richard Jinnai, Darryl Leer (Ciba Seed)

BACKGROUND: Ciba Seed applied for a Water Use Permit of Well 0705-05 Naiwa. Located in Molokai. Ciba Seed is a Mainland Company which solely produce and test plant seeds before being sold in the Mainland.

SOURCE:

1. Well consist of a 12" casing, Total depth 281', Pump Brand, Peerless, Serial No ET257, 125 HP Capacity at 1760 RPM. Outlet from pump, 6" cast iron pipe.
2. Engine that runs the pump is a John Deere engine serial no. T06059T322466. No other information.
3. Pumpage is metered and is being reported monthly to our office.
4. Uses water from well 6 days a month and pumps 24 hrs a day. Chloride ppm from well ranges in the 700's.
5. Since chloride count from the well is high, water from the Kualapuu Reservoir is use on other days to dilute salt in soil.
6. Location of well Latitude 21°07'59" Long. 157°05'18" Quad Map Mo2.

USE:

1. Irrigates approximately 150 acres. Only 75 - 100 is feasible.
2. Type of crops: corn, sorghum, cotton and soy bean.
3. Ciba uses reverse osmosis on the well water for domestic use in their office. Ciba employs 12 full time employee and 5 temporary.
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: Phone: 243-5352

(✓) We have no comments
(✓) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Date: 1/7/94
MEMORANDUM

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

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Historic Preservation Review of a Water Use Permit
Application for Ciba Seeds for Well No. 0705-05
Naiwa, Molokai
TMK: 5-2-11: 7

January 10, 1994

We believe that this application will have "no effect" on historic sites. This existing well facility and the irrigated seed corn operation are located in former pineapple fields. It is highly unlikely that historic sites are present.

Please contact our office at 587-0047 if you have any questions.

AG:jcn
MEMORANDUM

TO: Aquatic Resources
   Forestry and Wildlife/Natural Area Reserve System
   Historic Preservation
   Land Management
   Office of Conservation and Environmental Affairs
   State Parks
   Water and Land Development
   Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
          Water Use Permit Application
          Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: BRIAN MISKA Phone: 243-7731

We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Date: 1/3/94

Received by Commission on Water Resource Management 3/1/94
TO: Mrs. Hoaliku L. Drake, Director
    Department of Hawaiian Home Lands

Dr. John C. Lewin, M.D., Director
    Department of Health

Mr. Clayton H. W. Hee, Chairperson
    Office of Hawaiian Affairs

Mr. Goro Hokama, Chair
    County Council
    County of Maui

Mr. Byron S. Walters, Chair
    Board of Water Supply
    County of Maui

FROM: Keith W. Ahue, Chairperson
    Commission on Water Resource Management

SUBJECT: Water Use Permit Application
    Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: Luis A. Maneique

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Date: 1/3/94
Mr. Darryl Leer  
P.O. Box 830  
Kaunakakai, HI 96748  

Application for a Water Use Permit  
Manawainui Ground Water Management Area, Molokai

Dear Mr. Leer:

We acknowledge receipt, on December 3, 1993, of your completed water use permit application for the Naiwa Well (Well No. 0705-05).

We will be sending you a copy of the public notice for your application and any further information regarding the status of your application. In addition, we may need to visit and verify your proposed water source and use sites if we have not done so already under our registration program.

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

Sincerely,

RAE M. LOUI  
Deputy Director

LN:fc
Mr. Keith W. Ahue, Chairperson
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

RE: Application for Water Use Permit for Wells 0354-03 and 0705-05

We have reviewed the applications and have no objections to the issuance of Water Use Permits for these two existing applications.

Sincerely,

LINDA CROCKETT LINGLE
Mayor, County of Maui

NP:js0
c:\letter\1884
MEMORANDUM

TO: Mrs. Hoaliku L. Drake, Director
   Department of Hawaiian Home Lands
   Dr. John C. Lewin, M.D., Director
   Department of Health
   Mr. Clayton H. W. Hee, Chairperson
   Office of Hawaiian Affairs
   Mr. Goro Hokama, Chair
   County Council
   County of Maui
   Mr. Byron S. Walters, Chair
   Board of Water Supply
   County of Maui

FROM: Keith W. Ahue, Chairperson
   Commission on Water Resource Management

SUBJECT: Water Use Permit Application
   Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: Ben Henderson, Administrator Phone: 586-3836
Planning Office
( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: Ben Henderson Date: 12/02/93
MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
          Water Use Permit Application
          Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: Phone: 587-0218

☐ We have no comments
☐ We have no objections
☐ Comments attached
☐ Additional information requested
☐ Extended review period requested

Signed: Date: 12/20/93
Mr. Darryl Leer  
Ciba Seeds  
P.O. Box 830  
Kaunakakai, HI 96748  

Dear Mr. Leer:  

Enclosed is a copy of the public notice for your water use permit application for Well No. 0705-05 which will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.  

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:ky  
Encl.
PUBLIC NOTICE

Applications for Water Use Permit
Ground Water Management Areas

Applications for the following 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."

**Well #3 (Well No. 0354-03)**
Applicant: Kanukuawa Ranch
P.O. Box 707
Kaunakakai, HI 96748
Date Completed Application Received: December 3, 1993
Aquifer: Kawela System, Southeast Sector, Molokai
Well Source: Well #3 Well, Well No. 0354-03, at Kapuaokoolau, Molokai at Tax Map Key: 5-5-1:12
Existing Water Use: Domestic supply for 7 residences and irrigation of 30 acres of orchard
Place of Water Use: Kapuaokoolau, Molokai at Tax Map Key: 5-5-1:12
Quantity Requested: 5,000 gallons per day.

**Naiva (Well No. 0705-05)**
Applicant: Ciba Seeds
P.O. Box 830
Kaunakakai, HI 96748
Date Completed Application Received: December 3, 1993
Aquifer: Manawainui System, Central Sector, Molokai
Well Source: Naiva Well, Well No. 0705-05, at Naiva, Molokai at Tax Map Key: 5-2-11:7
Existing Water Use: Irrigation of 75 acres of seed corn
Place of Water Use: Naiva, Molokai at Tax Map Key: 5-2-11:7
Quantity Requested: 105,000 gallons per day.

Written objections or comments on the applications for water use permits 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 permits. Send written objections by January 14, 1994 to 1) the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809 and 2) a copy of the objection letter(s) to the applicant at the above address.

COMMISSION ON WATER RESOURCE MANAGEMENT

[Signature]
KEITH W. AHUE
Chairperson

Dated: DEC 17 1993

DEC 20 1993

MEMORANDUM

TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development
Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: ___________________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: __________
MEMORANDUM

TO: Mrs. Hoaliku L. Drake, Director
Department of Hawaiian Home Lands
Dr. John C. Lewin, M.D., Director
Department of Health
Mr. Clayton H. W. Hee, Chairperson
Office of Hawaiian Affairs
Mr. Goro Hokama, Chair
County Council
County of Maui
Mr. Byron S. Walters, Chair
Board of Water Supply
County of Maui

FROM: Keith W. Ahue, Chairperson
Commission on Water Resource Management

SUBJECT: Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993. We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

Attachments

Response: Contact person: ____________________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________________ Date: __________
Honorable Linda Crockett Lingle, Mayor
County of Maui
200 South High Street
Wailuku, HI 96793

Dear Mayor Lingle:

Notice of an Application for a Water Use Permit
Manawainui Ground Water Management Area, Molokai

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 Ciba Seeds for Well No. 0705-05, 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."

We have attached a copy of the application for your review and would appreciate receiving your comments, within the next sixty (60) days, on whether this water use is consistent with county plans and policies.

Very truly yours,

KEITH W. AHUE

Enc.
DEC 20 1993

MEMORANDUM

TO: Aquatic Resources
    Forestry and Wildlife/Natural Area Reserve System
    Historic Preservation
    Land Management
    Office of Conservation and Environmental Affairs
    State Parks
    Water and Land Development
    Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
    Water Use Permit Application
    Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: ___________________________ Phone: ____________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: ____________
APPLICATION FOR WATER USE PERMIT

Ground Water or Surface Water

PERMITTEE INFORMATION

1. (a) APPLICANT
   Firm/Name: Ciba Seeds
   Contact Person: Barry Leer
   Address: P.O. Box 1830
  Honokaa, HI 96714

(b) LANDOWNER OF SOURCE
   Firm/Name: Ciba Seeds
   Contact Person: Barry Leer
   Address: P.O. Box 1830
   Honokaa, HI 96714

SOURCE INFORMATION

2. WATER MANAGEMENT AREA: West Molokai Moomauwai Island: Molokai

3. (a) EXISTING WELL/DIVERSION NAME AND STATE NUMBER: 4-0705-05 Naiwa Well

(b) PROPOSED (NEW) WELL/DIVERSION NAME: ""

(c) LOCATION: Address: Naiwa, Molokai
   Tax Map Key: 5-2-011-007
   (Attach a U.S. map, scale 1" = 2000', and a parcel tax map showing the property line referenced to the established property boundary here.)

4. SOURCE TYPE (check one): ""
   Stream
   Surface
   Underground
   Other

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

USE INFORMATION

6. LOCATION OF PROPOSED WATER USE: (If possible, show on same map as source location. Otherwise, attach similar map)
   (a) Proposed use of water is: Existing
   New
   Both existing & new uses
   (b) Tax Map Key: 5-2-011-007
   (If location of use is over multiple TMKs, please complete Table 1 on back of application)
   (c) Address: Naiwa, Molokai
   (d) Current Land Use District: Urban
   Agriculture
   Conservation
   Rural
   (e) Current County Zoning Code: ""

7. QUANTITY OF WATER REQUESTED: 105,000 gallons per day (averaged over 1 year)

8. METHOD OF MEASUREMENT:
   Flowmeter
   Open-pipe
   Well
   Office
   Other (explain)

9. QUALITY OF WATER REQUESTED:
   Fresh
   Brackish
   Salt
   Potable
   Non-Potable

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

11. TOTAL NUMBER OF RESIDENCES TO BE SERVED: 15

12. TOTAL ACRES TO BE IRRIGATED AND TYPE OF CROP: Seed Corn

13. PROPOSED TIME OF WATER WITHDRAWAL OR DIVERSION: 24 hours Drip Irrigation
   (daytime hours of operation, ex. 7 a.m. to 2 p.m.)

14. APPLICANT MUST BRIEFLY DESCRIBE FOLLOWING POTENTIAL RESTRICTIONS ON WATER USE:
   (a) Impact on Sustainable yield (i.e., yield affected by other uses of water)
   Established Existing use that is part of sustainable yield
   None
   (b) Instream Flow Standards affected (i.e., affected by other uses of water)
   Hawaiian Home Land use affected (i.e., affected by Hawaiian Home Land use)
   None
   (c) Other existing legal use affected (i.e., affected by other uses of water)
   None
   (d) Other unregistered permits, EIS, etc. (i.e., affected by other uses of water)
   None

15. REMARKS, EXPLANATIONS:
   Irrigation of Seed Corn Operation on Molokai since 1970
   Well water supplement state surface water system from Kuluni reservoir.

NOTE: Signing below indicates that the applicant understands that a water use permit is granted by the Commission on Water Resource Management, a permit is subject to prior existing permitted uses, uses in sustainable yields and instream flow standards, reserved uses as defined by the Commission, and Hawaiian Home Lands future uses. In addition, applicants acknowledge that, upon permit approval, related water shortage plans must be submitted should the Commission require one.

Applicant (print): Ciba Seeds
Signature: [Signature]
Date 11/4/92

Landowner (print): [Signature]
Date 11/4/92

For Official Use Only:
Date Received 11/4/92
Hydrologic Unit No. 3120021
Date Accepted 11/4/92
WUPA Form 8/10/92

Diversions Works No.
State Well No.
### TABLE 1. MULTIPLE TMKs TO USE REQUESTED WATER

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<th>PROJECT NAME</th>
<th>TMK</th>
<th>CURRENT COUNTY</th>
<th>CURRENT ZONING CODE</th>
<th>UNITS</th>
<th>GPD/UNIT</th>
<th>TOTAL</th>
<th>% OF TOTAL TO BE USED OVER NEXT 4 YEARS</th>
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CONTOUR INTERVAL 50 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
DATUM IS MEAN EA LEVEL

FIGURE 1

Coral
MEMORANDUM

TO: Aquatic Resources
   Forestry and Wildlife/Natural Area Reserve System
   Historic Preservation
   Land Management
   Office of Conservation and Environmental Affairs
   State Parks
   Water and Land Development
   Other Interested Parties

FROM: Rae M. Loui, Deputy Director

SUBJECT: Request for Comments
         Water Use Permit Application
         Manawainui Ground Water Management Area, Molokai

Transmitted for your review and comment is a copy of a water use permit application for Ciba Seeds for Well No. 0705-05. Public notice of this application will be published in the Honolulu Star Bulletin issues of December 23, 1993 and December 30, 1993.

We would appreciate your review of the attached application and please return this cover memo form by January 14, 1994.

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

LN:ky
Attachments

Response: Contact person: ___________________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ___________________________ Date: __________
MEMORANDUM

TO: Aquatic Resources
Forestry and Wildlife/Natural Area Reserve System
Historic Preservation
Land Management
Office of Conservation and Environmental Affairs
State Parks
Water and Land Development
Other Interested Parties

FROM: Rae M. Loui, Deputy Director

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Water Use Permit Application
Manawainui Ground Water Management Area, Molokai

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

Response: Contact person: ______________________ Phone: __________

( ) We have no comments
( ) We have no objections
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Signed: ____________________________ Date: ____________

THE SUBJECT WELL SITE IS NOT WITHIN THE STATE LAND AND USE CONSERVATION DISTRICT. WE THEREFORE HAVE NO COMMENTS ON THIS MATTER.
CIBA-GEIGY Seed Division  
P.O. Box 1830  
Kaunakakai, HI 96748

Dear Applicant:

The Commission on Water Resource Management will be acting on your permit application(s) at its meeting on May 15, 1991, at 9:00 a.m., at the Wailuku Community Center, Wailuku, Maui.

The agenda and submittal(s) concerning your application(s) are enclosed for your information.

You or your representative are invited to attend the meeting.

Sincerely,

MANABU TAGOMORI  
Deputy Director

ES:fc  
Encl.
NAIWA–CIBA–GEIGY IRRIGATION WELL

(0705–05)
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<tr>
<td>LUM, A.</td>
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<td>3 Approval</td>
<td>See Me</td>
</tr>
<tr>
<td>NAKAMA, L.</td>
<td></td>
<td>3 Signature</td>
<td>Review &amp; Comment</td>
</tr>
<tr>
<td>NAKANO, D.</td>
<td></td>
<td>4 Information</td>
<td>Take Action</td>
</tr>
<tr>
<td>HARDY, R.</td>
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<td>File</td>
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<td>KUNIMURA, I</td>
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**WELL NUMBER 0705-05**  **WELL NAME: Aina**

- **WELL CONSTRUCTION**
  - WUP transfer
  - cover letter
  - permit
  - send to applicant
  - WURS shortage plan
  - (earlier)

- **PUMP INSTALLATION**

- **ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:**
  1. COVER LETTER
  2. PERMIT (2x)
  3. PUMP TEST
  4. DOH COMMENTS
  5. LAND DIV. COMMENTS
  6. WCR FORM

- **ATTACHMENTS FOR PUMP INSTALLATION PERMIT:**
  1. COVER LETTER
  2. PERMIT (2x)
  3. DOH COMMENTS
  4. LAND DIV. COMMENTS
  5. WCR FORM
  6. WUR FORM

- **FOR OFFICE USE ONLY**
Dave Gilliland  
Agrigenetics, Inc.  
P.O. Box 701  
Kaunakakai, HI 96748  

Dear Mr. Gilliland:  

Approval of Water Use Permit for Well No. 0705-05  
Manawainui Ground Water Management Area, Molokai  

This letter transmits your water use permit for NAIWA Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. Please note that as a matter of current policy, a new water use permit number has been assigned to mark the transfer. The conditions of the permit remain unchanged. As part of the Commission's approval, the following special condition was added and is part of your permit under Standard Permit Condition 18:

**Special Conditions**

1. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days. [This condition has been satisfied.]

Enclosed with this letter of approval are the following:

1. Your water use permit  
2. Your official annual monthly water use report form  
3. Your current water shortage plan.

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

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

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

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

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Attachments
WATER USE PERMIT NO. 583

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>
<thead>
<tr>
<th>Water User:</th>
<th>Agrigenetics, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P.O. Box 701</td>
</tr>
<tr>
<td></td>
<td>Kaunakakai, HI 96748</td>
</tr>
<tr>
<td>Landowner of Source:</td>
<td>Agrigenetics, Inc.</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 701</td>
</tr>
<tr>
<td></td>
<td>Kaunakakai, HI 96748</td>
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</tbody>
</table>

- Permitted Withdrawal Rate: 0.012 mgd (Based upon a 12-month moving average)
- Water Management Area: Manawainui
- Island: Molokai
- Aquifer Sector/System: Central/Manawainui
- System Sustainable Yield: 2 mgd
- Water Type: Brackish
- Original CWRM Date: April 14th, 1994
- Standard Conditions: 1-19,
- Special Conditions: 7

Water Source

<table>
<thead>
<tr>
<th>State Well Number(s):</th>
<th>0705-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Name:</td>
<td>Naiwa</td>
</tr>
<tr>
<td>Water Source TMK Number(s):</td>
<td>2nd Division, 5-2-011:007</td>
</tr>
<tr>
<td>State Land Use Classification(s):</td>
<td>Agriculture</td>
</tr>
<tr>
<td>County Zoning Classification(s):</td>
<td>Agriculture</td>
</tr>
<tr>
<td>Geographical Coordinates:</td>
<td>Latitude 21° 07' 47.7'' North</td>
</tr>
<tr>
<td></td>
<td>Longitude 157° 04' 53.4'' West</td>
</tr>
</tbody>
</table>

End Use

<table>
<thead>
<tr>
<th>End Use TMK Number(s):</th>
<th>2nd Division, 5-2-011:007</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Land Use Classification(s):</td>
<td>Agriculture</td>
</tr>
<tr>
<td>County Zoning Classification(s):</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>
Figure 1 – State Well No. 0705-05

Figure 2 – Well site
Figure 3 – Well pump and system controls

Figure 4 – System flowmeter
Figure 5 – End use area
Water Use Permit Survey

(Please complete one survey form for each WUP)

WU# Number: 583

Well Number(s): Well No. 0705-05

Contact information of person who will be present at site visit:

Name: Adele Held
Phone (for phone interviews): 808 567-9421  Fax: 808 567-9426
Email: aheld@mcdow.com
Best time to reach for phone interview: 9:00 a.m. m-f

Property information (area water use/well location):

Address: 19 Huani Road
City: Wahiawa
Zip: 96735
Well Location TMK (list if multiple wells present): 5-2-11-09
Water Use TMK (last digit of TMK on multiple lots):

Water Use/Well Information:

Is the water source currently flowing? Yes ☑ No
If no, please explain:

What are you currently using the water for? (Example: "Use for 42 acres of diversified agriculture and 5 residences")
Mainly used for:
approx. 100 acres seed corn, windbreaks and other row crops.

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 4-25 Wed Time: 9:00 am ☑ 12:00 pm ☑ 3:00 pm ☑
Option #2: Date 4-26 Wed Time: 9:00 am ☑ 12:00 pm ☑ 3:00 pm ☑
Option #3: Date 4-27 Wed Time: 9:00 am ☑ 12:00 pm ☑ 3:00 pm ☑

Once this survey is returned, a Brown and Caldwell representative will be contacting you to conduct a phone interview and finalize the exact date and time of your field investigation. Please fax/mail completed surveys by March 5th, 2008 and direct any questions related to this survey to Mr. Wilho Smith of Brown and Caldwell at:

1995 Aukea Stree, Suite #22-01
Honolulu, HI 96813
Tel: (808) 203-266
Fax: (808) 333-0226
wilho.msmith@brown-caldwell.com

Received 7/21/08  Information Updated 7/21/08  Phone Interview Complete

Notes/comments:
Phone Interview

WUP Number: 583  Well Number(s): 0705-05

Contact Name: Adolph Helm  Phone Number: 507-9421

Attempt #1: Date/Time:  
Result: 

Attempt #2: Date/Time:  
Result: 

Well Location TMK(s): 5-2-011:007

Water Use TMK(s): 

Water Source Address: 19 Huadi Road
City: Hoolehuq  Zip Code: 96729

Currently using water source?  Yes ☐  No ☐

Notes/Comments: But, pump is broken, someone will come & fix this month

How often is the water source being used?  Daily ☐  Weekly ☒  Monthly ☐

Notes/Comments: 3x week

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: Thurs Aug 21st 08 9:00 am

Notes (Special directions, site conditions, potential hazards, general notes, etc.):

1st Rd on left West of Airport
Huadi Rd go all the way down

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:  
Date: 3/15/08  Time: 10:00
# Field Investigation Checklist

**WUP Number:** 583  
**Well Number(s):** 0705-05

## Water Source
- **Well Location TMK(s):** 5-2-011:007
- **Well Head GPS Coordinates:**
  - Latitude: 21°07'47.7"N
  - Longitude: 157°04'53.4"W
- **Currently using water source?**
  - Yes [X]  
  - No [ ]
- **Is there a flow meter installed?**
  - Yes [X]  
  - No [ ]
- **Is the flow meter operational**
  - Yes [X]  
  - No [ ]
- **Notes/Comments:**
  - Pump is currently broken will fix by end of August

## Water Use
- **Water Use TMK(s):**
- **What is the water being used for?**
  - Pump
- **Is the water being used within the permitted boundaries?**
  - Yes [X]  
  - No [ ]
- **Is there any observed wasting of water or water loss?**
  - Yes [ ]  
  - No [X]
- **Are the permit conditions being complied with?**
  - Yes [X]  
  - No [ ]
  - If no, explain:

## Other
- **Photographs of:**
  - Water Source [X]
  - Water Meter [X]
  - Usage Area [X]
  - Pump/Motor [X]
- **General Notes/Comments:**
  - 12' of black pvc pipe to distribution f-gells
  - 2000 gal storage tank
  - Only 1 field
  - Grass cover

**Investigated By:**
- [Names]

**Date:** 6/21/02  
**Time:** 7:00
Standard Conditions List

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

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

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

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

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

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

7. The water use permit application and submittal, as amended, approved by the Commission at its <Insert Date> meeting are incorporated into this permit by reference.

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

Variations of Standard Condition (8) are as follows:
   i. Modification of any permit condition shall be approved by the Commission. Modification of any permit condition without notification may result in the revocation of the water use permit.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
   a. Protect the water sources (quantity or quality);
   b. Meet other legal obligations including other correlative rights;
   c. Insure adequate conservation measures;
   d. Require efficiency of water uses;
   e. Reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
   f. Meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
   g. Carry out such other necessary and proper exercise of the State’s and the Commission’s police powers under law as may be required.

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

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

Variations of Standard Condition (10) are as follows:
   i. The applicant shall keep monthly pumpage estimates to be submitted annually to the Commission.
   ii. An approved flowmeter(s) need not be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).
   iii. An approved flowmeter(s) must be installed to measure withdrawals and a monthly record of withdrawals, water-levels, salinity, and temperature must be kept and reported to the Commission on a monthly basis in accordance with the Commission’s September 16, 1992 action on reporting requirements.
   iv. Approved flowmeters must be installed to measure monthly withdrawals and a monthly record of withdrawals must be kept and reported to the Commission on Water Resource Management on a monthly basis.
   v. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a quarterly/yearly basis (attached).
   vi. An approved flowmeter shall be installed to measure water withdrawals
   vii. An approved flowmeter(s) must be installed to measure withdrawals; and a record of the withdrawals must be kept and reported to the Department of
Land and Natural Resources, Division of Water and Land Development, P.O. Box 373, Honolulu, HI 96809, on a monthly basis.

viii. Although not stated as a condition of the permit §13-168-7 HAR requires you to keep a record of your monthly total pumpage, water level, salinity, and water temperature. This information must be submitted to the Commission on a regular monthly basis using the enclosed water use report form.

ix. An approved flowmeter shall be installed and the withdrawal from Well 1851-73 shall be recorded and reported to DLNR on a monthly basis by the owner and/or operator of the well.

x. The withdrawals from these wells shall be recorded and reported to the DLNR on a monthly basis by the BWS.

xi. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting water usage on a monthly basis.

xii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.

xiii. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission along with water level and salinity measurements.

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

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

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

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

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

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

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

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

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

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

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

Variations of Standard Condition (20) are as follows:

i. The permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within two years from the date of permit issuance.

21. This permit may not be transferred or the use rights granted by this permit sold or in any other way alienated. Pursuant to HRS § 174C-59 and the requirements of Chapter 174C, the Commission on Water Resource Management has the authority to allow the transfer of the permit and the use rights granted by this permit in a manner consistent with HRS § 174C-59. Any such transfer shall only occur with the Commission’s prior express written approval. Any sale, assignment, lease, alienation, or other transfer of any interest in this permit shall be void.

22. The water use permit granted shall be an interim water use permit, pursuant to HRS § 174C-50. The final determination of the water use quantity shall be made within five (5) years of the filing of the application to continue the existing use.

23. The water use permit shall be issued only after agricultural review.

24. That scheduled adjustments to Oahu Sugar Co. permitted use shall be initiated upon discontinuance of agricultural uses.
25. The issuance of this permit was approved by the Commission on Water Resource Management at its meeting on <Insert Date>.

26. The permit shall be subject to the review by the Attorney General.

27. The permit holder may be required to relinquish this permit at any time or specified time after issuance to the Board of Land and Natural Resources in accordance with Chapter 166 of Title 13.

28. The applicant shall obtain the necessary land acquisition documents from the Hawaii Housing Authority.
**Special Conditions List**

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

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

3. The applicant shall contact the Environmental Management Division, State Department of Health, at 586-4304, concerning “GUIDELINES APPLICABLE TO GOLF COURSES IN HAWAII” date <Insert Date & Version #>.

4. Standard Condition 10 is emphasized, to report consumption on a regular basis.

5. The applicant may continue this existing use of ground water within the limits approved by the Commission, and the actual issuance of the interim permit shall not be a reason to interrupt this existing use.

6. This interim water use permit shall cease to become interim and shall be subject to HRS § 174C-55 upon administrative review of the quantity within five (5) years, provided that all conditions of the use (including the review of the quantity which shall not be greater than the amount initially granted) remain the same. Enforcement of the allocation limit shall be stayed pending staff’s review and issuance of a permanent water use permit.

7. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days.

8. In the event the pump tests show that aquifer boundary conditions do not support the requested withdrawals, the Commission reserves the right to amend this permit, after a hearing, to a level that is supported by the pump tests.

9. The existing use may be continued within the levels approved by the Commission, and the actual issuance of the permit document shall not be a reason to interrupt the approved level of use.

10. The filing of an application by Kukui, Inc. for a new or modified water use permit for the Kualapuu Aquifer in excess of 2.0 mgd (total system withdrawal) shall be just cause for re-consideration of this interim permit by the Commission.

11. Upon completion of a new transmission line for the transport of water use by Well #17, the permit shall be modified to reduce the allocation amount by the additional 79,220 gallons per day allocated for use of the Molokai Irrigation System.

12. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall conduct a feasibility study and submit a report describing
alternative sources of nonpotable water for irrigation uses at the resort area. It is suggested that the developer consider use of dual lines in the subdivisions so that effluent may be used in the existing reuse system. Another consideration is the development of brackish water wells in the Kaluakoi Aquifer system for mixing with the effluent generated at the resort.

13. Within six (6) months from the date of approval of a water use permit for the well, the application shall evaluate the filter back discharges into Kakaako Gulch to determine if excessive preventable waste is occurring and identify possible measures to eliminate or reduce such waste. The evaluation shall be conducted in cooperation with the Commission staff and staff of the Department of Health’s Safe Drinking Water Branch, which regulates the drinking water system.

14. Within six (6) months from the date of approval of a water use permit for the well, the applicant shall 1) implement a leakage control and detection system and compete repairs to prevent such leakage and 2) implement use of xeriscaping and low-flow fixtures.

15. Action on the future use portion of the water use permit application for Well #17 (Well No. 0901-01) is deferred pending the establishment of existing uses in the aquifer. Kukui Inc.’s application for uses in excess of those uses existing on July 15, 1992 will be considered “new” uses and will be taken up by the Commission as soon as other existing use applications have been decided. In the interim,
   a. The Commission shall recognize that there is disagreement between the applicant's staff calculations of reasonable-beneficial existing use
   b. The Applicant will have the burden of proof to show within six (6) months reasonable-beneficial existing use calculations that support the applicant’s request as opposed to staff’s calculations.
   c. The Commission’s enforcement of the approved existing use allocation will be suspended for six (6) months.

16. The permittee shall submit a notice of intent and written request to continue the use at least ninety (90) days prior to the expiration of the interim five-year permit.

17. The Commission shall delegate to Maui Department of Water Supply the authority to allocate the use of water for municipal purposes, as provided in §174C-48(b).

18. Maui Department of Water Supply shall be exempt from the requirements for permit modifications, as provided in §174C-57(c).

19. The permittee must meter water use and monitor chloride concentrations on a monthly basis and submit monthly reports of water use and chloride concentrations to the Commission.

20. Standard Condition 16 is waived for saltwater wells.

21. The permit will be revoked if (1) stream monitoring shows that pumping the well reduces stream flow, or (2) the electromagnetic resistivity survey indicates that the
well was drilled into a dike compartment, unless the applicant submits a petition for an amendment to the interim instream flow standard with the well completion report. However, no use of the water may be made without a Pump Installation Permit, which cannot be issued during consideration of the amendment of the interim instream flow standard.

22. The applicant shall present the results of the electromagnetic resistivity survey, pump tests, and stream monitoring to a community meeting as well as to the Commission.

23. A final determination of water use quantity shall be made within five (5) years of the filing date of the application (<Insert Date>) to continue existing use.

24. The applicant shall implement, by December 31, 1995, a biological and hydraulic monitoring program for a minimum 2-year period that: 1) documents the existing operating procedure, 2) seeks to identify the impacts of all operating alternatives on Waikolu Stream, and 3) seeks to identify the effectiveness of weir modifications (Dam No. 1). This program shall incorporate the three new wells, Wells #4-6 (Well Nos. 0855-06, -05, & -04, respectively), which may be pumped within the approved limits, for monitoring and testing purposes only. Further, semi-annual reports summarizing data and preliminary findings shall be submitted to the Commission. It is suggested that the Department of Agriculture work with the State Division of Aquatic Resources and other affected agencies to prepare the monitoring program in light of the difficult technical questions raised by this application. A particular concern is the coordination of this monitoring program with the ongoing National Park Service study by Anne Brasher. A draft of this plan shall be submitted to the Commission staff within ninety (90) days for technical review and comment. Results of the monitoring program shall be used to make recommendations to the Commission on any additional use of the wells, and shall be made readily available to all interested parties.

25. That the Commission approves the well construction permit for the Kamiloloa-Waiola Well (Well No. 0759-01), subject to the standard well construction conditions and the special conditions for the pumping well for the aquifer tests.

26. That the Commission authorizes the Chairperson to approve and issue a pump installation permit upon acceptance of adequate pump test result, subject to the standard pump installation conditions.

27. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

28. The applicant shall follow the agreed monitoring plan.

29. If pesticides used by the applicant are found in ground or surface water and can be traced to the applicant's use, the CWRM may revoke the permit immediately upon such finding.
30. Issuance of the interim permit shall be withheld until the reservation of water for DHHL is set by rule. Applicant may continue this existing use within the approved limits.

31. The applicant shall submit well modification and pump installation permit applications for administrative approval by chairperson prior to beginning any work required to complete well.

32. Should any stream flow impacts result from use, petition to amend interim instream flow standards shall be submitted.

33. Should any dewatering result from use, pumping shall cease immediately.

34. Shall submit accurate schematic diagram of distribution system for the battery of 5 wells.

35. Shall be subject to a 6-month independent audit & monitoring.

36. Final pump capacity shall be determined from pump test results & approved administratively by signature of chair.

37. The permittee shall seek and submit to the Commission within ninety (90) days written confirmation from the Department of Land Utilization of the non-conforming use.

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

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

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

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

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

43. Require adherence to the Conservation Conditions.
44. In the event a water shortage is declared by the Commission, permittees in the <Insert Aquifer System> shall comply with the <Insert Aquifer System> water shortage plan adopted by the Commission.

45. The permittee shall contact the Department of Health, Clean Water Branch and obtain the necessary discharge permit(s).

46. Permit shall be interim and replaces existing WUP for 2051-07 & 11.

47. Applicant shall submit an acceptable archaeological inventory survey report to DHP. If historic sites affected, a plan to mitigate these affects must be accepted by DHP and completed by applicant.

48. Should the well be used for back-up domestic supply, applicant is advised to contact DOH or otherwise ensure safe drinking water quality is maintained.

49. (The permittee) may report monthly pumpage on yearly basis.

50. Prior to issuance of any permits, must submit filing fee for after-the-fact pump installation permit.

51. The term of this permit shall be twenty years from the date of issuance of the permit with a five-year Board review to determine compliance with the provisions of the permit.

52. The amount of water to be withdrawn under this permit shall be 0.19 mgd, averaged annually, for irrigation use. This permitted use of 0.19 mgd when added to a preserved use of 0.27 mgd amounts to a total of 0.46 mgd, averaged annually, which may be withdrawn from well 1646-01.

53. The use authorized by the permit must not interfered substantially and materially with existing individual household uses and existing uses.

54. The use of this well shall be subject to the shortage and emergency powers of the Board of Land and Natural Resources (BLNR).

55. This permit may be suspended or revoked, in accordance with Chapter 166.

56. The permit holder may be required to relinquish this permit to BLNR, in accordance with Chapter 166.

57. The withdrawal from Well 1646-10 shall be recorded and reported to DLNR on a monthly basis by the permittee.

58. In the event that emergency water use occurs, the permittee shall notify the Commission in writing within one (1) day of pumping, to inform the Commission as to the nature of the emergency and the expected duration of the emergency. A water
use report shall also be filed pursuant to Standard Condition 10 and Administrative Rule 13-168-7.

59. Note DOH's requirements related to non-potable water systems (attached to original permit).

60. Standard Condition 16 requiring the submittal of a water shortage plan is waived.

61. All non-potable spigots and piping shall be clearly labeled as "DO NOT DRINK, NON-POTABLE" to prevent direct human consumption.

62. Standard Condition 10 is modified. Due to the inability to take water level measurements, the requirement to measure monthly water levels is waived. In addition, as long as the U.S. Geological Survey is collecting and analyzing the chloride content of the well water, the requirement for the permittee to measure and report chlorides is also waived.

63. Well elevation components must be surveyed by a licensed surveyor and this information must be submitted to commission prior to issuance of permanent permit.

64. The permittee shall obtain approvals from the Department of Health and the U.S. Environmental Protection Agency prior to use of the water.

65. This water use permit, WUP No. <Insert #>, shall supersede WUP No. <Insert #>.

66. WUP No. <Insert #> is revoked

67. Standard Condition 17 is waived.

68. Standard Condition 22 for interim water use permits shall not apply.

69. To supplement our records, we request that you provide a map of the Galbraith Est. lands west of Wahiawa (2100 ac+) and the associated TMK's for use area.

70. Deferred action on portion requested for golf course irrigation pending further refinement of irrigation requirement and a feasibility study for utilization of surface water sources, including Wahiawa Reservoir.

71. Written justification be provided for any 'cushion' of 0.5 mgd.

72. The water use permit shall be an interim permit. The duration of the interim permit shall be until treated wastewater is available and acceptable for use. The permittee shall continue discussions with Honolulu Board of Water Supply regarding the use of reclaimed water.

73. The permittee is put on notice that this is a qualified approval in that this permit may be modified or revoked prior to the expiration of the interim permit if the
Commission decides that the use of additional basal ground water for dust control and landscape irrigation is not reasonable-beneficial use.

74. The permittee encouraged to use drought-tolerant landscaping to conserve water.

75. Should the applicant provide written evidence that the county DHCD approves a 201E exemption for the elderly affordable housing project then the applicant may modify a corresponding portion of their existing aquacultural use to be used by the exemption approved project within the Commission approved water use permit limits under recommendation 5.

76. The applicant shall obtain a water lease/permit from Land Division prior to actual use of the well water.

77. Require the permittee to sign a contract by May 14, 1998 with the City Department of Wastewater Management to buy and use 0.400 mgd of R-1 water for a corresponding reduction in allocation for Well Nos. 1900-02, 17 to 20, and 1901-03.

78. Standard Condition 9 is waived.

79. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

80. Standard Condition 10 is waived.

81. Applicant must seek a determination from BLNR and Land Mgt Div as to whether water license required. If required, license must be obtained prior to issuance of permit. If not, permit will be issued w/out further action.

82. Commission defers action on use in excess of 452,000 gpd pending additional info from BWS and further staff analysis.

83. The permit shall be subject to the Commission’s sustainable yield review by December 1990.

84. The Commission shall delegate to the Honolulu Board of Water Supply the authority to allocate the use of water for municipal purposes, in accordance with §174C-48(b) HRS.

85. Honolulu Board of Water Supply shall be exempt from the requirements of permit modifications as provided in §174C-57.

86. BWS must participate in discussions, to be coordinated by Commission Staff, regarding a monitoring program to address impacts to Kaneohe Bay water quality, prior to any action on applications for future municipal uses.

87. A pump installation permit application must be made and approved prior to the installation of a permanent pump.
88. The water withdrawn shall be 0.7 mgd for municipal use.

89. The installed pump capacity of the well shall not be more than 700 gpm or 1.01 mgd.

90. The term of permit shall automatically expire twelve months from the date of issuance.

91. The Honolulu Board of Water Supply may continue to submit monthly water data on their own form, provided that the data are submitted in a format that is acceptable to the Commission staff.

92. Standard Condition 7 shall not apply.

93. Standard Condition 22 shall not apply.

94. Standard Condition 10 is modified to exempt the permittee from monthly measurements of salinity and temperature.

95. This permit shall be subject to conditions providing for stream restoration if the Commission determines that additional water should be returned to the streams.

96. HECO 1 mgd for industrial use

97. Campbell Estate 1 mgd for municipal use through BWS, by separate agreement with HECO

98. BWS 1 mgd for municipal use.

99. The permit shall be subject to the Commission’s sustainable yield review by <Insert Date>.

100. The applicant shall obtain the current version of the Department of Health’s Guidelines Applicable to Golf Courses in Hawaii. Where relevant and viable, items of the guidelines should be implemented and sustained appropriately. To obtain the current version, contact the Safe Drinking Water Branch, Environmental Management Division at 808-586-4258 (Honolulu).

101. The future use portion of the application shall be deferred until existing uses in the Koolauloa area are established.

102. The water to be withdrawn under this permit shall be a total of 0.03 mgd (0.02 mgd preserved plus an additional 0.01 mgd permitted use), averaged annually, for domestic and irrigation use.

103. Existing well 1851-09 shall be properly sealed by a licensed drilling contractor. A well modification permit application, enclosed, shall be submitted to the Department for approval of the well sealing. A filing fee for sealing the well will not be required.
104. The permittee is required to test the source using a certified private laboratory and submit the test results to the Commission within three (3) months. The Commission will then forward the results to the Department of Health for their review. The Department of Health recommends that the well be routinely tested for microbiological and chemical parameters thereafter.

105. The permittee is required to submit a completed Registration of Well and Declaration of Water use by <Insert Date>.

106. The permittee shall contact the Department of Health for a written determination on the status of their water system and comply with any Department of Health requirements for monitoring and testing.

107. In the event that the original spring source decontaminates, the new well authorized will be shut down.

108. That within each aquifer the total permitted use shall not exceed the sustainable yield.

109. That any water available for allocation shall be for in-district use.

110. That scheduled reductions to Oahu Sugar Co. permitted use shall be initiated upon final termination of an Osco lease or sub-lease, whichever occurs later.

111. That permits for water use issued in accordance with the proposed schedule shall be interim permits subject to review and adjustment by 1995.

112. That the permit shall be an interim permit for a new use which is afforded to existing users as specified in §13-171-20.

113. That the original allocation of 0.200 mgd shall be taken to hearing for possible revocation at a later date to complete the transfer of the water use permit entirely to Well No. 3407-02. This revocation would reduce the current allocation afforded to the Kunihiro Well (Well No. 3406-06) to zero.

114. This allocation incorporates the unspecified domestic needs of the applicant and therefore necessitates a single meter be installed at the well.

115. Should any impacts to nearby wells or streams be established by the use of this well, the applicant shall address these issues to the satisfaction of the Commission.

116. If an economically feasible nonpotable source is identified, the applicant shall convert to the alternative nonpotable source.

117. The permit shall be subject to the Chairperson’s approval of a water use plan recommending possible measures to prevent or minimize saltwater contamination and establish courses of action to follow should the aquifer become to saline to use.
118. Permittee shall provide the necessary end-use information on the 10th residence to allow regulation of the use under Chapter 174C.

119. Standard Conditions 10 & 18 shall not apply.

120. Standard Condition 10 is modified to exempt the permittee from the requirement to install a flowmeter. Salt water withdrawals may instead be estimated based on pumping capacity and run time.

121. The applicant shall review the existing year long period of pumpage and streamflow data and provide analysis on ground and surface water interaction. Deadline is January 25, 1994.

122. The water use permit for Well Nos. 2301-27 to -32 for 0.75 mgd (WUP No. 419) shall be revoked upon issuance of a pump installation permit for the well.

123. The permittee shall use mulching to decrease evaporative losses and manage irrigation scheduling to minimize water demand.

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

125. If not already obtained, the permittee shall seek and obtain any necessary permits from the Department of Health for the proposed discharge to Malaekahana Stream.

126. Standard Condition 10 is modified to waive the requirement for installing a water meter on Well Nos. 2358-21, 22, and 29. The permittee shall install a water meter on Well No. 2358-26 to measure total monthly flow through the discharge line. This quantity should then be assumed to be the rate of natural flow from the other three wells for monthly reporting purposes.

127. The permit shall be effective upon submittal of documentation by Navy that it has met the DOH requirements for a public system.

128. This WUP shall be subject to Army's application for a WUP to reduce the permitted use of the Army's Schofield Shaft (2901-02 to 04, 10) by 0.208 mgd to a new total of 5.648 mgd. The Army's application shall be submitted within 60 days after the approval of this WUP or this WUP shall be void. Approval of the modification request shall be obtained from the CWRM prior to use of Well No. 3100-02 and issuance of this WUP.

129. Navy shall submit an after-the-fact PIPA, and approval of the permit shall be obtained prior to use of the well.

130. The well shall not be used for drinking water purposes unless it is properly tested and treated.
131. This permit is approved subject to reclaimed water becoming a practical alternative and provided that the Department of Health approves the reuse application.

132. Should any opae ula be recovered in the well water, the permittee shall notify the Division of Aquatic Resources and provide specimens to the Division of Aquatic Resources for analysis.

133. If a single meter at the well is used, the Commission shall allow an additional 1,000 gallons per day to the water use permit amount for the domestic needs of two residences, although a permit for individual domestic consumption is not required. Otherwise, the applicant must provide a meter to separately measure the irrigation consumption.

134. This permit is approved under the requirement that conversion to either: 1) treated wastewater becoming available for reuse as an alternative supply source, provided that Department of Health concerns over the use of treated effluent over the potable water aquifer have been addressed; and/or 2) other nonpotable source becoming available will occur in a timely manner.

135. These permits shall be subject to a review of actual use within four years for possible modification of the permitted amount.

136. The permit shall be reviewed in two (2) years for possible additional revocation due to nonuse.

137. The allocation is based on the projects listed in Exhibit 5 (of Item 10 of the May 20, 1998 Staff Submittal), except for the Queen’s Beach GC (TMK 139-11-2,3), Lot 9 (TMK 139-17-51), and Varsity Place (TMK 128-24-35).

138. Kamehameha Schools Bishop Estate/Honolulu Board of Water Supply shall transfer the water use permit within ninety (90) days of the effective date of the transfer of the pump station to the Honolulu Board of Water Supply, pursuant to §174C-59 Hawaii Revised Statutes.

139. The permittee shall ensure that the water is recycled by either directing it into the Waiahole Ditch for use by downstream farmers (subject to the approval of the Agribusiness Development Corporation’s Board) or into Waiekele Farm’s existing irrigation system.

140. The permittee shall file a completed application to modify WUP No. 758 to reduce the allocation by 0.100 mgd within 60 days. If a completed water use permit modification application is not received within 60 days from this submittal’s date, then the subject water use permit application (WUPA No. 767) shall be deemed denied without prejudice without the need for another hearing.

141. The water withdrawn shall be for municipal use. No improvements to the existing sources are required as the existing source capacities are greater than the increase.
142. Water license must be determined through LM.

143. Proposed other uses will be considered at a later date.
Dear Mr. Gilliland:

Approval of Water Use Permit for Well No. 0705-05
Manawainui Ground Water Management Area, Molokai

This letter transmits your water use permit for NAIWA Well (Well No. 0705-05) for use of 0.012 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 April 14, 1994. Please note that as a matter of current policy, a new water use permit number has been assigned to mark the transfer. The conditions of the permit remain unchanged. As part of the Commission's approval, the following special condition was added and is part of your permit under Standard Permit Condition 18:

Special Conditions

1. As-built drawings of the well and pump, and a complete pumping test record shall be submitted within sixty (60) days. [This condition has been satisfied.]

Enclosed with this letter of approval are the following

1. Your water use permit
2. Your official annual monthly water use report form
3. Your current water shortage plan.

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

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

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

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

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Attachments
GROUND WATER USE PERMIT
WUP NO. 583

PERMITTEE

Applicant/Water User                   Landowner of Use
Agrigenetics, Inc.                    Agrigenetics, Inc.
P.O. Box 701                                         P.O. Box 701
Kaunakakai, HI 96748                   Kaunakakai, HI 96748

PERMITTED SOURCE INFORMATION

Island                        Molokai
Water Management Area       Manawainui
    Aquifer Sector        Central
    Aquifer System       Manawainui
    System Sustainable Yield  2 mgd
Well Name                    Naiwa
State Well No.                0705-05

PERMITTED USE INFORMATION

Reasonable beneficial use               Agriculture (Irrigation of 75 acres of seed corn)
Withdrawal (12 month moving ave.)       0.012 mgd
Location of water use
    TMK #                    5-2-11:7
    Address                  Naiwa
    State land use classification    Agriculture
    County zoning classification   Agriculture

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 April 14,
   1994 meeting are incorporated into this permit by reference.

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

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

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide
the permittee an opportunity to be heard.
10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a yearly basis (attached).

11. This permit shall be subject to the Commission's periodic review of the Manawainui 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 Manawainui 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 Manawainui 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.

SIGNED

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

See attachments.

Mel Naiwa Well Air line.jpg  Naiwa Well Meter.jpg

Charley,

See attachment.

Mel Well Motor and Engine 004.jpg

awarding WCR 2
CHECKLIST

WELL CONSTRUCTION and PUMP INSTALLATION PERMITS

WELL NAME or LOCATION: Naiwa - CIBA-GEIGY Irrigation Well
WELL NUMBER: 0705-05
OWNER or OPERATOR: CIBA-GEIGY Seed Division
ADDRESS: P.O. Box 1830
Kaunakakai, Hawaii 96748
TELEPHONE: 567-6146 (Daryl Leir)

Date application received .................................... 7/10/89
Date acknowledged receipt........................................
Date of request for more information, fee, etc. 7/24/89
Date application accepted........................................
Suspense date (90 days)...........................................
Date filing fee deposited......................................... 8/2/89
Date sent to DOH for comments 7/22/89
Date comments received from DOH 8/21/89
Date application approved or disapproved 9/27/89 Issued
Date applicant notified of decision................................

REMARKS: ____________________________________________
**CHECKLIST**

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**WELL CONSTRUCTION PERMIT**  **PUMP INSTALLATION PERMIT**

**WELL NAME or LOCATION:** NA'WA-CIBA-GEIGY IRR.  **WELL ISLAND:** MOLOKA'I

**WELL NUMBER:** 0705-05  **Tax Map Key:** 5-2-11:07

**OWNER/OPERATOR:**
- Firm Name: CIBA-GEIGY SEED DIVISION
- Contact Person: DAREL LEER
- Address: P.O. BOX 1930  
  KAUAI, HI 96748
- Phone: (808) 667-6146

**LANDOWNER:**
- Firm Name: SAME
- Contact Person: 
- Address: 
- Phone: 

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**Date application received:** 2-20-91
**Date acknowledged receipt/request more info:** 3-5-91
**Date application accepted:**
**Suspense date (90 days):**
**Date filing fee deposited:**

**Application sent to following:**
- Dept. of Health
- Dept. of Hawn Home Lands
- Dept/Bd of Water Supply
- Historic Preserv. Prog.
- Koolau MB #28 (Oahu)
- Dept-Pub-Works (Hawaii)
- Office of Hawaiian Affairs
- MOLAKAI OTHERS (5)

**Date sent** | **Date agenda due** | **Comments received**
---|---|---
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 
4/19/91 | | 

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**Date submittal due:**
**Date submittal sent to applicant:**
**Date application approved or disapproved:**
**Date applicant notified of decision:**

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**REMARKS:** 5 March 91 - mailed letter requesting:
1) Pump test record and well completion report
2) Returned well completion report 19 March 1991
CIBA-GEIGY WELL CROSS-SECTION AS BUILT
WELL NO. 0705-05 MOLAKAI

241'

231'

20'

APPROX. GROUND EL. 254'

ASTM A-53 CASING
12" I.D. X 3/8"

GROUT

5' SAND

GRAVEL PACK
3/8" BASALT GRAVEL

SCREEN
12" ASTM A-53
1/4" LOUVER SLOTS

NOT TO SCALE

10/27/97
EVALUATION OF DRILLING AND TESTING
CIBA-GEIGY WELL
MOLOKAI, HAWAII 1990

PREPARED BY: CHESTER LAO
HYDROLOGIST-GEOLOGIST
JULY 15, 1990
EVALUATION OF DRILLING AND TESTING OF CIBA GEIGY WELL
MOLOKAI, HAWAII 1990

SUMMARY
This report presents the hydrogeological evaluation of the recently completed well located on the Molokai Research Farm with recommendations for sizing of pump and for use of the well water. The well was completed satisfactorily by the drilling contractor Fred Page International and was successfully test pumped. As pointed out in my report of 1989, the chances of finding the freshest water was by the highway rather than at this location. With due consideration, however, of the primary purpose of the well to be able to bring in crops already in the ground and budgetary limits, the site selected was still considered favorable. Testing the well for yield and drawdown shows a capacity of 400 gallons per minute with a drawdown of slightly over 7 feet is possible. For a diesel powered pumping unit working against a total dynamic head of 445 feet including 60 pounds per square inch delivery pressure, a power unit of 120 horsepower is recommended.

Water quality improved slightly over the 78 hours of test pumping from an initial 3360 micromhos to 3260 micromhos field conductivity. Calibration to a known standard reduces the values to 3125 micromhos and 3032 micromhos, respectively. Salinity of the water should be satisfactory to complete a season of crops. Dilution with low salinity state water could easily double the available water for expanded normal operations.

WELL DRILLING

Unfortunately through miscommunication, well cutting samples were not saved for the first 100 feet of drilling for determination of lithologic character. Although regrettable from the viewpoint of recording data, the loss is not considered important to this well. According to the driller, this interval consisted of soil and weathered rock. The remaining 181 feet of formations is compiled and attached as "Formation Log for Ciba Geigy Molokai Well". Nothing of an unusual geologic nature in the formations was noted. The formations for the most part are rather thick dense aa type lava flows with associated clinkers and dense pahoehoe flows that are probably transitional to aa. The lavas are from the Upper Member of the East Molokai Volcanic Series of the East Molokai volcanic shield. The dense massive nature of the flows were difficult to drill. The most important interval of the well which is below the water table consisted mostly of a several massive flows with a few associated thin clinker...
beds. Nevertheless, the well is considered a good producer with moderate drawdown.

TEST PUMPING

Test pumping of the well was performed with a diesel powered unit driving a line shaft multistage turbine pump through a right angle drive head with an in-out ratio of 1:2. A 4-inch flow meter and gate valve were located in the discharge line for the purpose of measuring rate and gallons pumped and to insure a full pipe of water passing the meter. An air line was attached to the pump column to measure drawdown. Following installation of the pump in the well, surging was performed to cleanse the well of cuttings. The well was then allowed to recover and rest 3 days before the actual test began. Testing was divided into two phases consisting of a yield-drawdown test and a 72-hour sustained test.

YIELD-DRAWDOWN TEST. This test required 6 hours for completion because it was not known beforehand how sensitive the well was to pumping and a slow and sure approach was better than rash and sorry which could have set matters back considerably. The results of this testing are presented as the attachment titled "Ciba Geigy Well Yield-Drawdown Test".

The rates pumped ranged from 100 gpm to the maximum output of the test pump at 344 gpm. The drawdown at 100 gpm was not measurable as a pressure loss on the gage. The maximum indicated drawdown was 5.54 feet at 344 gpm. Some variation of drawdown was noted in testing but these were the results of well improvement and to a minor extent from tidal effects on the aquifer. Plotting of the data on log-log paper and fitting the points to a straight line permits the drawdown at rates not tested to be determined. For the rate of 400 gpm which presently best fits the irrigation practice on the farm, drawdown would be approximately 7 feet. A linear regression analysis with an r of .979 predicts a drawdown of 7.17 feet which corroborates the log-log plot.

SUSTAINED TEST. After completion of the yield-drawdown test, the sustained test began one and one-half hours later and continued uninterrupted for 72 hours. The purpose of this testing is detect changes of drawdown which indicate aquifer boundaries and to detect changes of water quality with time, both essential to determining whether a well is likely to meet the test of time for yield and utility. From previously gathered data from the yield-drawdown test on water quality and rate-drawdown and equipment limitations, a rate of 300 gpm was selected. The rate selection corresponds to an engine speed of slightly over 1700 rpm to insure completion of the test without interruption due equipment failure. These data
are presented as the attachment titled "72 Hour Uninterrupted Test Pumping".

The sustained test indicates water quality improved slightly over the duration of the test based on field measurements of specific conductance which is a measure of total dissolved solids or salinity of the water. Although a field kit was used by the farm manager Daryl Leer to titrate for chloride concentration, a more controlled analysis by a qualified lab should be made. Depending upon the chloride ratio to the other ions contributing to specific conductance of the water, chloride content could range from about 750 to 1000 ppm. Total dissolved solids (TDS) could range from approximately 2000 to 2300 ppm.

PLUMBNESS TEST. A test of the plumbness of the 12-inch I.D. well casing and louvered screen was made to a depth of 295 feet. This was performed by lowering a plummet with a minimum circumferential clearance of the sidewall on a stainless steel cable suspended over a pulley centered over the casing. Owing to the strong gusty winds at time of the test, the pulley was suspended at a height of 65.5 inches rather than the usual 10 feet or more. Despite the shortened pulley height which tends to increase the angular error, the well easily meets the American Water Works specification for drift of no more than 2/3 rds the inside diameter of the casing for any 100 feet interval or 8 inches per 100 feet. The maximum drift of 6.25 inches occurred in the 100 feet interval between 160 and 260 feet. The actual drift values are probably smaller because of difficulty in getting readings on a constantly swinging cable and the shortened pulley height. The well is quite straight, as can be verified by looking down the well, and has only a small drift to the northeast. Construction of the well more than meets specifications.

The data for the plumbness test were processed in a computer and the results are indicated in the attachment titled "Plumbness Test for Ciba Geigy Molokai Well.

PUMP RECOMMENDATIONS

The results of the extended test pumping allow a measure of confidence in sizing the permanent pump for the well, especially if it is recognized that actual output may have to be reduced. In contrast to constant speed electric power, the diesel powered unit can be regulate pump output by simply reducing engine speed. Partially closing down the valve on discharge line will serve the same purpose with either type of unit.

Because the central Molokai basal ground water body is
not well known except for the failures of the sugar plantation wells that had huge excess capacities and the potable county well near Kalae. Although this writer's prediction of the likelihood of this well being in an expanded transition zone was accurate, it is not possible to state unequivocably that this well can maintain forever its present salinity at a pumping rate of 400 gpm because of delayed reaction to pumping or adverse effects from future competitive wells.

On the other hand, more well capacity is available from the well for uses that tolerate higher salinity. For example, the well could supply 1000 gpm with a drawdown of approximately 22.8 feet for a brackish shrimp farm operation.

Based on an initial 400 gpm capacity against a total dynamic head of 445 feet with a discharge pressure of 60 psi, the following parameters have been calculated for your information:

- Water Horsepower: 45
- Brake Horsepower: 64
- Diesel Horsepower: 107 say, 110 to 125
- Est. fuel costs: 13.2 cents per dollar per gallon for each 1000 gallons of water

The actual number of stages for the pump will depend on the bowl design. Trimming of impellers may be required to match the desired discharge pressure.

DISCUSSION AND RECOMMENDATIONS

For the purposes of insuring a crop can brought to harvest with water from a well on the Molokai Research Farm, the Ciba Geigy well results are positive. Some of the unknowns presently not determined are: 1). crop tolerance to this well water, 2). long term stability of salinity of the well water to pumping especially if there are future competitors for ground water, and 3). presence in the well water of pesticides used on pineapple formerly grown on these lands.

The tolerance of corn to water of the salinity found in the well is already assured by the present successful experiences of the competing corn seed farms using water from shallow wells excavated along the coastline. The Molokai soils are well drained and should minimize salt or sodium buildup. Normal rainfall should assist in flushing of salts in the soil. Long term use for irrigation is expected to
cause an salinity increase of the well water from applied water in excess of plant requirements that percolate beyond the root zone. Continued availability of low salinity State water will minimize degradation of the ground water. Location of the well at the uppermost edge of the property and fields will tend to minimize the influence of return irrigation water.

Despite the slight improvement of salinity of the well water indicated in the 72-hour test, the stability of salinity over a 100 days of pumping at rate 25% greater remains to be determined and will only come from operational experience with this well. The uncertainty is based on the estimated low flux of ground water in this area derived from recharge. Thin basal lenses are sensitive to pumping and the fact that this well has not shown this behavior so far is positive encouragement, but there must be willingness to scale back pumpage to preserve usable water quality if required. Even if this well proves out a 400 gpm capacity with a steady salinity, a likely future scenario is a cutback due to quality changes brought about by new wells, particularly those in upland locations that could intercept ground water flow and place this well in an unfavorable back water position.

Under the present practices of the Department of Land and Natural Resources Commission on Water Resource Management the owner of a well that is not used to its permitted value will have his permitted use reduced. Permitted uses are reviewed every five years. Although the Commission granted Ciba Geigy 0.5 mgd, the well permit requested this amount in the unlikely event the well showed this potential. The present permitted use is probably safe for a while, but the State will be aware of who is using what since pumpage must be reported annually. The more use can be made of the potential of this well, the greater will be the future permitted use. The strategy to protect this well from future encroachment is to lodge a written statement against future proposed wells that appear to threaten the Ciba Geigy well at the times the permit applications are reviewed by the Commission on Water Resource Management. The threats are from three sources: firstly, from exceeding sustainable yield of the aquifer; secondly, from wells that too close; and finally, from upland wells of excessive capacity that would be using poorly quality water that would affect the quality of the underlying aquifer.

Use of this well for domestic water has been discussed with Mr. Leer and some of the administrative and quality requirements were discussed. Because of the brackishness of the well water, it presently fails to meet Department of Health requirements for drinking water. With dilution of one
part well water to two parts State water, the mineralogical standards could be met. The water also would have to be tested for EDB, DBCP, and TCP, which are soil fumigants formerly widely used for controlling nematodes in the pineapple industry. A scan for other pesticides, herbicide, and chemical on the Environmental Protection Agency list is also required. Simple dilution with pesticide free State water could possibly reduce the pesticides to acceptable limits; otherwise, costly removal of the contaminants would be required. Use of the well water for human consumption will further require that an Engineering Report as mandated by Section 29 must be submitted to and accepted by the Department of Health.

For all the above reasons, it is recommended that Ciba Geigy plan using the well extensively for a test period after which decisions can be made as to the sale of water to other farms for off season use or for dilution to extend potable supplies. In this way, a prioritized beneficial use will be established to secure future access to this water.
## Formation Log for Ciba Geigy Molokai Well

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0 to 100</td>
<td>Samples not saved for inspection</td>
</tr>
<tr>
<td>101 to 120</td>
<td>Massive, dense aa w/olivine and plagioclase crystals, bit of augite</td>
</tr>
<tr>
<td>123 to 127</td>
<td>Massive pahoehoe w/few round vesicles</td>
</tr>
<tr>
<td>127 to 134</td>
<td>Massive, dense</td>
</tr>
<tr>
<td>134 to 142</td>
<td>Less dense, reddish particles</td>
</tr>
<tr>
<td>142 to 145</td>
<td>Finer cuttings of same</td>
</tr>
<tr>
<td>145 to 153</td>
<td>Dense flat chips</td>
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<tr>
<td>153 to 157</td>
<td>Aa, porous clinkers</td>
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<tr>
<td>157 to 160</td>
<td>Fine sand sized cuttings, dense dark</td>
</tr>
<tr>
<td>160 to 165</td>
<td>Aa, porous, some clinkers</td>
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<tr>
<td>165 to 184</td>
<td>Dark, dense fine cuttings</td>
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<td>184 to 189</td>
<td>Dense pahoehoe</td>
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<td>189 to 198</td>
<td>Fine sand sized cuttings of dense</td>
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<td>Coarse cuttings of brown-gray pahoehoe</td>
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<td>Dark fine cuttings</td>
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<td>204 to 224</td>
<td>reddish brown clinkers</td>
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<tr>
<td>224 to 236</td>
<td>Dense dark aa cuttings</td>
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<td>236 to 239</td>
<td>Fist-sized red clinker, feldspar crystals</td>
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<td>239 to 249</td>
<td>Dark sand sized cuttings</td>
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<td>Large red clinkers</td>
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<td>252 to 262</td>
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<td>257 to 264</td>
<td>Aa w/plagioclase crystals</td>
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<td>Aa dense</td>
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<tr>
<td>Depth</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>270 to 272</td>
<td>Pahoehoe</td>
</tr>
<tr>
<td>272 to 279</td>
<td>Dense chips, no vesicles</td>
</tr>
<tr>
<td>279 to 281</td>
<td>Red clinkers</td>
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</tbody>
</table>
Ciba Geigy Well Yield-Drawdown Test  
June 29, 1990

Personnel Present: Fred Page, Daryl Leer, Chester Lao

Equipment: Diesel Powered Line Shaft Pump, Flow Meter,  
276.9 feet of Air Line, Conductivity-Temperature Meter.

Beginning Reading of Flow Meter: 878700

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<th>PSI</th>
<th>Drawdown</th>
<th>Temp</th>
<th>Micromhos</th>
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Stop Pump

Recovery completed in 60 seconds.

* Ciba Geigy Instrument Readings

+++-----------------------------------------+++---
+++-----------------------------------------+++

#### 72-Hour Uninterrupted Test Pumping

Rate: Nominal 300 gpm rate, engine speed 1700 rpm
Duration: 1830 June 29, 1990 to 1830 July 2, 1990

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Recalibrate
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End of Test  July 2, 1990

End Meter Reading
Total Water Pumped
Plumbness Test for Ciba Geigy Molokai Well

Date of test: July 8, 1990
Personnel: Fred Page, Daryl Leer, Chester Lao
Equipment: Plummet diameter 3/8 inch less than casing J.D.
Double sheaves, 1/8 inch aircraft cable
Pulley height 65.5 inches

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<tr>
<th>Feet</th>
<th>N</th>
<th>S</th>
<th>E</th>
<th>W</th>
<th>Drift</th>
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Ms. Stacy E. Uehara
Dwyer Imanaka Schraff Kudo Meyer & Fujimoto
900 Fort Street Mall
Honolulu, Hawaii 96813

Dear Ms. Uehara:

Pump Installation Report
Naiwa Well (Well No. 0705-05)

Thank you for transmitting well section as-built drawing, pump assembly drawing, pump test curves, and geologist’s report, received here October 27, 1997. These meet the special conditions approved with the Water Use Permit for Ciba-Geigy Seeds on April 14, 1994, except for slightly exceeding the specified 60-day deadline.

If you have any questions, please call Charley Ice at 587-0251.

Sincerely,

RAE M. LOUI
Deputy Director

C/O
April 14, 1992

Dear Mr. Paty,

Well No. 0705-05 pump installation was completed as per application pump permit of May 29, 1991. A copy of requested pump installation plans were sent to your office to obtain pump installation permits. All construction & installation of pump was completed in October 1991 by Rosco Moss. I have contacted Ed Sakota for forms and information to keep state required pump logs. We appreciate your patience and cooperation on this matter.

Thankyou,

Darryl Leer
Research Station Supervisor
CIBA-Geigy Seed Division

cc: Ed Sakota
State of Hawaii  
DLNR  
Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii  86809  

April 14, 1992  

Dear Mr. Paty,  

Well No. 0705-05 pump installation was completed as per  
application pump permit of May 29, 1991. A copy of requested pump  
installation plans were sent to your office to obtain pump  
installation permits. All construction & installation of pump was  
completed in October 1991 by Rosco Moss. I have contacted  
Ed Sakota for forms and information to keep state required pump logs.  
We appreciate your patience and cooperation on this matter.  

Thankyou,  

Darryl Leer  
Research Station Supervisor  
CIBA-Geigy Seed Division  

cc: Ed Sakota
Darryl Leer  
CIBA-Geigy Seed Division  
P.O. Box 1830  
Kaunakakai, Molokai 96748

State of Hawaii  
Dept of Land & Natural Resources  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, Hawaii 96809

December 27, 1991

Dear Mr. Paty:

I am notifying you in regards according to pump installation permit well No. 0705-05.

As per our permit, a pump was installed in October of 1991 by Rosco Moss. As yet the work has not been completed and we are waiting for some speciality parts to complete the system. We hope to have the completion of the pump system within the next 90 days. Rosco Moss will then furnish necessary reports.

Sincerely,

Darryl Leer
PUMP INSTALLATION PERMIT

for

Naiwa-CIBA-GEIGY Irrigation Well
Well No. 0705-05
Naiwa, Molokai

TO: CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, HI 96748

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 install a pump in Naiwa-CIBA-GEIGY Irrigation Well (Well No. 0705-05) within Tax Map Key: 5-2-11:07, for seed corn and commercial crop irrigation use, is approved subject to the following conditions:

1. The Division of Water Resource Management (DWRM), P.O. Box 373, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The proposed pump installation 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.

3. The permit shall be for installation of a 500 gallons per minute capacity pump in the well.

4. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage on a monthly basis.
5. The following shall be submitted to DWRM within 30 days after completion of the work:

a. Well Completion Report.

b. As-built sectional drawing of the installed pump.

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 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 24 months from the date of permit issuance.

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

MAY 29 1991
Date of Issuance

cc: USGS
Department of Health
Safe Drinking Water Branch
Ground Water Protection Program
Maui Department of Water Supply
Mr. Darryl Leer  
CIBA-GEIGY Seed Division  
P.O. Box 1830  
Kaunakakai, Hawaii 96748

Dear Mr. Leer:

We have received your application and filing fee for a permit to install a pump in your irrigation well (Well No. 0705-05) at Naiwa, Hawaii (TMK: 5-2-11:07). We are reviewing the application for completeness.

As prescribed in your well construction permit, please send us 1) the complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data and 2) the completed Well Completion Report, form enclosed.

Should you have any questions, please call the Regulation Branch of the Division of Water Resource Management at 548-7541.

Sincerely,

MANABU TAGOMORI  
Deputy Director

NF: mh
Encl.
INSTRUCTIONS: Please print or type and submit completed report within 30 days of well completion to the Division of Water & Land Development, P.O. Box 313, Honolulu, HI 96810. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 548-7542, Hydrology, Geology Section for assistance.

A. STATE WELL NO. 0705 - 05 WELL NAME: Naawa
   ISLAND: Molokai

B. LOCATION: Molokai TAX MAP KEY: 5-2-011-0007-0222

C. WELL OWNER: CIBA-GEIGY Seed Division

D. DRILLING OR PUMP INSTALLATION CONTRACTOR: Roscoe Moss
   Type of Rig: Cable Tool
   DRILLER: Fred Page

E. DATE OF WELL COMPLETION: 08/29/90 DATE OF PUMP INSTALLATION: 08/29/90

G. GROUND ELEVATION (sea): 254 ft.
   Height of drilling platform above ground surface: 4 ft.
   Bench mark and method used to determine ground elevation: ft.

H. TOTAL DEPTH OF WELL BELOW GROUND
   1. HOLE SIZE: 16 inch dia. from 0 ft. to 281 ft. below ground

J. CASING INSTALLED:
   1) 12 in. I.D. x 3/8 in. wall solid to 251 ft. below ground
   2) 12 in. I.D. x 5/16 in. wall perforated to 281 ft. below ground

K. ANNOTUS:
   Grouted from 0 ft. to 100 ft. below ground
   Gravel packed from 100 ft. to 281 ft. below ground

L. PERMANENT PUMP INSTALLATION:
   Pump type, make, serial No.: Peerless
   Capacity: 400 gpm
   Motor type, H.P., voltage, r.p.m.: Diesel 160 HP 1800 RPM
   Depth of pump intake setting: 275 ft. below Top Well Case which elevation is ft.
   Depth of bottom of airline: 2 ft. below which elevation is ft.

M. PROPOSED USE
   Irrigation - Domestic

N. INITIAL WATER LEVEL: 3.2 ft. below ground. Date and time of measurement: 06/29/90 10:00 a.m.
   INITIAL CHLORIDE: 990 ppm. Date and time of sampling: 06/29/90 10:10 a.m.

P. PUMPING TESTS: Reference point (R.P.) used: Ground which elevation is 254 ft.

Q. DRILLER'S LOG:
   Depth, ft. Rock Description & Remarks Water Level
   0 to 22. Soil Dirt, boulders
   22 to 42. Gray & brown lava
   42 to 63. Gray blue, brown hard
   63 to 101. Brown & gray firm
   101 to 223. Gray hard
   223 to 277. Brown & gray firm
   277 to 377. Gray lava hard
   377 to 617. Gray & brown coarse

REMARKS:

CIBA-GEIGY Seed Division
submitted by (print) By Agent, Darryl K. Leer
signature: Darryl Sun
Title: Research Station Supervisor
Date: 2/15/91
Dear Mr. Paty:

SUBJECT: PUMP INSTALLATION PERMIT APPLICATION
NAIWA-CIBA-GEIGY IRRIGATION WELL
STATE WELL NO. 0705-05
KAUNAKAKAI, MOLOKAI

Thank you for the opportunity to review the subject document. We have reviewed the application and have the following comments to offer:

1. The application indicates that the subject well will be for domestic use. If the well is to serve 25 or more individuals at least 60 days per year or will have a minimum of 15 service connections, the applicant will be required to comply with the Department's Administrative Rules, Title 11, Chapter 20, "Potable Water Systems."

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

3. The application indicates that the subject well will also be used for the irrigation of seed corn and commercial crops. Thus, adequate measures must be taken to eliminate cross-connections and backflow conditions. The potable and non-potable (irrigation) water systems shall be clearly labeled and physically separated by an air gap or an approved backflow preventer to avoid contaminating the potable water supply.
4. While the subject well is situated immediately below the Underground Injection Control (UIC) line, the well should have a concrete well pad and full grouting to prevent seepage or floodwaters from migrating down the well shaft.

If you should have any questions, please contact the Safe Drinking Water Branch at 543-8258.

Sincerely,

THOMAS E. ARIZUMI, P.E., Chief
Environmental Management Division

cc: Darryl Leer
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Molokai, HI 96748
May 1, 1991

The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Well Construction and Pump Installation Applications
Stream Alteration Permit

Thank you for the opportunity to comment on the following permit applications:

- Kohanaiki 1 & 2 (4458-01, 02) Well and Pump
- Puako 4-6 (5748-01, 5648-04, 5549-02) Well and Pump
- HCEOC-Milolii (1154-01) Well and Pump
- DHHL-Kawaihae (6448-02) Exploratory Well
- Fern Grotto 2 (0221-02) Well
- Anahola C (0818-03) Well and Pump
- Moloka'i Golf 1 & 2 (0901-02, 1001-02) Well and Pump
- Naiwa-Ciba/Geigy Irrigation (0705-05) Pump
- and Kihei Gulch No. 2 Stream Alteration Permit

Our comments are directed to two projects with positive impact on Hawaiian home lands -- Kawaihae and Anahola wells; and the Moloka'i Golf resubmittal, for which we prepared comments at an earlier time.

The Kawaihae Well is being drilled and tested for the Department of Hawaiian Home Lands by the Division of Water Resource Management; it will directly benefit new native Hawaiian lessees at Kawaihae, a major anticipated growth area and development priority. We anticipate potable results from the well testing, and request your approval of this project.

The Anahola Well will supplement the system on Hawaiian home lands in Anahola operated by Kaua'i County, which serves
Hawaiian homesteaders and other members of this old community. The system is currently at capacity. Anahola is the Department's primary development area on the island of Kaua'i. We request your approval of this project.

The Moloka'i Golf resubmittal appears to be the same as the previous request, and we are attaching our prior comments, which are still relevant. That letter requests the project be denied.

The other captioned projects do not affect Hawaiian home lands, and we do not have comments at this time.

Warmest aloha,

Hoailua L. Drake, Chairman
Hawaiian Homes Commission

HLD:DCY:CI
May 1, 1991

The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

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The other captioned projects do not affect Hawaiian home lands, and we do not have comments at this time.

Warmest aloha,

Hoalulau L. Duke, Chairman
Hawaiian Homes Commission

HLD:DCY:CI
Dear Mr. Paty,

Moloka'i Golf Inc.
Request for Extension of Well Construction Permits
Moloka'i Golf Wells 1 & 2, Kualapuu, Moloka'i

The Department of Hawaiian Home Lands appreciates the opportunity to comment on the request to extend well construction permits to serve a golf course in Kualapuu.

These wells draw from the Kualapuu Aquifer, which underlies Hawaiian home lands and is a major source of water for homestead development. By our estimates, Moloka'i Ranch's reasonable share of this aquifer, based upon its proportion of overlying land, is perhaps 1.25 Mgd. Moloka'i Ranch has already sold its interest in an existing well tapping this aquifer, one yielding a little over 1 Mgd. The Department of Hawaiian Home Lands respectfully submits that the proposed golf course wells exceed the amount that might be withdrawn from this aquifer to serve Moloka'i Ranch lands.

We understand that developers expect to find brackish water in these wells. We appreciate that this approach aims to protect potable sources. Any approval to use brackish water should be based on an adequate understanding of the aquifer such that potable sources are not endangered. Should only potable water be found, it should only be used by overlying land owners for reasonable potable uses, in proportion to their rights to the aquifer.

We still have concerns about the appropriateness of golf course development in this location, first because its use of fertilizers, pesticides, and brackish irrigation water may pose a threat to groundwater, and second because the Moloka'i Community Plan confines resort activities to the West End of Moloka'i.
Finally, we wish to express concern over very short notice to prepare comments. The agenda for the Commission on Water Resource Management appears barely a week before the scheduled meeting. This does not allow much preparation time, either to prepare comments or to schedule attendance, as necessary. While most other agenda items have been processed well in advance, this one appeared without prior notice. We are anticipating other issues that are critical to the Hawaiian home lands programs, and would like to have adequate time to make an appropriate response.

A decision on designation of all or parts of Moloka'i as a Water Management Area is one issue in which we have great interest. Even without this designation, the Commission's authority to issue a permit in its trustee capacity is a regulatory function, and the clear potential of the subject request to create a legal conflict as well as a water quality threat should be sufficient to act accordingly.

In light of considerable activity since the initial request, the Commission is within its authority to review the current request from a larger perspective. We do not believe it meets the reasonable and beneficial standard to be applied as the Commission's trust responsibility, and we ask you to deny this request.

Thank you again for this opportunity to present our position.

Warmest aloha,

Hōaliʻi L. Drake, Chairman
Hawaiian Homes Commission
April 29, 1991

Mr. Manabu Tagomori  
Department of Land and Natural Resources  
State of Hawaii  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Tagomori:

Re: Well Construction and Pump Installation Permit Application  
NAIWA-CIBA-GEIGY, Well No. 0705-05, Molokai, Hawaii

Please be advised that we would not have any objections if the pump installation permit is issued.

Sincerely,

Rae M. Shikuma  
Director

cc: engineering  
planning

"By Water All Things Find Life"
MEMORANDUM

TO: Manabu Tagomori, Deputy Director
Commission on Water Resource Management

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Pump Installation Permit for the CIBA-GEIGY Seed Corporation (Well No. 0705-05)
Naiwa, Molokai
TMK 5-2-11: 7

HISTORIC PRESERVATION PROGRAM CONCERNS:

We believe that this application will have "no effect" on significant historic sites. There are no known historic sites in the well site. An archaeological survey conducted by Environmental Impact Study Corporation on the makai portion of this parcel noted that the parcel has undergone intensive ground disturbance from agricultural activities. Therefore, it is not likely that historic sites are still present.

If you have any questions, please contact Ms. Annie Griffin at 587-0013.
Mr. Thomas K. Kaulukukui, Sr.
Chairman & Trustee-At-Large
Office of Hawaiian Affairs
1600 Kapiolani Blvd., Suite 1500
Honolulu, Hawaii 96814

Attn: Ms. Linda Delaney, Land & Natural Resources Division

Dear Mr. Kaulukukui:

Well Construction and Pump Installation Permit Application

Transmitted for your review and comment is a copy of the following permit application:

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Please review the application pursuant to your area of concern and submit your comments to us, orally or in writing, by ten (10) working days from date of letter.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

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

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Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Honorable John C. Lewin, M.D.
Director
Department of Health
State of Hawaii
1250 Punchbowl Street
Honolulu, Hawaii 96813

Attn: Mr. William Wong, Drinking Water Branch

Dear Dr. Lewin:

Well Construction and Pump Installation Permit Application

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Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Ms. Rae Shikuma, Director
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Maui, Hawaii 96793

Dear Ms. Shikuma:

Well Construction and Pump Installation Permit Application

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Irrigation Well

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

MANABU TAGOMORI
Deputy Director

NF:bm
Enc.
Ms. Noelani Joy  
Farrington Ave.  
Kaunakakai, Hawaii 96748

Dear Ms. Joy:

**Well Construction and Pump Installation Permit Application**

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

MANABU TAGOMORI  
Deputy Director

NP:bm  
Enc.
Ms. Rachel Kamakana  
P.O. Box 145  
Kaunakakai, Hawaii 96748

Dear Ms. Kamakana:

Well Construction and Pump Installation Permit Application

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director

NF:bm  
Enc.
MEMORANDUM

TO: Don Hibbard, Director  
    Historic Preservation Program

FROM: Manabu Tagomori, Deputy Director  
      Commission on Water Resource Management

SUBJECT: Well Construction and Pump Installation Permit Application

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Should you have any questions, please contact our Regulation Branch at 548-7541.

NF:bm
Enc.
Mr. Matthew Adolpho
Moomomi Ave.
Kaunakakai, Hawaii 96748

Dear Mr. Adolpho:

Well Construction and Pump Installation Permit Application

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Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[Signature]
MANABU TAGOMORI
Deputy Director
Mr. Wayne Meyer  
P.O. Box 454  
Kaunakakai, Hawaii 96748

Dear Mr. Meyer:

Well Construction and Pump Installation Permit Application

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Sincerely,

[Signature]

Manabu Tagomori  
Deputy Director

NF:bm  
Enc.
Ms. Sarah E. Sykes  
P.O. Box 370  
Kaunakakai, Hawaii 96748

Dear Ms. Sykes:

Well Construction and Pump Installation Permit Application

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Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director

NF:bm  
Enc.
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As prescribed in your well construction permit, please send us 1) the complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data and 2) the completed Well Completion Report, form enclosed.

Should you have any questions, please call the Regulation Branch of the Division of Water Resource Management at 548-7541.

Sincerely,

MANABU TAGOMORI
Deputy Director

NF: mh

Encl.
APPLICATION FOR

X 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 $25.00 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: [MOLOKAI] Tax Map Key: 5-2-011-0007-0222
Address

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER

Firm Name: CIBA-GEIGY Seed Division
Contact Person: DARRYL LERI
Address: P.O. BOX 1830
KAINAKAKAI, HI 96748
Phone: (808)567-6146

3. PROPOSED CONTRACTOR FOR:

☐ Well Drilling ☑ Pump Installation

Name: ROSCOE MOSS COMPANY
Address: 830 AHUA ST.
HONOLULU, HI 96819
Phone: 839-6888
Contractor's License No.: C-2101

4. PROPOSED WORK

☐ Drill New Well ☑ Deepen ☑ Alter ☑ Redrill
☐ Install New Pump ☑ Seal ☑ Abandon ☑ Modify Pump
☐ Replace Pump

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

☐ Domestic (individual, noncommercial water systems) ☐ Irrigation (specify) ☑ SEED CORN & COMMERCIAL CROPS ☐ Industrial
☐ Military
☐ Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL

575,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: ☑ Vertical Turbine ☑ Submersible ☑ Centrifugal
Motor: ☑ Diesel ☑ Gas ☑ Electric: Rated Horsepower
Rated Pump Capacity: 500 gallons per minute (gpm)

Well Owner (print): CIBA-GEIGY Seed Division
Landowner (print): CIBA-GEIGY Seed Corporation

Signature by agent: ____________________________
Date: 3/31/91

Signature by agent: ____________________________
Date: ____________________________

For Official Use Only:

Field Checked By: ____________________________
Latitude: ____________________________
Hydrologic Unit: ____________________________

Date: ____________________________
Longitude: ____________________________
State Well No.: 0705-05
Briefly describe the proposed work:

Install pump in existing well

PROPOSED SECTION OF WELL

Elevation at top of casing

Ground Elev. 254 ft., msl

Cement Grout 100 ft.

Hole Dia. 16 in.

Total Depth 281 ft.

Rock Packing 105 ft.

Solid Casing:

Material STEEL

Length 251 ft.

Diameter 12" in.

Wall thickness 3/8 in.

Casing: / Perforated /X/Screen

Material Steel Louvered

Length 30 ft.

Diameter 12" in.

Wall thickness 3/8 in.

Openings 1/4" slots sq. in./L.F.

Open Hole:

Length

Diameter

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
AY TO THE ORDER OF

Department of Land and Natural Resources

Twenty-five and no/100 DOLLARS

Filing fee. Tax map key

Donna Elizabeth Johnson

0705-05 - PUMP INST.
ELEVATION CERTIFICATION

FOR: CIBA-GEIGY, Seed Division
Naiwa, Molokai, Hawaii

TMK: 5-2-11:7(POR)

I CERTIFY THAT THE WELLHEAD ON THE ABOVE CAPTIONED PROPERTY IS AT AN ELEVATION OF 254 Feet Referenced to MEAN SEA LEVEL.

[Signature]

Charles M. Busby P.E.

CIVIL ENGINEERING: Design & Construction Supervision.
SURVEYING SERVICES: Geodetic & Control Surveys.
Topographic & Construction Surveys.
LAND SURVEYING under the direct supervision of JAMES F. FOSTER L.S.
NAIWA-CIBA-GEIY IRRIGATION WELL (0705-05)
WELL CONSTRUCTION PERMIT
for
Naiwa-CIBA-GEIGY Irrigation Well
Well No. 0705-05
Naiwa, Molokai

TO: CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

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. 0705-05 within Tax Map Key: 5-2-11:7 for irrigation use 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 pump installation permit from the Commission.

3. The grouted annulus of the well shall be a minimum of from 0 to 200 ft. instead of from 0 to 100 ft. as proposed.

4. The following shall be submitted to DOWALD within 30 days after completion of the well:
   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.
5. The applicant shall comply with all applicable laws, rules, and ordinances.

6. 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.

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

SEP 27 1989
Date of Issuance

cc: USGS
   Department of Health,
   Drinking Water Program
   Ground Water Protection Program
   Maui Department of Water Supply
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 APPLICATION  
NAIWA-CIBA-GEIGY IRRIGATION WELL  
STATE WELL NO. 0705-05  
NAIWA, MOLOKAI

Thank you for the opportunity to comment on the well construction permit for the Naiwa-CIBA-GEIGY Irrigation Well. We offer the following comments:

1. Because the well will be for irrigation purposes, the State's Potable Water Systems Regulations, Chapter 20, Title 11, Administrative Rules, are not applicable.

2. The well will be located below the UIC line and thus is not expected to impact underground sources of drinking water. In addition, there appear to be no existing drinking water wells located downgradient of the proposed site.

If you have any questions, please contact the Safe Drinking Water Branch at 548-2235.

Very truly yours,

[Signature]

JOHN C. LEWIN, M.D.  
Director of Health

cc: Mr. Daryl Leer  
CIBA-GEIGY Seed Division  
P.O. Box 1830  
Kaunakakai, Hawaii 96748
September 8, 1989

CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

The Commission on Water Resource Management will be acting on your permit application for Naiwa-CIBA-GEIGY Irrigation Well at their meeting on September 13, 1989, at 2:00 p.m. Please note that the meeting will take place in Lihue, Kauai, at the State Office Building, Conference Rooms A and B, 3060 Riwa Street.

Your application will be included on the agenda as Item 7 (attached).

You or your representative are invited to attend the meeting.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:bm
Attach.
August 9, 1989

Mr. Manabu Tagomori
Deputy Director
Commission on Water Resource Management
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Tagomori:

Re: Well Construction Permit Application
Naiwa-CIBA-GEIGY Irrigation Well (0705-05)
TMK 5-2-11:07, Naiwa, Molokai

We are concerned over the impact that proposed wells at this approximate location will have on the groundwater capacity and upon each other. Aside of this well permit application, a non-potable groundwater source is proposed at this approximate location by Kukui, Molokai to serve the non-potable needs of West-end Molokai.

Before the State Commission on Water Resources Management approve this application, there should be some assurance of adequate water supply for proposed usage. There should also be some assurance that the quality of the aquifier in the sector will not be degraded or threatened in any way.

Sincerely,

Vince G. Bagyo, Jr.
Director

ab
xc: Engineer file

"By Water All Things Find Life"
CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

We acknowledge receipt of your application to construct a well at Naiwa, Molokai, Tax Map Key: 5-2-11:7.

Department of Land and Natural Resources administrative rules require a $25.00 filing fee to accompany each permit application. Please send a $25.00 check, payable to the Department of Land and Natural Resources, to P.O. Box 373, Honolulu, Hawaii 96809.

Sincerely,

MANABU TAGOMORI
Deputy Director

---

Expense
Code

Budget
Center

Amount
Due

Authorized
Signature

Date

RECD JUL 27 1989

CK #U224

---
FUNK SEEDS INTERNATIONAL
A COMPANY OF CIBA-GEIGY CORPORATION
P. O. BOX 371
KAUNAKAKAI, HI  96748

PAY TO THE ORDER OF: Dept. of Land & Natural Resources

Twenty five and 79/100 DOLLARS

Bank of Hawaii
NAIWA - CIBA GEIGY

For: permit (well 0705-05)

August 03, 89

$2579

DAMY L. RAW
AUG 1 1969

Honorable John C. Lewin, M.D.
Director Of Health
Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Attention: Mr. Thomas Arizumi, Drinking Water Program

Dear Dr. Lewin:

Well Construction Permit Applications

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-188-12(c), we are sending you a copy of the following permit applications:

- Makahilo Golf Course Well (1904-02)
- Neiwa-CIBA-GEICY Irrigation Well (0705-05)
- Kahuku-Kulilma Resort Well
- Port Allen Power Station Salt Water Well (5435-06)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Manabu Togomori at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
July 28, 1989

Mr. Vince Bagoyo
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui 96793-0343

Dear Mr. Bagoyo:

Well Construction Permit Application

We are sending you a copy of the following permit application for your review and comments:

Naiwa-CIBA-GEIGY Irrigation Well (0705-05)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Dan Lum at 548-7643.

Sincerely,

MANABU TAGOMORI
Deputy Director

[Signature]

ES:bm
Enc.
July 24, 1989

CIBA-GEIGY Seed Division
P.O. Box 1830
Kaunakakai, Hawaii 96748

Gentlemen:

We acknowledge receipt of your application to construct a well at Nalwa, Molokai, Tax Map Key: 5-1-11:7.

Department of Land and Natural Resources administrative rules require a $25.00 filing fee to accompany each permit application. Please send a $25.00 check, payable to the Department of Land and Natural Resources, to P.O. Box 373, Honolulu, Hawaii 96809.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:ko
APPLICATION FOR

XX WELL CONSTRUCTION PERMIT
XX 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 96806. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7543. Hydrology/Geology Section for assistance.

1. WELL LOCATION
Island: Molokai  Tax Map Key 5-2-11:7
Address: Naiwa
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name: CIBA-GEIGY Seed Division
Contact Person: Daryl Leer
Address: P.O. Box 1330
Kaunakakai, Hawaii 96748
Phone: 567-6146

3. PROPOSED CONTRACTOR FOR:
Name: Fred Page International
Address: P.O. Box 2838
Kailua-Kona, Hawaii 96745
Phone: 326-5699

4. PROPOSED WORK
Drill New Well
Deepen
Seal
Redrill
Seal New Pump
Abandon
Replace Pump
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.)
Military
Domestic (individual, non-commercial water systems)
Industrial
Irrigation (specify) Seed Corn
Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 500,000 gallons per day

7. PROPOSED PUMP INFORMATION
Pump Type: Vertical Turbine
Submersible
Centrifugal
Gas
Electric:
Rated Pump Capacity 350 gallons per minute (gpm)

For Official Use Only:
Field Checked By __________________________ Latitude ____________ Hydrologic Unit
Date ____________

Signature __________________________ Signature __________________________

Well Owner (print) CIBA-GEIGY Seed Division Landowner (print) Same

Date ____________

Date ____________
Briefly describe the proposed work:

Drill new well for the purpose of irrigating corn and other seed crops. Install pump for the purpose of delivering water.

PROPOSED SECTION OF WELL

Elevation at top of casing 232 ft., msl.

Cement Grout 100 ft.

Ground Elev. 230 ft., msl

Solid Casing:
- Material: Mild steel
- Length: 230 ft.
- Diameter: 12 in.
- Wall thickness: 3/8 in.

Casing: / / Perforated / X Screen
- Material: Mild Steel
- Length: 30 ft.
- Diameter: 12 in.
- Wall thickness: 5/16 in.
- Openings: 100 sq. in./L.F.

Open Hole:
- Length: 30
- Diameter: 11 1/2 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.
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
Division of Water Resource Management

APPLICATION FOR

XX WELL CONSTRUCTION PERMIT
XX 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 $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7543, Hydrology/Geology Section for assistance.

1. WELL LOCATION
Island Molokai Tax Map Key 5-2-11:7
Address Naiwa

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name CIBA-GEIGY Seed Division
Contact Person Daryl Leer
Address P.O. Box 1830
Kaunakakai, Hawaii 96748
Phone 567-6146

 LANDOWNER
Firm Name Same
Contact Person
Address
Phone

3. PROPOSED CONTRACTOR FOR:
Name Fred Page International
Address P.O. Box 2838
Kailua-Kona, Hawaii 96745
Phone 326-5699
Contractor's License No. C-10838

4. PROPOSED WORK
Drill New Well
Deepen
Redrill
Alter
Seal
Abandon
Install New Pump
Replace Pump
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.)
Military
Domestic (individual, noncommercial water systems)
Industrial
Irrigation (specify)
Seed Corn

6. PROPOSED AMOUNT OF WITHDRAWAL 500,000 gallons per day

7. PROPOSED PUMP INFORMATION
Pump Type: Vertical Turbine
Motor: Diesel
Submersible
Gas
Electric:
Centrifugal
Rated Pump Capacity 350 gallons per minute (gpm)

Well Owner (print) CIBA-GEIGY Seed Division
Signature ___________________________ Date ________________
Landowner (print) Same
Signature ___________________________ Date ________________

For Official Use Only:
Field Checked By ___________________________ Latitude ________________ Hydrologic Unit ___________________________
Date ___________________________ Longitude ________________ State Well No. ___________________________
Briefly describe the proposed work:

Drill new well for the purpose of irrigating corn and other seed crops. Install pump for the purpose of withdrawing water.

**PROPOSED SECTION OF WELL**

<table>
<thead>
<tr>
<th>Elevation at top of casing</th>
<th>232 ± ft., msl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement Grout</td>
<td>100 ft.</td>
</tr>
<tr>
<td>Hole Dia.</td>
<td>16 in.</td>
</tr>
<tr>
<td>Total Depth</td>
<td>290 ft.</td>
</tr>
<tr>
<td>Rock Packing</td>
<td>160 ft.</td>
</tr>
</tbody>
</table>

**Ground Elev. 230 ± ft., msl**

**Solid Casing:**
- Material: Mild Steel
- Length: 230 ft.
- Diameter: 12 in.
- Wall thickness: 3/8 in.

**Casing: / /Perforated / /Screen**
- Material: Mild Steel
- Length: 30 ft.
- Diameter: 12 in.
- Wall thickness: 5/16 in.
- Openings: 100 sq. in./L.F.

**Open Hole:**
- Length: 30
- Diameter: 11 1/2 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.*
NAIWA—CIBA—GEIGY IRRIGATION WELL
(0705-05)