COMMISSION ON WATER RESOURCE MANAGEMENT

FROM: Charley
TO: IMATA, R.
TO: MILLS, D.
TO: UYENO, D.
TO: CHONG, R.
TO: CHENG, C.
TO: LAROUX, E.
TO: OHYE, M.
TO: FUJII, N.
TO: YOSHINAGA, M.
TO: SWANSON, S.
TO: KUNIMURA, I.
TO: ENGLAND, D.

INIT. TO: INIT.
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DATE: 12 July 10

FOR: Approval
FOR: Signature
FOR: Information

PLEASE:
Review & Comment
Type Draft
Type Final
File
Copies:
Take Action:

Signature Information

Type Draft
Type Final
File

Copy: __

Take Action:

02 Jul 08

Don't know where original is; I used modified
it after talking w/ Tom Lance

Did we get 6PS readings or other locational
info? Let long for all 3 funded (see folder for
02 103
Thank you for the letter from Chuck Hill dated May 3, 2010, responding to our July 30, 2009 letter requesting additional information on the captioned wells. It is our understanding that you intend to continue the use of Wells 1 & 2 (Well Nos. 2006-16 and 2007-02) as monitor wells and seal Well 3 (Well No. 2007-03).

We requested well completion reports for Wells 2 & 3 (Well Nos. 2007-02 & 03), as required by your permits, which are not in our records. You have noted that all three wells were drilled in 1990 by a company no longer in business, and you have provided minimal information about the construction of these wells. Photos of the wellheads show severe cracking around the casing. It is apparent that all these wells might be candidates for sealing and abandonment.

Please file an application to seal Well 3 (Well No. 2007-03) as you have planned (attached: well construction permit application, see Item #7). At the same time, we are concerned that the other two wells may serve as conduits for potential contamination of the underlying basal aquifer. Please respond in writing how you plan to continue safe monitoring use at Wells 1 & 2.

If you have any questions, please contact Charley Ice of our staff at (808) 587-0218.

Sincerely,

LENORE N. OHYE
Acting Deputy Director

CI:ss
Attachment
<table>
<thead>
<tr>
<th>FROM: ROY</th>
<th>DATE: MAY 4, 2010</th>
</tr>
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<tbody>
<tr>
<td>TO:</td>
<td>INIT. TO:</td>
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<tr>
<td>CHENG, C.</td>
<td>KAWAHARA, K.</td>
</tr>
<tr>
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<td>DANBARA, S.</td>
<td>KUNIMURA, I.</td>
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<td>OHYE, L.</td>
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<td>FUJI, N.</td>
<td>OSHIRO, K.</td>
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<td>HARDY, R.</td>
<td>UYENO, D.</td>
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<td>ICE, C.</td>
<td>YOSHINAGA, M.</td>
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<td>See Me</td>
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<td>File</td>
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<td>Xerox ___ copies</td>
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</tbody>
</table>

Well abandonment permit app. needed.
Mukaiwa 1-3, wcp. 1 Jr

Left message on May 10

5/16 - did you call John Hingham about evidence or commitment
to monitoring as we asked 6/3/09 (I don't think they answered
question)?
Dear Mr. Kawahara:

Makaiwa Monitor Test Holes 1, 2 and 3
(Well Nos. 2006-16, 2007-02 and 2007-03)

I wanted to provide an update on the status of the rehabilitation of Makaiwa Monitor Test Hole 3 (hereinafter referred to as "Well 3"). In our September 25, 2009 letter to you we indicated that Well 3 would be repaired and used to monitor non-potable water levels. Since September, we have determined that it is not feasible to rehabilitate Well 3 and consequently, it will be sealed in accordance with accepted industry practices. We have a proposal from Geolabs Inc. to perform the work and anticipate starting construction in the near future. The status of Wells 1 and 2 has not changed and they will continue to be used in the manner outlined in our earlier correspondence.

If you require any further information or clarification, please contact John Higham who will be your new contact person regarding this matter. Please do not hesitate to contact him at 674-3229 or email johnh@kapolei.com.

Very truly yours,

Chuck Hill
Vice President

cc: Craig Arakaki
    Tom Nance
    Steve Kelly
    John Higham
CHECKLIST

WELL CONSTRUCTION PERMIT

WELL NAME or LOCATION: Makaiwa Monitor Test Hole

WELL NUMBER: 2006-16

OWNER or OPERATOR: Estate of James Campbell

ADDRESS: 828 Fort Street Mall, Suite 500

Honolulu, Hawaii 96813

TELEPHONE (contact person): 536-1961 (Sam Keala)

Date application received: 11-21-89

Date application acknowledged receipt/request more info: ____________

Date application accepted: ____________

Date application received: ____________

Date filing fee deposited: 11-28-89

Date filing fee received: ____________

Application sent to following:

Dept. of Health

County water board/dept

Comments received

NA

NA

NA

NA

NA

NA

NA

Date agenda due: ____________

Date submittal due: ____________

Date submittal sent to applicant: ____________

Date application approved or disapproved: Issued 11-30-89

Date applicant notified of decision: sent 12-5-89

REMARKS: ______________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
WELL COMPLETION REPORT

1. **STATE WELL NO.** 2006-116  **WELL NAME** MAKIKI T.H.,  **ISLAND** OAHU
2. **LOCATION:** Address  **Tax Map Key** 9-2-03102
3. **DRILLING OR PUMP INSTALLATION CONTRACTOR** P.R. DRILLING
4. **CONTRACTOR’S C-57 LICENSE NUMBER** C-9127
5. **NAME OF DRILLER WHO PERFORMED WORK** John C. McKoy
6. **TYPE OF RIG/CONSTRUCTION** 8-W MOBILE
7. **DATE OF WELL DRILLING COMPLETION** Jan. 9, 1990

8. **GROUND ELEVATION (msl)** 154.5 ft.
   - Top of Drilling Platform (msl) __________ ft.
   - Height of Drilling Platform above Ground surface __________ ft.
   - Bench Mark and Method Used to Determine Ground Elevation __________ ft.

9. **DRILLER’S LOG:**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level</th>
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<tbody>
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</table>

10. **TOTAL DEPTH OF WELL BELOW GROUND** 200 ft.

11. **HOLE SIZE:** ___________ inch dia. from ___________ ft. to ___________ ft. below ground
    ___________ inch dia. from ___________ ft. to ___________ ft. below ground
    ___________ inch dia. from ___________ ft. to ___________ ft. below ground

12. **CASING INSTALLED:**
    - 12 in. I.D. x ___________ in. well solid section to ___________ ft. below ground
    - In. I.D. x ___________ in. well perforated section to ___________ ft. below ground
    - Type of Perforation ___________

13. **ANNULUS:**
    - Grouted from ___________ ft. below ground to ___________ ft. below ground
    - Gravel packed from ___________ ft. below ground to ___________ ft. below ground

14. **INITIAL WATER LEVEL** 14.2 ft. below ground. Date and time of measurement ___________

15. **INITIAL CHLORIDE** ___________ ppm Date and time of sampling ___________

16. **INITIAL TEMPERATURE** ___________ °F Date and time of sampling ___________

17. **DATE OF PUMP INSTALLATION** ___________

18. **PUMP INSTALLATION:**
    - Pump Type, Make, Serial No. ___________
    - Capacity ___________ gpm
    - Motor type, H.P., Voltage, rpm ___________
    - Depth of Pump Intake Setting ___________ ft. below ___________ ft., which elevation ___________ ft.
    - Depth of bottom of airline ___________ ft. below ___________ ft., which elevation ___________ ft.
    - Pumping Head is ___________ ft.

19. **PUMPING TESTS:**
    - Reference Point (R.P.) used: ___________, which elevation ___________ ft.
    - Date 1-15-90
      - Start water level 134.5 ft. below R.P.
      - End water level ___________ ft. below R.P.
      - Depth of well ___________ ft. below R.P.
      - Total time ___________ hours
      - Draw- down ___________ ft.
      - Rate ___________ gpm
      - Temp. ___________ °F
      - Chloride ___________ ppm

Remarks: ___________

(If more space is needed, continue on back.)

**Contractor (print):** ___________
**Title:** ___________
**Signature:** ___________
**Date:** ___________

For Driller’s Use: ___________
**Job Name:** ___________
**Job No:** ___________

For Office Use: ___________
**Well No:** 2006-116
**Well No:** ___________
**Longitude:** 19° 01’ 47” W
**Latitude:** 21° 20’ 46” N

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
### DRILLER'S LOG (cont'd)

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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### PUMPING TESTS (cont'd):

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<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
</tr>
</thead>
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</tr>
</tbody>
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Remarks (cont'd):

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February 1, 1990
90-216 (333-41)

Mr. Manabu Tagomori
Division of Water and Land Development
Department of Land & Natural Resources
P. O. Box 373
Honolulu, Hawaii 96809

Dear Manabu:

Results of the First Makaiwa Gulch Test Hole

Enclosures to this letter describe the location of the test hole, formations encountered in drilling, and water level and quality. This hole penetrated the Waianae aquifer where its head is 14 feet above sea level. The well is outfitted with a locking cap. It is our intention to use it to monitor water level and quality on a permanent basis.

An application for a second test hole will soon be submitted by Campbell Estate. This hole will be 1300 feet to the west and is expected to encounter water with a four- to five-foot head. The enclosed map also shows this proposed test hole location.

Sincerely,

Tom Nance

TN:it

cc: Sam Keala

Enclosures
Driller's Log
Makaiwa Test Hole
Drilled December 20, 1989 to January 9, 1990
Ground Elevation 154.5 Feet
Total Depth = 200 Feet

<table>
<thead>
<tr>
<th>Depth (Feet)</th>
<th>Formation</th>
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<tbody>
<tr>
<td>0 - 3</td>
<td>Red-brown clayey silt soil</td>
</tr>
<tr>
<td>3 - 7</td>
<td>Soil and basalt boulders</td>
</tr>
<tr>
<td>7 - 12</td>
<td>Solid and hard gray basalt</td>
</tr>
<tr>
<td>12 - 25</td>
<td>Medium hard pahoehoe flow lava</td>
</tr>
<tr>
<td>25 - 45</td>
<td>Solid and hard gray basalt</td>
</tr>
<tr>
<td>45 - 63</td>
<td>Medium hard gray pahoehoe lava</td>
</tr>
<tr>
<td>63 - 72</td>
<td>Soft and porous gray caving material</td>
</tr>
<tr>
<td>72 - 80</td>
<td>Medium hard gray basalt</td>
</tr>
<tr>
<td>80 - 85</td>
<td>Soft and porous gray lava</td>
</tr>
<tr>
<td>85 - 100</td>
<td>Hard gray basalt in layers</td>
</tr>
<tr>
<td>100 - 110</td>
<td>Medium hard gray basalt</td>
</tr>
<tr>
<td>110 - 135</td>
<td>Hard gray basalt</td>
</tr>
<tr>
<td>135 - 150</td>
<td>Very hard, dark gray basalt</td>
</tr>
<tr>
<td>150 - 175</td>
<td>Layers of soft and medium hard basalt</td>
</tr>
<tr>
<td>175 - 180</td>
<td>Hard, dark gray basalt</td>
</tr>
<tr>
<td>190 - 200</td>
<td>Medium hard, light gray, porous basalt</td>
</tr>
</tbody>
</table>

Top of Casing (without cap) = 154.79
Depth to Water (Jan. 17, 1990) = 140.54
Still Water Level = 14.25 (msl)

Well No. 2006-16
WELL ID  3-2006-016  Makaiwa
Depth (ft)  Strat. Col.  Lithology  Hydrogeology
10  
25  Pahoehoe Lava, medium hard  
45  Dense basalt  
63  Pahoehoe Lava, medium hard  
90  Soft material (Weathered basalt?)  
110  Gray basalt, medium hard  
135  
150  Dense basalt, very hard  
175  Soft and medium hard basalt (Weathered basalt?)  GWL = 14.3 ft  
190  Dense basalt  MSL = 180 ft  
200  Light gray basalt, porous, medium hard  

Casing

GWL = 14.3 ft

MSL = 180 ft
## PR DRILLING CO., INC.
### PUMP TEST LOG

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<thead>
<tr>
<th>OPERATOR</th>
<th>John Crossing</th>
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<tr>
<td>DATE</td>
<td>1-15-90</td>
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<tr>
<td>LOCATION</td>
<td>Euro Plains</td>
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<tr>
<td>PROJECT</td>
<td>89-132-200' test well</td>
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<tr>
<td>JOB NO.</td>
<td>89-132</td>
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<td>BORING NO.</td>
<td>1</td>
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<tr>
<td>TYPE OF EQUIPMENT</td>
<td>Bo-61 Mobile Drill</td>
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</tbody>
</table>

### Ground Elevation: NK
### Casing Elevation: (Above ground level)
### Casing Depth: 12" casing
### Open Hole Depth: 194'
### Pump Depth: 182'
### Airline Depth: 178'
### Measured Water Level Elevation: Static of 1-15-90 139' 6"

<table>
<thead>
<tr>
<th>Time</th>
<th>Wtr press.</th>
<th>Meter</th>
<th>Temp.</th>
<th>Air lbs</th>
<th>Drawdown</th>
<th>GPM</th>
<th>Remarks</th>
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<td>12:40</td>
<td>600.00</td>
<td>600.00</td>
<td>600.00</td>
<td>3600</td>
<td>6.2</td>
<td>45</td>
<td>Clean water, fresh</td>
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<td>1:10</td>
<td>360.00</td>
<td>360.00</td>
<td>360.00</td>
<td>3.2</td>
<td>6.5</td>
<td>43</td>
<td>Clean water, fresh</td>
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<tr>
<td>1:20</td>
<td>36.00</td>
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<td>1.0</td>
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<td>65</td>
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</tr>
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<td>1:55</td>
<td>45.00</td>
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<td></td>
<td>1.2</td>
<td></td>
<td>65</td>
<td>Clean water, fresh</td>
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<tr>
<td>2:00</td>
<td>59.20</td>
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<td>1.5</td>
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<td>2:30</td>
<td>71.30</td>
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<td>1.7</td>
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<td></td>
</tr>
<tr>
<td>2:40</td>
<td>84.30</td>
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<td>1.7</td>
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<td>3:00</td>
<td>97.30</td>
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<td>1.7</td>
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<td>115.30</td>
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<td>1.7</td>
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<td>3:40</td>
<td>135.30</td>
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<td>4:00</td>
<td>137.30</td>
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<td>1.7</td>
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<td>65</td>
<td>End of test</td>
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</table>

**SIGNATURE:**
**LABORATORY ANALYSIS REPORT**

**TO:** Belt Collins  

**SAMPLES OF:** Makaiwa water  

**RECEIPT DATE:** 1/17/90  

**ATTN:** Tom Nance  

**SAMPLED:** 1/15/90  

**LOG NO.:** 3945

<table>
<thead>
<tr>
<th>ANALYSIS DATE</th>
<th>1/17 er</th>
<th>1/17 mm</th>
<th>1/18 BAL</th>
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<tbody>
<tr>
<td>MEASUREMENT</td>
<td>Nitrate</td>
<td>Chloride</td>
<td>Silica</td>
</tr>
<tr>
<td>UNITS:</td>
<td>mg N/L</td>
<td>mg Cl/L</td>
<td>mg SiO$_2$/L</td>
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<tr>
<td>SAMPLE(S)</td>
<td>1.85</td>
<td>410</td>
<td>77</td>
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<tr>
<td></td>
<td>1.87</td>
<td>405</td>
<td>74</td>
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</table>

Remarks: Sampled during 4-hour pump test at 65 GPM
December 15, 1989

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

Dear Mr. Tagomori:

Subject: WELL CONSTRUCTION PERMIT FOR MAKAIWA MONITOR TEST WELL NO. 2006-16

We do not have any objections or comments concerning this well.

We would appreciate a copy of the as-built cross-section, geological log, and hydrological data when you receive this information from the driller.

Very truly yours,

KAZU HAYASHIDA  
Manager and Chief Engineer
TO: The Estate of James Campbell  
828 Fort Street Mall, Suite 500  
Honolulu, Hawaii 96813

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 a monitor test hole within Tax Map Key: 9-2-03:2 (see attached map) is approved, subject to the following conditions:

1. The Division of Water and Land Development (DOWALD), Geology-Hydrology Section, shall be notified at 548-7543, before any work covered by this permit commences.

2. The well shall be used for monitoring and testing only.

3. The following shall be submitted to DOWALD, P.O. Box 373, Honolulu, Hawaii 96809, 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.
4. The applicant shall comply with all applicable laws, rules, and ordinances.

5. 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.

6. Upon completion of monitoring operations, the applicant shall obtain a well construction permit to seal the well with cement grout in a manner approved by the Department.

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

NOV 30 1989
Date of Issuance

Enc. (Well Completion Report form)
cc: USGS
   Department of Health,
   Drinking Water Branch
   Ground Water Protection Program
   Honolulu Board of Water Supply
   P.R. Drilling Co., Inc.
   Tom Nance Water Resources Engineering
DIVISION OF WATER RESOURCE MANAGEMENT

FROM: M. TAGOMORI

TO: INITIAL.

PLEASE:

- See Me
- Take Action By

route to Your Branch
- Route to Your Branch
- Review & Comment
- Draft Reply
- Acknowledge Receipt
- Xerox ___ copies
- File
- Mail
- For Information
- S. Kokubun
- D. Hamada
- L. Nanbu
- F. Ching

FILE IN: 2006-16

DATE: 1 - M

Remarks:

(1) Plan to keep in obs, vocal or seal?
(2) Any problem going to w/ ground?

Signed: 30 Nov.
Mr. Manabu Tagomori  
Division of Water and Land Development  
Department of Land & Natural Resources  
P. O. Box 373  
Honolulu, Hawaii 96809  

Dear Manabu:

Drilling Application for an Exploratory Borehole in Makaiwa Gulch on Oahu

On behalf of the Ewa Plain Water Development Corporation, we are pleased to submit the enclosed well drilling application and $25.00 filing fee. The small diameter borehole will be used to investigate the western boundary of the Walanae Aquifer and potential use of brackish water in Makaiwa Gulch. It is my understanding that this application can be approved by the staff due to the size and purpose of the boring.

Should you have any questions regarding the application or require additional information, please contact me or Sam Keala (536-1961).

Sincerely,

Tom Nance

TN:lt

Enclosures

cc: Sam Keala

November 20, 1989
89-2114 (933-84)
APPLICATION FOR

X WELL CONSTRUCTION PERMIT
_ PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $125.00 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 Oahu Tax Map Key 9-2-03:2
Address Across Honokai Hale Subdivision Along Farrington Highway

(Attach a USGS map (scale 1"=2000") and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name Estate of James Campbell
Contact Person Mr. Sam Keala
Address 828 Fort Street Mall, Suite 500 Honolulu, Hawaii 96813
Phone 536-1961

LANDOWNER
Firm Name Estate of James Campbell
Contact Person Mr. Sam Keala
Address 828 Fort Street Mall, Suite 500 Honolulu, Hawaii 96813
Phone 536-1961

3. PROPOSED CONTRACTOR FOR: ☐Well Drilling ☐Pump Installation
Name PR Drilling Company, Inc.
Address 235 Kellog Street Wahiawa, Hawaii 96786
Phone 622-2631

Contractor's License No. C-9627

4. PROPOSED WORK
☐ Drill New Well ☐ Deepen ☐ Redrill
☐ Alter ☐ Seal ☐ Abandon
☐ Install New Pump ☐ Replace Pump ☐ Modify Pump
☐ Replace 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) ☐ Other (specify) Observation

6. PROPOSED AMOUNT OF WITHDRAWAL
None gallons per day (Observation Use Only)

7. PROPOSED PUMP INFORMATION (Not Applicable)
Pump Type: ☐ Vertical Turbine ☐ Submersible ☐ Centrifugal
Motor: ☐ Diesel ☐ Gas ☐ Electric: Rated Horsepower
Rated Pump Capacity gallons per minute (gpm)

Well Owner (print) Signature ____________________________ Date __________

Landowner (print) ____________________________ Date 11/3/89

For Official Use Only:
Field Checked By ____________________________ Latitude __________
Date ____________________________ Longitude __________
State Well No. 2006-16
Briefly describe the proposed work:

Well is to be drilled for observation use only. The intention is to investigate the western boundary of the Waianae aquifer.

PROPOSED SECTION OF WELL

Elevation at top of casing 182 ft., msl.

Ground Elev. 180 ft., msl*

Cement Grout 20 ft.

Solid Casing:
Material Steel
Length 20 ft.
Diameter 6 in.
Wall thickness 0.25 in.

Hole Dia. 4"* in.
*Except for top conductor pipe

Casing: / /Perforated / /Screen
Material (none to be used)
Length _____________ ft.
Diameter _____________ in.
Wall thickness _____________ in.
Openings _____________ sq. in./L.F.

Total Depth 200 ft.

Rock Packing None ft.

Open Hole:
Length 180 feet
Diameter 4 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.
PAY DOLLARS $25.00

TO THE ORDER OF DEPT. OF LAND & NATURAL RESOURCES

Jane K. Kishimoto

DATE DESCRIPTION AMOUNT

FILING FEE: (933.8400)  $25.00
Makaiwa Monitor Test Hole (Well No. 2006-16)
MAKAIWA MONITOR TEST HOLE
(Well No. 2006–16)