<table>
<thead>
<tr>
<th>WELL NO</th>
<th>Head</th>
<th>Dia-meter</th>
<th>Aquifer Thickness</th>
<th>Active Length</th>
<th>THEIS COOPER-JACOB</th>
<th>HARR 10^4</th>
<th>HARR 10^6</th>
<th>RECOVERY</th>
<th>ZANGAR</th>
<th>POLUBARIN</th>
<th>THOMAS</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5530-04</td>
<td>2.0</td>
<td>0.30</td>
<td>21.3</td>
<td>25.3</td>
<td>80</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td></td>
<td></td>
<td>1600</td>
</tr>
<tr>
<td>5540-01</td>
<td>2.3</td>
<td>0.41</td>
<td>9.0</td>
<td>9.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>5615-06</td>
<td>1.5</td>
<td>0.15</td>
<td>6.1</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>5616-02</td>
<td>1.7</td>
<td>0.10</td>
<td>6.1</td>
<td>13.6</td>
<td>40</td>
<td>60</td>
<td>130</td>
<td>90</td>
<td>240</td>
<td></td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>5616-05</td>
<td>1.8</td>
<td>0.15</td>
<td>6.5</td>
<td>9.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1800</td>
<td></td>
<td></td>
<td>1800</td>
</tr>
<tr>
<td>5617-05</td>
<td>1.9</td>
<td>0.15</td>
<td>6.4</td>
<td>8.3</td>
<td>2300</td>
<td>2000</td>
<td>1100</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>5620-04</td>
<td>0.6</td>
<td>0.15</td>
<td>6.7</td>
<td>8.6</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>370</td>
<td></td>
<td></td>
<td>370</td>
</tr>
<tr>
<td>5620-05</td>
<td>1.1</td>
<td>0.15</td>
<td>5.8</td>
<td>9.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
<td></td>
<td></td>
<td>130</td>
</tr>
<tr>
<td>5620-06</td>
<td>1.1</td>
<td>0.15</td>
<td>6.1</td>
<td>7.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>340</td>
<td></td>
<td></td>
<td>340</td>
</tr>
<tr>
<td>5631-02</td>
<td>3.2</td>
<td>0.41</td>
<td>29.6</td>
<td>35.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1300</td>
<td></td>
<td></td>
<td>1300</td>
</tr>
<tr>
<td>5631-03</td>
<td>4.3</td>
<td>0.41</td>
<td>26.5</td>
<td>36.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td></td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>5638-03</td>
<td>5.5</td>
<td>0.36</td>
<td>16.2</td>
<td>18.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>520</td>
<td></td>
<td></td>
<td>520</td>
</tr>
<tr>
<td>5731-02</td>
<td>2.4</td>
<td>0.41</td>
<td>16.5</td>
<td>17.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>480</td>
<td></td>
<td></td>
<td>480</td>
</tr>
<tr>
<td>5731-03</td>
<td>2.3</td>
<td>0.41</td>
<td>16.3</td>
<td>17.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>510</td>
<td></td>
<td></td>
<td>510</td>
</tr>
<tr>
<td>5731-04</td>
<td>2.1</td>
<td>0.41</td>
<td>16.8</td>
<td>18.0</td>
<td>1100</td>
<td>1500</td>
<td>320</td>
<td>290</td>
<td>1300</td>
<td></td>
<td></td>
<td>1300</td>
</tr>
<tr>
<td>5731-05</td>
<td>1.7</td>
<td>0.05</td>
<td>18.5</td>
<td>18.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>700</td>
<td></td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>5738-01</td>
<td>1.7</td>
<td>0.41</td>
<td>12.2</td>
<td>12.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>980</td>
<td></td>
<td></td>
<td>980</td>
</tr>
<tr>
<td>5739-01</td>
<td>1.5</td>
<td>0.41</td>
<td>17.4</td>
<td>18.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td></td>
<td></td>
<td>400</td>
</tr>
<tr>
<td>5739-02</td>
<td>1.8</td>
<td>0.41</td>
<td>14.6</td>
<td>16.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>190</td>
<td></td>
<td></td>
<td>190</td>
</tr>
<tr>
<td>5741-01</td>
<td>0.4</td>
<td>0.15</td>
<td>6.1</td>
<td>8.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>520</td>
<td></td>
<td></td>
<td>520</td>
</tr>
<tr>
<td>5832-03</td>
<td>2.1</td>
<td>0.20</td>
<td>8.2</td>
<td>8.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>490</td>
<td></td>
<td></td>
<td>490</td>
</tr>
<tr>
<td>5838-01</td>
<td>1.4</td>
<td>0.30</td>
<td>10.1</td>
<td>11.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>170</td>
<td></td>
<td></td>
<td>170</td>
</tr>
<tr>
<td>5838-02</td>
<td>1.9</td>
<td>0.30</td>
<td>10.4</td>
<td>11.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>740</td>
<td></td>
<td></td>
<td>740</td>
</tr>
<tr>
<td>5838-03</td>
<td>2.1</td>
<td>0.36</td>
<td>9.4</td>
<td>11.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>620</td>
<td></td>
<td></td>
<td>620</td>
</tr>
<tr>
<td>5838-04</td>
<td>1.8</td>
<td>0.36</td>
<td>6.1</td>
<td>8.2</td>
<td>1600</td>
<td>2400</td>
<td>500</td>
<td>460</td>
<td></td>
<td></td>
<td></td>
<td>460</td>
</tr>
<tr>
<td>5839-02</td>
<td>0.5</td>
<td>0.20</td>
<td>23.8</td>
<td>24.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>290</td>
<td></td>
<td></td>
<td>290</td>
</tr>
<tr>
<td>5840-01</td>
<td>0.8</td>
<td>0.20</td>
<td>3.0</td>
<td>6.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>5840-04</td>
<td>0.8</td>
<td>0.15</td>
<td>6.0</td>
<td>6.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1100</td>
<td></td>
<td></td>
<td>1100</td>
</tr>
<tr>
<td>5938-02</td>
<td>2.1</td>
<td>0.36</td>
<td>18.5</td>
<td>18.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>650</td>
<td></td>
<td></td>
<td>650</td>
</tr>
<tr>
<td>5938-03</td>
<td>1.6</td>
<td>0.36</td>
<td>12.2</td>
<td>14.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>460</td>
<td></td>
<td></td>
<td>460</td>
</tr>
<tr>
<td>5938-04</td>
<td>1.5</td>
<td>0.38</td>
<td>23.2</td>
<td>23.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td></td>
<td></td>
<td>400</td>
</tr>
<tr>
<td>5939-02</td>
<td>0.1</td>
<td>0.15</td>
<td>3.0</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td></td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>
compare NRMS
20° 57' 19.98
157° 16' 38.06

(center of parcel? - no better
wier ID
except correction of parcel - )

very small
0 correct locations
(WRIMS cat long approx/guessed?)
no user backup
Selected Parcel(s)

The Maui County Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified taxroll. All data is subject to change before the next certified taxroll. PLEASE NOTE THAT THE PROPERTY APPRAISER MAPS ARE FOR ASSESSMENT PURPOSES ONLY; NEITHER MAUI COUNTY NOR ITS EMPLOYEES ASSUME RESPONSIBILITY FOR ERRORS OR OMISSIONS -- THIS IS NOT A SURVEY --

Date printed: 09/14/12 : 16:23:33
Search Results

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo</th>
<th>Tnr</th>
<th>Address</th>
<th>Owner/Lessee</th>
<th>Bds</th>
<th>Bths</th>
<th>Land area</th>
<th>Liv area</th>
<th>Last Sale</th>
<th>Instr</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 2-2-8-3-18</td>
<td>PEahi</td>
<td>500</td>
<td>VANDEVELDE</td>
<td>3 2/2</td>
<td>5.82 ac</td>
<td>3,338</td>
<td>2/5/2003</td>
<td>TRANSD</td>
<td>$1,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Copyright ©9/14/2012 by Hawaii Information Service
**Recent Sales in Neighborhood**

<table>
<thead>
<tr>
<th>Owner Name</th>
<th>Mailing Address</th>
<th>Location Address</th>
<th>Property Type</th>
<th>Neighborhood Code</th>
<th>Legal Information</th>
<th>Assessed Land Value</th>
<th>Building Value</th>
<th>Total Assessed Value</th>
<th>Total Exemption Value</th>
<th>Total Net Taxable Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARIOUS OWNERS</td>
<td>0 MANAWAI PL</td>
<td></td>
<td>AGRICULTURAL</td>
<td>1100-5</td>
<td></td>
<td>$100</td>
<td>$0</td>
<td>$100</td>
<td>$100</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Assessment Information**

<table>
<thead>
<tr>
<th>Year</th>
<th>Tax Class</th>
<th>Market Land Value</th>
<th>Agricultural Land Value</th>
<th>Assessed Land Value</th>
<th>Building Value</th>
<th>Total Assessed Value</th>
<th>Total Exemption Value</th>
<th>Total Net Taxable Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>AGRICULTURAL</td>
<td>$100</td>
<td>$0</td>
<td>$100</td>
<td>$0</td>
<td>$100</td>
<td>$100</td>
<td>$0</td>
</tr>
</tbody>
</table>

**2012 Tax Payments**

<table>
<thead>
<tr>
<th>Tax Period</th>
<th>Description</th>
<th>Original Due Date</th>
<th>Taxes Assessment</th>
<th>Tax Credits</th>
<th>Net Tax</th>
<th>Penalty</th>
<th>Interest</th>
<th>Other</th>
<th>Amount Due</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recent Sales Information**

<table>
<thead>
<tr>
<th>Sale Date</th>
<th>Price</th>
<th>Instrument #</th>
<th>Instrument Type</th>
<th>Document Type</th>
<th>Land Court #</th>
<th>Land Court Cert</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/20/2001</td>
<td>$0</td>
<td>01-145428</td>
<td>Fee conveyance</td>
<td>Warranty deed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08/20/2001</td>
<td>$0</td>
<td>01-145429</td>
<td>Fee conveyance</td>
<td>Warranty deed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/19/2000</td>
<td>$0</td>
<td>01-002353</td>
<td>Fee conveyance</td>
<td>Warranty deed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Permit Information**

<table>
<thead>
<tr>
<th>Date</th>
<th>Permit Number</th>
<th>Reason</th>
<th>Permit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Current Tax Bill Information**

No Tax Information available on this parcel.

**Improvement Information**

No improvement information available for this parcel.

**Accessory Information**

No accessory information associated with this parcel.

<table>
<thead>
<tr>
<th>Description</th>
<th>Year Built</th>
<th>Dimensions/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The Maui County Tax Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. Website Updated: September 15, 2012.**

© 2010 by the Maui County Tax Assessor's Office | Website design by qpublic.net
Search criteria: TMK Taxkey 2-2-8-3-63

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo</th>
<th>Tnr</th>
<th>Address</th>
<th>Owner/Lessee</th>
<th>Bds</th>
<th>Bths</th>
<th>Land area</th>
<th>Liv area</th>
<th>Last Sale</th>
<th>Instr</th>
<th>Pri</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2-8-3-63 Peahi</td>
<td>F</td>
<td>HANA</td>
<td>CD &amp; BE HWY</td>
<td>PROPERTIES LTD</td>
<td>0</td>
<td>0</td>
<td>5.82 ac</td>
<td>0</td>
<td>8/1/2003 DEED $1,300,1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Copyright ©9/15/2012 by Hawaii Information Service
## PUBLIC RECORD DATA

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo</th>
<th>Tnr</th>
<th>Address</th>
<th>Owner/Lessee</th>
<th>Bds</th>
<th>Bths</th>
<th>Land area</th>
<th>Liv area</th>
<th>Last Sale</th>
<th>Instr</th>
<th>Pri</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2-8-3-65Peahi</td>
<td>F 475</td>
<td>BERNS, MANAWAIJACQUELINE</td>
<td>0 0</td>
<td>5.0010 ac</td>
<td>0 6/24/2005 DEED $2,000,1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Copyright ©9/15/2012 by Hawaii Information Service

http://reserver1.hawaiiinformation.com/REsearch/Sites/HIS/Areas/SearchHI... 9/15/2012
MEMO To File

Illegal Well Drilling

Mike Robertson returned my call today, and commented at length on two matters

1) Illegal driller of at least three known wells where Mike has done work for others. This is the driller we have identified at Don Wilburn, who says he brought a rig from New Mexico and was "practicing" on his property in Honopou.

Mike says the other three wells were a) down Hanawana Road (no TMK or other specific ID; b) Ho'olawa (same lack of specific info); and c) the Donald O’Conner well in Manawai (TMK 2-4-3:44).

Mike is concerned and frustrated because well owners for whom Mike has done work are now at risk for contamination; and because the guy on the Big Island got fined big-time and this other guy is going free. [I mentioned that we're not done yet, and that getting the relevant info to move forward has been frustrating. Wilburn was to have submitted WCRs for the well we identified, by 30 Sep 05, and they have not arrived.] Mike notes that improper construction standards means that three separate neighborhoods have been potentially contaminated.

2) The current “test pumping” to remove pesticides from Peahi Farms wells. Mike drilled three wells for Ron Serle (Opana Pt. 1& 2, Stream Resources #3 – 5617-02, 03, & 04) and these two wells for Rick Holt (Holt #1 & 2 – 5517-05, 5617-05).

Before Mike was able to get started on the Holt Wells, the well owner was trying to get a test well done to draw a water sample for his investors’ information [news articles place the purchase price of this development at $3.5 M.] As Mike was unavailable, the hydrologist Tom Nance was able to line up Tom Pico to do the work. The work was done without a permit [no WCPIA was ever received for such a well, described by Mike as ~100 feet from the Holt Well #1 (Well No. 5517-05), at ~400 ft. el.]. About halfway down, around 200 feet, Pico got his gear jammed in a hard layer, and blasted it loose (not illegal), but Mike believes some of the gear is still down there, and that the well was not properly sealed. Bulldozing has since eliminated trace of the well's location.

Mike had done the Serle wells earlier and was aware that a hard rock layer above the basal lens had perched water with pesticide contamination. The water had been tested – that’s how he knows. After grouting off that section, he continued drilling to basal water, and pumped for a period of time to clear the pesticides from the well bore and immediate vicinity. The subsequent testing showed the water to be clear of contamination.

Mike told Holt that it would be desirable to pump the wells continuously for a week to purge contaminants from the groundwater. He is concerned that the Pico well continues to conduct contaminants to the basal lens. [We are told that Holt’s current pumping is actually the
second effort, and that if a third is required, he will do it again. This suggests that the contamination is not acute but chronic, suggesting that it is not from the properly grouted wellbore but from another source, possibly the Pico well; it may also be directly from pineapple cultivation.

I've inquired with Safe Drinking Water Branch, and they indicate they have no rules against dynamiting in a well. We also have no prohibition in our standards.

**Opana-Pehi Wells** potentially subject to contamination from “Pico Test Well” (unpermitted)

<table>
<thead>
<tr>
<th>5516-01, 02</th>
<th>Feehan 1&amp;2</th>
</tr>
</thead>
<tbody>
<tr>
<td>5517 01</td>
<td>Joachim</td>
</tr>
<tr>
<td>02</td>
<td>Manawau-Papanui</td>
</tr>
<tr>
<td>03</td>
<td>Summit Trade 2</td>
</tr>
<tr>
<td>04</td>
<td>Davison</td>
</tr>
<tr>
<td>05</td>
<td>Holt 1</td>
</tr>
<tr>
<td>06</td>
<td>Garcia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5616-01</th>
<th>? (no record)</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Martin</td>
</tr>
<tr>
<td>03</td>
<td>Clark</td>
</tr>
<tr>
<td>04</td>
<td>Honig</td>
</tr>
<tr>
<td>05</td>
<td>Vandevelde</td>
</tr>
<tr>
<td>06</td>
<td>Steele</td>
</tr>
<tr>
<td>07</td>
<td>Felton</td>
</tr>
<tr>
<td>08</td>
<td>Grossman</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5617-01</th>
<th>Summit Trade 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Opana Pt 1 (Serle)</td>
</tr>
<tr>
<td>03</td>
<td>Opana Pt 2</td>
</tr>
<tr>
<td>04</td>
<td>Stream Resources 3 (Serle)</td>
</tr>
<tr>
<td>05</td>
<td>Holt 2</td>
</tr>
</tbody>
</table>
September 30, 2002

Mr. Dennis Vandevelde
PMB 201-120 Hana Highway #9
Paia, HI 96779

Dear Mr. Vandevelde:

Well Completion Report for Well No. 5616-05

We received your Well Completion Report Part II for the Manawai-Vandevelde (Well No. 5616-05) on June 19, 2002 and acknowledge that it is complete. This completes the permitting requirements for this well.

If you have any questions, please contact Charley Ice of the Commission staff at [redacted] or toll-free at [redacted] extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

Cc: Wailani Drilling, Inc.
**FROM:** Charley

**DATE:** 25 Sep 02

**TO:**
- BAUER, G.
- GOODING, K.
- FUJII, N.
- OHYE, M.
- JINNAI, R.
- IMATA, R.
- NAKAMA, L.
- HIGA, D.
- UYENO, D.
- MATHIAS, T.

**INIT.**
- HARDY, R.
- HIRANO, E.
- SAKODA, E.
- NAKANO, D.
- NISHIOKA, L
- DANBARRA, S.
- SUBIA, S.
- YODA, K.

**FOR:**
- Approval
- Signature
- Information

**PLEASE:**
- Review & Comment
- Type Draft
- Type Final
- File
- Xerox copies
- Take Action

**PLEASE:**
- do or don't
- Please See Me

We need a definitive note that the pump tests support the use of the proposed pump (Sect. 1 of World check) (See Roy's note)
B.M. 202.33'
DHW 196.35'
head 5.96'

nearby wells 5616-02, 03, 109
8516-01, 02

long term 173 gpm ~ 2.1' dd
CE at 145 gpm

Roy / Charlie,

They test pumped at 173 gpm with
~ 2.1' drawdown and CE at 145 gpm. A
150 gpm pump is OK with me. They
may have a problem later because they are
close to the ocean.

Kevin

They seem a little tricky. It looks like they
installed the bigger pump from the beginning and
then asked for a bigger pump permit!
MEMO and ROJTE SLIP

WCR 2 Check for Well No. 5516-05 (survey to regulation memo)

1. **Pump Tests Check** (special condition of PIP? Yes/No) Glenn Bauer (initial if yes)
   
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   *Step-Drawdown Test:*
   - followed WCPI Stds
   - analysis attached
   - proposed pump cap o.k.

   *Aquifer Pump Test:*
   - followed WCPI Stds
   - T & S analysis attached

   *Well Interference:*
   - estimated Steady-State drawdown at 1-mile radius is __________ ft.
   - analysis attached

   *Stream Surface Water Impacted:*
   - If yes, identify most probable stream

2. **Pump Installation Check** Mitch Ohye (initial)
   
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   *data complete*
   *followed WCPI Stds*
   *well database updated*

3. Charley/Lenore/Ryan (initial) take action based on above analysis

4. Roy (initial) check

5. Subia (initial) finalize

6. Linnel (initial) signature

7. Charley/Lenore/Ryan File
**MEMO and ROUTE SLIP**

**WCR 1 Check for Well No. 5616-05**  
(survey to regulation memo)

1. **Pump Tests Check**  
   Glenn Bauer (initial)  
   
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
   
   **Step-Drawdown Test:**  
   followed WCPI Stds  
   analysis attached  
   proposed pump cap o.k.  
   
   **Aquifer Pump Test:**  
   followed WCPI Stds  
   T & S analysis attached  
   
   **Well Interference:**  
   estimated Steady-State  
   drawdown at 1-mile radius is ___ ft.  
   analysis attached  
   
   **Stream Surface Water Impacted:**  
   Yes No  
   If yes, identify most probable stream  

2. **Construction Check**  
   Mitch Ohye (initial)  
   
<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
   
   data complete  
   followed WCPI Stds  
   well database updated  

3. Charley/Lenore/Ryan (initial) take action based on above analysis

**ATTACHMENTS FOR PUMP INSTALLATION PERMIT:**

1. COVER LETTER
2. PERMIT (2x)
3. DOH COMMENTS
4. LAND DIV. COMMENTS
5. WCR 2 FORM
6. WUR FORM
7. USER MAP
8. PARCEL CHECK
9. DATABASE PAINTOUT
10. GLENN'S WORKSHEET
11. WELL CHECK PRINT

4. Roy (initial) check  
5. Subia (initial) finalize  
6. Linnel (initial) signature  
7. Charley/Lenore/Ryan File
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART II
Pump Installation

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrm/

1. State Well No.: 5616-05  Well Name: Manawai-Vandevelde  Island: Maui

2. Address: Manawai, Uaoa Bay  Tax Map Key: 2-8-3:18D

3. Pump Installation Company: WAIKALI DRILLING

4. Date Pump Installed: 5/29/02

5. PERMANENT PUMP INFORMATION (Attach pump specifications and rating curve)

<table>
<thead>
<tr>
<th>Pump Type, Make, Serial No.:</th>
<th>Submersible, GRUNFOS, 150S 200-11</th>
<th>Rated Capacity: 150 gpm at head of: 409' ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Type, H.P., Voltage, rpm:</td>
<td>FRANKLIN, 15 HP, 230V, 3450 RPM</td>
<td>Type of flow meter: TURBINE which measures in G.P.M.</td>
</tr>
<tr>
<td>Model Number</td>
<td>M-3</td>
<td>Serial Number</td>
</tr>
<tr>
<td>Pump type (check one):</td>
<td>☑ Submersible  ☐ Rotary  ☐ Propeller  ☐ Deep Well Turbine  ☐ Rotary-Displacement  ☐ Reciprocating  ☐ Centrifugal  ☐ Rotary-Gear  ☐ Impulse</td>
<td></td>
</tr>
</tbody>
</table>

6. Method of flow measurement:
- ☑ Flowmeter  Manufacturer micrometal  Make M-3  Size 3"
- ☐ Weir  ☐ Open Pipe  ☐ Orifice*  ☐ Other*, explain below  
  *attach schematic

7. Fill in the as-built section on the other side of this sheet.
8. Attach photograph of well and concrete pad clearly showing benchmark on concrete pad.
9. Other remarks/comments: Pump max. output @ 100 GPM @ 70 psi see attached pump curve

Pump Installation Contractor (print) Mike Robertson  C-57/C-57a/A Lic. No. 2015
Signature Mike Robertson  Date 6/3/02

Permittee (print) Dennis Vandevelde
Signature Dennis Vandevelde  Date 6/3/02
**State of Hawaii**
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART II
Pump Installation

**Instructions:** Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at [number]. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/dlnr/cwm/](http://www.state.hi.us/dlnr/cwm/)

1. **State Well No.:** 5616-05  
**Well Name:** Manawai-Vandevelde  
**Island:** Maui

2. **Address:** Manawai, Uaoa Bay  
**Tax Map Key:** 2-8-3:18D

3. **Pump Installation Company:** [Name]

4. **Date Pump Installed:** 5/29/02

5. **PERMANENT PUMP INFORMATION** (Attach pump specifications and rating curve)

   - **Pump Type, Make, Serial No.:** Submersible, Grunfos 150S-34A, 150S150-8
   - **Rated Capacity:** 150 gpm at head of: 409 ft.
   - **Motor Type, H.P., Voltage, rpm:** Franklin, 151HP, 230V, 3450 RPM
   - **Type of flow meter:** Turbine
   - **Model Number:** M-3  
   - **Serial Number:** N/A

   - **Pump type (check one):**
     - [ ] Deep Well Turbine
     - [X] Submersible
     - [ ] Centrifugal

   - **Method of flow measurement:**
     - [X] Flowmeter
     - [ ] Weir
     - [ ] Open Pipe
     - [ ] Orifice
     - [ ] Other, explain below

   - **Manufacturer:** [Name]

   - **Model:** M-3

   - **Size:** 3"

6. **Other remarks/comments:**

   - Pump Max output @ 100 gpm @ 20 psi  see attached pump curve (est. based on Amp curve)
   - THIS DOES NOT INCLUDE FRICTION LOSS (2" PVC 1800 FT RUN)

---

**Pump Installation Contractor** (print)  Mike Robertson  
C-57/C-57a/A Lic. No. 2015

**Signature**  Mike Robertson  
**Date:** 6/3/02

**Permittee** (print)  Dennis Vandevelde

**Signature**  Dennis Vandevelde  
**Date:** 6/3/02
Bench mark elevation surveyed to nearest 0.01 ft. = 202.33 ft. mean sea level

Elevation of top of chase tube 202.93 ft. mean sea level

Pump intake depth = 210 ft. (referenced to bench mark)

Chase tube depth = 209 ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = N/A ft. mean sea level
To: Charlie Ice  
For: State of Hawaii Water Resource Commission  

From: Bill Steele  

Reference: Request to install increase Permanent pump size on Vandervelde Well #5616-05  

Original Permit- was for 50 gpm @ 70 psi with a proposed withdrawal of 36,000 gal/day with a 10 hp submersible pump.  

Request for larger Permanent pump installation- will be 100 gpm @ 70 psi with a proposed withdrawal of 48,000 gal/day using a 15 hp submersible pump.  
(see attached pump curve chart)  

Remarks/Explanations: Initially the designed high pressure private water system was to be used for residential use only but recent changes in fire codes will required the subdivision project to install a minimum 15,000 gallon holding tank thus, the larger pump will give a faster recovery rate in the case of a fire.  
Since this system will serve a duel roll between low residential volume to high volume for fire protection it will be operated by a programableVariable Frequency Controller which increases or decreases pump motor RPMs depending on system demand. This equates to a variability of 10 gpm on the low side to 100 gpm for maximum at 70 psi.  

Attachments:  
1. Step draw down test results @ 173 gpm w/20 hp pump  
2. Constant rate test results @ 173 gpm w/20 hp pump  
3. Pump Curve for proposed permanent pump  

Please review information and if there is anything else needed to complete this request please call me.  

Thanks again,  
Bill Steele, G.M.  

Certified By And A Member Of The National Ground Water Association
1.5 in flex conduit to 15 hp controller

6 in. well seal @ 202.33 msl

2 in. Water Meter

32"x24"x16" Utility Box

1 in. sch. 40 PVC sounding tube

#4 layflat submersible pump cable

12 in. borehole to 226.5 ft.

Cement Basket set @ 160 ft.

Pump set @ 240 ft.
Wailani Drilling Company 6/03/02 Lic. # C20115

Manawai-Vanderdele Well
State Well- # 5616-05
Elevation @ Slab is 202.33 ft above m.s.l.

Depth of Well 226.5 ft.
initial chlorides 145 ppm

*Note: not drawn to scale
April 17, 2002

Mr. Dennis Vandevelde
PMB 201-120 Hana Highway #9
Paia, HI 96779

Dear Mr. Vandevelde:

Reissued Pump Installation Permit
Manawai-Vandevelde (Well No. 5616-05)

Enclosed are two (2) originals of your reissued Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 11:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

Please sign and have the contractor sign both permit originals and return one for our files. A copy of the Well Completion Report (Part II) and a copy of your water use report form are enclosed for your use.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission. Except for the monthly water use report form, please provide copies of all the information in this packet to your pump installation contractor.

If you have any questions, please call Charley Ice of the Commission staff at [redacted] or toll-free at [redacted] extension 70255.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Enclosure

c: Wailani Drilling, Inc.
REISSUED PUMP INSTALLATION PERMIT
Manawai-Vandevelde, Well No. 5616-05

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for Manawai-Vandevelde (Well No. 5616-05) at Manawai, Uaoo Bay, Maui, TMK 2-8-318D, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The pump installation permit shall be for installation of a 100 gpm rated capacity at 365 feet, or 70 psi of head, or less, pump in the well.

3. The permittee, its successors, and assigns shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on an annual basis, on forms provided by the Chairperson (attached).

4. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to pump water from a well shall not constitute a determination of correlative water rights. The permittee, well operator, and/or well owner are notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

5. The permittee, well operator, and/or well owner shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

6. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

7. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

8. The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the pump installation permit application shall be completed within twenty (20) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

10. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: April 8, 2002
Expiration Date: April 8, 2004

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

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: Dennis Vandevelde Date: 4/26/02
Printed Name: Dennis Vandevelde Firm or Title: Manawai-Vandevelde

Installer's Signature: Mike Robertson Date: 4/26/02
Printed Name: Mike Robertson Firm or Title: Manawai-Vandevelde

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.
Bench mark elevation surveyed to nearest 0.01 ft. = \(202.33\) ft. mean sea level

Elevation of top of chase tube = \(202.93\) ft. mean sea level

Pump intake depth = \(210\) ft. (referenced to bench mark)

Chase tube depth = \(209\) ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = \(N/A\) ft. mean sea level
FLOW RANGE: 30 - 220 GPM
OUTLET SIZE: 3" NPT
NOMINAL DIA. 6"

PERFORMANCE CURVES 150 GPM Model 150S

FLOW RANGE: 30 - 220 GPM
OUTLET SIZE: 3" NPT
NOMINAL DIA. 6"

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

- MOTOR STANDARD, 21/2 HP/1725 RPM.
- MOTOR STANDARD, 7.5-60 HP/3450 RPM.
- MOTOR STANDARD, 75 HP/3525 RPM.
Alternate motor sizes available.

Performance conforms to ISO 2548 Annex B
 Warn: 5 ft. min. submergence.
Mr. Dennis Vandevelde
PMB 201-120 Hana Highway #9
Paia, HI 96779

Dear Mr. Vandevelde:

Reissued Pump Installation Permit
Manawai-Vandevelde (Well No. 5616-05)

Enclosed are two (2) originals of your reissued Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson’s approval, the following special conditions were added and are part of your permit under Permit Condition 11:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

Please sign and have the contractor sign both permit originals and return one for our files. A copy of the Well Completion Report (Part II) and a copy of your water use report form are enclosed for your use.

IMPORTANT - Pump installation shall not commence until a fully signed permit is returned to the Commission. Except for the monthly water use report form, please provide copies of all the information in this packet to your pump installation contractor.

If you have any questions, please call Charley Ice of the Commission staff at [Redacted] or toll-free at [Redacted] extension 70255.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Enclosure

c: Wailani Drilling, Inc.
REISSUED PUMP INSTALLATION PERMIT
Manawai-Vandevelde, Well No. 5616-05

Note: This permit shall be prominently displayed at the site until the work is completed

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management’s Administrative Rules, Section 13-168, entitled “Water Use, Wells, and Stream Diversion Works”, this document permits the pump installation for Manawai-Vandevelde (Well No. 5616-05) at Manawai, Uaoa Bay, Maui, TMK 2-8-3:18D, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The pump installation permit shall be for installation of a 100 gpm rated capacity at 350 feet, 70 psi of head, or less, pump in the well.

3. The permittee, well operator, and/or well owner shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on an annual basis, on forms provided by the Chairperson (attached).

4. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to pump water from a well shall not constitute a determination of correlative water rights. The permittee, well operator, and/or well owner are notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

5. The permittee, well operator, and/or well owner shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

6. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

7. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

8. The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the pump installation permit application shall be completed within two (2) years of the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

10. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: April 8, 2002
Expiration Date: April 8, 2004

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

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee’s Signature: ___________________________ Date: __________

Printed Name: ___________________________ Firm or Title: ___________________________

Installer’s Signature: ___________________________ C-57, C-57a, or A License #: __________ Date: __________

Printed Name: ___________________________ Firm or Title: ___________________________

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

Attachments
C:
USGS
Department of Health/ Safe Drinking Water & Wastewater Branch
Maui Department of Water Supply
Wailani Drilling, Inc.
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR PERMIT ISSUANCE

FROM: CHARLEY
DATE: 15 Apr 02
SUSPENSE DATE: 

TO: INIT. TO: INIT. FOR: PLEASE:


ROUTE SLIP FOR PERMIT ISSUANCE
DATE

APPROVAL DATE
SIGNATURE DATE
INFORMATION DATE

PLEASE:
1 Review & Comment
2 Type Final
3 Approval
4 Signature
5 Information
6 Xerox copies

WELL NUMBER 5616-05 WELL NAME Manawai, VanderVeld

WELL CONSTRUCTION

ATTACHMENTS FOR WELL CONSTRUCTION PERMIT:
1 COVER CURRENT LETTER
2 PERMIT (2x)
3 PUMP TEST
4 DOH COMMENTS
5 LAND DIV. COMMENTS
6 WCR FORM
7 USGS MAP
8 PARCEL CHECK
9 DATABASE PRINTOUT
10 WELL CHECK PRINT

TO BE SENT TO APPLICANT

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
7 USGS MAP
8 PARCEL CHECK
9 DATABASE PRINTOUT
10 GLENN'S WORKSHEET

TO BE SENT TO APPLICANT

FOR OFFICE USE ONLY

DRAFT REVIEW GLENN NOTE

REQUEST TO RESEND

PUMP TEST

458940

WELLNUMBER
WELLNAME
Manawai, VanderVeld
<table>
<thead>
<tr>
<th>FROM: Charley</th>
<th>DATE: 11 April 02</th>
<th>SUSPENSE DATE</th>
<th>TO:</th>
<th>INIT.</th>
<th>TO:</th>
<th>INIT.</th>
<th>FOR:</th>
<th>PLEASE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAUER, G.</td>
<td></td>
<td></td>
<td>FUJII, N.</td>
<td></td>
<td>OHYE, M.</td>
<td></td>
<td>JINNAI, R.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IMATA, R.</td>
<td></td>
<td>NAKAMA, L.</td>
<td></td>
<td>HIGA, D.</td>
<td></td>
</tr>
<tr>
<td>re-issue PIP for 150 gpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE:**
- Review & Comment
- Type Draft
- Type Final
- File
- Xerox copies
- Take Action:
- Please See Me

*Handwritten Note:*
Should be ok.
To: Charlie Ice
For: State of Hawaii Water Resource Commission

From: Bill Steele

Reference: Request to install increase Permanent pump size on Vandevelde Well #5616-05

Original Permit- was for 50 gpm @ 70 psi with a proposed withdrawal of 36,000 gal/day with a 10 hp submersible pump.

Request for larger Permanent pump installation- will be 100 gpm @ 70 psi with a proposed withdrawal of 48,000 gal/day using a 15 hp submersible pump. (see attached pump curve chart)

Remarks/Explanations: Initially the designed high pressure private water system was to be used for residential use only but recent changes in fire codes will required the subdivision project to install a minimum 15,000 gallon holding tank thus, the larger pump will give a faster recovery rate in the case of a fire.

Since this system will serve a duel roll between low residential volume to high volume for fire protection it will be operated by a programmable Variable Frequency Controller which increases or decreases pump motor RPMs depending on system demand. This equates to a variability of 10 gpm on the low side to 100 gpm for maximum at 70 psi.

Attachments:
1. Step draw down test results @ 173 gpm w/20 hp pump
2. Constant rate test results @ 173 gpm w/20 hp pump
3. Pump Curve for proposed permanent pump

Please review information and if there is anything else needed to complete this request please call me.

Thanks again,
Bill Steele, G.M.
### Table 1 (SDPTD Form 12/17/97)

**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

<table>
<thead>
<tr>
<th>Pumped Well No.</th>
<th>Observation well no.</th>
<th>Pumped Well Name</th>
<th>Distance between Obs. &amp; Pumped Well ft.</th>
<th>Target Q gpm</th>
<th>Reference pt. for depth to water ft. msl</th>
<th>Static Water Level @ start of test ft. msl</th>
</tr>
</thead>
<tbody>
<tr>
<td>564-05</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>150</td>
<td>202.35</td>
<td>196.35</td>
</tr>
</tbody>
</table>

Water level measurements by:  
- [ ] steel tape  
- [ ] pressure transducer  
- [ ] airline  
- [x] Ref. Pt. Benchmark "SLAB"

**START TEST**  
Date: 2/16/01  
Time of day: 12:00 PM  

Flow Meter Reading Start: 21 gals

<table>
<thead>
<tr>
<th>Suggested Elapsed time (min)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (μhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F °C</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>-45</td>
<td>-45</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30</td>
<td></td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td>-15</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>197.13</td>
<td>.78</td>
<td>80</td>
<td></td>
<td>69</td>
<td></td>
<td>Start pump</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>&quot;</td>
<td>.78</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>197.13</td>
<td>.78</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30²</td>
<td>30</td>
<td>197.4</td>
<td>1.05</td>
<td>100</td>
<td>14³</td>
<td></td>
<td>Chloride sample taken</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>197.4</td>
<td>1.05</td>
<td>100</td>
<td>14³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>120</td>
<td>197.92</td>
<td>1.57</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>180</td>
<td>&quot;</td>
<td>1.57</td>
<td>&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data in this table is for:  
- [ ] Pumped Well  
- [ ] Observation Well  
- [ ] Chloride sample taken  
- [ ] Step 2 begin?
Table 1 (SDPTD Form 12/17/97)

<table>
<thead>
<tr>
<th>Suggested Elapsed Time t (min)</th>
<th>Actual Elapsed Time t (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (umhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F/°C</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>210</td>
<td>198.57</td>
<td>2.22</td>
<td>173</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>240</td>
<td>240</td>
<td>&quot;</td>
<td>2.22</td>
<td>173</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>270</td>
<td>270</td>
<td>&quot;</td>
<td>2.22</td>
<td>173</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period:

15,243 gals

1 starting pumping rate Q
2 minimum length of step period of constant pumping rate
3 minimum mandatory Chloride (Cl⁻) measurement/sampling at end of every step
4 Use same ending drawdown figure as start for recovery.
<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth To Water (nearest 0.1 ft)</th>
<th>Recovery Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (microhos)</th>
<th>Cl- (mg/l)</th>
<th>Temp. (°F or °C)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>197.13</td>
<td>0.78</td>
<td>0</td>
<td>69</td>
<td></td>
<td></td>
<td>Pump off, start recovery</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

END TEST  Date: 12/19  Time of day: 4:30 PM

ADDITIONAL REMARKS:

Person in charge of pump test (print):  Ron Deeks

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge.
# CONSTANT-RATE PUMP TEST DATA

Pumped Well No. **5616-05**  
Pumped Well Name **Manawai Pondcreek**  
Target Q **150** gpm

Distance between Obs. & Pumped Well **NA** ft.  
Reference pt. for depth to water **202.33** ft. msl  
Static Water Level @ start of test **196.35** ft. msl

Water level measurements by:  
- steel tape  
- pressure transducer  
- airline

**START TEST**  
Date: **3/29/01**  
Time of day: **4:30 PM**  
*Benchmark "SLAB"

Flow Meter Reading  
Start: **15,300** gals

<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (μmhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. (°F or °C)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>-45</td>
<td>-45</td>
<td>196.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30</td>
<td></td>
<td>196.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td>-15</td>
<td>196.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>196.35</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>198.42</td>
<td>2.07</td>
<td>173</td>
<td></td>
<td>145</td>
<td></td>
<td>Start pump/Cl⁻ taken</td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>198.42</td>
<td>2.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>198.43</td>
<td>2.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>198.42</td>
<td>2.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>198.45</td>
<td>2.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggested elapsed time (min)</td>
<td>Actual elapsed time (min)</td>
<td>Depth to water (nearest 0.1 ft)</td>
<td>Drawdown (unadjusted to nearest 0.1 ft)</td>
<td>Pumping rate Q (gpm)</td>
<td>EC (millimhos)</td>
<td>CH⁻ (mg/l)</td>
<td>Temp. °F or °C</td>
<td>Remarks</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------</td>
<td>---------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------</td>
<td>----------------</td>
<td>------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>198.45</td>
<td>2.10</td>
<td>173</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300</td>
<td>198.45</td>
<td>2.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>500</td>
<td>198.44</td>
<td>2.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700</td>
<td>700</td>
<td>198.42</td>
<td>2.07</td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>900</td>
<td>900</td>
<td>198.43</td>
<td>2.08</td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td>1500</td>
<td>198.43</td>
<td>2.08</td>
<td>173</td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Chloride sampling required
2 Use same ending drawdown figure as start for recovery

Data in this table is for:  
- **Pumped Well**
- **Observation Well**

Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period:

---

---
<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Recovery Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate (gpm)</th>
<th>EC (unmhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. (°F or °C)</th>
<th>Data in this table is for:</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>197.41</td>
<td>1.06</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>197.1</td>
<td>0.75</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>197.1</td>
<td>0.75</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>196.4</td>
<td>0.15</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**END TEST**  Date: 4/20/01  Time of day: 4:30 PM

**ADDITIONAL REMARKS:**

Person in charge of pump test (print): Row Peers

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this pump test.
Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

- ✓ Request to install larger pump for Vandevelde #5616-05
- ✓ WCR I Felton #5616-07
- ✓ Info for Robertson 5615-01
- ✓ WCR II for Maui Kamaole #4226-16
- ✓ WCR I for Steele #5616-06
- ✓ Notice to decrease pump size @ Front Street # 5341-02
- ✓ Correction notice on WCP for Maui Kamaole #4226-16
- ✓ WCR II for Sullivan # 4100-01

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at [Redacted]

From: Bill Steele
To: Charlie Ice  
For: State of Hawaii Water Resource Commission  

From: Bill Steele  

Reference: Request to install increase Permanent pump size on Vandevelde Well #5616-05  

Original Permit- was for 50 gpm @ 70 psi with a proposed withdrawal of 36,000 gal/day with a 10 hp submersible pump.  

Request for larger Permanent pump installation- will be 100 gpm @ 70 psi with a proposed withdrawal of 48,000 gal/day using a 15 hp submersible pump. (see attached pump curve chart)  

Remarks/Explanations: Initially the designed high pressure private water system was to be used for residential use only but recent changes in fire codes will required the subdivision project to install a minimum 15,000 gallon holding tank thus, the larger pump will give a faster recovery rate in the case of a fire.  

Since this system will serve a duel roll between low residential volume to high volume for fire protection it will be operated by a programable Variable Frequency Controller which increases or decreases pump motor RPMs depending on system demand. This equates to a variability of 10 gpm on the low side to 100 gpm for maximum at 70 psi.  

Attachments:  
1. Step draw down test results @ 173 gpm w/20 hp pump  
2. Constant rate test results @ 173 gpm w/20 hp pump  
3. Pump Curve for proposed permanent pump  

Please review information and if there is anything else needed to complete this request please call me.  

Thanks again,  
Bill Steele, G.M.  

Certified By And A Member Of The National Ground Water Association
ATTN. Charlie Ice

Fax Number

Phone Number

FROM Soundworks

Fax Number

Phone Number

SUBJECT Attn Charlie Ice

Number of Pages 2

Date 3/28/02

MESSAGE

Please call me when you receive this @
To: Charlie Ice  
For: State of Hawaii Water Resource Commission  

From: Bill Steele  

Reference: Request to install increase Permanent pump size on Vanderveldt Well #5616-05  

Original Permit- was for 50 gpm @ 70 psi with a proposed withdrawal of 36,000 gal/day with a 10 hp submersible pump.  

Request for larger Permanent pump installation- will be 100 gpm @ 70 psi with a proposed withdrawal of 48,000 gal/day using a 15 hp submersible pump. (see attached pump curve chart)  

Remarks/Explanations: Initially the designed high pressure private water system was to be used for residential use only but recent changes in fire codes will required the subdivision project to install a minimum 15,000 gallon holding tank thus, the larger pump will give a faster recovery rate in the case of a fire.  

Since this system will serve a duel roll between low residential volume to high volume for fire protection it will be operated by a progradable Variable Frequency Controller which increases or decreases pump motor RPMs depending on system demand. This equates to a variability of 10 gpm on the low side to 100 gpm for maximum at 70 psi.  

Attachments:  
1. Step draw down test results @ 173 gpm w/20 hp pump  
2. Constant rate test results @ 173 gpm w/20 hp pump  
3. Pump Curve for proposed permanent pump  

Please review information and if there is anything else needed to complete this request please call me.  

Thanks again,  
Bill Steele, G.M.  

Certified By And A Member Of The National Ground Water Association
Return Receipt Fax Memo

For: Charlie Ice

Charlie, Enclosed are the following items:

Signed

✓ PIP for Manawai-Vandevelde well #5616-05

PS. Thanks for getting this through for Dennis

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at [redacted]

From: Bill Steele
Mr. Dennis Vandevelde  
PMB 201-120 Hana Highway #9  
Pa'ia, Maui, HI 96779  

Dear Mr. Vandevelde:  

Pump Installation Permit  
Manawai-Vandevelde (Well No. 5616-05)  

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 11:  

Special Conditions  

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.  

The permittee, well operator, and/or well owner are responsible for all conditions of the permit. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.  

Please sign and have the contractor sign both permit originals and return one for our files. A copy of your water use report form is enclosed for your use.  

Except for the monthly water use report form, please provide copies of all the information in this packet to your pump installation contractor.  

Finally, this letter is notice that we have accepted your Well Completion Report - Part I as complete. Please submit your new TMK number when your final subdivision is recorded with the Bureau of Conveyance.  

If you have any questions, please call Charley Ice of the Commission staff at □□□□ or toll-free at □□□□ extension 70251.  

Aloha,  

GILBERT S. COLOMA-AGARAN  
Chairperson  

Enclosure  
c. Wailani Drilling Company
IN ACCORDANCE WITH DEPARTMENT OF LAND AND NATURAL RESOURCES, COMMISSION ON WATER RESOURCE MANAGEMENT'S
ADMINISTRATIVE RULES, SECTION 13-158, ENTITLED "WATER USE, WELLS, AND STREAM DIVERSION WORKS", THIS DOCUMENT PERMITS THE
PUMP INSTALLATION FOR MANAWAI-VANDEVELDE (WELL NO. 5616-05) AT MANAWAI, UAOA BAY, MAUI, TMK 2-8-3:18D, SUBJECT TO THE
HAWAII WELL CONSTRUCTION & PUMP INSTALLATION STANDARDS (1/23/97) WHICH INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING
CONDITIONS:

1. THE CHAIRPERSON TO THE COMMISSION ON WATER RESOURCE MANAGEMENT (COMMISSION), P.O. BOX 621, HONOLULU, HI 96809, SHALL BE
NOTIFIED, IN WRITING, AT LEAST TWO (2) WEEKS BEFORE ANY WORK COVERED BY THIS PERMIT COMMENCES AND STAFF SHALL BE ALLOWED TO INSPECT
INSTALLATION ACTIVITIES IN ACCORDANCE WITH §13-168-15, HAWAII ADMINISTRATIVE RULES.

2. THE PUMP INSTALLATION PERMIT SHALL BE FOR INSTALLATION OF A 50 GPM CAPACITY, OR LESS, PUMP IN THE WELL.

3. THE PERMITTEE, WELL OPERATOR, AND/OR WELL OWNER SHALL PROVIDE AND MAINTAIN AN APPROVED METER OR OTHER APPROPRIATE MEANS FOR
MEASURING AND REPORTING WITHDRAWALS AND WATER LEVELS, AND APPROPRIATE DEVICES OR MEANS FOR MEASURING CHLORIDES AND TEMPERATURE.

4. THE PROPOSED USE SHALL NOT ADVERSELY AFFECT EXISTING OR FUTURE LEGAL USES OF WATER IN THE AREA, INCLUDING ANY SURFACE WATER OR
ESTABLISHED INSTREAM FLOW STANDARDS. THIS PERMIT OR THE AUTHORIZATION TO PUMP WATER FROM A WELL SHALL NOT CONSTITUTE A DETERMINATION OF
CORRELATIVE WATER RIGHTS. THE PERMITTEE, WELL OPERATOR, AND/OR WELL OWNER ARE NOTIFIED AND BY THIS PROVISION UNDERSTANDS THAT THE
QUANTITY OF WATER TAKEN FROM THE WELL COULD BE REDUCED BY THE COMMISSION IN THE FUTURE. THIS PERMIT IS NOT A COMMITMENT THAT THE
PUMP CAPACITY PERMITTED HERE OR EVEN SOME LESSER AMOUNT IS GUARANTEED IN THE FUTURE.

5. THE PERMITTEE, WELL OPERATOR, AND/OR WELL OWNER SHALL COMPLETE AND SUBMIT AS-BUILT DRAWINGS AND PART II - (PERMANENT) PUMP
INSTALLATION REPORT OF THE WELL COMPLETION REPORT (ATTACHED) TO THE CHAIRPERSON WITHIN SIXTY (60) DAYS AFTER COMPLETION OF WORK.

6. THE PERMITTEE, WELL OPERATOR, AND/OR WELL OWNER SHALL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND ORDINANCES, AND NON-COMPLIANCE MAY
BE GROUNDS FOR REVOCATION OF THIS PERMIT.

7. THE PUMP INSTALLATION PERMIT APPLICATION AND ANY RELATED STAFF SUBMITTAL APPROVED BY THE COMMISSION ARE INCORPORATED INTO THIS PERMIT
BY REFERENCE. THE THIS PERMIT IS ALSO SUBJECT TO THE HAWAII WELL CONSTRUCTION & PUMP INSTALLATION STANDARDS (1/23/97). IF THE HWCIS
ARE NOT FOLLOWED AND AS A CONSEQUENCE WATER IS WASTED OR CONTAMINATED, A LIEN ON THE PROPERTY MAY RESULT.

8. THE PERMIT MAY BE REVOCED IF WORK IS NOT STARTED WITHIN SIX (6) MONTHS AFTER THE DATE OF APPROVAL OR IF WORK IS SUSPENDED OR ABANDONED
FOR SIX (6) MONTHS, UNLESS OTHERWISE SPECIFIED. THE WORK PROPOSED IN THE PUMP INSTALLATION PERMIT APPLICATION SHALL BE COMPLETED WITHIN TWO
(2) YEARS FROM THE DATE OF PERMIT APPROVAL, UNLESS OTHERWISE SPECIFIED. THE PERMIT MAY BE EXTENDED BY THE CHAIRPERSON UPON
A SHOWING OF GOOD CAUSE AND GOOD-FAITH PERFORMANCE. A REQUEST TO EXTEND THE PERMIT SHALL BE SUBMITTED TO THE CHAIRPERSON NO LATER THAN THREE (3)
MONTHS PRIOR TO THE DATE THE PERMIT EXPIRES. IF THE COMMENCEMENT DATE IS NOT MET, THE COMMISSION MAY REVOCATE THE PERMIT AFTER GIVING THE
PERMITTEE, WELL OPERATOR, AND/OR WELL OWNER NOTICE OF THE PROPOSED ACTION AND AN OPPORTUNITY TO BE HEARD.

9. IF THE WELL IS NOT TO BE USED IT MUST BE PROPERLY CAPPED. IF THE WELL IS TO BE ABANDONED THEN THE PERMITTEE, WELL OPERATOR, AND/OR WELL
OWNER MUST APPLY FOR A WELL ABANDONMENT PERMIT IN ACCORDANCE WITH §13-168-12(f) PRIOR TO ANY WELL SEALING OR PLUGGING WORK.

10. THE PERMITTEE, ITS SUCCESSORS, AND ASSIGNS SHALL INDEMNIFY, DEFEND, AND HOLD THE STATE OF HAWAII HARMLESS FROM AND AGAINST ANY LOSS,
LIABILITY, CLAIM, OR DEMAND FOR PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH ARISING OUT OF ANY ACT OR OMISSION OF THE APPLICANT, ASSIGNS,
OFFICERS, EMPLOYEES, CONTRACTORS, AND AGENTS UNDER THIS PERMIT OR RELATING TO OR CONNECTED WITH THE GRANTING OF THIS PERMIT.

11. SPECIAL CONDITIONS IN THE ATTACHED COVER TRANSMITTAL LETTER ARE INCORPORATED HEREIN BY REFERENCE.

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
COMMISSION ON WATER RESOURCE MANAGEMENT

I HAVE READ THE CONDITIONS AND TERMS OF THIS PERMIT AND UNDERSTAND THEM. I ACCEPT AND AGREE TO MEET THESE CONDITIONS AS A
PREREQUISITE AND UNDERLYING CONDITION OF MY ABILITY TO PROCEED AND UNDERSTAND THAT I SHALL NOT COMMENCE WORK UNTIL I AND THE PUMP
INSTALLER HAVE SIGNED, DATED, AND RETURNED THE PERMIT TO THE COMMISSION. I ALSO UNDERSTAND THAT NON-COMPLIANCE WITH ANY PERMIT
CONDITION MAY BE GROUNDS FOR REVOCATION AND FINES OF UP TO $1000 PER DAY STARTING FROM THE PERMIT DATE OF APPROVAL.

PERMITTEE'S SIGNATURE: [Signature] DATE: 10/1/2001
PRINTED NAME: Dennis Vandevelder

INSTALLER'S SIGNATURE: [Signature] DATE: 10/1/2001
PRINTED NAME: Mike Robertson

PLEASE SIGN BOTH COPIES OF THIS PERMIT, RETURN ONE TO THE CHAIRPERSON, AND RETAIN THE OTHER FOR YOUR RECORDS.
Mr. Dennis Vandevelde  
PMB 201-120 Hana Highway #9  
Pa'ia, Maui, HI 96779

Dear Mr. Vandevelde:

Pump Installation Permit  
Manawai-Vandevelde (Well No. 5616-05)

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson’s approval, the following special conditions were added and are part of your permit under Permit Condition 11:

Special Conditions

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

The permittee, well operator, and/or well owner are responsible for all conditions of the permit. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign and have the contractor sign both permit originals and return one for our files. A copy of your water use report form is enclosed for your use.

Except for the monthly water use report form, please provide copies of all the information in this packet to your pump installation contractor.

Finally, this letter is notice that we have accepted your Well Completion Report - Part I as complete. Please submit your new TMK number when your final subdivision is recorded with the Bureau of Conveyance.

If you have any questions, please call Charley Ice of the Commission staff at [number] or toll-free at [number] extension 70251.

Aloha,

[Signature]

GILBERT S. COLOMA-AGARAN  
Chairperson

Enclosure

c. Wailani Drilling Company
PUMP INSTALLATION PERMIT
Manawai-Vandevelde, Well No. 5616-05

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the pump installation for Manawai-Vandevelde (Well No. 5616-05) at Manawai, Uaoa Bay, Maui, TMK 2-8-3:18D, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The pump installation permit shall be for installation of a 50 gpm capacity, or less, pump in the well.

3. The permittee, well operator, and/or well owner shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on an annual basis, on forms provided by the Chairperson (attached).

4. The proposed use shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to pump water from a well shall not constitute a determination of correlative water rights. The permittee, well operator, and/or well owner are notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

5. The permittee, well operator, and/or well owner shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

6. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances, and non-compliance may be grounds for revocation of this permit.

7. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. The this permit is also subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97). If the HWCPS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

8. The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the pump installation permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

10. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: June 28, 2001
Expiration Date: June 28, 2003
GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the pump installer have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ____________________________ Date: __________

Printed Name: ____________________________ Firm or Title: ____________________________

Installer's Signature: ____________________________ C-57, C-57a, or A License #: __________ Date: __________

Printed Name: ____________________________ Firm or Title: ____________________________

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

Attachments:
- USGS Department of Health/ Safe Drinking Water & Wastewater Branch
- Maui Department of Water Supply
- Wailani Drilling Company
**COMMISSION ON WATER RESOURCE MANAGEMENT**

**ROUTE SLIP FOR PERMIT ISSUANCE**

<table>
<thead>
<tr>
<th>FROM: CHARLEY</th>
<th>TO: BAUER, G.</th>
<th>INIT</th>
<th>TO: LUM, A.</th>
<th>INIT.</th>
<th>FOR: Approval</th>
<th>PLEASE: See Me</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHING, F.</td>
<td></td>
<td>NAKAMA, L.</td>
<td></td>
<td>Signature</td>
<td>1 Review &amp; Comment</td>
</tr>
<tr>
<td></td>
<td>FUJII, N</td>
<td></td>
<td>NAKANO, D.</td>
<td></td>
<td>Information</td>
<td>4 Take Action</td>
</tr>
<tr>
<td></td>
<td>HARDY, R.</td>
<td></td>
<td>NISHIOKA, L.</td>
<td>3</td>
<td></td>
<td>2 Type Final</td>
</tr>
<tr>
<td></td>
<td>HIGA, D.</td>
<td></td>
<td>OHYE, M</td>
<td>4</td>
<td></td>
<td>5 File</td>
</tr>
<tr>
<td></td>
<td>HIRANO, E.</td>
<td>1</td>
<td>SAKODA, E.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ICE, C.</td>
<td>2</td>
<td>SUBIA, S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IMATA, R.</td>
<td></td>
<td>SWANSON, S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JINNAI, R</td>
<td></td>
<td>UYENO, D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KUNIMURA, I</td>
<td></td>
<td>YODA, K</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DATE:** 26 Sep '01  
**SUSPENSE DATE:**

**WELL NUMBER:** 566-05  
**WELL NAME:** Manawai - Vandeveerde

**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
7 USDG MAP
8 DATABASE EXTRACT
9 WCR FORM
10 WELL CHECKPOINT

TO BE SENT TO APPLICANT

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
7 USDG MAP
8 DATABASE EXTRACT
9 DATABASE TEXT
10 GLENN'S WORKSHEET

TO BE SENT TO APPLICANT

FOR OFFICE USE ONLY

Glenn said pumping cap too great - no issue!?  
Application was for 50 gal/min pump tests went up to 173. Glenn did no curve, but said "150 was too much"!?  
(In the future, the constant rate test should be expected pump cap - yes?)

At least
we got transmissivity of 1,826.2 which is the main number.

So o.k. then.
This superseded one I left that went out today. The TDK is OK, we just thought the new one was around the corner — no need to hold up.
October 9, 2001

Mr. Dennis Vandevelde
PMB Box 201-120
Hana Highway #9
Paia, Maui, HI 96708

Dear Mr. Vandevelde:

Well Completion Report for Well No. 5616-05

We have received your Well Completion Report Part II for the Manawai-Vandevelde (Well No. 5616-05). However, matters which must be addressed before we accept your report as complete are as follows:

1. The new TMK designation must be forwarded when available. We understand that the correct lot designation locating the well on the old TMK 2-8-3:52 is Lot D of the subdivision, an “access parcel”.

Upon receipt of the correct new designation, your pump installation permit can be issued. Until then, water may not be used from the well, subject to fines of up to $1000 per day.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

Cl:ss
C: Wailani Drilling Company
Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

- Letter to correct Lot # for Vandevelde
- WCR 1 for Manawai-Papanui well #5517-02
- WCR 1 revised for O'Neil well #5514-02 received survey
- After the fact information for Front Street #5341-02

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at [redacted]

From: Bill Steele
To: Charlie Ice  
For: State of Hawaii Water Resource Commission  
From: Bill Steele  
Reference: To correct TMK Lot No. for Dennis Vandevelde  
Aloha Charlie,  

This letter is being submitted by Well Contractor, Land Owner and Surveyor to correct the Lot location that was listed on the Well Elevation survey by Ed Valera. According to the survey submitted the well is located on TMK 2-8-03:18 Lot 18-C this is incorrect. The well is actually on TMK 2-8-03:18 Lot 18-D.  

Mike Robertson, Wailani Drilling, Inc.  
Dennis Vandevelde, Land Owner  
Ed Valera, Land Surveyor  

Certified By And A Member Of The National Ground Water Association
Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

- WCR I for Manawai-Vandevelde #5616-05 with
  Drillers Log ✓
  Stepdraw down test ✓
  Constant rate test ✓
  Well elevation survey ✓
  Colored well drawing ✓

- WCR I for Kauhale-Makai #4527-14 with
  Drillers Log ✓
  Stepdraw down test ✓
  Constant rate test ✓
  Well elevation survey ✓
  Colored well drawing ✓

- WCR I for Kuau-Newbro #5521-03 with
  Drillers Log ✓
  Constant rate test ✓
  Well elevation survey ✓
  Colored well drawing ✓

- Signed Well Construction Permit Manawai-Steele #5616.06

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at [redacted]

From: Bill Steele

Re:
FAX MEMO

For: Charlie Ice
From: Mike Robertson
Re: Start Work

10/30/00 7:30 AM

This is to provide notice as required by the Water Commission of work to start on the following wells:

Kilii Akahi # 4327-06
Manawai-Vandervelde # 5616-05

Please call or fax to confirm.

Notification is sufficient — confirmation not necessary.

Vandervelde has not filed signature copy validating his permit. Please do so immediately.

Thank you: Mike Robertson
WELL CONSTRUCTION PERMIT
Manawai-Vandervelde, Well No. 5616-05

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management Section 13-168, entitled “Water Use, Wells, and Stream Diversion Works” this document is a permit issued by the Chairperson of the Commission on Water Resource Management (Chairperson). P.O. Box 82 writing, at least two (2) weeks before any work authorized by this permit commences and shall be accompanied with §13-168-15, Hawaii Administrative Rules.

1. The Chairperson of the Commission on Water Resource Management (Chairperson). P.O. Box 82 writing, at least two (2) weeks before any work authorized by this permit commences and shall be accompanied with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basalt groundwater, the depth of the well may not exceed one fourth (1/4) of the theoretical thickness (41 times initial head) of the basalt ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction 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 the well shall not constitute a determination of navigable water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, MSL) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997, HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

12. The permittee, his successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: August 14, 2000
Expiration Date: August 14, 2002

TIMOTHY F. JOHNS, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $100 per day starting from the permit date of approval.

Permittee’s Signature:  
Dennis Vandervelde  
Im or Title:  Owner  
Phone: 572-6345

Driller’s Signature:  
Mike Robertson  
C-57 License #:  2015  
Date:  
Printed Name:  
Wahiiki Drilling Company

Printed Name:  
Mike Robertson  
Firm or Title:  
Phaiki Drilling Company

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

Attachment:  
USGS  
Department of Health Safe Drinking Water, Wastewater, and Clean Water Branches  
Maui Department of Water Supply  
Wahiiki Drilling Company
WELL CONSTRUCTION PERMIT
Manawai-Vandevelde, Well No. 5616-05

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Manawai-Vandevelde (Well No. 5616-05) at Manawai, Ua'uma Bay, Makawao, Maui, TMK 2-8-3:52, subject to the Hawaii Well Construction & Pump Installation Standards (123/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1.5-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The well, operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established in-stream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, ms) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The well work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

12. The permittee, its successors and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: August 14, 2000
Expiration Date: August 14, 2002

TIMOTHY E. JOHNS, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ____________________________ Date: ____________________________
Printed Name: ____________________________ Firm or Title: ____________________________
Driller's Signature: ____________________________ C-57 License #: ____________________________ Date: ____________________________
Printed Name: ____________________________ Firm or Title: ____________________________

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

Attachment:
  - USGS
    Department of Health's Safe Drinking Water, Westerwater, and Clean Water Branches
    Maui Department of Water Supply
    Wailani Drilling Company
### SECTION 1: WELL LOCATION INFORMATION

<table>
<thead>
<tr>
<th>Island</th>
<th>MAUl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer System</td>
<td>KOOLAU</td>
</tr>
<tr>
<td>Aquifer Sector</td>
<td>#________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Use</th>
<th>Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Withdrawal</td>
<td>36000</td>
</tr>
</tbody>
</table>

| System Sustainable Yield | 11 |

### SECTION 2: WELL SECTION DATA  
(enter data in grey cells only)

| Elevation at top of casing | 270 ft., m.s.l. |
| Ground Elevation | 250 ft., m.s.l. |
| Cement Grout | 170 ft. |
| Rock Packing | 12.0 in. |
| Hole Diameter | 12.0 in. |
| Total Depth | 320 ft. |

| Estimated Head | 3 ft., m.s.l. |
| Calculated Aquifer Thickness | 123 ft. |

| County Water Supply (Y/N ?) | NO |

| Solid Casing |
| Material | Plastic |
| Designation | Sch 40 |
| Length | 300 ft. |
| Diameter | 6 in. |
| Wall Thickness | 0.25 in. |

| Casing |
| Material | Plastic |
| Designation | Sch 40 |
| Length | 30 ft. |
| Diameter | 6 in. |
| Wall Thickness | 0.25 in. |
| Openings | 7 sq in./f.f. |

| Open Hole |
| Length | 0 ft. |
| Diameter | 0 in. |

### SECTION 3: CHECKLIST  
(values to check are shaded)

**Well Depth**

| Theoretical Thickness of Aquifer | 123 ft. |
| 1/4 Aquifer Thickness | 30.75 ft. |
| Depth of Well below Sea Level | 51 ft. |

| too deep | (refer to HWCPIS Section 2.2) |

**Well Casing**

| Minimum Wall Thickness |
| Material | PVC |
| County or Non-County | non-county |
| Minimum Thickness per standards | 0.280 in. |
| Wall Thickness Provided | 0.250 in. |

| too small | (refer to HWCPIS Section 2.4 c) |

| Minimum Length of Solid Casing |
| 90% of ground to top of aquifer | 239.4 ft. |
| Length of solid casing Provided | 300 ft. |

| okay | (refer to HWCPIS Section 2.4 d) |

| Casing Material | Sch 40 |

| okay | (refer to HWCPIS Section 2.4 e) |

| Annular Space |
| If the cell above reads #N/A, reference HWCPIS |

| Depth of Grouting |
| Calculated Depth of Grouting | 166.2 ft. |
| Depth of Grouting provided | 190 ft. |

| okay | (refer to HWCPIS Section 2.6 c) |

| Thickness of Annular Space | 3.25 in. |

| okay | (refer to HWCPIS Section 2.6 d) |
PUBLIC RECORD DATA

TMK # 2-2-8-3-18
HANA HWY

Owner: STONE, JEFFREY I & SHARYN A
Tax Payer: STONE, JEFFREY I & SHARYN A
Tax Bill: 115 ALEIKI PL, PAIA, HI 96779 USA

Tenure: Fee Simple
Semi-Annual Tax: $1,842.63

Assessed Value | Exemption | Size | Buildings: | Dwellings: | PITT Code: | Zoning: | Land Use: | Nbhood Code: | Subdivision: | Condo Name:
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Land: $731,200 | $0 | 16.89 ac | 0 | 0 | 500 | AGR | 0 | 2846 | Peahi |  
Buildings: $0 | $0 | 0 sq ft | 0 | 0 |  
Total: $731,200 | $0 |  

SALES

11/27/1978 DEED $900,000
12/1/1978 DEED $3,600,000 B/P 13314/347
5/3/1995 DEED-M $1,750,000 Doc 95-058505 LCD 2235002 MANAWAI INC
12/3/1996 DEED $1,000 Doc 96-170495 LOT 8 = 16.887 AC HEALY, WILLIAM, C (Tenants in Severalty)
* A MARRIED MAN
1/23/1997 DEED $700,000 Doc 97-010302 LOT 8 = 16.887 AC HOLLAND, DENNIS, P (Tenants By Entirety)
HOLLAND, DIANNE (Tenants By Entirety)
4/24/1998 DEED $325,000 Doc 98-057011 HOLLAND, DENNIS P, H/W (Tenants By Entirety)
HOLLAND, DIANNE, H/W (Tenants By Entirety)
* UNDIVIDED 1/2 INTEREST
VANDEVELDE, DENNIS L, H/W (Tenants By Entirety)
VANDEVELDE, DIANNE J, H/W (Tenants By Entirety)
* UNDIVIDED 1/2 INTEREST
1/5/2001 DEED $400,000 Doc 01-002353 STONE, JEFFREY I, H/W (Tenants By Entirety)
STONE, SHARYN A, H/W (Tenants By Entirety)

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR NEW APPLICATIONS

FROM: **CHARLEY**

DATE: 7/18

TO: BAUER, G.
CHING, F.
FUJII, N.
HARDY, R.
HIRANO, E.
ICE, C.
IMATA, R.
KUNIMURA, I.
NAKAMA, L.
NAKANO, K.
NISHIOKA, L.
OHYE, M.
SAKODA, E.
SUBIA, S.
SWANSON, S.
UYENO, D.
YODA, K.

APPROVAL

SUSPENSE DATE: __________

PLEASE:
1. Review & Comment
2. Type Final, label new file folder
3. Approval
4. Signature
5. Type Draft acknow letter

WELL NUMBER 5266-05
WELL NAME Manawai-Vandervelde

WELL CONSTRUCTION

ATTACHMENTS FOR APPLICATION
1. TRANS. LETTER
2. CWRM MAP
3. APPL. FORM (3X)
4. USGS MAPS (3X)
5. TAX MAPS (3X)
6. PARCEL OWNER VERIF.
7. CONTRACTOR VERIF.
8. ALL INFO FILLED IN
9. BACKGROUND CHECK

FOLDER:
☐ MADE NEW FILE FOLDER, ATTACHED
☐ FILE FOLDER ALREADY MADE, IN FILE CABINET

INCOMPLETE ACTION DATES:

DATE ACTION
26 July 00 Finally nailed down well location

I assume Mike is following up on this in next week of his control.
Dear Mr. Vandevelde:

Well Completion Report for Well No. 5616-05

We have received your Well Completion Report Part I for the Manawai-Vandevelde (Well No. 5616-05). However, matters which must be addressed before we accept your report as complete are as follows:

1. The new TMK designation must be forwarded when available. We understand that the correct lot designation locating the well on the old TMK 2-8-3:52 is Lot D of the subdivision, an "access parcel".

Upon receipt of the correct new designation, your pump installation permit can be issued. Until then, the pump may not be used, subject to fines of up to $1000 per day.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

c. Wailani Drilling Company
### PUBLIC RECORD DATA

<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo-Apt</th>
<th>Property Tnr Address</th>
<th>Owner/Lessee</th>
<th>Beds</th>
<th>Baths</th>
<th>Land area</th>
<th>Living area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2-8-3-18Peahi</td>
<td></td>
<td>F HANA HWY A</td>
<td>STONE, JEFFREY I &amp; SHARYN</td>
<td></td>
<td></td>
<td>16.89 ac</td>
<td></td>
</tr>
</tbody>
</table>

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.
<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo-Apt</th>
<th>Tnr Property Address</th>
<th>Owner/Lessee</th>
<th>Beds</th>
<th>Baths</th>
<th>Land area</th>
<th>Living area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2-8-3-52</td>
<td>Peahi</td>
<td>KA HALE KAPUAI TR</td>
<td>3</td>
<td>2+1/2</td>
<td>5.25 ac</td>
<td>2741</td>
<td></td>
</tr>
</tbody>
</table>

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.
Well Name: Manawai-Vandervelde W^r" No. 5616-05
Date of Test: February 19, 2001
Date of Analysis: 16-May-01

Alternative way for determining T from step-drawdown data (Mink, per. comm)

\[ Q = \text{ft}^3/\text{d} \]
\[ Q_1 \text{ (gpm)} = 173 = 33303 \text{ ft}^3/\text{d} \]
\[ s = \text{ft.} \]
\[ Q_2 \text{ (gpm)} = 80 = 15400 \text{ ft}^3/\text{d} \]

Set up two equations:

\[ s_1 = jQ_1 + nQ_1^{a2} \]
\[ s_2 = jQ_2 + nQ_2^{a2} \]

\[ Q_2 = 15400 \]
\[ s_2 = 0.78 \]
\[ Q_1 = 33303 \]
\[ s_1 = 2.22 \]

Well Depth below sea level = 21.5
Radius of well (ft) = 0.5

\[ n = s_1 - \frac{(Q_1/Q_2)s_2}{Q_1(Q_1-Q_2)} \]
\[ j = \frac{s}{Q} - nQ \]

Laminar flow equation:
\[ s = jQ = 1.22804 \]

55.32% Head loss due to laminar flow

Thiem Eq.

\[ T = \frac{1}{2\pi j} \ln(\frac{re}{r}) \]
\[ re = \text{Well Depth BSL} \times 1.6 = 34.4 \]
Therefore:
\[ T = \frac{1}{2\pi j} \ln(\frac{re}{r}) = 18262 \text{ ft}^2/\text{d} \]
MEMO and ROUTE SLIP

WCR 1 Check for Well No. 5616-05 (survey to regulation memo)

1. **Pump Tests Check** Glenn Bauer [initial]
   - [ ] Yes  [ ] No
   - If no, describe deficiency
     - Step-Drawdown Test:
       - followed WCPI Stds [ ] analysis attached [ ] proposed pump cap o.k. [ ]
     - Aquifer Pump Test:
       - followed WCPI Stds [ ] T & S analysis attached [ ]
     - Well Interference:
       - estimated Steady-State drawdown at 1-mile radius is _____ ft
       - analysis attached [ ]
     - Stream Surface Water Impacted: [ ]
       - If yes, identify most probable stream

2. **Construction Check** Mitch Ohye [initial]
   - [ ] Yes  [ ] No
   - data complete [ ]
   - followed WCPI Stds [ ] well database updated [ ]

3. Charley/Lenore/Ryan [initial] take action based on above analysis

4. Roy [initial] check
5. Kathy [initial] finalize
6. Linnel [initial] signature
7. Charley/Lenore/Ryan File

ATTACHMENTS FOR PUMP INSTALLATION PERMIT:
- COVER LETTER
- PERMIT (2x)
- DOH-COMMENTS
- LAND DIV. COMMENTS...
- WCR FORM
- WUR FORM
- USGS MAP
- PARCEL CHECK
- DATABASE PRINTOUT
- GLENN'S WORKSHEET
- WELL CHECK PRINT

[Handwritten note]
- Readers to 0.0cm with 0.0cm saline over time with proposed water condition.
- 0.0 cm pump too great.
- [Handwritten note]

[Handwritten note]
- Mod clarifications from Glenn while applicant gets all the info.
**State of Hawaii**  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
**Department of Land and Natural Resources**  

**WELL COMPLETION REPORT - PART I**  
Well Construction

1. **State Well No.:** S616-05  
   **Well Name:** MANAIAI-VANDEVELD  
   **Island:** MAUI

2. **Address:** P.M.B. Box 201-170 Wainaku, PAIA HI 96778  
   **Tax Map Key:** (2) 3 - 8 - 003

3. **Drilling Company:** WALLAN DRILLING

4. **If drilled, type of Rig:**  
   - [ ] Rotary  
   - [ ] Percussion

5. **Date Construction (drilled, cased, grouted) completed:** 2/16/01  
   **Attach Driller's Log (72629 DL Form)**

6. **Initial water-level encountered:** 201  
   **ft. below ground**  
   **Date and time of measurement:** 2/15/01

7. **Step-Drawdown Test completed?**  
   - [ ] No  
   - [ ] Yes  
   **Attach Step-Drawdown Test form (12177/87 SDPTD Form)**

8. **Constant Rate Aquifer Test completed?**  
   - [ ] No  
   - [ ] Yes  
   **Attach Constant Rate Aquifer Test form (12177/87 CRPTD Form)**

9. **Parameters prior to pump test:**  
   - **Water-level:** 5.98  
     **ft. above msl**  
     **Date and time of measurement:** 2/19/01

10. **Chloride:** 145  
    **ppm**  
    **Date and time of sampling:** 2/19/01

11. **Temperature:** 69  
    **°F**  
    **Date and time of measurement:** 2/19/01

12. Fill in the as-built section on the other side of this sheet.

13. Attach plot plan and surveyor's stamped elevation report.

14. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)

15. **Remarks:**  
   - [ ] Benchmark "SLAB" @ 5202.33 FT (1953 SURVEY)

---

**Licensed Driller (print):** MIKE ROBERTSON  
**C-57 Lic. No.:** 20115  
**Date:** 4/13/01

**Surveyor (print):**  
**Date:** 4/18/01

**Permittee (print):**  
**Date:** 4/18/01
13. AS-BUILT WELl SECTION

(Please attach as-built if different from diagram provided below)

Elevation at top of casing: 12.25 ft., msl
Minimum of 2' Radius & 4" Thick Concrete Pad
Ground Elevation: 203.44 ft., msl

Bench mark elevation: 202.33 ft., msl
(Survey to nearest 0.01 ft.)

Cement Grout: 160 ft.
(min. 70% of distance from
ground elevation to top of
water surface or 500 ft.,
whichever is less.)

Annular space between
hole and casing (min. 3"):
3 in.

Rock or Gravel Packing:
N/A ft.
Material:
- Crushed Basalt
- Rounded Gravel

Water Level Elevation:
5.98 ft., msl

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
- Length: 205.17 ft.
- Nominal Diameter: 6" in.
- Wall Thickness: 2.5 in.
- Bottom Elevation: -1.5 ft., msl

Open Casing: □ Perforated □ Screen
- Length: 20 ft.
- Nominal Diameter: 6" in.
- Wall Thickness: 2.5 in.
- Bottom Elevation: -21.50 ft., msl

Open Hole:
- Length: __________ ft.
- Diameter: __________ in.
- Bottom Elevation: __________ ft., msl

Solid Casing Material:
Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
And compliant with (check one or more): □ ASTM A242 □ Type E □ Type S □ Grade B □ Other
Stainless Steel: (check one):
□ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
□ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant with (check one or more): □ ANSI/AWWA C200 □ API Spec. 5L □ ASTM A53 □ ASTM A139
And compliant with (check one or more): □ ASTM A242 □ Type E □ Type S □ Grade B □ Other
Stainless Steel: (check one):
□ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
□ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296

*msl = mean sea level

Please refer to the HAWAII WELl CONSTRUCTION AND PUMP INSTALLATION STANDARDS to ensure that your as-built is in compliance with applicable standards.
Table 1 (SDPTD Form 12/17/97)

**STEP-DRAWDOWN PUMP TEST DATA**

(not required for wells producing < 100,000 gpd or 70 gpm)

Pumped Well No. **S616-05**  
Pumped Well Name **MANNAVIL ANDERSON**  
Target Q **150** gpm  
Reference pt. for depth to water **202.33** ft. msl  
Static Water Level @ start of test **196.35** ft. msl  

Water level measurements by:  
☐ steel tape  
☐ pressure transducer  
☐ airline

START TEST Date: **2/19/01**  
Time of day: **12:00 PM**  
* Ref. Pt Benchmark **SLAB**

Flow Meter Reading Start: **12.1** gals

<table>
<thead>
<tr>
<th>Suggested Elapsed Time (min)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (µmhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F or °C</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>-45</td>
<td>-45</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30</td>
<td>-</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td>-15</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>197.13</td>
<td>.78</td>
<td>80</td>
<td>69</td>
<td></td>
<td></td>
<td>Start pump</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td></td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>197.13</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>197.4</td>
<td>1.05</td>
<td>100</td>
<td>145³</td>
<td></td>
<td></td>
<td>Chloride sample taken</td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>197.4</td>
<td>1.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>120</td>
<td>197.92</td>
<td>1.57</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data in this table is for:  
☐ Pumped Well  
☐ Observation Well

Remarks:  
Start test/ Step 1  
Chloride sample taken  
Step 2 begin?
<table>
<thead>
<tr>
<th>Suggested Elapsed Time (min)</th>
<th>Actual Elapsed Time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (at least 3 steps) (gpm)</th>
<th>EC (μmhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F or °C</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>210</td>
<td>198.57</td>
<td>2.22</td>
<td>173</td>
<td></td>
<td></td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>240</td>
<td>240</td>
<td>&quot;</td>
<td>2.22</td>
<td>173</td>
<td></td>
<td></td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>270</td>
<td>270</td>
<td>&quot;</td>
<td>2.22</td>
<td>173</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data in this table is for:
- Pumped Well
- Observation Well

Max possible duration, water level or quality did not stabilize for any 24 period

Begin recovery data next page
Flow meter reading at end of pumped period: 15,293 gals

1. starting pumping rate Q
2. minimum length of step period of constant pumping rate
3. minimum mandatory Chloride (Cl⁻) measurement/sampling at end of every step
4. Use same ending drawdown figure as start for recovery
<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth To Water (nearest 0.1 ft)</th>
<th>Recovery Drawdown S (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (µmhos)</th>
<th>Cl&lt;sup&gt;-&lt;/sup&gt; (mg/l)</th>
<th>Temp. ▼ °F ▲ °C</th>
<th>Data in this table is for: Pumped Well Observation Well</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>197.13</td>
<td>0.78</td>
<td>0</td>
<td>0</td>
<td>69</td>
<td></td>
<td>Pump off, start recovery</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>80</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>200</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>250</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**END TEST** Date: **2/19** Time of day: **4:30 PM**

**ADDITIONAL REMARKS:**

Person in charge of pump test (print): **Ron Deces**

Signature: **[Signature]**

The signature above indicates that the data reported on this form is accurate and true to the best of the person's
# CONSTANT-RATE PUMP TEST DATA

<table>
<thead>
<tr>
<th>Suggested elapsed time</th>
<th>Actual elapsed time</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (umhos)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F or °C</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-45</td>
<td>-45</td>
<td>196.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Start Test</td>
</tr>
<tr>
<td>-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td>-15</td>
<td>196.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>196.35</td>
<td>0.00</td>
<td>1</td>
<td>69</td>
<td></td>
<td></td>
<td>Start pump/Cl⁻ taken</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>198.42</td>
<td>2.07</td>
<td>173</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>198.42</td>
<td>2.07</td>
<td>173</td>
<td>145</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>198.43</td>
<td>2.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>198.42</td>
<td>2.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>198.45</td>
<td>2.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Pumped Well No.**: SL16-05
- **Observation well no.**: NA
- **Pumped Well Name**: Manawai - Pupuke
- **Distance between Obs. & Pumped Well**: 150 ft.
- **Target Q**: 150 gpm
- **Reference pt. for depth to water**: 202.33 ft. msl
- **Static Water Level @ start of test**: 196.35 ft. msl

**Water level measurements by**: Steel tape, pressure transducer, airline

**START TEST Date**: 3/19/01
**Time of day**: 4:30 PM

**Flow Meter Reading Start**: 15,800 gals

**Data in this table is for**:
- Pumped Well
- Observation Well

**Remarks**
<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (unadjusted to nearest 0.1 ft)</th>
<th>Drawdown (in this table is for)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (unbox)</th>
<th>Cl⁻ (mg/l)</th>
<th>Temp. °F or °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>150</td>
<td>198.45</td>
<td></td>
<td>210</td>
<td>173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>300</td>
<td>198.45</td>
<td></td>
<td>2.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>500</td>
<td>198.44</td>
<td></td>
<td>2.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700</td>
<td>700</td>
<td>198.42</td>
<td></td>
<td>2.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>900</td>
<td>900</td>
<td>198.43</td>
<td></td>
<td>2.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500</td>
<td>1500</td>
<td>198.43</td>
<td></td>
<td>2.08</td>
<td>173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks 1: Chloride sampling required  
Remarks 2: Use same ending drawdown figure as start for recovery  

2 (CRPTD Form 12/17/97)  
Data in this table is for:  
- Pumped Well  
- Observation Well  
Remarks: Max possible duration, water level or quality did not stabilize for any 24 period  
Begin recovery data next page  
Flow meter reading at end of pumped period: ___________ gals
<table>
<thead>
<tr>
<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (nearest 0.1 ft)</th>
<th>Recovery Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate (gpm)</th>
<th>EC (µhos)</th>
<th>Cl- (mg/l)</th>
<th>Temp. °F or °C</th>
<th>Data in this table is for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>197.41</td>
<td>1.06</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>Pumped Well</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>197.1</td>
<td>0.75</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>Observation Well</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>197.1</td>
<td>0.75</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>196.4</td>
<td>0.5</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>196.35</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>60</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>70</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>80</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

END TEST  Date: 1/20/01   Time of day: 4:30 PM

ADDITIONAL REMARKS:

Person in charge of pump test (print): Ray Peets

Signature: [Signature]

The signature above indicates that the data reported on this form is accurate and true to the best knowledge of the person who operated this pump test.
WELL NUMBER: 5616-05

DRILLER'S LOG (7/26/99 DL Form)

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 51</td>
<td>Top Soil</td>
<td>12/15</td>
</tr>
<tr>
<td>51 to 94</td>
<td>Soft Tan Rock</td>
<td>12/15</td>
</tr>
<tr>
<td>94 to 105</td>
<td>Blue Rock</td>
<td></td>
</tr>
<tr>
<td>105 to 117</td>
<td>Soft Tan Rock</td>
<td></td>
</tr>
<tr>
<td>117 to 145</td>
<td>Blue Rock / Hard</td>
<td></td>
</tr>
<tr>
<td>145 to 175</td>
<td>Soft Tan Rock</td>
<td>12/16</td>
</tr>
<tr>
<td>175 to 201</td>
<td>Blue Rock</td>
<td>12/16</td>
</tr>
<tr>
<td>201 to 210</td>
<td>Soft Tan Rock</td>
<td>12/16</td>
</tr>
<tr>
<td>210 to 226.5</td>
<td>Pahoe Hoe</td>
<td>12/16</td>
</tr>
</tbody>
</table>

Remarks:

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, etc.</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TO WHOM IT MAY CONCERN:

This is to certify that the elevation of the well concrete pad at Lot 18-C of Manawai Subdivision is 202.33 feet above mean sea level. The elevation is based from the Triangulation Station "KULOLI" as established by trigonometric leveling.

If you have any questions, please give me a call.

Wailuku, Hawaii

Edgardo V. Valera
Licensed Professional Land Surveyor

EVV:asv
Manawai-Vanderdele Well
State Well # 5616-05
Elevation @ Slab is 202.33 ft above m.s.l.

Depth of Well 226.5 ft.
Initial chlorides 145 ppm

Pump tested at 173 gpm for 24 hours with maximum drawdown of 1.44 ft.

*Note: not drawn to scale
Mr. Dennis Vandevelde  
PMB Box 201-120  
Hana Highway #9  
Paia, HI 96708  

Dear Mr. Vandevelde:

Well Construction Permit  
Manawai-Vandevelde (Well No. 5616-05)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

**Special Conditions**

1. Attached for your information is a copy of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.

2. The well casing shall meet the minimum thickness required in the Hawaii Well Construction and Pump Installation Standards (HWCPIS, January 1997).

3. Well depth shall not exceed one-fourth the theoretical aquifer thickness.

This permit does not authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (1/23/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."

If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.
Please sign and have the contractor sign both permit originals and return one for our files. Also, copies of the aquifer pump test worksheet and the well completion report form are enclosed for your use.

**IMPORTANT** - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Charley Ice of the Commission staff at [phone number] or toll-free at [phone number] extension 70251.

Aloha,

TIMOTHY E. JOHNS
Chairperson

Enclosures

c: Wailani Drilling Company
WELL CONSTRUCTION PERMIT
Manawai-Vandevelde, Well No. 5616-05

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Manawai-Vandevelde (Well No. 5616-05) at Manawai, Uaoa Bay, Makawao, Maui, TMK 2-8-3:52, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1¼-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department's Historic Preservation immediately.

6. The proposed well construction 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 the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997: HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(1) prior to any well sealing or plugging work.

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under this permit or relating to or connected with the granting of this permit.

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

Date of Approval: August 14, 2000
Expiration Date: August 14, 2002

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ______________________ Date: ____________________
Printed Name: ______________________________ Firm or Title: ____________________________
Driller's Signature: __________________________ C-57 License #: __________________________ Date: ____________________
Printed Name: ______________________________ Firm or Title: ____________________________

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

Attachment
C. USGS
Department of Health's Safe Drinking Water, Wastewater, and Clean Water Branches
Mau Department of Water Supply
Wailani Drilling Company
TO: Honorable Bruce S. Anderson, Director
   Department of Health
   Attention: Dennis Tulang, Wastewater Branch
   William Wong, Safe Drinking Water Branch

FROM: Timothy E. Johns, Chairperson
   Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
   Manawai-Vandevelde Well (Well No. 5616-05)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by August 11, 2000.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [Redacted].

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29. The DOH, Safe Drinking Water Branch will transmit requirements to the applicant directly.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant’s information, a source of possible wastewater contamination [ ] is [ ] not located near the proposed well site (information attached).

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

[ ] No comments/objections

Contact Person: Melvin J Haman
Signed: [Redacted]
Phone: 808-426-5890
Date: 8/11/00

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

AUG - 4 2000

RECEIVED
SAFE DRINKING WATER BRANCH

Phone: [Redacted]

Date: [Redacted]
<table>
<thead>
<tr>
<th>Approved Well No</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction</th>
<th>Pump Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issued</td>
<td>Signed</td>
</tr>
<tr>
<td></td>
<td>Manawai-Papanui</td>
<td>Papanui, LLC</td>
<td>C-20115</td>
<td>BOTH</td>
<td>2/28/1996</td>
<td>2/19/1997</td>
</tr>
<tr>
<td>4/27/1992</td>
<td>5615-01</td>
<td>Haiku-Robertson</td>
<td>Michael H. Robertson</td>
<td>BOTH</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Friday, August 25, 2000
<table>
<thead>
<tr>
<th>Approved</th>
<th>Well No</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction</th>
<th>Pump Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/22/1999</td>
<td>3712-01</td>
<td>Waicpah Haleakal</td>
<td>Haleakal Ranch [01]</td>
<td>C-20115</td>
<td>WELL</td>
<td>2/8/1999</td>
<td></td>
</tr>
<tr>
<td>8/10/1999</td>
<td>5615-04</td>
<td>Peahi-Honig</td>
<td>Fredrick Honig</td>
<td>C-20115</td>
<td>BOTH</td>
<td>8/17/1999</td>
<td>8/30/1999</td>
</tr>
<tr>
<td>7/6/2000</td>
<td>5341-02</td>
<td>Front St. Housing</td>
<td>William Dobush</td>
<td>C-20115</td>
<td>PUMP</td>
<td>7/31/2000</td>
<td></td>
</tr>
</tbody>
</table>
TO: Honorable Bruce S. Anderson, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch

FROM: Timothy E. Johns, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
Manawai-Vandevelde Well (Well No. 5616-05)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by August 11, 2000.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [Blank].

RESPONSE:

This well qualifies as a source which will serve as a source of potable water to a public water system (serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

For the applicant's information, a source of possible wastewater contamination [ ] is [ ] not located near the proposed well site.

Other relevant DOH rules/regulations, information, or recommendations are attached.

No comments/objections

Contact Person: Lori N. Kajiwara  Phone: 586-42-94
Signed: Lori N. Kajiwara  Date: 8-11-2000
Facsimile Request & Cover Sheet
Wastewater Branch
916 Ala Moana Blvd. Room 309
Honolulu, Hawaii 96814-4520

Date: 6-2-2000

To: Roland Tajano, Maui District Health Office
Phone: 984-8232  Fax: __________

From: Lori Kajiwara, Planning Design Section
Phone: 586-4280  Fax: 586-4300
Email: LKAJIWARA@hpa.health.state.hi.us

Subject: Request for Information

Do you have any IWS files or records for the following:

(2) 121 iPhones:  Manawai - Vandevelde
(7) 103 3:  Manawai Place

Please indicate if [ ] sewered or [ ] not sewered.

If not sewered, is it on [ ] cesspool or [ ] septic tank or [ ] aerobic unit or other.

Please indicate:
Record Date: __________________________
Submit Date: __________________________
Plan Approval Date: __________________________
Inspection Date: __________________________
System Approval for Use Date: __________________________

* of Bedrooms: __________  File # 4
TO: Honorable Bruce S. Anderson, Director
   Department of Health
   Attention: Dennis Tulang, Wastewater Branch
   William Wong, Safe Drinking Water Branch

FROM: Timothy E. Johns, Chairperson
      Commission on Water Resource Management

SUBJECT: Well Construction Permit Application
         Manawai-Vandevelde Well (Well No. 5616-05)

Transmitted for your review and comment is a copy of the captioned well application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by August 11, 2000.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [phone number].

Class
Attachment(s)

RESPONSE:

May Qualify

1. This well will not serve as a source of potable water to a public water system serving 25 or more people at least 60 days per year as required by the Water Resources Commission's Administrative Rules (HARR), Title 11, Chapter 29, Rules Relating to Potable Water Systems, 11-1-20-29. The DOH, Safe Drinking Water Branch will transmit any requirements to the applicant directly.

2. If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigons with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

3. The well will be used to supply both potable and non-potable purposes in a single system, and the user should eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigons with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

4. Other relevant DOH rules/regulations, information, or recommendations are attached.

5. No comments/objections.

Contact Person: [Name]
Phone: 586-4268

Signed: [Signature]  Date: 8/11/00
TO: Dean Y. Uchida, Administrator  
Land Division  
FROM: Linnel T. Nishioka, Deputy Director  
Commission on Water Resource Management  
SUBJECT: Well Construction/Pump Installation Permit Application  
Manawai-Vandevelde Well (Well No. 5616-05)

Transmitted for your review and comment is a copy of the captioned well application which includes a request for a pump installation permit.

We would appreciate your comments on the captioned with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by August 11, 2000.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [redacted].

RESPONSE:

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

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

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

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

[ ] No objections

☒[ ] Other comments: Original source of title is Royal Patent Grant 3221 issued in 1875.

Contact Person: Gary Martin  
Phone: 587-0421

Signed: Gary Martin  
Date: 8/18/00
Mr. Dennis Vandevelde
P.M.B. Box 201-120
Hana, Highway #9
Paia, Hawaii 96708

Dear Mr. Vandevelde:

Well Construction Permit Application for Well No. 5616-05

We acknowledge receipt, on July 26, 2000, of your completed well construction permit application for the Manawai-Vandevelde Well (Well No. 5616-05). You can expect your application to be processed within ninety (90) days from this date.

For your information, the process of constructing a well is normally regulated and permitted in two (2) steps. First, a well construction permit is issued for drilling and testing purposes only. Based upon information provided by you through a Well Completion Report Part 1 (Well Construction), a pump installation permit (upon completed application) may then be issued to authorize pump work. If a pump is installed then a Well Completion Report Part 2 (Pump Installation) is required.

Please be aware that your driller has some unfinished business with the Water Commission that must be resolved in order for us to accept his signature on a permit, and no work shall commence unless a copy of the permit has been returned fully signed by both permittee and driller.

If you have any questions about your permit application, please contact Charley Ice of the Commission staff at [contact information] or toll-free at [contact information] extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

CL:SS

C: Wailani Drilling Company
TO: Honorable Bruce S. Anderson, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Safe Drinking Water Branch  

FROM: Timothy E. Johns, Chairperson  
Commission on Water Resource Management  

SUBJECT: Well Construction Permit Application  
Manawai-Vandevelde Well (Well No. 5616-05)  

Transmitted for your review and comment is a copy of the captioned well application.  

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by August 11, 2000.  

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [redacted].

RESPONSE:  

This well qualifies as a source which will serve as a source of potable water to a public water system (serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.  

This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connection(s)) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.  

If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.  

It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.  

For the applicant's information, a source of possible wastewater contamination [redacted] is not located near the proposed well site (information attached).  

Other relevant DOH rules/regulations, information, or recommendations are attached.  

No comments/objections

Contact Person: ___________________________ Phone: _________________  
Signed: ___________________________ Date: _________________
TO: Dean Y. Uchida, Administrator  
Land Division

FROM: Linnel T. Nishioka, Deputy Director  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application  
Manawai-Vandevelde Well (Well No. 5616-05)

Transmitted for your review and comment is a copy of the captioned well application which includes a request for a pump installation permit.

We would appreciate your comments on the captioned with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by August 11, 2000.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at [redacted].

Cl:ss  
Attachment(s)

RESPONSE:

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

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

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

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

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
<table>
<thead>
<tr>
<th>DOCUMENT NO.</th>
<th>SRC/COST</th>
<th>PROJECT</th>
<th>PH ACT</th>
<th>AMOUNT</th>
<th>NAME/DESCRIPTION (WANG INPUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S 01 326 C 1026 0752</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>25.00</td>
<td>Dennis Vandevelde</td>
</tr>
<tr>
<td>S 01 326 C 1026 0752</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>25.00</td>
<td>RHS Development Inc.</td>
</tr>
</tbody>
</table>

**TOTAL** 50.00

**REMARKS:**
- LINE (1) WELL No. 5616-05 (WCPA)
- LINE (2) WELL No. 5518-05 (WCPA)
- LINE (3) ----

---

**KRS DEVELOPMENT, INC.**
**WEST KUIAHA**
1045 MAKAWAO AVE. #208
MAKAWAO, HI 96768

**PAY TO THE ORDER OF:**
**Department of Land and Natural Resources**

**DATE:** 6/23/00

**DOLLARS**

**For:**

---

**DENNIS VANDEVELDE**
**DIANNE VANDEVELDE**
3611 WARDS PT.
ORCHARD LAKE, MI 48324

**FIRST OF AMERICA:**
First of America Bank - Michigan, BIA
DETROIT MICHIGAN 48226

**MANAWAII PROPERTY**

---
Judging from your subdivision map, I believe you have
mishandled the well location on the topo map and used
the wrong TMK no.

I believe you have drawn parcel 2-8-3:18, which is being
further subdivided, but no well location is clear. Is it in fact
being subdivided, and is the well on lot A, B, or C?

Telex 20 July 00: Lot D, which is 2-8-3:52 D4
### Well Background Check

<table>
<thead>
<tr>
<th>Approved Well No</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction</th>
<th>Pump Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issued Signed</td>
<td>Issued Signed</td>
</tr>
<tr>
<td>4/27/92</td>
<td>5615-01</td>
<td>Haiku-Robertson</td>
<td>C-20115</td>
<td>WELL</td>
<td>4/27/92</td>
<td>8/27/93</td>
</tr>
<tr>
<td>5/17/95</td>
<td>5615-02</td>
<td>Peahi-Phillips</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/21/95</td>
<td>7/19/96</td>
</tr>
<tr>
<td>1/24/96</td>
<td>5413-05</td>
<td>Huelo-Gould</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/24/96 7/15/96</td>
<td>7/19/96 10/12/96</td>
</tr>
<tr>
<td>4/10/96</td>
<td>5615-03</td>
<td>Peahi-Trier</td>
<td>C-20115</td>
<td>BOTH</td>
<td>2/2/96 7/19/96</td>
<td>10/12/98 2/1/99</td>
</tr>
<tr>
<td>7/17/96</td>
<td>5515-03</td>
<td>Peahi-Wanner</td>
<td>C-20115</td>
<td>BOTH</td>
<td>8/12/96 10/20/96</td>
<td>2/18/97 10/12/98</td>
</tr>
<tr>
<td>9/11/96</td>
<td>5426-01</td>
<td>Papaula-Ruben</td>
<td>C-20115</td>
<td>BOTH</td>
<td>10/7/96 7/19/96</td>
<td>3/20/98 4/14/98</td>
</tr>
<tr>
<td>12/18/96</td>
<td>5413-08</td>
<td>Huelo-Lowen</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/7/97 5/6/98 7/19/97</td>
<td>10/20/97 3/31/98</td>
</tr>
<tr>
<td>12/18/96</td>
<td>5413-07</td>
<td>Huelo-Baker</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/7/97 5/18/00 2/18/97</td>
<td>5/18/00 10/12/98</td>
</tr>
<tr>
<td>12/18/96</td>
<td>5414-01</td>
<td>Huelo-Hipp</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/7/97 12/18/98 7/19/97</td>
<td>10/27/97 3/20/98</td>
</tr>
<tr>
<td>6/9/97</td>
<td>5517-01</td>
<td>Joachim</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/10/97 9/18/97 10/1/97 10/17/97 12/12/97</td>
<td></td>
</tr>
<tr>
<td>9/22/97</td>
<td>5731-02</td>
<td>Kanoa 1</td>
<td>C-20115</td>
<td>WELL</td>
<td>9/24/97 7/10/98 7/10/98 7/6/99</td>
<td></td>
</tr>
<tr>
<td>12/8/97</td>
<td>5413-10</td>
<td>Huelo-Naiditch</td>
<td>C-20115</td>
<td>BOTH</td>
<td>12/12/97 8/29/99 1/31/00 15/4/00 5/16/00 1/31/00 5/4/00 12/17/98 12/17/98</td>
<td></td>
</tr>
<tr>
<td>1/21/98</td>
<td>5522-02</td>
<td>Thorsen</td>
<td>C-20115</td>
<td>WELL</td>
<td>1/21/98 2/1/00</td>
<td></td>
</tr>
<tr>
<td>5/1/98</td>
<td>5841-03</td>
<td>Shoemaker</td>
<td>C-20115</td>
<td>WELL</td>
<td>5/7/98 6/17/99</td>
<td></td>
</tr>
<tr>
<td>5/1/98</td>
<td>5741-01</td>
<td>McDonald</td>
<td>C-20115</td>
<td>BOTH</td>
<td>5/7/98 5/25/98 4/17/00 4/18/00 5/5/00 5/25/00 4/17/00</td>
<td></td>
</tr>
<tr>
<td>5/21/98</td>
<td>5328-52</td>
<td>Maui Bch Hotel</td>
<td>C-20115</td>
<td>BOTH</td>
<td>5/22/98 5/26/98 7/28/99 5/17/03 5/26/00 6/6/00 6/20/00</td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Well No</td>
<td>Well Name</td>
<td>Applicant</td>
<td>Driller</td>
<td>Type</td>
<td>Issued</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------------------------</td>
<td>--------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>6/24/98</td>
<td>5614-01</td>
<td>Honopou-Young</td>
<td>Lafayette Young</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/25/98</td>
</tr>
<tr>
<td>7/10/98</td>
<td>5515-04</td>
<td>Peahi-Johnson</td>
<td>Mary Johnson</td>
<td>C-20115</td>
<td>BOTH</td>
<td>7/14/98</td>
</tr>
<tr>
<td>7/13/98</td>
<td>5412-01</td>
<td>Hanawana-Douglass</td>
<td>Keith Douglas</td>
<td>C-20115</td>
<td>BOTH</td>
<td>7/16/98</td>
</tr>
<tr>
<td>1/22/99</td>
<td>3712-01</td>
<td>Waiopai Haleakal</td>
<td>Haleakala Ranch [01]</td>
<td>C-20115</td>
<td>WELL</td>
<td>2/8/99</td>
</tr>
<tr>
<td>5/26/99</td>
<td>3926-10</td>
<td>Makena-Kaufman</td>
<td>Jack Naiditch</td>
<td>C-20115</td>
<td>BOTH</td>
<td>4/7/00</td>
</tr>
<tr>
<td>8/4/99</td>
<td>5840-03</td>
<td>Kahana Ranch</td>
<td>Kahana Ranch</td>
<td>C-20115</td>
<td>BOTH</td>
<td>8/23/99</td>
</tr>
<tr>
<td>8/10/99</td>
<td>5616-04</td>
<td>Peahi-Honig</td>
<td>Fredrick Honig</td>
<td>C-20115</td>
<td>BOTH</td>
<td>8/17/99</td>
</tr>
<tr>
<td>8/25/99</td>
<td>4821-01</td>
<td>Omaopio Esty</td>
<td>Edward Esty</td>
<td>C-20115</td>
<td>WELL</td>
<td>9/2/99</td>
</tr>
<tr>
<td>8/26/99</td>
<td>5731-04</td>
<td>Kanoa 2</td>
<td>Maui DWSS [02]</td>
<td>C-20115</td>
<td>WELL</td>
<td>9/8/99</td>
</tr>
<tr>
<td>8/26/99</td>
<td>5939-02</td>
<td>Napili Park</td>
<td>Maui County Parks Dept.</td>
<td>C-20115</td>
<td>BOTH</td>
<td>9/2/99</td>
</tr>
<tr>
<td>1/9/00</td>
<td>5414-02</td>
<td>Huelo-Ulin</td>
<td>David &amp; Nancy Ulin</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/18/00</td>
</tr>
<tr>
<td>1/9/00</td>
<td>4821-02</td>
<td>Omaopio-Siele</td>
<td>Jack Siele</td>
<td>C-20115</td>
<td>BOTH</td>
<td>1/18/00</td>
</tr>
<tr>
<td>3/17/00</td>
<td>5425-03</td>
<td>Stable Road Golti</td>
<td>Eric Golting</td>
<td>C-20115</td>
<td>BOTH</td>
<td>4/7/00</td>
</tr>
<tr>
<td>4/10/00</td>
<td>5514-02</td>
<td>Ulana-O'Neill</td>
<td>Shawne O'Neill</td>
<td>C-20115</td>
<td>BOTH</td>
<td>4/28/00</td>
</tr>
<tr>
<td>5/1/00</td>
<td>5620-03</td>
<td>Pauwela Lewis 1</td>
<td>Sky Lewis</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/13/00</td>
</tr>
<tr>
<td>5/1/00</td>
<td>5620-04</td>
<td>Pauwela Lewis 2</td>
<td>Sky Lewis</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/13/00</td>
</tr>
<tr>
<td>5/23/00</td>
<td>5523-01</td>
<td>Paia Ulmer</td>
<td>Kurt Ulmer</td>
<td>C-20115</td>
<td>BOTH</td>
<td>5/26/00</td>
</tr>
<tr>
<td>5/23/00</td>
<td>5516-04</td>
<td>Kuaiha-Smith</td>
<td>Smith Development</td>
<td>C-20115</td>
<td>BOTH</td>
<td>6/15/00</td>
</tr>
<tr>
<td>7/6/00</td>
<td>5413-11</td>
<td>Huelo Klopping</td>
<td>Steve Klopping</td>
<td>C-20115</td>
<td>BOTH</td>
<td></td>
</tr>
</tbody>
</table>
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 821, Honolulu, Hawaii 86820. Application must be accompanied by 3 copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225. For further information and updates to this application form, visit http://www.state.hi.us/dlnr/cwrm.

APPLICANT INFORMATION: (Fill out all three, if applicable, and place a check next to the primary contact)

1. (a) WELL OWNER: Dennis Vandervele
   Mailing Address: P.M.B. 201-120 Hoa Hau #9 Paia HI 96779
   Phone: 573-8298
   (b) LAND OWNER: Dennis Vandervele
      Mailing Address: P.M.B. 201-120 Hoa Hau #9 Paia HI 96779
      Phone: 573-8298
      (c) CONTRACTOR: Wailer's Drilling Inc
         Mailing Address: 955 Kula Rd Hana HI 96713
         Phone: 572-3673

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL LOCATION/NAME: Manaewa - Vandervele
   Island: Maui
   Address: Manaewa Place
   Tax Map Key: (circle one): C-57/C-57a, or A
   Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1"=24,000), and (b) a property tax map, showing well location referenced to established property boundaries.

3. PROPOSED WORK:
   (Check all that apply)
   Drill New Well
   Deepen
   Install New Pump
   Modify Existing Well
   Redrill
   Modify Pump
   Abandon/Seal
   Replace Pump
   (Check one)
   Well No.  
   Be sure to complete and submit well abandonment report upon completion of work.

4. CONSTRUCTION:
   Is this well a part of a battery of wells?  Yes | No
   (Please describe.)
   Drilled | Radial

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: 50 gallons per minute
   Pump Type (Check one):
   Deep Well Turbine
   Submersible
   Centrifugal
   Rotary
   Rotary-Displacement
   Rotary-Gear
   Propeller
   Reciprocating
   Impulse
   Powered by:
   Diesel
   Gas
   Electric, rated horsepower: 5

6. PROPOSED USE:
   (Check all that apply)
   Municipal (including hotels, stores, etc.)
   Domestic (individual, noncommercial water system)
   Irrigation (crop)
   Military
   (explain):
   No. of Dwelling Units: 6
   No. of Acres:
   Industrial
   Other

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: 36,000 gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
   Flowmeter | Open-pipe | Weir | Orifice | Other (explain)

OTHER IMPORTANT INFORMATION:

8. PENDING ACTIONS: CDUA | SMA | EIS | EA | NONE | Other (explain)

9. REMARKS, EXPLANATIONS: I request to use and 40" PVC casing because of the nearness of well to the ocean.

I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 30 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner: Dennis Vandervele
Landowner: Dennis Vandervele
Contractor: Wailer's Drilling Inc
Signature: July 10 2016
Date: 7-6-00

(If more space is needed, please attach additional sheet)

For Official Use Only:

Mailed to:

For complete information on approved pump capacity and the type of pump, see the Commission's Rules on Water Use (Chapter 170-70, 71, 72, 73, 74, 75) and the Water Conservation Act (Chapter 170-80, 81, 82).
11. PROPOSED WELL SECTION

Elevation at top of casing (Survey to nearest 0.01 ft.)

Hole Diameter: 12.5 in.

Minimum of 2' Radius & 4' Thick Concrete Pad

Ground Elevation: -20 ft., msf

Total Depth: 200 ft.

Minimum annular space between hole and casing ≥ 3".

Cement Grout: 190 ft.

(most 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Rock or Gravel Packing: 4 ft.

Material: Crushed Basalt

Water Level Elevation: -20 ft., msf

Solid Casing: 60% x (Ground Elev.-Water Level Elev.)

Material: PVC

Length: 200 ft.

Diameter: 12 in.

Wall Thickness: 3.5 in.

Bottom Elevation: -20 ft., msf

Open Casing: Perforated

Material: PVC

Length: 200 ft.

Diameter: 12 in.

Wall Thickness: 3.5 in.

Bottom Elevation: -20 ft., msf

Open Hole:

Length: 12 ft.

Diameter: 12 in.

Bottom Elevation: -20 ft., msf

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

Bottom Elevation of Well Limit = (Water Elevation - 1/4 x Water Level Elevation)

Example: Estimated + 2 ft. Water Level Elev. — Bottom Elevation of Well Limit = (2 - 1/4 x 2) = 1.5 ft.

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

Solid Casing Material:

Steel: compliant with (check one or more):

☐ ANSI/AWWA C200
☐ API Spec. 5L
☐ ASTM A53
☐ ASTM A139

And compliant with (check one or more):

☐ ASTM A242
☐ Type E
☐ Type S
☐ Grade B
☐ Other

Stainless Steel: (check one):

☐ ASTM A409
☐ ASTM A312

ABS Plastic conforming to ASTM F490 and ASTM D1527: (check one)

☐ Schedule 40
☐ Schedule 80

PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one):

☐ Schedule 40
☐ Schedule 80

Thermoset Plastic: (check one):

☐ Filament Wound Resin Pipe conforming to ASTM D2996
☐ Centrally Cast Resin Pipe conforming to ASTM D2997
☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
☐ FEP Fluorocarbon Tubing conforming to ASTM D3295

Open Casing Material:

Steel: compliant with (check one or more):

☐ ANSI/AWWA C200
☐ API Spec. 5L
☐ ASTM A53
☐ ASTM A139

And compliant with (check one or more):

☐ ASTM A242
☐ Type E
☐ Type S
☐ Grade B
☐ Other

Stainless Steel: (check one):

☐ ASTM A409
☐ ASTM A312

ABS Plastic conforming to ASTM F490 and ASTM D1527: (check one)

☐ Schedule 40
☐ Schedule 80

PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one):

☐ Schedule 40
☐ Schedule 80

Thermoset Plastic: (check one):

☐ Filament Wound Resin Pipe conforming to ASTM D2996
☐ Centrally Cast Resin Pipe conforming to ASTM D2997
☐ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
☐ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
☐ PTFE Fluorocarbon Tubing conforming to ASTM D3296
☐ FEP Fluorocarbon Tubing conforming to ASTM D3295

Please refer to the HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS to assure that your construction plans are in compliance with all existing regulations.