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Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

- PIP WCR II for Well # 5517-02 Manawai-Papanui
- PIP WCR II for Well # 5517-02 Pauwela-Lewis #1
- PIP WCR II for Well # 5517-02 Pauwela-Lewis #2
- Map for Lahaina Park Well Application

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at 808-572-0925.

From: Bill Steele
Tuesday, 04 October 05
13:20 HST

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-Pehai Wells** potentially subject to contamination from "Pico Test Well" (unpermitted)

5516-01, 02 Feehan 1&2

5517 01 Joachim  
02 Manawau-Papanui  
03 Summit Trade 2  
04 Davison  
05 Holt 1  
06 Garcia

5616-01 ? (no record)  
02 Martin  
03 Clark  
04 Honig  
05 Vandevelde  
06 Steele  
07 Felton  
08 Grossman

5617-01 Summit Trade 1  
02 Opana Pt 1 (Serle)  
03 Opana Pt 2  
04 Stream Resources 3 (Serle)  
05 Holt 2
Mr. Jeff and Ms. Paula Fagerholm  
Papanui LLC  
3120 Ua Noe Place  
Ha'iku, Maui, HI 96708  

Dear Mr. Fagerholm:  

Well Completion Report for Well No. 5517-02  

We received your Well Completion Report Part II for the Manawai-Papanui Well (Well No. 5517-02) on **August 1, 2001** 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 587-0251 or toll-free at 984-2400 extension 70251.  

Sincerely,  

[Signature]  
LINNEL T. NISHIOKA  
Deputy Director  

Cl:ky  
c: Wailani Drilling Company
1. **Pump Tests Check** (special condition of PIP? Yes/No) Glenn Bauer (initial if yes)

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

   Glenn Bauer: [Signature]

   Already analyzed

   **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)

   **Yes** **No** **If no, describe deficiency**

   - data complete followed WCPI Stds
   - well database updated

   [Signature]

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

4. Roy [Signature] (initial) check

5. Susan Subia [Signature] (initial) finalize

6. Linnel [Signature] (initial) signature

7. [Charley/Lenore/Ryan File]
Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

- PIP WCR II for Well # 5517-02 Manawai-Papanui
- PIP WCR II for Well # 5517-02 Pauwela-Lewis #1
- PIP WCR II for Well # 5517-02 Pauwela-Lewis #2
- Map for Lahaina Park Well Application

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at 808-572-0925.

From: Bill Steele

FYI

The matter which triggered the paragraph suggesting that your signature might not be accepted is the installation of pumps without yet receiving a permit – the misunderstanding concerning the meaning or interpretation of checking off the pump installation portion of the application at the same time as the well construction and the ability to install a permanent pump if <70 gpm but not >70gpm, and your contention that the pumps are inoperable until you hook up the proper electrical controller. This matter needs to go before the Commission, and our recommendation will take into account your misunderstanding.

Staff disagrees with your approach to installing the pumps, and recommends that you use a separate in-line variable pump for testing purposes, not installing the permanent pump until the permit is issued. I believe you argue that you are saving the customer money by your approach, and I would recommend in that event that you make your pitch to the Commission when we take the matter up with them.

Meanwhile, I am pursuing your request to have a clearance letter written to Maui Parks concerning our letter on the Lahaina Park Well. If the only matter triggering the paragraph is unfinished because we have not yet submitted the matter for Commission consideration, this does not seem fair to me, and I prefer an alternative, such as an agreement to use a test pump until the matter can be resolved. What are your thoughts?
State of Hawaiʻi  
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 587-0226. For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrmm/

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* Pump rated @ 40 gpm @ 899 ft head, actual gpm was 38 gpm open pipe set @ 535 ft

Pump Installation Contractor (print) Mike Robertson  C-57/C-57a/A Lic. No. 20115  
Signature Mike Robertson  Date 7/24/01

Permittee (print) PAULA FAGERHOLM  
Signature Paula Fagerholm  Date July 14, 2001
9. AS-BUILT PUMP SECTION (Please attach as-built if different from diagram provided below)

Bench mark elevation surveyed to nearest 0.01 ft. = 53.5 ft. mean sea level

Elevation of top of chase tube = 53.5 ft. mean sea level

Pump intake depth = 53.5 ft. (referenced to bench mark)

Chase tube depth = 53.4 ft. (referenced to bench mark)

If airline installed, bottom of airline elevation = N/A ft. mean sea level
July 12, 2001

Mr. Jeff and Ms. Paula Fagerholm
Papanui LLC
3120 Ua Noe Place
Ha’iku, Maui, HI 96708

Dear Mr. & Ms Fagerholm:

Pump Installation Permit
Manawal-Papanui Well (Well No. 5517-02)

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 - Parts I & II as complete.

If you have any questions, please call Charley Ice of the Commission staff at 587-0251 or toll-free 984-2400 extension 70251.

Aloha,

GILBERT S. COLOMA-AGARAN
Chairperson

Enclosure

c. Wailani Drilling Company
PUMP INSTALLATION PERMIT
Manawai-Papanui Well, Well No. 5517-

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-Papanui Well (Well No. 5517-02) at Manawai, Makawao, Maui, TMK 2-8-3:59, 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 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 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: Paula Hagerholm Date: 7-14-2001
Printed Name: PAULA HAGERHOLM Firm or Title: Manawai LLC
Installer's Signature: Mike Robartes Date: 7/24/01
Printed Name: MIKE ROBARTES C-57, C-57a, or A License #: 2015 Firm or Title: Wailani Drilling

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 Company
MEMO and ROUTE SLIP

WCR 1 Check for Well No. 5517-02 (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:**  
   | ☐ | ☐ | ← 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>
<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  

---  

4. Roy  
5. Kathy (initial) finalize  
6. Linnel (initial) signature  
7. Charley/Lenore/Ryan File

7/19/01

---

Miken - I think you had questioned the benchmark elevation. Here is a corrected elevation.
July 24, 2001

Jeff and Paula Fagerholm
Papanui LLC
3120 Ua Noe Place
Haiku, HI 96708

Dear Mr. and Ms. Fagerholm:

Well Completion Report for Well No. 5517-02

We received a corrected Well Completion Report Part I for the Manawai-Papanui (Well No. 5517-02) on July 17, 2001 and acknowledge that it is complete.

Our records show that we have already issued a pump installation permit to you on July 12, 2001. Please do not forget to sign and return the permit prior to the start of any work.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400, extension 70251.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

LN:ky
c. Wailani Drilling
Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

☑ Corrected copy of WCR I page 2 (elevation)

Please confirm receipt by checking off the enclosed items and faxing a copy of this memo to me at 808-572-0925.

From: Bill Steele

Fax sent 7/10/01
**State of Hawaii**
**Commission on Water Resource Management**
**Department of Land and Natural Resources**

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

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 587-0225. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/dlnr/cwmri](http://www.state.hi.us/dlnr/cwmri/).

<table>
<thead>
<tr>
<th>1. State Well No.:</th>
<th>5517-02</th>
<th>Well Name:</th>
<th>MANAWAI-PAKANUI</th>
<th>Island:</th>
<th>MW</th>
<th>Address:</th>
<th>3120 WA NOE PLACE, WAILUKU, HI</th>
<th>Tax Map Key:</th>
<th>2-8-359</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Address:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Drilling Company:</td>
<td>WAILANI DRILLING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Drilling method used during construction:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Date Well Construction (drilled,cased,grouted) completed:</td>
<td>3/8/01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. Was the subject well cored?</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Initial water-level encountered</td>
<td>173</td>
<td>ft. below ground</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Step-Drawdown Test completed?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Constant Rate Aquifer Test completed?</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Water-level:</td>
<td>6.15</td>
<td>ft. above msl</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11. Chloride:</td>
<td>400 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Temperature:</td>
<td>69°F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

13. Fill in the as-built section on the other side of this sheet.
15. 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.).
16. Remarks:

---

**Licensed Driller (print)** Mike Robertson
Signature Mike Robertson
Date 6/19/01

**Surveyor (print)** Bruce R. Lee
Signature
Date 6/22/01

**Permittee (print)** Jeff Fagerholm
Signature
Date 6/19/01
13. AS-BUILT WELL SECTION (Please attach as-built if different from diagram provided below)

Minimum of 2' Radius & 4" Thick Concrete Pad
Ground elevation: 53.5 ft., msl*

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

Elevation at top of casing: 53.5 ft., msl*
(to nearest 0.01 ft.)

Cement Grout: 400 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:
Material: N/A ft.
- Crushed Basalt
- Round Gravel

Water Level Elevation: 6.15 ft., msl*

Hole Diameter: 18.25 in.

Solid Casing: (≥ 90% x (Ground Elev.-Water Level Elev))
Length: 536 ft.
Nominal Diameter: 6 in.
Wall Thickness: 2.50 in.
Bottom Elevation: -27.15 ft., msl

Open Casing: Perforated Screen
Length: 20 ft.
Nominal Diameter: 6 in.
Wall Thickness: 2.50 in.
Bottom Elevation: -27.15 ft., msl

Open Hole:
Length: N/A ft.
Diameter: N/A ft.
Bottom Elevation: N/A ft., msl

*msl = mean sea level

Solid Casing Material:
Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 8 API Spec. 5L 8 ASTM A53 8 ASTM A139
And compliant with (check one or more): 8 ASTM A242 8 Type E 8 Type S 8 Grade B 8 Other
Stainless Steel: (check one):
8 ASTM A409 (production wells) 8 ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 8 Schedule 40 8 Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): 8 Schedule 40 8 Schedule 80 8 Schedule 120
Thermoset Plastic: (check one)
8 Filament Wound Resin Pipe conforming to ASTM D2996
8 Centrifugally Cast Resin Pipe conforming to ASTM D2997
8 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
8 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C960
8 PTFE Fluorocarbon Tubing conforming to ASTM D3296
8 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 8 API Spec. 5L 8 ASTM A53 8 ASTM A139
And compliant with (check one or more): 8 ASTM A242 8 Type E 8 Type S 8 Grade B 8 Other
Stainless Steel: (check one):
8 ASTM A409 (production wells) 8 ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 8 Schedule 40 8 Schedule 80
PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): 8 Schedule 40 8 Schedule 80 8 Schedule 120
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8 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C960
8 PTFE Fluorocarbon Tubing conforming to ASTM D3296
8 FEP Fluorocarbon Tubing conforming to ASTM D3296
Mr. Jeff and Ms. Paula Fagerholm  
Papanui LLC  
3120 Ua Noe Place  
Ha'iku, Maui, HI 96708  

Dear Mr. & Ms Fagerholm:  

Pump Installation Permit  
Manawai-Papanui Well (Well No. 5517-02)  

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 - Parts I & II as complete.  

If you have any questions, please call Charley Ice of the Commission staff at 587-0251 or toll-free 984-2400 extension 70251.  

Aloha,  

GILBERT S. COLOMA-AGARAN  
Chairperson  

Enclosure  
c. Wailani Drilling Company
PUMP INSTALLATION PERMIT

Hawaii-Papanui Well, Well No. 5517

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-Papanui Well (Well No. 5517-02) at Manawai, Makawao, Maui, TMK 2-B-3:59, 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 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 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
### Pump Tests Check

<table>
<thead>
<tr>
<th>Step-Drawdown Test</th>
<th>Glenn Bauer</th>
<th>Initial</th>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Followed WCPI Stds</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis attached</td>
<td>❌</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed pump cap o.k.</td>
<td>❌</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aquifer Pump Test</th>
<th>Followed WCPI Stds</th>
<th>✔️</th>
<th>❌</th>
</tr>
</thead>
<tbody>
<tr>
<td>T &amp; S analysis attached</td>
<td>❌</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Well Interference</th>
<th>Estimated Steady-State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawdown at 1-mile radius is</td>
<td>✔️</td>
</tr>
<tr>
<td>Analysis attached</td>
<td>❌</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stream Surface Water Impacted</th>
<th>If yes, identify most probable stream</th>
</tr>
</thead>
</table>

### Construction Check

<table>
<thead>
<tr>
<th>Mitch Ohye</th>
<th>Initial</th>
<th>7-11-01</th>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data complete</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followed WCPI Stds</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well database updated</td>
<td>❌</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 ✔️

4. **Roy** (initial) check
5. **Kathy** (initial) finalize
6. **Linnel** (initial) signature
7. **Charley/Lenore/Ryan** File

---

**Notes:**
- If yes, identify most probable stream.
- Stream surface water impacted.
- Water quality impacted?
- Water quality not measurable.
- Data complete.
- Analysis attached.
# WELL COMPLETION REPORT - PART I

**Well Construction**

**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 587-0225. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/clmr/cwm/](http://www.state.hi.us/clmr/cwm/).

## 1. State Well No.: S517-02

**Well Name:** MANAWAI-PAPANUI  
**Island:** MAUI

## 2. Address: 3120 UA NOE PLACE, WAILUKU, HI  
**Tax Map Key:** 2-8-3:59

## 3. Drilling Company: WAILANI DRILLING

## 4. Drilling method used during construction: ☑ Rotary ☐ Percussion ☐ Other (describe)

## 5. Date Well Construction (drilled, cased, grouted) completed: 3/8/01  
**Attach Driller's Log (7/26/99 DL Form)**

*In addition to the driller's log, if a geologic log was prepared, please submit with this form.*

## 6. Was the subject well cored? ☑ Yes ☐ No

## 7. Initial water-level encountered: 173 ft. below ground  
**Date and time of measurement:** 2/26/01  
**month/day/year**

## 8. Step-Drawdown Test completed? ☑ Yes ☐ No  
**Attach Step-Drawdown Test form (12/17/97 SDPTD Form)**

## 9. Constant Rate Aquifer Test completed? ☑ Yes ☐ No  
**Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)**

**Parameters prior to pump test:**

## 10. Water-level: 6.15 ft. above msl  
**Date and time of measurement:** 3/9/01  
**month/day/year**

## 11. Chloride: 40 ppm  
**Date and time of sampling:** 3/9/01  
**month/day/year**

## 12. Temperature: 69 °F  
**Date and time of measurement:** 3/9/01  
**month/day/year**

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


## 15. 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.)

## 16. Remarks:

---

**Licensed Driller**  
**Name:** Mike Robertson  
**C-57 Lic. No.:** 20115  
**Signature:** Mike Robertson  
**Date:** 6/9/01

**Surveyor**  
**Name:** Bruce R. Lee  
**L.P.L.S. Lic. No.:** 5983-L3  
**Signature:** Bruce R. Lee  
**Date:** 6/22/01

**Permittee**  
**Name:** Jeff Fagerholm  
**Signature:** Jeff Fagerholm  
**Date:** 6/9/01

---

WCR1 Form 9/29/00
Solid Casing Material:
Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 0 API Spec. 5L 0 ASTM A53 0 ASTM A139
And compliant with (check one or more): 0 ASTM A242 0 Type E 0 Type S 0 Grade B 0 Other
Stainless Steel: (check one): 0 ASTM A409 (production wells) 0 ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 0 Schedule 40 0 Schedule 80
PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one): 0 Schedule 40 0 Schedule 80 0 Schedule 120
Thermoset Plastic: (check one) 0 Filament Wound Resin Pipe conforming to ASTM D2996
0 Centrifugally Cast Resin Pipe conforming to ASTM D2997
0 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
0 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
0 PTFE Fluorocarbon Tubing conforming to ASTM D3296
0 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant with (check one or more): ANSI/AWWA C200 0 API Spec. 5L 0 ASTM A53 0 ASTM A139
And compliant with (check one or more): 0 ASTM A242 0 Type E 0 Type S 0 Grade B 0 Other
Stainless Steel: (check one): 0 ASTM A409 (production wells) 0 ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 0 Schedule 40 0 Schedule 80
PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one): 0 Schedule 40 0 Schedule 80 0 Schedule 120
Thermoset Plastic: (check one) 0 Filament Wound Resin Pipe conforming to ASTM D2996
0 Centrifugally Cast Resin Pipe conforming to ASTM D2997
0 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
0 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
0 PTFE Fluorocarbon Tubing conforming to ASTM D3296
0 FEP Fluorocarbon Tubing conforming to ASTM D3296

Please refer to the HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS to ensure that your as-built is in compliance with applicable standards.
WELL NUMBER: 55-17-02

DRILLER'S LOG (712699 Dr. Form)

<table>
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<th>Rock Description, Water Level, etc.</th>
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<th>Depths (ft.)</th>
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ELEVATION CERTIFICATE

May 18, 2001

2000-4868

WAILANI DRILLING COMPANY
655 Kulike Road
Haiku, Maui, Hawaii 96708

To Whom It May Concern:

On April 9, 2001, the well located on Parcel 59 of Tax Map Key: (2) 2-8-003, being Lot 5-A-3-B as shown on Map 28 of Land Court Application 960 — Section “A”, was surveyed by surveyors under my instructions and the elevation at the top of the well casing was determined to be 535.0 Feet Mean Sea Level.

NEWCOMER-LEE
LAND SURVEYORS, INC.
A Hawaii Corporation

BRUCE R. LEE, President
Licensed Professional Land Surveyor Certification No. 5983-LS
### CONSTANT-RATE PUMP TEST DATA

<table>
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<th>Pumped Well No.</th>
<th>Observation well no.</th>
<th>Distance between Obs. &amp; Pumped Well</th>
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<th>ft. msl</th>
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**START TEST** Date: **3/12/01** Time of day: **7:00 AM**

**Flow Meter Reading Start: ** - 0 - **gals**

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<th>Actual elapsed time (min)</th>
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<th>Drawdown (unadjusted to nearest 0.1 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (unmhos)</th>
<th>Cl⁻ (mg/l)</th>
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Data in this table is for:

- □ Pumped Well
- □ Observation Well
- □ Reference Point

**Remarks:** Start Test
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<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 (gpm)</th>
<th>EC (ppm)</th>
<th>Cl⁻ (mg/l)</th>
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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: 25,520 gals

¹ Chloride sampling required
² Use same ending drawdown figure as start for recovery
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<th>Actual elapsed time (min)</th>
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<th>Recovery Drawdown (unadjusted to nearest 0.1 ft)</th>
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<th>EC (mhos)</th>
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**END TEST**  Date: **3/12/01**  Time of day: **3:00 PM**

**ADDITIONAL REMARKS:**

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

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.
To: Charlie Ice  
For: Water Resource Commission

Dear Charlie: Notice to start work on:  
Well Name: Manawai-Papanui  
Well #: 5517-02

Owner also wants to take advantage of the declaratory ruling # DEC-ADM98-G5 because proposed pumps are rated less than 70 g.p.m.

Thank You;  
Mike Robertson  
dba Wailani Drilling Inc.

Certified By The National Groundwater Association
Wailani Drilling Company
655 Kulike Road  Haiku, Maui, Hawaii 96708
Ph. 808 572-2673
Fax 572-0925  Cellular 264 7079

25/2001 Lic. # C20115

Manawai-Papanui Well
State Well- # 5517-02
Elevation @ Slab is 535 ft. above m.s.l.

1" flex conduit to 15 hp controller
6 in. well seal @ 535 ft. msl

635 ft. msl @ Benchmark
2 in. Water Meter


Top Soil-0.22 ft.

2' schd 40 galvanized column pipe
Manawai-Papanui Well
State Well- # 5517-02
Elevation @ Slab is 535 ft. above m.s.l.

Static water level @ 528.85 ft.  Total Well Depth 558 ft.
initial chlorides 40 ppm

Pump tested at 55 gpm for 8 hours with maximum drawdown of .67 ft.
and no change in chlorides from 40 ppm.
ROUTE SLIP FOR NEW APPLICATIONS

FROM: CHARLEY

DATE: __________

SUSPENSE DATE: __________

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

INIT: LUM, A.
NAKAMA, L.
NAKANO, D.
NISHIOKA, L.
OHYE, M.
SAKODE, E.
SUBIA, S.
SWANSON, S.
UYENO, D.
YODA, K.

FOR: 3 Approval
3 Signature
4 Information

PLEASE:
1 See Me
2 Review & Comment
3 Take Action
4 Type Final, label new file folder
5 File
6 Xerox ______ copies

WELL NUMBER 5517-02

WELL NAME

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

☐ CLEAR NOW, I think

☐ But have to go to CWRM (see wellcheck)

Check what Mike once or too before accepting. I thought our policy was to accept with caveat that driller's signature may not be accepted or permit.

From whom? We do have loose ends at the moment, but not from Wailau's end.?

Yeah... so where's the FAUHOLMES that we might not accept like a driller? O.K.

Clear now, I think.

I must have done this application acknowledgement 12 times!

Finally sorted out most of the probs.

Charley, we go! Well Permit Route Sec shortly

(Continued on next page)
Mr. Jeff and Ms. Paula Fagerholm
Papanui LLC
3120 Ua Noe Place
Haiku, HI 96708

Dear Mr. and Ms. Fagerholm:

Well Construction Permit
Manawai-Papanui Well (Well No. 5517-02)

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.

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 587-0251 or toll-free at 984-2400, extension 70251.

Aloha,

![Signature]

TIMOTHY E. JOHNS
Chairperson

Enclosures

c: Wailani Drilling Company
WELL CONSTRUCTION PERMIT

Manawai-Papanui Well, Well No. 5517-02

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-Papanui Well (Well No. 5517-02) at Manawai, Makawao, Maui, TMK 2-8-3:59, 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 than 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: October 27, 2000
Expiration Date: October 27, 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
C: USGS
   Department of Health! Safe Drinking Water, Wastewater, and Clean Water Branches
   Maui Department of Water Supply
   Wailani Drilling Company
WELL CONSTRUCTION PERMIT
Manawal-Papanal Well, Well No. 5517-02

In accordance with the Department of Land and Natural Resources, Commission on Water Resources Management's Administrative Rules, Section 13-198, entitled "Water Use, Wells, and Surface Diversion Works", this document permits the construction and drilling of Manawal-Papanal Well (Well No. 5517-02) at Manawal, Makawao, Maui, T-1K 2-6-3S, subject to the Hawaii Well Construction & Pump Installation Standards (HWS) which include all state and federal regulations.

1. The Commissioner of the Commission on Water Resource Management (Commission), P.O. Box 517, Honolulu, HI 96806, shall be notified in writing, at least two (2) weeks before any work authorized by this permit commences, and such work shall be subject to inspection. The permittee, well operator, and/or well owner shall cooperate with the Commission and conduct a pumping test in accordance with the standards to test the adequacy of the well (pumping worksheet is attached). The permittee, well operator, and/or well owner shall submit the results of the test as required by law. The well owner shall provide any and all other information required by the Commission.

2. The well construction permit shall be issued for the construction and testing of the well only. A minimum 8-inch diameter monitor well shall be permanently installed, in a manner acceptable to the Commission, to accurately monitor water levels. The permittee, well operator, and/or well owner shall report the location of the monitor well within thirty (30) days of installation to the Commission.

3. In the event that the well may not exceed one foot (14 of 14 feet) of static water level, unless otherwise authorized by the Commission.

4. The permittee, well operator, and/or well owner shall keep records of all operations conducted, including the date, time, depth, and quantity of water pumped from the well.

5. The permittee, well operator, and/or well owner shall comply with any other rules and regulations of the Commission.

6. The permittee, well operator, and/or well owner shall not use any water exceeding the maximum allowed by the permit. The permittee, well operator, and/or well owner shall not exceed the quantity of water allowed by the permit. The permittee, well operator, and/or well owner shall not exceed the quantity of water allowed by the permit.

7. The permittee, well operator, and/or well owner shall not use any water exceeding the maximum allowed by the permit. The permittee, well operator, and/or well owner shall not exceed the quantity of water allowed by the permit. The permittee, well operator, and/or well owner shall not exceed the quantity of water allowed by the permit.

8. The permittee, well operator, and/or well owner shall comply with applicable water rights, and ordinances; non-compliance may be grounds for revocation of the permit.

9. The permittee, well operator, and/or well owner shall comply with applicable water rights, and ordinances; non-compliance may be grounds for revocation of the permit.

10. The permittee, well operator, and/or well owner shall comply with applicable water rights, and ordinances; non-compliance may be grounds for revocation of the permit.

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12. The permittee, well operator, and/or well owner shall comply with applicable water rights, and ordinances; non-compliance may be grounds for revocation of the permit.

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

Date of Approval: October 27, 2000
Expiration Date: October 27, 2002

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

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.
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/Pump Installation Permit Application Manawai-Papanui Well (Well No. 5517-02)

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 October 20, 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 587-0251.

CI:ss Attachment(s)

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 (information attached).

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

[ ] No comments/objections

Contact Person: William Wong Phone: 586-4258

Signed: Bill Wong Date: 10/19/2000
TO: Dean Y. Uchida, Administrator
Land Division

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

SUBJECT: Well Construction/Pump Installation Permit App:
Manawai-Papanui Well (Well No. 5517-02)

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

We would appreciate your comments on the captioned program, plans, and objectives specific to your division. Please cover memo form by October 20, 2000.

Please find the attached maps to locate the proposed well, construct your comments or request additional information, or please contact Charley Ice of the Commission staff at 587-0251.

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: _______________
Mr. Jeff and Ms. Paula Fagerholm  
Papanui LLC  
3120 Ua Noe Place  
Wailuku, HI 96708

Dear Mr. Jeff and Ms. Fagerholm:

Well Construction/Pump Installation Permit Application for Well No. 5517-02

We acknowledge receipt, on September 8, 2000, of your completed Well Construction/Pump Installation permit application and filing fee for the Manawai-Papanui Well (Well No. 5517-02). 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 completed 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 587-0251 or toll-free at 984-2400, 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/Pump Installation Permit Application
         Manawai-Papanui Well (Well No. 5517-02)

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 October 20, 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 587-0251.

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 (information attached).

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

No comments/objections
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-Papanui Well (Well No. 5517-02)

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 application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by October 20, 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 587-0251.

RESPONSE:

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

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

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

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

[ ] No objections

[ ] Other comments:

Contact Person: ___________________________ Phone: __________

Signed: ___________________________ Date: __________
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<td>TOTAL 25.00</td>
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**REMARKS:**

LINE (1) Well No. 5517-02

LINE (2)

LINE (3)

LINE (4)
Wailani Drilling Company

For: Charlie Ice
From: Mike Robertson
Re: Papanui

On the Joachim well I hit water bearing. When I checked the recovery rate it was.
I drilled only an additional 20 ft to porous rock that would yield the water needed. This is
only an area of permeable rock 20 ft.
If I had stopped when I first hit the palochoke I don't believe
The well would yield sufficient water.
The Papanui well may not be exactly the same but should be similar.

Thank you:
Mike Robertson

The Joachim well was drilled and completed on a flat rate of $30,000.00 including all equipment and everything.
It took 1 month to complete the project.
I was paid no more for 530 ft as I would have been
paid for 530 ft.
My main concern was to get good water for the customer.
Also in wells with unstable formations such as this one,
its not uncommon for 20 ft or more to heave back or
fall back in after the tools are removed.

Mike
Well No. 5517-02
Well Name Manawai-Papanui
Applicant Papanui LLC

Date of Review 9/18/00
Reviewer RRI

SECTION 1: WELL LOCATION INFORMATION

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

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<th>38 ft., m.s.l.</th>
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<td>Length</td>
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<td>Rock Packing</td>
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</tr>
<tr>
<td>Total Depth</td>
<td>193 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Head</td>
<td>123 ft.</td>
<td></td>
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<tr>
<td>Calculated Aquifer Thickness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>County Water Supply (Y/N ?)</td>
<td>No</td>
<td></td>
<td></td>
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</tbody>
</table>

SECTION 3: CHECKLIST (values to check are shaded)

<table>
<thead>
<tr>
<th>Well Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Thickness of Aquifer</td>
</tr>
<tr>
<td>1/4 Aquifer Thickness</td>
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<tr>
<td>Depth of Well below Sea Level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Well Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Wall Thickness Material</td>
</tr>
<tr>
<td>County or Non-County</td>
</tr>
<tr>
<td>Minimum Thickness per standards</td>
</tr>
<tr>
<td>Wall Thickness Provided</td>
</tr>
<tr>
<td>Minimum Length of Solid Casing</td>
</tr>
<tr>
<td>90% of ground to top of aquifer</td>
</tr>
<tr>
<td>Length of solid casing Provided</td>
</tr>
<tr>
<td>Casing Material</td>
</tr>
<tr>
<td>Annular Space</td>
</tr>
<tr>
<td>Depth of Grouting</td>
</tr>
<tr>
<td>Calculated Depth of Grouting</td>
</tr>
<tr>
<td>Thickness of Annular Space</td>
</tr>
</tbody>
</table>

Wells 5516-01, 02 went 135/123 ft. deep, got very meager results.
Well 5517-01 went 570 ft., got 3 ft head
same situation w/ Kula confining member; 5517-01 did not encounter water until punching through "blue rock"

Is this going to be a regular trip to CVRM?
Looking at Papanui LLC application (S517-02)...
I noticed the Joachim's well nearby reached water at -528 from an elevation of 531. Why did the well go to -570? (40 more ft)
Why do you expect to need to feel below sea level at Papanui?
<table>
<thead>
<tr>
<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>LUM, A.</td>
<td></td>
<td>Approval</td>
<td>See Me</td>
</tr>
<tr>
<td>CHING, F.</td>
<td></td>
<td>NAKAMA, L.</td>
<td></td>
<td>Signature</td>
<td>Review &amp; Comment</td>
</tr>
<tr>
<td>DANBARA, S.</td>
<td></td>
<td>NAKANO, D.</td>
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<td>Information</td>
<td>Take Action</td>
</tr>
<tr>
<td>FUJI, N.</td>
<td></td>
<td>NISHIOKA, L.</td>
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<td>Type Draft</td>
</tr>
<tr>
<td>HARDY, R.</td>
<td></td>
<td>OHYE, M.</td>
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<td></td>
<td>Type Final</td>
</tr>
<tr>
<td>HIGA, D.</td>
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<td>SAKODA, E.</td>
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<td>File</td>
</tr>
<tr>
<td>HIRANO, E.</td>
<td></td>
<td>SUBIA, S.</td>
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<td>Xerox ___ copies</td>
</tr>
<tr>
<td>ICE, C.</td>
<td></td>
<td>SWANSON, S.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IMATA, R.</td>
<td></td>
<td>UYENO, D.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JINNAI, R.</td>
<td></td>
<td>YODA, K.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>KUNIMURA, I.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FROM:** LINNEL  **DATE:** AUG 16 2000  **SUSPENSE DATE**

**PLEASE:**

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

**No check arr 18 Sep 00**
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT
of Well Construction and/or Pump Installation

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 521, Honolulu, Hawaii 96809. Application must be accompanied by 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 587-6225. For your 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: Same as below  Contact Person: ___________________________________ Phone: _____________________________
   (b) LAND OWNER: ________________________________________________________________________________
      Mailing Address: __________________________________________ E-mail: _____________________________
      Fax: __________________________________________
      Contact Person: ______________________ Phone: _____________________________
      (c) CONTRACTOR: ________________________________________________________________________________
         Mailing Address: __________________________________________ E-mail: _____________________________
         Fax: __________________________________________

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

2. WELL NAME: _________________________________________________ Island: _____________
   Address: ___________________________________________ Tax Map Key: _____________
   ___________________________________________ Zone: ________ Sec: ________ Plat: ________

   Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1:24,000) and include the name of the quad map, and (b) a legal tax property map, showing well location referenced to established property boundaries.

3. PROPOSED WORK: (check all that apply)
   [ ] Construct New Well [ ] Install New Pump*
   [ ] Modify Existing Well* [ ] Modify Pump*
   [ ] Abandon/Seal*

   *State Well No.: _____________ (if unknown, please call Commission at 587-6225)

4. CONSTRUCTION: [ ] Drilled [ ] Dug [ ] Shaft [ ] Tunnel
   Is this well part of a battery of wells? [ ] Yes [ ] No (please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: _______ gallons per minute
   Pump Type (Check one):
   [ ] Deep Well Turbine [ ] Rotary [ ] Propeller
   [ ] Submersible [ ] Rotary-Displacement [ ] Reciprocating
   [ ] Centrifugal [ ] Rotary-Gear [ ] Impulse

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

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: ______________________ gallons per day
   (b) METHOD OF FLOW MEASUREMENT: [ ] Flowmeter [ ] Open-pipe [ ] Weir [ ] Office [ ] Other (explain): __________________________________________________________

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: [ ] CDUP [ ] SMAP [ ] EIS [ ] EA [ ] None [ ] Other (explain):

9. REMARKS, EXPLANATIONS:
   (If more space is needed, please attach additional sheet)

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 60 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: ______________________ Landowner: ______________________ Contractor: ______________________
Signature: ______________________ Signature: ______________________ Signature: ______________________
Date: _____________ Date: _____________ Date: _____________

For official use only
Altitude: ______________________ Aquifer System No.: ______________________
Longitude: ______________________ State Well No.: ______________________

WCPIPA Form 5/2000
10. PROPOSED WELL SECTION
(please attach schematic if different from diagram provided below)

For non-salt water Basalt 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 Elev.)

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

**Solid Casing Material:**
- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: (check one): ASTM A409 (production wells), ASTM A312 (monitor wells)
- Thermoset Plastic: (check one): Filament Wound Resin Pipe conforming to ASTM D2996
- 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
- Stainless Steel: (check one): ASTM A409 (production wells), ASTM A312 (monitor wells)
- PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): Schedule 40, Schedule 80
- 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

Solid Casing: (> 90% x (Ground Elev.-Water Level Elev.))
Total Length: 570 ft.
Nominal Diameter: 6 in.
Wall Thickness: 0.25 in.
Bottom Elevation: -40 ft., msl*

Open Casing: Perforated Screen
Total Length: 20 ft.
Nominal Diameter: 6 in.
Wall Thickness: 0.25 in.
Bottom Elevation: -60 ft., msl*

Note: Neither bentonite nor mud should be used in saturated zone during drilling.

* 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/Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.