Return Receipt Fax Memo

For: Charlie Ice

Charlie. Enclosed are the following items:

✓ Well Construction Permit for Honopou-Bathelt (signed)
✓ PIP for Kamaole-Maui Vista (signed)
✓ PIP for Waipi'o-Hager already in file

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

From: Mike Robertson

Thank you:
Mike Robertson
Mr. Sam Hagar  
P.O. Box 5395  
Novato, California 94948

Dear Mr. Hagar:

After-the-Fact Pump Installation Permit  
Waipi'o-Hagar Well (Well No. 5413-09)

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) which authorizes 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 10:

Special Conditions

1. None

The well owner is responsible for all conditions of the permit. This includes ensuring that the pump installation contractor, or other party who installs the pump, submits a completed Part II of the Well Completion Report form (enclosed) within sixty (60) days after the pump installation 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.

To validate your pump installation permit, 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. 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.

If you have any questions, please call the Commission staff at (808) 587-0251.

Aloha,

Enclosures

c: Wailani Drilling Company
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 Waipi'o-Hagar Well (Well No. 5413-09) at Waipi'o, Makawao, Maui, TMK 2-9-5:50, 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 20 gpm capacity, or less, pump in the well.

3. The permittee 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 is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

5. The permittee 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 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 is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97).

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 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 must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

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

Date of Approval: March 18, 1998
Expiration Date: March 18, 2000

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. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day.

Permittee’s Signature: ____________________________ Date: ____________

Printed Name: ____________________________ Firm or Title: ____________________________

Installer’s Signature: ____________________________ 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 Branches
- Maui Department of Water Supply
- Wailani Drilling Company
Mr. Mike Robertson  
Wailani Drilling Company  
655 Kūlīike Road  
Hāʻikū, Hawaii 96708

Dear Mr. Robertson:

After-the-Fact Approval of Pump Installation Permits

At its March 18, 1998 meeting, the Commission on Water Resource Management (Commission) approved these staff recommendations:

1. Permittees and Wailani Drilling Company are in violation of HAR §13-168-12(a) for drilling and installing pumps without valid well construction and pump installation permits. Permit transmittal letters clearly state that the permits are not valid without the signatures of both permittee and driller, and two copies are sent to provide one for return with signatures;

2. Given the good faith efforts of the driller and minimal impacts associated with small domestic wells not in water management areas, fines for these violations are waived. This is a one-time waiver; the Commission cannot be expected to waive future violations.

3. The following pump installation permits are approved:

<table>
<thead>
<tr>
<th>Well Name</th>
<th>Pump Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waipiʻo-Hagar (Well No. 5413-09)</td>
<td>20 gpm</td>
</tr>
<tr>
<td>Huelo-Hipp (Well No. 5414-01)</td>
<td>20 gpm</td>
</tr>
<tr>
<td>Papaʻula-Ruben (Well No. 5426-01)</td>
<td>50 gpm</td>
</tr>
</tbody>
</table>

4. By Declaratory Ruling, drillers may install permanent pumps of 0-70 gpm capacity prior to pump testing and issuance of the pump installation permit for combined well construction and pump installation applications not in water management areas, 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.

   We still require the signed permit documents for these wells for our files.

   If you have any questions, please call Charley Ice at 587-0251 or toll-free at 984-2400 (Maui), extension 70251.

Sincerely,

EDWIN T. SAKODA  
Acting Deputy Director

Cl:ss

c: Mr. Sam Hagar  
    Mr. Gary Hipp  
    Mr. Michael Ruben
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
March 18, 1998
Honolulu, Oahu

APPLICANT AFTER-THE-FACT PUMP INSTALLATION PERMITS

<table>
<thead>
<tr>
<th>Applicants</th>
<th>Well Name (Well No.)</th>
<th>TMK</th>
<th>Capacity</th>
<th>Aquifer System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sam Hagar</td>
<td>Waipi'o-Hagar (5413-09)</td>
<td>2-9-5:50</td>
<td>20 gpm</td>
<td>Honopou</td>
</tr>
<tr>
<td>P.O. Box 5395</td>
<td>Novato, CA 94948</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gary Hipp</td>
<td>Huelo-Hipp (5414-01)</td>
<td>2-9-4:14</td>
<td>20 gpm</td>
<td>Honopou</td>
</tr>
<tr>
<td>SR1 Box 162</td>
<td>Ha'ikū, HI 96708</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Michael Ruben</td>
<td>Papa'ula-Ruben (5426-01)</td>
<td>3-8-2:26</td>
<td>50 gpm</td>
<td>Kahului</td>
</tr>
<tr>
<td>314 Pa'ani Pl.</td>
<td>Pa'ia, HI 96779</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Well Driller: Mike Robertson, dba Waiani Drilling, Inc.
655 Külike Rd., Ha'ikū, Maui

LOCATION: See Exhibit 1

BACKGROUND:

October 27, 1997 The well driller filed Well Completion Reports, Part 1 (Well Construction) with pump test results for the three wells indicated above, as is required to support action approving pump installation permit applications. The reports showed that pumps were already installed, in violation of standard condition #2 which clearly states that no permanent pump may be installed prior to issuance of the pump installation permit.

November 25, 1997 Staff review of the Well Completion Reports indicated that the accuracy of water-level measurements was inadequate and possibly erroneous.
ANALYSIS/ISSUES:

The Administrative Rules (HAR § 13-168-12(a)) provides that:

"No well shall be constructed, altered, or repaired and no pump or pumping equipment shall be installed, replaced, or repaired without an appropriate permit from the Commission... The owner of a well shall make an application or cause an application to be made by the driller..."

Standard Condition #2 of a Well Construction Permit states:

"The well construction permit shall be for construction and testing of the well only... No permanent pump may be installed until a pump installation permit is approved and issued by the Commission." (see Exhibit 2)

For all wells, two copies of the permits are sent to the applicant, with instructions to sign both and return one. The transmittal letter states the owner's responsibility for all conditions and is intended to assure that the well driller is made aware of the conditions, particularly the transmittal of the required well completion report. The driller's signature is required to validate the permit. Therefore, staff makes both the applicant and the driller responsible for the terms of the well construction permit. None of the applicants nor the driller signed and returned the well construction permits identified in this submittal. Therefore, drilling was performed without a valid permit from the Commission, in violation of HAR 13-168-12(a).

Communications Experience

Despite the apparently clear language of these permits, the failure of these applicants to comply with several permit conditions has been common. The experience with this particular driller has been instructive. In frequent telephone conversations and subsequent performance, we have a record of the driller's good faith and conscientious efforts to follow the letter of Commission requirements and we have learned to improve the means by which we make these conditions known. To the driller's credit, he has provided the most complete and comprehensive well completion reports (WCR) that staff has reviewed.

The driller has indicated that efficient use of the drilling rig suggests very strongly that the pump should be installed while the rig is still in place. Similarly, the driller's practice has been to install the permanent pump for the purpose of conducting the pump tests, eliminating an extra step of rigging a temporary pump and also providing for a better pump test with a more controllable and quiet electric pump rather than a variable and noisy diesel-powered pump. He has requested a speedy review of pump test results to facilitate a minimal delay in final approval. His practice has been to install variable-speed electric pumps, increasing the flexibility of appropriate pumpage rates. In most cases, the pump tests do not show much, if any, drawdown, indicating that the proposed rates are appropriate.

Risk of Permit Violation

The purpose of the two-phase well construction and pump installation approval is to assure valid pump testing and acceptable well construction reporting prior to final pump installation approval. In the case of small wells with small withdrawal, the risk of overpumpage is minimal except when
several wells are in close proximity. Speedy review of pump tests while rigging equipment is still in place is one way of addressing suspect results in a timely manner, correcting misinformation, and making adjustments to the final-approved capacity while the installer is still on-site.

To further highlight the minimal impacts from smaller wells, the Well Construction and Pump Installation Standards (January 13, 1997) specify that wells with pump capacities under 70 gpm do not require step-drawdown tests but only constant-rate tests.

Given these are relatively small wells, staff is requesting a declaratory ruling that pump installations for withdrawals of 70 gpm, or less, in non-ground water management areas be allowed prior to pump testing and pump installation permit issuance, subject to removal if the testing shows that a smaller pump is required to protect neighboring wells and reduce potential upcoing at the applicant's well site. The final or permanent pump installed will then be identified on the pump installation permit.

**RECOMMENDATION:**

That the Commission:

1. Find both the applicants and the driller under this submittal in violation of HAR 13-168-12(a) for drilling and installing permanent pumps without valid well construction and pump installation permits.

2. Given the good-faith efforts of the driller, waive fines for these violations in 1.

3. Approve the pump installation permits for the following wells, subject to the standard conditions shown in Exhibit 3:
   
   - Waipi'o-Hagar (Well No. 5413-09) pump capacity: 20 gpm
   - Huelo-Hipp (Well No. 5414-01) pump capacity: 20 gpm
   - Papa'ula-Ruben (Well No. 5426-01) pump capacity: 50 gpm

4. Approve a Declaratory Ruling that permanent pump installation for combined well construction and pump installation applications for individual wells in non-groundwater management areas between 0-70 gpm capacity may be allowed prior to pump testing and pump installation permit issuance, subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upcoing at the applicant's well.

Respectfully submitted,

EDWIN T. SAKODA
Acting Deputy Director

Exhibit(s): 1 (Location Map)  
2 (Sample Well Construction Permit)  
3 (Pump Installation Permits)
STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

March 18, 1998
Honolulu, Oahu

APPLICANT AFTER-THE-FACT PUMP INSTALLATION PERMITS

Applicants: Well Name (Well No.) TMK Capacity Aquifer System

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3. Michael Ruben Papa‘ula-Ruben (5426-01) 3-8-2:26 50 gpm Kahului

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LOCATION: See Exhibit 1

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Respectfully submitted,

EDWIN T. SAKODA
Acting Deputy Director

Exhibit(s): 1 (Location Map)
2 (Sample Well Construction Permit)
3 (Pump Installation Permits)
### WCR 1 Check for Well No. 59 13-09  (survey to regulation memo)

#### 1. Pump Tests Check

**Glenn Bauer** *(initial)*

<table>
<thead>
<tr>
<th>Step-Drawdown Test:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>acceptable</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>followed WCPI Stds</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>analysis attached</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>proposed pump cap o.k.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Aquifer Pump Test:**

- acceptable [ ] [ ]
- 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>data complete</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>followed WCPI Stds</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>wellphys.dbf updated</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>welaplic.dbf updated</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Note:**

**Well Construct.  Permits:***

- **Wells** are installed
- **W.L. Locations:** are suspect

---

**Section 2.6d Minimum Spacing**

- Min. 2" all around wells.
- No less than 25 ft.
- Only 100 ft. between cond. casing.
Charlie, I got Hager signatures on corrected elevations. Carter is signing documents and a power of attorney affidavit and sending it in himself. Ruben is in Spain and will be back in 203 weeks but he signed the fax copy I sent him. Hope this clears everything up.

Well completion on Main Central Park wells coming together this week.

Thanks

Mike Robertson
**State of Hawaii**  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
Department of Land and Natural Resources

**WELL COMPLETION REPORT**

(State, Box, and Lic. No.)

(Receive Date)

(Well Completion Report)

(Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 521, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 808-684-4644 Extension 2012.)

1. State Well No.: 5413-09
2. Well Name: Wai'pio, Makawao
3. Island: Maui
4. Locale/District: Waipio, Makawao
5. Tax Map Key: 2-9-560

<table>
<thead>
<tr>
<th>PART I. WELL CONSTRUCTION REPORT</th>
<th>PART II. WELL COMPLETION REPORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Name of driller who performed work: Mike Robertson</td>
<td>8. Signature: Michael Robertson</td>
</tr>
<tr>
<td>8. Type of rig/construction: Air Rotary</td>
<td>9. Date(s) Well Construction and pump tests (if any) completed: 6/20/97</td>
</tr>
<tr>
<td>9. Date(s) Well Construction and pump tests (if any) completed: 6/20/97</td>
<td>10. GROUND ELEVATION (referenced to mean sea level, msl): 383.8 ft.</td>
</tr>
<tr>
<td>11. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)</td>
<td>12. Total depth of well below ground: 415 ft.</td>
</tr>
<tr>
<td>Depths (ft.) Rock Description, Water Level, Dates, etc.</td>
<td>13. Hole size:</td>
</tr>
<tr>
<td>0 to 10</td>
<td>Brown Clay + Boulders</td>
</tr>
<tr>
<td>10 to 70</td>
<td>Soft Blue Rock</td>
</tr>
<tr>
<td>71 to 29</td>
<td>Hard blue rock</td>
</tr>
<tr>
<td>29 to 80</td>
<td>Brown Clay + Boulders</td>
</tr>
<tr>
<td>14. Casing installed: 10/4 in. I.D. x 1.25 in. wall solid section to 160/400 ft. below ground</td>
<td></td>
</tr>
<tr>
<td>15. Annulus: Grouted from 0 ft. below ground to 160 ft. below ground</td>
<td></td>
</tr>
<tr>
<td>16. Initial water level: 383.5 ft. below ground</td>
<td></td>
</tr>
<tr>
<td>17. Initial temperature: 68°F</td>
<td></td>
</tr>
<tr>
<td>18. Initial chloride: 200 ppm</td>
<td></td>
</tr>
<tr>
<td>19. PUMPING TESTS: Reference Point (R.P.) used: Tapped casing, which elevation is 383.5 ft.</td>
<td></td>
</tr>
<tr>
<td>(a) Step-Drawdown Test Date 6/20/97</td>
<td></td>
</tr>
<tr>
<td>Start water level 383.5 ft. below R.P.</td>
<td></td>
</tr>
<tr>
<td>End water level 383.5 ft. below R.P.</td>
<td></td>
</tr>
<tr>
<td>(b) Long-term Aquifer Test Date 6/20/97</td>
<td></td>
</tr>
<tr>
<td>Start water level 383.5 ft. below R.P.</td>
<td></td>
</tr>
<tr>
<td>End water level 383.5 ft. below R.P.</td>
<td></td>
</tr>
<tr>
<td>(c) Surveyed Location</td>
<td></td>
</tr>
<tr>
<td>(d) Surveyed Elevation</td>
<td></td>
</tr>
</tbody>
</table>

20. Attach: (a) As-built drawings.  
(b) Surveyed Location  
(c) Long-Term Continuous Aquifer Pump Test Data & graphs.  
(d) Surveyed Elevation

21. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print): Michael Robertson  
Signature: Michael Robertson  
Date: 7/1/97  
C-57 Lic. No.: C-20115

Surveyor (print): Edgardo V. Valera  
Signature: Edgardo V. Valera  
Date: Sept 26, 1997  
Lic. No.: 5076

Applicant (print): Sammy Nagari  
Signature: Sammy Nagari  
Date: 10-2-97  
State of Hawaii Certificate of Acceptance

[Signatures and dates]
### PART II. (PERMANENT) PUMP INSTALLATION REPORT

22. Pump Installation Company: ________________________________

23. Name of person performing work: ________________________________

24. Date Pump Installation Completed: ________________________________

25. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.: ________________________________
   - Capacity: ________ gpm
   - Motor type, H.P., Voltage, rpm: ________________________________
   - Depth of Pump Intake Setting ________ ft. below ________, which elevation is ________ ft.
   - Depth to bottom of airline ________ ft. below ________, which elevation is ________ ft.
   - Pumping Head is ________ ft. Type of flow meter: ________ which measures in ________

26. As-built drawings attached?  Yes  No

27. Other remarks/comments: (See below)

<table>
<thead>
<tr>
<th>Water Level</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks</th>
<th>Water Level</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates (ft.)</td>
<td></td>
<td></td>
<td>Dates (ft.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128 to 132</td>
<td>Soft Tan Rock</td>
<td></td>
<td>261 to 270</td>
<td>Soft Bluerock</td>
<td></td>
</tr>
<tr>
<td>132 to 145</td>
<td>Soft Bluerock</td>
<td></td>
<td>271 to 291</td>
<td>Hard Bluerock</td>
<td></td>
</tr>
<tr>
<td>145 to 199</td>
<td>Hard Bluerock</td>
<td></td>
<td>291 to 390</td>
<td>Alternating Soft &amp; Hard Bluerock</td>
<td></td>
</tr>
<tr>
<td>200 to 209</td>
<td>Soft Bluerock</td>
<td></td>
<td>400 to 415</td>
<td>Soft Water Bearing</td>
<td></td>
</tr>
<tr>
<td>209 to 230</td>
<td>Hard Bluerock</td>
<td></td>
<td>420 to 425</td>
<td>Soft Water Bearing</td>
<td></td>
</tr>
<tr>
<td>230 to 256</td>
<td>Dry Lava Tube Ironton Sand</td>
<td></td>
<td>430 to 435</td>
<td>Soft Water Bearing</td>
<td></td>
</tr>
<tr>
<td>256 to 260</td>
<td>Dry Lava Tube Ironton Sand</td>
<td></td>
<td>440 to 445</td>
<td>Soft Water Bearing</td>
<td></td>
</tr>
</tbody>
</table>

19. & 25. Remarks: Well is located approx. 800’ from ocean and water level appears to be affected by the rise and fall of the tides.

Well No. 5413-09 Waipio-Hagar
Hagar Well Log

Wailani Drilling Company

Mike Robertson 655 Kukile Road Haiku, Maui, Hawaii 96708
Ph. 808-572-2673 Fax 572-0925 Cellular 283-8481

Waipio-Hagar State Well-#5413-09 (Elevation 381.86 ft. m.s.l.)

Oc. # C20115

Well Head Elevation 383.5

Depth-ft.

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

6 in well seal on 6 in. Tee

4x3x4" concrete slab

brown clay and boulders

soft blue rock

brown clay and boulders

soft blue rock

soft basalt

Dry tube - lost return

soft basalt

hard blue rock

soft basalt

hard blue rock

Static Water Level = 383.5 ft.

Drawdown = 3-1/2 inches

Sub-Hard Basalt - Hf Water 400'

Soft (Water Bearing)

Total Well Depth = 415 ft.

*Note: not drawn to scale
Mr. Sam Hagar  
P.O. Box 5395  
Novato, CA  94948

Dear Mr. Hagar:

Well Completion Report for Well No. 5413-09

We have received your Well Completion Report Part I & II for the Waipi'o-Hagar Well (Well No. 5413-09). However, matters which must be addressed before we accept your report as complete are as follows:

1. The driller must correct the elevations indicated on the form to show the top of the well above ground.

2. You must sign the form. The form has been returned to the driller, who will forward it to you.

Please respond to the above item(s) within thirty (30) days of this letter's date. Failure to do so may result in fines of up to $1000 per day.

If you have any questions, please contact Charley Ice of the Commission staff at (808) 587-0251.

Sincerely,

RAE M. LOUI  
Deputy Director

Cl:ss

c: Mike Robertson, Wailani Drilling
**Hagar Well Log**

**Depth-ft.**

- 0 ft: 6 in. well seal on 6 in. Tee
- 10 ft: 4'x3'x 4' concrete slab
- 20 ft: brown clay and boulders
- 30 ft: soft basalt
- 40 ft: soft basalt
- 50 ft: Lava and Dry Lava tube
- 60 ft: soft basalt
- 70 ft: hard basalt
- 80 ft: hard basalt
- 90 ft: hard basalt
- 100 ft: hard basalt
- 110 ft: hard basalt
- 120 ft: hard basalt
- 130 ft: hard basalt
- 140 ft: hard basalt
- 150 ft: hard basalt
- 160 ft: hard basalt
- 170 ft: hard basalt
- 180 ft: hard basalt
- 190 ft: hard basalt
- 200 ft: hard basalt
- 210 ft: hard basalt
- 220 ft: hard basalt
- 230 ft: hard basalt
- 240 ft: hard basalt
- 250 ft: hard basalt
- 260 ft: hard basalt
- 270 ft: hard basalt
- 280 ft: hard basalt
- 290 ft: hard basalt
- 300 ft: hard basalt
- 310 ft: hard basalt
- 320 ft: hard basalt
- 330 ft: hard basalt
- 340 ft: hard basalt
- 350 ft: hard basalt
- 360 ft: hard basalt
- 370 ft: Static Water Level = 383.5 ft
- 380 ft: Drawdown = 3-1/2 inches
- 390 ft: Med hard basalt
- 400 ft: Soft (Water Bearing)
- 410 ft: Soft
- 420 ft: Soft
- 430 ft: Soft
- 440 ft: Soft
- 450 ft: Soft

**Total Well Depth = 415 ft.**

- 20' of 316-1-1/4" stainless column pipe at waterline
- 2 h.p. Grundfos 20 gpm submersible pump set at 403 ft. (intake)
- 4" sced 40 PVC slotted casing 400' to 415'

*Note: not drawn to scale*
NOTE: "**" The MCL (Maximum Contaminant Level) or an established guideline has been exceeded for this contaminant.

"**" Bacteria results may be invalid due to lack of collection information or because the sample has exceeded the 30-hour holding time.

"ND" This contaminant was not detected at or above our stated detection level.

"NEB" No bacteria submitted.

"P" = PRESENCE

"EP" = E. COLI PRESENCE

"EA" = E. COLI ABSENCE

**Analysis Performed**

<table>
<thead>
<tr>
<th></th>
<th>MCL</th>
<th>Det.</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(mg/l)</td>
<td>Level</td>
<td>Detected</td>
</tr>
</tbody>
</table>

**Total coliform**

**Inorganic chemicals - metals:**

<table>
<thead>
<tr>
<th>Element</th>
<th>MCL</th>
<th>Det.</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>0.2</td>
<td>0.1</td>
<td>ND</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.05</td>
<td>0.020</td>
<td>ND</td>
</tr>
<tr>
<td>Barium</td>
<td>2</td>
<td>0.30</td>
<td>ND</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.005</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Chromium</td>
<td>0.1</td>
<td>0.004</td>
<td>ND</td>
</tr>
<tr>
<td>Copper</td>
<td>1.3</td>
<td>0.004</td>
<td>ND</td>
</tr>
<tr>
<td>Iron</td>
<td>0.3</td>
<td>0.020</td>
<td>ND</td>
</tr>
<tr>
<td>Lead</td>
<td>0.015</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.05</td>
<td>0.004</td>
<td>ND</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.002</td>
<td>0.001</td>
<td>ND</td>
</tr>
<tr>
<td>Nickel</td>
<td>0.1</td>
<td>0.02</td>
<td>ND</td>
</tr>
<tr>
<td>Selenium</td>
<td>0.05</td>
<td>0.020</td>
<td>ND</td>
</tr>
<tr>
<td>Silver</td>
<td>0.1</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Sodium</td>
<td>-----</td>
<td>1.0</td>
<td>100</td>
</tr>
<tr>
<td>Zinc</td>
<td>5</td>
<td>0.004</td>
<td>0.076</td>
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</table>

**Inorganic chemicals - other, and physical factors:**

<table>
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<th>Property</th>
<th>MCL</th>
<th>Det.</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>Alkalinity (Total as CaCO3)</td>
<td>20.0</td>
<td>60</td>
<td></td>
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<tr>
<td>Chloride</td>
<td>250</td>
<td>5.0</td>
<td>700</td>
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<tr>
<td>Fluoride</td>
<td>4</td>
<td>0.5</td>
<td>ND</td>
</tr>
<tr>
<td>Nitrate as N</td>
<td>10</td>
<td>0.5</td>
<td>ND</td>
</tr>
<tr>
<td>Nitrite as N</td>
<td>1</td>
<td>0.5</td>
<td>ND</td>
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<tr>
<td>Sulfate</td>
<td>500</td>
<td>5.0</td>
<td>24</td>
</tr>
<tr>
<td>Hardness (suggested limit = 100)</td>
<td>10.0</td>
<td>140*</td>
<td></td>
</tr>
<tr>
<td>pH (Standard Units)</td>
<td>6.5-8.5</td>
<td>---</td>
<td>7.7</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>500</td>
<td>20.0</td>
<td>420</td>
</tr>
<tr>
<td>Turbidity (Turbidity Units)</td>
<td>1.0</td>
<td>0.1</td>
<td>ND</td>
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</tbody>
</table>

**Organic chemicals - trihalomethanes:**

<table>
<thead>
<tr>
<th>Compound</th>
<th>MCL</th>
<th>Det.</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromoform</td>
<td>0.1</td>
<td>0.004</td>
<td>ND</td>
</tr>
<tr>
<td>Bromodichloromethane</td>
<td>0.1</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Chloroform</td>
<td>0.1</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Dibromochloromethane</td>
<td>0.1</td>
<td>0.004</td>
<td>ND</td>
</tr>
<tr>
<td>Total THMs (sum of four above)</td>
<td>0.1</td>
<td>0.002</td>
<td>ND</td>
</tr>
<tr>
<td>Substance</td>
<td>MCL</td>
<td>ND</td>
<td>Detection Level</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------</td>
<td>----</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.005</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>0.002</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>0.005</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
<td>0.005</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Trichloroethane</td>
<td>0.005</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>1,4-Dichlorobenzene</td>
<td>0.007</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
<td>0.2</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Bromobenzene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Bromomethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>0.1</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Chloroethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Chloromethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>2-Chlorotoluene</td>
<td>---</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>4-Chlorotoluene</td>
<td>---</td>
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<tr>
<td>Dibromochloropropane (DCP)</td>
<td>---</td>
<td>ND</td>
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<tr>
<td>Dibromomethane</td>
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<td>ND</td>
<td>0.002</td>
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<tr>
<td>1,2-Dichlorobenzene</td>
<td>0.6</td>
<td>ND</td>
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<td>1,3-Dichlorobenzene</td>
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<tr>
<td>Dibromodifluoromethane</td>
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<td>0.002</td>
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<tr>
<td>1,1-Dichloroethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>cis-1,2-Dichloroethene</td>
<td>0.07</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>0.005</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,2-Dichloroethylene</td>
<td>0.005</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,3-Dichloroethylene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
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<td>2,2-Dichloroethylene</td>
<td>---</td>
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<tr>
<td>1,1-Dichloroethylene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
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<tr>
<td>1,3-Dichloroethylene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
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<tr>
<td>Ethylbenzene</td>
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<tr>
<td>Ethylene dibromide (EDB)</td>
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<td>ND</td>
<td>0.001</td>
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<tr>
<td>Styrene</td>
<td>0.1</td>
<td>ND</td>
<td>0.002</td>
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<tr>
<td>1,1,1,2-Tetrachloroethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,1,2,2-Tetrachloroethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Tetrachloroethene (PCE)</td>
<td>0.005</td>
<td>ND</td>
<td>0.007</td>
</tr>
<tr>
<td>1,2,4-Trichlorobenzene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,2,3-Trichlorobenzene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,1,2-Trichloroethane</td>
<td>0.005</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Trichlorofluoromethane</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>1,2,3-Trichloropropene</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Toluene</td>
<td>1</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Xylene</td>
<td>10</td>
<td>ND</td>
<td>0.001</td>
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<tr>
<td><strong>Organic chemicals - pesticides, herbicides and PCBs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alachlor</td>
<td>0.002</td>
<td>ND</td>
<td>0.001</td>
</tr>
<tr>
<td>Atrazine</td>
<td>0.003</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Chlordane</td>
<td>0.002</td>
<td>ND</td>
<td>0.001</td>
</tr>
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<td>Aldrin</td>
<td>---</td>
<td>ND</td>
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</tr>
<tr>
<td>Dichloran</td>
<td>---</td>
<td>ND</td>
<td>0.002</td>
</tr>
<tr>
<td>Dieldrin</td>
<td>---</td>
<td>ND</td>
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<tr>
<td>Endrin</td>
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<td>Heptachlor</td>
<td>0.0004</td>
<td>ND</td>
<td>0.0004</td>
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<tr>
<td>Heptachlor Epoxide</td>
<td>0.0002</td>
<td>ND</td>
<td>0.0001</td>
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<tr>
<td>Hexachlorobenzene</td>
<td>0.001</td>
<td>ND</td>
<td>0.0005</td>
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<tr>
<td>Hexachlorocyclopentadiene</td>
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</tr>
<tr>
<td>Lindane</td>
<td>0.0002</td>
<td>ND</td>
<td>0.0002</td>
</tr>
<tr>
<td>Methoxychlor</td>
<td>0.04</td>
<td>ND</td>
<td>0.002</td>
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<tr>
<td>PCBs</td>
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<td>ND</td>
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</tr>
<tr>
<td>Pentaehloronitrobenzene</td>
<td>---</td>
<td>ND</td>
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<tr>
<td>Silvex(2,4,5-TP)</td>
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<tr>
<td>Simazine</td>
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<td>Toxaphene</td>
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<tr>
<td>Trifluralin</td>
<td>---</td>
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<tr>
<td>2,4-D</td>
<td>0.07</td>
<td>ND</td>
<td>0.010</td>
</tr>
</tbody>
</table>

I certify that the analyses performed for this report are accurate, and that the laboratory tests were conducted by methods approved by the U.S. Environmental Protection Agency or variations of these EPA methods.

These test results are intended to be used for informational purposes only and may not be used for regulatory compliance.

DR. ALAN A. LEFF
VICE PRESIDENT, OPERATIONS, NATIONAL TESTING LABORATORIES, LTD.

REV. 7-96
# WELL COMPLETION REPORT

1/23/97 WCR Form

(Check Appropriate Box)  □ Well Construction  □ (Permanent) Pump Installation

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225, or 1-800-468-4644 Extension 70225.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State Well No.: 5413-09</td>
<td>2. Well Name: Wai'pio-Hagar</td>
</tr>
<tr>
<td>4. Locale/District: Wai'pio, Makawao</td>
<td>5. Tax Map Key: 2-9-5:51</td>
</tr>
</tbody>
</table>

## PART I. WELL CONSTRUCTION REPORT

6. Drilling Company: ____________

7. Name of driller who performed work: ____________

8. Type of rig/construction: ____________

9. Date(s) Well Construction and pump tests (if any) completed: ____________

10. GROUND ELEVATION (referenced to mean sea level, msl): ____________ ft.

   Well Bench Mark (description/location): ____________ Elevation (msl): ____________ ft.

11. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)

   Depths (ft.) Rock Description, Water Level, Dates, etc.
   ____________ to ____________
   ____________ to ____________
   (If more space is needed, continue on back.)

12. Total depth of well below ground: ____________ ft.

13. Hole size:

   ____________ inch dia. from ____________ ft. to ____________ ft. below ground
   ____________ inch dia. from ____________ ft. to ____________ ft. below ground
   ____________ inch dia. from ____________ ft. to ____________ ft. below ground

14. Casing installed:

   ____________ in. I.D. x ____________ in. wall solid section to ____________ ft. below ground
   ____________ in. I.D. x ____________ in. wall perforated section to ____________ ft. below ground

   Casing Material/Slot Size: ____________

15. Annulus:

   Grouted from ____________ ft. below ground to ____________ ft. below ground
   Gravel packed from ____________ ft. below ground to ____________ ft. below ground

16. Initial water level: ____________ ft. below ground.

   Date and time of measurement: ____________

17. Initial chloride: ____________ ppm

18. Initial temperature: ____________ °F

   Date and time of measurement: ____________

19. PUMPING TESTS: Reference Point (R.P.) used: ____________

   (a) Step-Drawdown Test Date ____________

   (b) Long-term Aquifer Test Date ____________

   Start water level ____________ ft. below R.P.
   End water level ____________ ft. below R.P.

   Start water level ____________ ft. below R.P.
   End water level ____________ ft. below R.P.

20. Attach: (a) As-built drawings.

   (b) Surveyed Location

   (c) Long-Term Continuous Aquifer Pump Test Data & graphs.

   (d) Surveyed Elevation

21. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) ____________ C-57 Lic. No. ____________

Signature ____________ Date ____________

Surveyor (print) ____________ Lic. No. ____________

Signature ____________ Date ____________

Applicant (print) ____________

Signature ____________ Date ____________
**THEIS DRAWDOWN CALCULATION**

**FILE NAME =** Waipio-Hagar Well No. 5413-09

**TEST NAME =** Long-Term Test

**DATE =** June 20, 1997

**INPUT PARAMETER GREEN VALUES**

<table>
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<tr>
<th>Parameter</th>
<th>Value</th>
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<tr>
<td>Transmissivity</td>
<td>T = 7.560 ft^2/day</td>
</tr>
<tr>
<td>Storage Coeff.</td>
<td>S = 0.100 dimensionless</td>
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<tr>
<td>Time</td>
<td>t = 1000 days</td>
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<tr>
<td>Pumping Rate</td>
<td>Q = 2,695.19 ft^3/day</td>
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<tr>
<td>Radial distance from well r ft.</td>
<td>u W(u) ft.</td>
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**OBSERVATION WELL**

Radial distance r from pumping well 5280 ft. (Well No. 0350-07)

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<th>u W(u) ft.</th>
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Theoretical drawdown a mile (5,280 ft) from the pumping well when u <= 0.01

\[ T = 7560 \text{ ft}^2/\text{d} \]

Sp. yield = 0.1

t = 365 days

s = 0.02 ft.
**Table 1**

**LONG-TERM AQUIFER TEST DATA**

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<th>Actual elapsed time</th>
<th>Depth to water (nearest 0.01 ft)</th>
<th>Drawdown (unadjusted to nearest 0.01 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (microsiemens)</th>
<th>CF (mg/l)</th>
<th>Temp. °F or °C</th>
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</table>

**Pumped Well No.** 5413-09  
**Pumped Well Name** Waipio-Hager  
**Target Q** 14 gpm  
**Distance between Obs. & Pumped Well**  
**Reference pt. for depth to water**  
**Static Water Level @ start of test**  
**Water level measurements by:**  
- [ ] steel tape  
- [ ] pressure transducer  
- [ ] airline

**START TEST** Date: 1/20/42  
**Hour of day:** 10:00 AM  
**Flow Meter Reading Start:** 750 gals  
**Data in this table is for:**  
- [ ] Pumped Well  
- [ ] Observation Well  
- [ ] Remarks  

**Remarks:**
- Start test
<table>
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<th>Suggested elapsed time (min)</th>
<th>Actual elapsed time (min)</th>
<th>Depth to water (nearest 0.01 ft)</th>
<th>Drawdown (unadjusted to nearest 0.01 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (µmhos)</th>
<th>Cl (mg/l)</th>
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<td>Max possible duration, water level or quality did not stabilize for any 24 period</td>
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Use same ending drawdown figure as start for recovery

Begin recovery data next page

Flow meter reading at end of pumped period:

7,500 gals
## Suggested Actual Depth Recovery Data

Data in this table is for:

- Pumped Well
- Observation Well

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<tr>
<th>Suggested elapsed time</th>
<th>Actual elapsed time</th>
<th>Depth to water (nearest 0.01 ft)</th>
<th>Recovery (unadjusted to nearest 0.01 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (μmhos)</th>
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**END TEST**  Date: 6/20/97  Hour of day: 10:00 PM

**ADDITIONAL REMARKS:**

- No further recovery until checked next day.
- Must be affected by tides.

**Person in charge of pump test (print):** Mike Robertson

**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 aquifer test.

CWRM LTAT Form 1/9/96
Pumping Test No. 1

Test conducted on: June 20, 1997
Discharge 14.00 U.S. gal/min

Transmissivity [ft/d]: $7.56 \times 10^3$
Pumping Test No. 1

Well 5413-09

Discharge 14.00 U.S. gal/min

Distance from the pumping well: 1.00 ft

Static water level: 383.50 ft below datum

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<th>Pumping test duration</th>
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TO WHOM IT MAY CONCERN:

This is to certify that the elevation of the Bench Mark at the Well Site which is situated at the northwest side of the property, TMK: (2), 2-9-05:50 is 381.86 feet above mean sea level.

The elevation emanated from U.S.G.S. Triangulation Station "HUELO" by trigonometric leveling.

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

Wailuku, Maui, Hawaii

Edgardo V. Valera
Licensed Professional Land Surveyor
State of Hawaii Certificate No. 5075

EVV:asv
Enclosure: Plat Map
NOTES:

1. The map used as reference is the Waipio Bay Subdivision, LUCAD.
2. Coordinates and azimuths are based from triangulation Static KAPUAI established directly from Trig Station HUELO.
3. Names of adjoining property owners are from the Tax Map.
4. All corners are marked with 1/2" pipe.
5. Exalt Lots 4 & 5 are for future road widening and will be to the County of Maui upon demand.
6. Graveyard lot perpetual footpath easement over Lot I will be resindivided by deed (Doc #95-081380) transferring ownership and easement to Lot I.

WAIPIO BAY SUBDIVISION
CONSOLIDATION OF LOT I AND GRAVEYARD (TMK:(2),2-9-05:41) AND RESUBDIVISION OF SAID CONSOLIDATION INTO LOTS I-A AND I-
Total Gross Area = 13.462 Acres
Being portions of Royal Patent 7761, Land Commission Award 2937, Apana 8 to William Harbottle and Royal Patent Grant 3214 to Papaliakea
EAST-WAIPIO, WEST-WAIPIO, HAMAKUALO, MAUI, HAWAII

Owners:
Russell S. Show & W. Colleen F.
HC 1 Box 20
Heleu, Hawaii 96718

This work was prepared by me or under my direct supervision,
CARLEA, INC.

Eugene Arthur
Registered Land Surveyor
State of Hawaii Certificate No. 5078

Revised 9/9/1995

LUCA File No. 2,230

VOLUME 9419-09 WAIPIO HAMAKUALO
Dear Charlie:

This letter is to provide notice of intent to start work on the Waipi'o Hagar Well

State Well Number 5413-09

I would like to proceed with this job on May 7, 1997.

Please call or fax me to confirm.

Thank You;

Mike Robertson
dba Wailani Drilling Co.

cc Charlie Ice,
Randy Hall
Mr. Sam Hagar  
P.O. Box 5395  
Novato, California 94948

Dear Mr. Hagar:

Well Construction Permit  
Waipi'o Hagar Well (Well No. 5413-09)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) which authorizes 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 12:

Special Conditions

1. No permanent monitor tube is required.
2. The well should not be used for drinking water unless it is properly tested and treated (see attached response from the Department of Health).

This permit does not authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon information provided to and accepted by Commission staff from the aquifer pumping test results, as required in Well Construction & Pump Installation Standards (1/23/97), performed under this permit.

The well owner is 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.

Please sign and have the contractor sign the permit originals and return one for our files. Also, copies of the aquifer pump test procedure and the well completion report form are enclosed for your use. Please provide all the information in this packet to your well drilling contractor.

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

Aloha,

MICHAEL D. WILSON  
Chairperson

Enclosures
WELL CONSTRUCTION PERM

Waipio-Hagar Well, Well No. 5413-09

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 Waipio-Hagar Well (Well No. 5413-09) at Waipio, Makawao, Maui, TMK 2-9-5:51, 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.

2. The well construction permit shall be for construction and testing of the well only. A minimum one-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the attached Aquifer Pump Testing Procedure (attached). The permittee 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 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 shall stop work and contact the Department's Historic Preservation Division (587-0045) 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 correlatable 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 shall comply with all applicable laws, rules, and ordinances, and 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 (1/23/97).

10. 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 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 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 must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

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

Date of Approval: April 22, 1997
Expiration Date: April 22, 1999

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. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day.

Permittee's Signature: __________________________ Date: __________
Printed Name: __________________________ Firm or Title: __________________________
Driller's Signature: __________________________ 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 Branches
Maul Department of Water Supply
WELL CONSTRUCTION PERMIT
Waipio-Hagar Well, Well No. 5413-09

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Permittee's Signature: ___________________________ Date: 6/10/97
Printed Name: ___________________________ Firm or Title: Owner
Driller's Signature: ___________________________ Date: 6/10/97
Printed Name: ___________________________ Firm or Title: Wailani Drilling Co.

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 Branches
Maui Department of Water Supply
TO: Honorable Lawrence Miike, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch

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

SUBJECT: Well Construction/Pump Installation Permit Application for
Waipi'o-Hagar Well (Well No. 5413-09)

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 March 21, 1997.

Please find a map, attached, 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 for serving a public water system (serving 25 or more people 60 days per year or 15 or more service connections) and must comply with Department of Health, Safe Drinking Water Branch, Chapter 20, HAR (Potable Water Systems).

[ ] This well does not qualify as a source serving a public system (<25 people 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.

[ ] If potable water is used to supply both domestic and irrigation 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. Routine testing of the backflow preventer devices may be required.

[ ] For the applicant's information, a source of possible wastewater contamination is located near the proposed well site (information attached).

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

Contact Person: Bill Wong
Phone: 586-4258

Signed: Bill Wong
Date: 3/11/97
TO: Honorable Lawrence Miike, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Safe Drinking Water Branch  

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

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Contact Person: Lori N. Kajiwara  
Phone: 3/13/97

Signed:  
Phone: 586-4294  
Date:  

Cris M. [Signature]
Mr. Sam Hagar  
P.O. Box 5395  
Novato, California 94948

Dear Mr. Hagar:

Well Construction/Pump Installation Permit Application for  
Waipi'o-Hagar Well (Well No. 5413-09)

We acknowledge receipt, on February 18, 1997, of your completed well  
construction/pump installation permit application for the Waipi'o-Hagar Well (Well No.  
5413-09). You can expect your application to be processed within ninety (90) days from  
this date.

If you have any questions about your application, please contact Charley Ice of the  
Commission staff at 587-0251.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

Cl:ss
TO: Honorable Lawrence Miike, Director
Department of Health
Attention: Dennis Tulang, Wastewater Branch
William Wong, Safe Drinking Water Branch

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

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CI:ss
Attachment(s)
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Contact Person: ___________________________ Phone: ___________________________

Signed: ___________________________ Date: ___________________________
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**REMARKS:**

LINE (1) Well No. 5413-09 (WCPA/PIPA)

LINE (2)

LINE (3)

LINE (4)

WAYNE I ARAKAKI ENGINEER

---

2307

WAYNE I ARAKAKI ENGINEER

-payable to the order of DEPARTMENT OF LAND AND NATURAL RESOURCES-

$25.00

Central Pacific Bank

Kahului Branch

85 W. KAAHUMANU AVE., KAHULUI, HAWAII 96732

DATE JANUARY 15, 1997

WAYNE I ARAKAKI
February 14, 1997

Rae M. Loui
Deputy Director
Dept. of Land & Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hi. 96809

Dear Ms. Loui:

Re: Application for Well Construction
Waipio Hagar Well

We are responding to your letter of January 24, 1997. Please note the owner is Mr. Sam Hagar, P.O. Box 5395, Novato, California 94948.

Attached are the additional documents required. We will be submitting for the pump installation after the well has been tested.

Sincerely,

Wayne I. Arakaki, P.E.

Enclosures
Mr. David Pico

Dear Mr. Pico:

Application for Well Construction
Waipio-Hagar Well

We received the captioned well construction application and filing fee. However, your application is incomplete. We request the following information before we accept your application as complete and before further processing:

1. Topographic and TMK maps to identify the location of the proposed well.
2. Acreage and crop to be irrigated. 20.17 parcel
3. Well owner's address (owner is recipient for all legal notifications).

You may prefer to apply for pump installation at the same time, if you expect that the entire project can be completed in two years. There is just one filing fee if both are processed simultaneously.

Finally, we note you submitted an old form. We are enclosing the latest form for your future use.

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

Sincerely,

RAE M. LOUI
Deputy Director

Enclosure
APPLICATION FOR

XX WELL CONSTRUCTION PERMIT
PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 372, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $115.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 808-1.215.0 Hydrology/Geology Section for assistance.

1. WELL LOCATION
   Island Maui Tax Map Key (2) 2-9-05:51
   Address East-Waipio, West-Waipio, Hamakualoa, Maui, Hawaii
   (Attach a USGS map (scale 1"=1000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
   Firm Name Sam Hagar
   Contact Person Ben Winslow
   Address
   Phone
   FAX

3. LANDOWNER
   Firm Name Sam Hagar
   Contact Person Ben Winslow
   Address
   Phone
   FAX

3. PROPOSED CONTRACTOR FOR:
   Drill Well Drilling Pump Installation
   Name David Pico Cesspool Digging
   Address 343 Aliu Road
   Phone 877-3419
   Contractor's License No. ABC 11912

4. PROPOSED WORK
   Drill New Well Deepen Seal
   Alter Install New Pump Replace Pump Redrill
   Abandon Modify Pump
   (Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE
   Municipal (including hotels, stores, etc.) Military
   Domestic (individual, noncommercial water systems) Industrial
   Irrigation (specify) Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 25,000 gallons per day

7. PROPOSED PUMP INFORMATION
   Pump Type: Vertical Turbine Submersible Centrifugal
   Motor: Gas Electric Rated Horsepower
   Rated Pump Capacity 20 gallons per minute (gpm)

Well Owner (print) Sam Hagar
Signature Date
Landowner (print) Sam Hagar
Signature Date

For Official Use Only:
Field Checked By Latitude
Date
Longitude
Hydrologic Unit
State Well No. 5713-09

Honopou
Briefly describe the proposed work:

We are proposing to drill a well for non-portable use. This well will be used to irrigate the existing landscape. It will not be used for potable use.

PROPOSED SECTION OF WELL

Elevation at top of casing 252.0 ft., mal.
Cement Grout 100 ft.
Hole Dia. 8 in.
Total Depth 290 ft.
Rock Packing 190 ft.

Ground Elev. 250.0 ft., mal*

Solid Casing:
- Material
- Length ft.
- Diameter in.
- Wall thickness in.

Casing: /X/Perforated / /Screen
- Material PVC
- Length 30.0 ft.
- Diameter 4.0 in.
- Wall thickness Sch. 80 in.
- Openings 20 sq. in./L.F.

Open Hole:
- Length
- Diameter N.A. in.

*Approximate elevation at time of filing application. Final elevation (mal) by a surveyor licensed by the State must be submitted at start of construction.
APPLICATION FOR

XX WELL CONSTRUCTION PERMIT

PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 315, Honolulu, Hawaii 96807. Application must be accompanied by a non-refundable filing fee of $11.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 671-1025, Hydrology/Gallery Section for assistance.

1. WELL LOCATION

Island Maui  Tax Map Key (2) 2-9-05:51

Address East-Waipio, West-Waipio, Hamakuaola, Maui, Hawaii

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

2. WELL OWNER

Firm Name Sam Hagar
Contact Person Ben Winslow
Address

Phone
FAX

3. PROPOSED CONTRACTOR FOR: □ Well Drilling □ Pump Installation

Name David Pico Cesspool Digging
Address 343 Alu Road
Wailuku, Hi. 96793

Contractor's License No. ABC 11912

4. PROPOSED WORK

□ Drill New Well □ Deepen □ Redrill
□ Alter □ Seal □ Abandon
□ Install New Pump □ Replace Pump □ Modify Pump

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

□ Municipal (including hotels, stores, etc.) □ Industrial
□ Domestic (individual, noncommercial water systems) □ Irrigation (specify)
□ Military

6. PROPOSED AMOUNT OF WITHDRAWAL 25,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: □ Vertical Turbine □ Submersible □ Centrifugal
Motor: □ Diesel □ Gas □ Electric: □ Rated Horsepower
Rated Pump Capacity 20 gallons per minute (gpm)

Well Owner (print) Sam Hagar
Signature Date 2-16-97

Landowner (print) Sam Hagar
Signature Date 2-16-97

For Official Use Only:
Field Checked By ___________________________  Latitude ___________  Hydrologic Unit
Date ________________  Longitude ___________  State Well No. 5413-09

Hawai'i
Briefly describe the proposed work:

We are proposing to drill a well for non-portable use. This well will be used to irrigate the existing landscape.

It will not be used for potable use.

PROPOSED SECTION OF WELL

Elevation at top of casing 252.0 ft., msl.

Ground Elev. 250.0 ft., msl*

Cement Grout 100 ft.

Solid Casing:
Material ____________________________
Length _____________________________ ft.
Diameter ____________________________ in.
Wall thickness _________________________ in.

Hole Diameter 8 in.

Casing: /X/Perforated / /Screen
Material PVC
Length 30.0 ft.
Diameter 4.0 in.
Wall thickness Sch. 80 in.
Openings 20 sq. in./L.F.

Total Depth 290 ft.

Rock Packing 190 ft.

Open Hole:
Length 0
Diameter N.A. in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.