



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'  
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA  
**COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

April 1, 2025  
Honolulu, Hawai'i

Natural Energy Laboratory Of Hawai'i Authority and  
Hawai'i Housing Finance and Development Corporation  
APPROVAL OF WELL CONSTRUCTION PERMIT  
Ota Well (Well No. 8-3957-006), TMK (3) 7-5-001:165  
Lanihau 1-2, Moeauo Ahupua'a, Keauhou, Hawai'i

WELL OWNER:

Natural Energy Laboratory of Hawaii  
Authority (NELHA)  
75-5225 Mamalahoa Highway  
Hōlualoa, Hawai'i 96725

Hawaii Housing Finance and  
Development Corporation (HHFDC)  
677 Queen Street  
Honolulu, Hawai'i 96813

LANDOWNER:

FHT Kamakana, LLC  
201 Merchant Street, Suite 2000  
Honolulu, Hawai'i 96813

**SUMMARY OF REQUEST**

Co-applicants Natural Energy Laboratory Authority (NELHA) and Hawai'i Housing Finance Development Corporation (HHFDC) request that the Commission on Water Resource Management (Commission) approve a modified well construction permit for the Ota Well (State Well No. 8-3957-006), previously approved at the August 16, 2022 meeting.

**BACKGROUND**

Hydrogeologic features

The proposed Ota well will be drilled along an area known to have high-level (dike confined) water. Downgradient of the proposed well, there is a basal lens, and some exploration indicates that there is a deep confined lens below the basal lens, though the characteristics (i.e. extent, robustness, thickness, flow patterns) are not generally known.

The interconnection between the high-level water that the Ota Well will draw from, and the basal and/or deep confined lens is not well established. As a result, the impacts of pumpage of the Ota Well (in addition to other high level wells) on onshore and nearshore environments cannot easily be determined. Onshore environments include anchialine ponds, which provide a habitat for biota. Ocean environments potentially impacted by coastal discharge of fresh water also provide habitat for biota. Impacts to these resources could potentially impact Native Hawaiian traditional and customary practices.

#### Keauhou Designation Petition and Adaptive Management Strategies

On September 13, 2013, the National Park Service (NPS) submitted a petition to designate the Keauhou Aquifer System Area as a groundwater management area. The Commission subsequently denied the petition, but a groundwater dependent ecosystem symposium led the Commission to direct staff to develop a pilot adaptive management approach to protect groundwater resources.

In conjunction with the NPS, Commission staff has drafted a document titled *Pilot Adaptive Management Plan For (1) Protecting Groundwater Dependent Ecosystems In Kaloko-Honokōhau National Historical Park and (2) Providing Water Security and Sustainability in the Keauhou Aquifer System Area, Hawai‘i County, Hawai‘i.*

As this document is in draft form, it’s not being included in this submittal. Nonetheless, it includes ideal elements of an adaptive management plan:

- defining a clear baseline,
- setting quantitative thresholds,
- developing protective triggers that require action before reaching a threshold,
- conducting regular measurement and monitoring,
- accounting for uncertainty, and
- adapting to changing conditions and new information.

#### Ota Well Application

NELHA received \$2.5 million from the State Legislature in 2014 to develop a potable water well, and subsequently entered into a Memorandum of Understanding with HHFDC to jointly develop the Ota Well. Upon completion, the Ota well will be dedicated to the Hawai‘i County Department of Water Supply (HDWS), for which

NELHA will be given water credits to complete the buildout of the Hawai‘i Ocean Science and Technology (HOST) Park. The well will also be used to supply potable water to HHFDC’s 2,330-unit master planned community, Kamakana Villages at Keahuolu, as well as approximately 18,077 gallons per day for the Department of Hawaiian Homelands.

On August 13, 2018, an application for the Ota Well was submitted by Tom Nance Water Resource Engineering on behalf of the driller, Water Resources International, Inc. (WRI). It is important to note that since then, NELHA/HHFDC no longer has a contract with WRI to drill the well.

#### Commission actions and staff/applicant follow-up actions

On April 20, 2021, the Commission deferred action on item B2 that proposed to approve the Well Construction Permit for the Ota Well with Special Conditions and directed staff to report back in June on next steps to convene a Groundwater Dependent Ecosystem Symposium-2. This proposed Symposium-2 would allow further collaboration between traditional and customary practitioners, ‘Aha Moku Advisory Council, hydrologists and biologists to formulate an adaptive management plan with mitigative actions.

On various dates in 2021-2022, Deputy Director Kaleo Manuel and Leimana DaMate from Aha Moku conducted various meetings with practitioners, which were also called hālāwai. Through these hālāwai, Deputy Director Manuel gathered information on the cultural practices in the area, and the concerns of practitioners on the impacts of the Ota well on water resources and how those impacts would impact their cultural practices.

Having completed the hālāwai, on August 16, 2022, staff presented the Ota Well application again to the Commission for approval, this time with several special conditions attached to the permit. After lengthy discussion and testimony, the Commission approved the well construction permit with amendments to the original recommendation.

Objecting to some of the conditions, NELHA then requested a contested case hearing. Mr. Charley Young (‘Aha Moku) and Ms. Ashley Obrey (Native Hawaiian Legal Corp.) expressed their interest in being a party of the contested case hearing if the Commission granted the request.

On September 6, 2022, the Commission received a written petition for a contested case hearing from NELHA and HHFDC. The contested case hearing did not move forward.

In 2023, NELHA and HHFDC developed some proposed amendments to the conditions that the Commission required as a condition of the permit approval at the August 16, 2022 approval. They reached out to various parties, and stated that there were no objections to their proposed amendments from consulted parties.

On March 4, 2024, NELHA submitted a request to formally address the Commission regarding their proposed modifications to the conditions of the permit.

Because communication could not happen with the Commission if in contested case hearing, on March 5, 2024, NELHA and HHFDC retracted their request for a contested case hearing.

In the interest of transparency and notification of all parties regarding the NELHA's request for modification, staff briefed the Commission regarding the requested proposed changes at the March 19, 2024 Commission meeting.

CONDITIONS IMPOSED BY COMMISSION AT THE AUGUST 16, 2022 COMMISSION MEETING, AND PREVIOUSLY REQUESTED AMENDMENTS:

The applicant objected to Conditions 1a. and 1d. that were proposed at the August 16, 2022 Commission meeting. The full list of conditions from the August 16, 2022 meeting can be seen hyperlinked [here](https://files.hawaii.gov/dlnr/cwrm/submittal/2022/sb20220816B1.pdf) (or at <https://files.hawaii.gov/dlnr/cwrm/submittal/2022/sb20220816B1.pdf>). The portion highlighted in grey represents the items that the applicant objected to.

1. The following mauka to makai mitigation measures shall be special be conditions of the Well Construction Permit, Pump Installation Permit, and Well Certificate that will run with the life of the well and its use:
  - a. Annual contributions of \$13,940/year shall be paid by the Well Owner to the Water Resource Management Fund that will assist DLNR DOFAW with watershed restoration based on the current proposed pump capacity. If pump capacity increases or decreases, then the contribution will be adjusted accordingly based on the Watershed Management Cost-Share Formula. Management costs increase overtime, so it is expected that the management contribution will be revisited every five (5) years.
  - b. There shall be real-time monitoring of rainfall and water levels at the well site by the well owner/operator. This information shall be shared with and reported to the Commission and community that will inform long-term adaptive use and management.
  - c. Practitioners want to ensure that projects that receive water from the Ota Well (NELHA, HHFDC, DHHL, and DWS) are good stewards of that resource and therefore request that:
    - i. Water is not wasted and is used as efficiently as possible. Water distribution systems should be managed, operated, and maintained to prevent waste.
    - ii. Water should be reused as much as possible. Projects should be designed to take advantage of on-site water reuse instead of immediate disposal into the Wastewater Treatment Plant.

- iii. Kealakehe Wastewater Treatment Plant should be upgraded to R-1 capability, so water does not have to be injected or released into outfalls.
- d. Working with practitioners and ‘ohana to determine what resources to inventory and in coordination with the DLNR Division of Aquatic Resources to avoid duplicative efforts, the applicant shall fund, design and implement an annual inventory of resources along the shoreline and nearshore waters of Lanihau 1-2, Moeauoa ahupua‘a. At minimum this should include the coastline from the Old Kona Airport State Recreation Area to Royal Kona resort and the coastal waters of Kailua Bay Fisheries Management Area. This annual inventory and data shall be shared with and reported to the Commission and community that will inform long-term adaptive use and management. This data collection could be modeled after the annual NELHA Benthic and Biota Monitoring Program that performs annual characterizations of the anchialine habitats, benthic substrate, and nearshore fish assemblages. [https://nelha.hawaii.gov/wp-content/uploads/2022/01/NELHA\\_Biota\\_Report\\_2021.pdf](https://nelha.hawaii.gov/wp-content/uploads/2022/01/NELHA_Biota_Report_2021.pdf)
- e. To ensure better communication and coordination in the region with community, the agencies benefitting from the use of water from Ota Well, including but not limited to NELHA, HHFDC, DHHL, and DWS, shall hold an annual community meeting in Lanihau 1-2, Moeauoa ahupua‘a to share updates on these mitigation measures and their respective projects.

#### SUMMARY OF REVISIONS PREVIOUSLY PROPOSED BY NELHA

Prior to the Commission action proposed by this submittal, NELHA requested the following amendments to the Commission’s conditions:

##### Condition 1a.

##### *Request*

The applicant requests modifying Condition 1a. above that will encapsulate the following:

- 1) Limit annual contributions to 30 years.
- 2) Takes out the payment to the Water Resource Management Fund.
- 3) Adds that the fund will specifically go towards the watershed restoration of the Honua’ula Forest Reserve.
- 4) Changes the annual contribution revisititation to only happen during active use of the well.

*Analysis*

~~The specificity of items 2) and 3) above appear to be good faith efforts to direct watershed restoration to direct efforts in the vicinity of the well.~~

~~Some discussion ensued at the March 2024 briefing regarding the annual contributions. One issue was the payment of the contribution after dedication to the DWS, and the applicant agreed that they would continue to pay the contribution even after they no longer owned the well.~~

~~Another issue raised at the March 2024 briefing was the duration of the annual contributions. There are several options for the Commission to consider for this condition:~~

~~The duration of the contribution can:~~

- ~~a) remain yearly indefinitely~~
- ~~b) remain yearly for 30 years~~
- ~~c) remain yearly until fencing to prevent ungulates is completed in the Honua'ula Forest Reserve~~
- ~~d) remain yearly as long as the well is in use~~

~~Staff is seeking to have the Keauhou Water Use and Development Plan updated, which should address impacts to cultural resources attributed to well development. In conjunction with the Adaptive Management Plan, contributions for remediation may change. For example, more comprehensive strategies for watershed restoration may raise this contribution amount for NELHA/HHFDC. Or more across the board fees for all wells in the area may reduce the contribution amount for NELHA/HHFDC.~~

~~Therefore, staff feels that the duration of the contribution should read as follows:~~

~~Annual contributions, as long as the well is in use of \$13,940/year (*language omitted for brevity but will be written out in the recommendation*) This contribution can be adjusted for inflation every five years. Additionally, this amount may be revisited by the Commission upon completion of the Keauhou Water Use and Development Plan and/or the adoption of the Adaptive Management Plan.~~

Condition 1d.

*Request*

NELHA states that the inventory of nearshore and coastal resources is duplicative of efforts done by the State Department of Land and Natural

Resources' Division of Aquatic Resources. Rather, NELHA is proposing developing a coastal groundwater monitoring program by sampling from anchialine ponds and drilling new monitor wells near the shoreline.

*Analysis*

~~The assessment of basal coastal discharge of freshwater will help to address one question of the puzzle of the interaction between pumpage of high level water, and coastal discharge of fresh water. However, in order to better illustrate the impacts of the Ota well, staff feels that this monitoring network is best implemented at least a year prior to the operation of the Ota well. In fact, the future pump test required under the pump installation permit can be conditioned upon monitoring of this network. Therefore staff supports this amendment, with the additional requirement that the monitoring network collect data for one year prior to the commencement of pumpage from this well. Additionally, the monitoring of these wells and anchialine ponds will be required during the constant rate test for this well.~~

NHLC RESPONSE TO PROPOSED AMENDMENTS

The Native Hawaiian Legal Corporation did not agree that the revised conditions adequately addressed a proactive approach to protection of cultural practices.

To help to find an amenable solution, a meeting between NHLC and NELHA was facilitated by Senator Dru Kanuha and Representative Kirsten Kahaloa and was held on December 17, 2024.

**COMMISSION'S DEVELOPMENT OF AN ADAPTIVE MANAGEMENT PLAN FOR THE KEAUKOU AQUIFER SYSTEM AREA**

The comments provided during the meeting between NHLC and NELHA prompted staff to find an alternative solution that will facilitate the best data collection, provides a precautionary approach that protects public trust resources, and can cautiously provide forward movement on the development of potable water sources.

Recognizing the following:

- 1) More applications will be submitted for wells in the Keauhou Aquifer System from prospective water users in the near future;
- 2) Multiple inquiries to practitioners about their cultural practices can result in interview fatigue;
- 3) The complexity of hydrogeology in Keauhou requires additional studies;
- 4) Impacts to coastal discharge of freshwater result from not just one well, but the *cumulative* impact of all wells pumping in the aquifer;
- 5) A methodology for monitoring ground water resources and biota will provide the consistency needed to observe potential impacts;

- 6) Establishing baseline water and biota data is critical in determining impacts of pumpage;
- 7) Costs for monitoring and watershed restoration should be shared among all users of the resource; and
- 8) Actionable thresholds must be established to protect public trust resources;

Staff has determined that an Adaptive Management Plan (AMP) for the entire Keauhou Aquifer System should be established to properly manage the resource with the above 8 items in mind. This AMP should build upon the work done under the GDE Symposium and the development of the previous AMP, and expand the geographic region to address potential development outside of the original AMP.

Staff proposes to develop this AMP by hiring a consultant and creating an advisory panel that will include experts in hydrogeology, biology, cultural practices, and water law. The consultant will facilitate focused meetings that convene experts in the fields of multi-level hydrogeology, aquatic species, and cultural practices. Upon completion of these meetings, a proposed AMP will be developed by the consultant and advisory panel under direction of the Chair of the Commission, and presented to the Commission for several informational briefings at which time the Commission and the public will be able to comment on the content of the AMP. After these informational briefings and further refinement of the AMP, staff will present the AMP to the Commission for approval.

It's important that baseline data on water resources and biota is collected as soon as possible. As a condition of approval of this permit, the Commission should require the drilling of monitor wells as soon as possible, as well as anchialine pool monitoring. The Division of Aquatic Resources is currently inventorying ocean resources.

Regarding a timeline for the above, staff is proposing the following:

- March-April 2025 – selection of consultant and assembling of advisory panel
- May 2025 – focused meetings
- July 2025 – completion of draft AMP
- July 15, 2025 Commission meeting – briefing on draft AMP
- August 19, 2025 Commission meeting – briefing on draft AMP
- October 21, 2025 Commission meeting – staff to present submittal for adoption of AMP

### **MODIFIED STRATEGY FOR APPROVAL OF WELL CONSTRUCTION PERMIT**

Monitor wells at the coastline can assess aquifer properties, specifically with respect to the thickness of the transition zone from fresh to salt water. This can then provide both baseline data for the area representative of coastal discharge of fresh water, as well as continuing data to compare against upgradient pumpage.

Similarly, salinity and water level monitoring in anchialine ponds can establish baseline data to compare against data reflective of changes in upgradient pumpage.

Collecting data from wells in both the basal and high level areas during the pump test can also help to inform the Commission about potential impacts, so special condition 2 of the previous permit is carried over to this permit.

Integral to that assessment is data from the pumpage of the Ota Well itself. Because of this, staff recommends that approval of the well construction, that, along with the baseline data obtained from the coastal monitor wells and anchialine ponds, can best assess the potential impacts of long-term pumpage of the Ota Well.

It's important to note that the Commission's approval of the well construction permit is purely to assess the impacts of pumpage on coastal resources, and that the applicant cannot rely on the construction of the well to be able to pump the well for consumptive purposes until a pump installation permit is approved, which will be subject to the Adaptive Management Plan. Staff anticipates that the completion of the well will be after the Commission's adoption of the Adaptive Management Plan.

Because no driller is currently on contract to construct the well, this well construction permit shall only be issued upon the selection of the licensed contractor and notification of the Commission.

### **RECOMMENDATION**

Staff recommends that, upon the selection of a licensed well driller, the Commission approve a modification of the well construction permit for the Ota Well previously approved at the August 16, 2022 Commission meeting, replacing all of the conditions established at that meeting, with the standard conditions in Exhibit 1 and the following special conditions:

1. The applicant shall submit a pre-pump test monitoring plan for baseline data collection to Commission staff, which shall then be subject to approval by the Commission. This monitoring plan shall include:
  - a. The location of the two monitoring wells and two anchialine pools to be monitored.
  - b. The design of the monitor wells which at a minimum will be constructed to observe the water to the bottom of the transition zone from fresh to salt water.
  - c. The parameters that will be monitored.
  - d. The frequency of monitoring to be done by NELHA.
  - e. The submission schedule of data to the Commission.
2. The applicant shall have all of the monitoring mechanisms in place (wells and anchialine pool monitoring) and begin collecting baseline data in accordance with the approved monitoring plan, for a minimum of three months before the commencement of pump tests from the Ota well.
3. Upon completion of the well construction and the minimum three-month baseline data collection, the applicant shall conduct the standard 96-hour constant rate aquifer and step-drawdown pump tests. The applicant shall also collect additional monitoring well data during the constant rate test. Specifically, the wells to be monitored and coordinated for water-level data collection during the constant rate pump test are:

- a. The high-level Komo Monitoring Well (3957-002); basal monitoring wells of Kamakana Deep Monitor Well (3959-001), Keopu Basal Monitor (3858-001), and three (3) existing NPS Kaloko-Honokōhau National Historical Park monitor wells (4061-001, and 4161-001 & 002); and deep confined freshwater monitoring well of Keopu 2 Deep Monitoring Well (3959-002).
- b. Other production wells to be considered for water-level monitoring during the constant rate test would be HDWS Keauhou QLT Well (4057-001), HDWS Keopu Deep (3957-001), Douter Coffee #1 (3957-004), and HHFDC Keopu #4 (3957-005).
- c. The coastal monitoring network described in Special Condition 1 above.

Respectfully submitted,



CIARA W.K. KAHAHANE  
Deputy Director

Exhibits: 1 Well Construction Permit Standard Conditions)

APPROVED FOR SUBMITTAL:



DAWN N.S. CHANG  
Chairperson

**STANDARD WELL CONSTRUCTION PERMIT 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 (HAR).
2. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.
3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff or at <http://files.hawaii.gov/dlnr/cwrp/forms/APTR.pdf>). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit **may be reduced** in the event that the pump test does not support the capacity.
4. 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. If it can be shown that the well does not tap basal ground water then this condition may be waived after consultation with and acceptance by Commission staff. However, in no instance can the well be drilled deeper than one-half (1/2) of the theoretical thickness without Commission approval.
5. 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.
6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.
7. 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.
8. The Well Completion Report Part I shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit <http://files.hawaii.gov/dlnr/cwrp/forms/WCR1.pdf> for current form).
9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.
10. The well construction permit application and, if relevant, any related staff submittal approved by the Commission are incorporated into this permit by reference.
11. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.
12. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.
13. 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 the date the permit expires.

14. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f), HAR, prior to any well sealing or plugging work.
15. 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.
16. This permit shall apply to the location shown on the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with §13-168-12(f), HAR.
17. Special conditions in the attached cover transmittal letter are incorporated herein by reference.