



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 16, 2024
Honolulu, Hawai'i

Request for Modification of Conditions 1a. and 1d. of Well Construction Permit approved at the August 16, 2022 Commission meeting – Approve with Special Conditions the Natural Energy Laboratory Of Hawai'i Authority and Hawai'i Housing Finance and Development Corporation

APPLICATION FOR 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) amend Conditions 1a. and 1d. of the well construction permit for the Ota Well (State Well No. 8-3957-006), 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 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 and are not uniform in nature.

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 Ongoing Planning Processes

On September 13, 2013, the National Park Service (NPS) submitted a petition to designate the Keauhou Aquifer System Area as a groundwater management area.

On February 14, 2017, the Commission subsequently denied the petition and imposed eight (8) alternative actions to designation. The submittal and minutes are available online for reference. Submittal: <https://files.hawaii.gov/dlnr/cwrm/submittal/2017/sb20170214B2.pdf>
Minutes: <https://files.hawaii.gov/dlnr/cwrm/minute/2017/mn20170214.pdf>

In November 2018, a groundwater dependent ecosystem symposium led the Commission to direct staff, in conjunction with the NPS, to develop a pilot adaptive management approach to protect groundwater resources. A document has been drafted 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.* Since the adaptive management plan (AMP) is in draft form, it is not included in this submittal. The AMP is intended to help identify ways to measure and monitor the impacts of pumping on groundwater dependent ecosystems (GDEs) and traditional and customary practices (T&C) and includes the following elements:

- 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.

Commission staff will continue to work with NPS on refining the AMP.

In December 2011, the Commission adopted the Hawai'i Island Water Use and Development Plan (WUDP). The plan highlighted the Keauhou region as a focus area in need of further

research, leading to the creation of the Keauhou WUDP. In 2015, the Commission approved a project description for the Keauhou WUDP. In 2021, a draft plan was sent to Commission staff and comments were submitted back to the county. The county is in the process of updating the draft Keauhou WUDP.

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 Home Lands (DHHL).

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). A copy of the application can be found in Exhibit 1. 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 the well construction permit 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. The submittal and minutes are available online for reference.

Submittal: <https://files.hawaii.gov/dlnr/cwrm/submittal/2021/sb20210420B2.pdf>

Minutes: <https://files.hawaii.gov/dlnr/cwrm/minute/2021/mn20210420.pdf>

On various dates in 2021-2022, former Deputy Director Kaleo Manuel and Leimana DaMate from 'Aha Moku conducted various meetings with practitioners, which were also called hālāwai. Through these hālāwai, Deputy 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 affect 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. The conditions can be found in Exhibit 2. The submittal and minutes are available online for reference.

Submittal: <https://files.hawaii.gov/dlnr/cwrm/submittal/2022/sb20220816B1.pdf>

Minutes: <https://files.hawaii.gov/dlnr/cwrm/minute/2022/mn20220816.pdf>

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 never moved forward.

In 2023, NELHA and HHFDC developed some proposed amendments to the conditions that the Commission imposed at the August 16, 2022 approval. They reached out to various parties, and have 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:

Since the applicant is only requesting amendments to Conditions 1a. and 1d., only Condition 1 and those conditions are being highlighted here. The full list of conditions can be found in the August 16, 2022 Submittal (Exhibit 2).

The original language approved by the Commission stated:

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 the Department of Land and Natural Resources' (DLNR) Division of Forestry and Wildlife (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 HDWS) 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
- 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 HDWS, 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 PROPOSED REVISIONS:

Condition 1a.

Request

The applicant is requesting a modification to 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 19, 2024 briefing regarding the annual contributions. One issue was the payment of the contribution after dedication to the HDWS, 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 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 working with the county 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.

OTHER ISSUES:

Driller selection

Since WRI is no longer the driller on record for this application, staff recommends that upon selection of the licensed well driller, that the issuance of the well construction permit can be delegated to the Chair, with all of the conditions imposed under the recommended section included in the signed permit.

Bifurcation of permits

Approval of this well construction permit does not mean that a pump installation permit is automatically approved. Therefore, a Well Completion Report Part I which typically includes constant-rate and step-drawdown tests must be submitted, in addition to the status of the special conditions.

RECOMMENDATION:

That the Commission approve the following conditions to attach to the Ota Well construction permit, subject to the standard conditions in Exhibit 3 and the following special conditions:

1. The following mauka to makai mitigation measures shall be special conditions of the Well Construction Permit, Pump Installation Permit, and Well Certificate and shall commence when the well begins its use.
 - a. Annual contributions of \$13,940/year, as long as the well is in use, shall be contributed by the NELHA to assist DLNR DOFAW Honua'ula Forest Reserve 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. This annual contribution will be revisited every five (5) years to adjust for inflation. Additionally, the Commission may revisit this amount upon completion of the Keauhou Water Use and Development Plan and/or the adoption of the Pilot Adaptive Management Plan, if either of those plans warrant a change in this contribution.
 - 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 HDWS) are good stewards of that resource and therefore request that these projects shall strive to support 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. NELHA and HHFDC shall design, fund, and initiate a coastal groundwater monitoring program for the Lanihau 1-2, Moeauoa ahupua'a modelled after the land-based portion of the program currently in place at NELHA's HOST Park at Keahole Point. A coastal groundwater monitoring plan must be submitted within 1 year of the date of approval of this permit, and is subject to the Chairperson's approval. This plan shall include the location of the wells and anchialine pond sampling sites.

Four sampling locations shall be established: one at each of two anchialine ponds, as well as two new shallow monitor wells. Samples shall be drawn from these locations quarterly and analyzed according to the standard procedures in NELHA's water chemistry laboratory.

- Results must be reported to the commission and shall be made publicly available on an annual basis – or sooner should a given test result give cause for concern.
- 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.
 - f. NELHA shall submit an annual report to the Commission by December 31st of every year on how these special conditions 1a to 1e have been met.
2. During the standard 96-hour constant rate aquifer and step-drawdown pump tests, applicant to provide additional monitoring well data collection during pump tests. Specifically, the wells to be monitored and coordinated for water-level data collection during the constant rate pump test shall be:
 - 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 1d. above.
 - d. The monitoring shall be subject to well owner and chairperson agreement prior to the pump test.
 3. Pump tests will be used to evaluate the following impacts based on the pump test coordinated with HDWS, USGS, NPS and CWRM, subject to the approval of the chairperson:
 - a. Impacts to high-level production wells of HDWS Keauhou QLT Well (4057-001), HDWS Keopu Deep (3957-001), Douter Coffee #1 (3957-004), HHFDC Keopu #4 (3957-005), by identifying and determining what reduction in water levels would be considered unacceptable in these nearby production wells.
 - b. Impacts and connection between the Ota Well pump test and the basal portions of the Keauhou Aquifer System Area by monitoring water-levels at basal observation wells Kamakana Deep Monitor Well (3959-001), Keopu Basal Monitor Well (3858-001), and three (3) existing NPS monitor wells Kaho 1-3 (4061-001, 4161-003 & 002, respectively). and other adjacent high-level production wells (monitor wells (USGS Komo Well (3957-002) and CWRM Keopu 2 Deep Monitor Well (3858-001).

4. Require a tracer/isotope study to gather data and assess differences between the summer/winter seasons to assist in determining flow direction of high-level water from Ota Well and possible quantification of the connection between the high-level and basal water in the proximity to the well.
 - a. This study shall be funded by HHFDC and NELHA under the guidance and subject to the approval of the chairperson.
 - b. A draft scope of work for this study shall be submitted to the chairperson for approval no later than 120 days after approval of these conditions.
5. Delegate to the Chair approval of the pump installation permit and well certificate for this well with attached modified special conditions, subject to compliance with pump tests required in items 2 and 3 above.
6. Transfers of the well construction, pump installation, and well/pump certificates are administratively handled.
7. Time extensions of the well construction and pump installation permits are delegated to the Deputy to approve subject to HAR 13-168-12 (k).

Respectfully submitted,



Dean D. Uyeno
Acting Deputy Director

Exhibits:

1. Well Construction Permit Application
2. Recommendation Section August 16, 2022 Submittal
3. Well Construction Permit Standard Conditions

APPROVED FOR SUBMITTAL:



Dawn N.S. Chang
Chairperson



Tom Nance Water
Resource Engineering

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No. of pages: 1
Email: alexander.leonard@hawaii.gov
bclay@wri.us.com
greg@tnwre.com
todd@tnwre.com

Original will will not
be mailed to you.

August 13, 2018
18-157 | 16-28

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

Dear Mr. Pearson:

Well Construction / Pump Installation Permit Application
for the Ota Well, Kailua-Kona, Hawaii

Enclosed for your review and approval is the Well Construction / Pump Installation Permit application and filing fee for the Ota Well in Kailua-Kona on the Big Island. If successful, the well would be dedicated to the Hawaii County Department of Water Supply as an addition to its North Kona Water System.

If you have questions or need additional information, feel free to contact me, Blaise Clay of Water Resource International, or Alex Leonard at Natural Energy Laboratory of Hawaii Authority.

Sincerely,

Tom Nance

Attachments

ec: Alex Leonard – Natural Energy Laboratory of Hawaii Authority
Blaise Clay – Water Resources International, Inc.
Greg Fukumitsu and Todd Yonamine – TNWRE Inc.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
APPLICATION FOR A WELL CONSTRUCTION /
PUMP INSTALLATION PERMIT

16-28

For Official Use Only:

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Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Application must be accompanied by 10 copies and a non-refundable filing fee of \$25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225. For further information and updates to this application form, visit <http://www.hawaii.gov/dlnr/cwrm>.

WELL LOCATION INFORMATION

1. STATE WELL NO. (if assigned)	2. WELL NAME Ota Well	3. ISLAND Hawaii	4. TMK <u>(3)</u> <u>7</u> - <u>5</u> - <u>01</u> : <u>165</u> <u>lot</u>
5. WELL COORDINATES (latitude and longitude, referenced to NAD 83, degrees, minutes, seconds to 1 decimal place) 19° 39' 49" North 155° 57' 27" West			
The following must be attached before this application is accepted as complete: <ul style="list-style-type: none"> • Property tax map, showing well location referenced to established property boundaries • Photograph of the proposed well site • A schematic diagram showing the well site, access road and proposed well infrastructure 			
6. WELL OPERATOR'S NAME/COMPANY Natural Energy Laboratory of Hawaii Authority		Well Operator's Contact Alexander Leonard	7. LANDOWNER'S NAME/COMPANY escrow, FHT Kamakana, LLC
Well Operator's Mailing Address 73-4460 Queen Kaahumanu Hwy., Suite 101, Kailua-Kona, HI 96740		Landowner's Mailing Address 201 Merchant Street, Suite 2000, Honolulu, HI 96813	
Well Operator's Phone (808) 327-9585 x262	Well Operator's Fax (808) 327-9586	Well Operator's E-mail alexander.leonard@hawaii.gov	Landowner's Phone (808) 528-9243
			Landowner's Fax (808) 725-6562
			Landowner's E-mail jagena@nextitle.com

PROPOSED WELL CONSTRUCTION

8. Proposed Work
 Construct New Well
 Modify Existing Well
 Abandon/Seal Well

9. Construction Type
 Drilled
 Dug
 Shaft
 Tunnel

10. Is this well part of a battery of wells? Yes No

PROPOSED PUMP INSTALLATION

11. Proposed Work
 Install New Pump
 Replace Pump

12. Method of flow measurement
 Flowmeter
 Other (explain)

13. Proposed Pump Capacity, gpm (gallons per minute)
700 GPM

14. Proposed Amount of Withdrawal, gpd (gallons per day)
672,000

15. Proposed Surveyor name and license number (a surveyor is required for all Well Construction Permits and may be required for some Pump Installation Permits)
Ryan Suzuki - License No. LS-10059

PROPOSED USE *If the well water will be treated, please describe how (reverse osmosis, ultra violet, etc.) and disposal method of resulting effluent, reject water, etc.*

16. Municipal (water systems serving greater than 25 individuals or 15 service connections)

17. Domestic Number of units to be served: _____

18. Industrial (describe)

19. Irrigation (describe crop and no. of acres)

20. Military (describe)

21. Other (describe)

OTHER LEGAL REQUIREMENTS *If required, items 22. and 23. must be obtained before the Commission can legally issue a permit:*

22. Conservation District Use Permit (CDUP)
 Well is in Conservation District
 Required, CDUP # _____ date approved _____
 Not Required (attach documentation from OCCL)
 I have not checked with OCCL about whether or not a CDUP is required.
 Well is not in Conservation District
 I have not checked if well is in or out of Conservation District.

23. Special Management Area Permit (SMAP)
 Required, SMA # _____ date approved _____
 Not Required (attach documentation from applicable County agency)
 I have not checked with the county about whether or not an SMA Permit is required.

24. State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources
 I have consulted with the SHPD regarding potential impacts of well construction activities on historic sites. I have attached applicable documentation from the HPD.
 I have not consulted with the SHPD regarding potential impacts of well construction activities on historic sites.

25. Chapter 343
 An Environmental Assessment was completed, and
 An Environmental Impact Statement was required and has been accepted (attach letter of acceptance). Publication date in The Environmental Notice: _____

A Finding of No Significant Impact has been determined (attach letter). Publication date in The Environmental Notice: _____

This project proposes:

<input checked="" type="checkbox"/> Use of state or county lands, or use of state or county funds	<input type="checkbox"/> A wastewater treatment unit
<input type="checkbox"/> Use within a state conservation district	<input type="checkbox"/> Waste-to-energy facility
<input type="checkbox"/> Use within a shoreline setback area	<input type="checkbox"/> Landfill
<input type="checkbox"/> Use within a national or Hawaii registered historic site	<input type="checkbox"/> Oil refinery
<input type="checkbox"/> Use within the Waikiki Special District	<input type="checkbox"/> Power-generating facility
<input type="checkbox"/> The construction, expansion or modification of helicopter facility	<input type="checkbox"/> None of the above 11 items

26. Water Use Permit No. (if applicable): Not Applicable

Additional remarks, explanations, etc. (attach additional sheet if more space is needed)
If successful, well would be outfitted and dedicated to the Hawaii Department of Water Supply

NOTE: Signing below indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that upon permit approval: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 30 days after the completion date of the permitted work; 3) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines of up to \$5000/day.

27. WELL DRILLER (Must be filled out if application is for Well Construction)

Water Resources International, Inc. **CT-17737**

Licensee business name **C-57 License No.**

Blaise Clay **8/13/2018**

Signature Print Date

P. O. Box 44520, Kamuela, Hawaii 96743

Address

(808) 882-7207 (808) 882-7655 bclay@wri.us.com

Phone Fax E-mail

28. PUMP INSTALLER (Must be filled out if application is for Pump Installation)

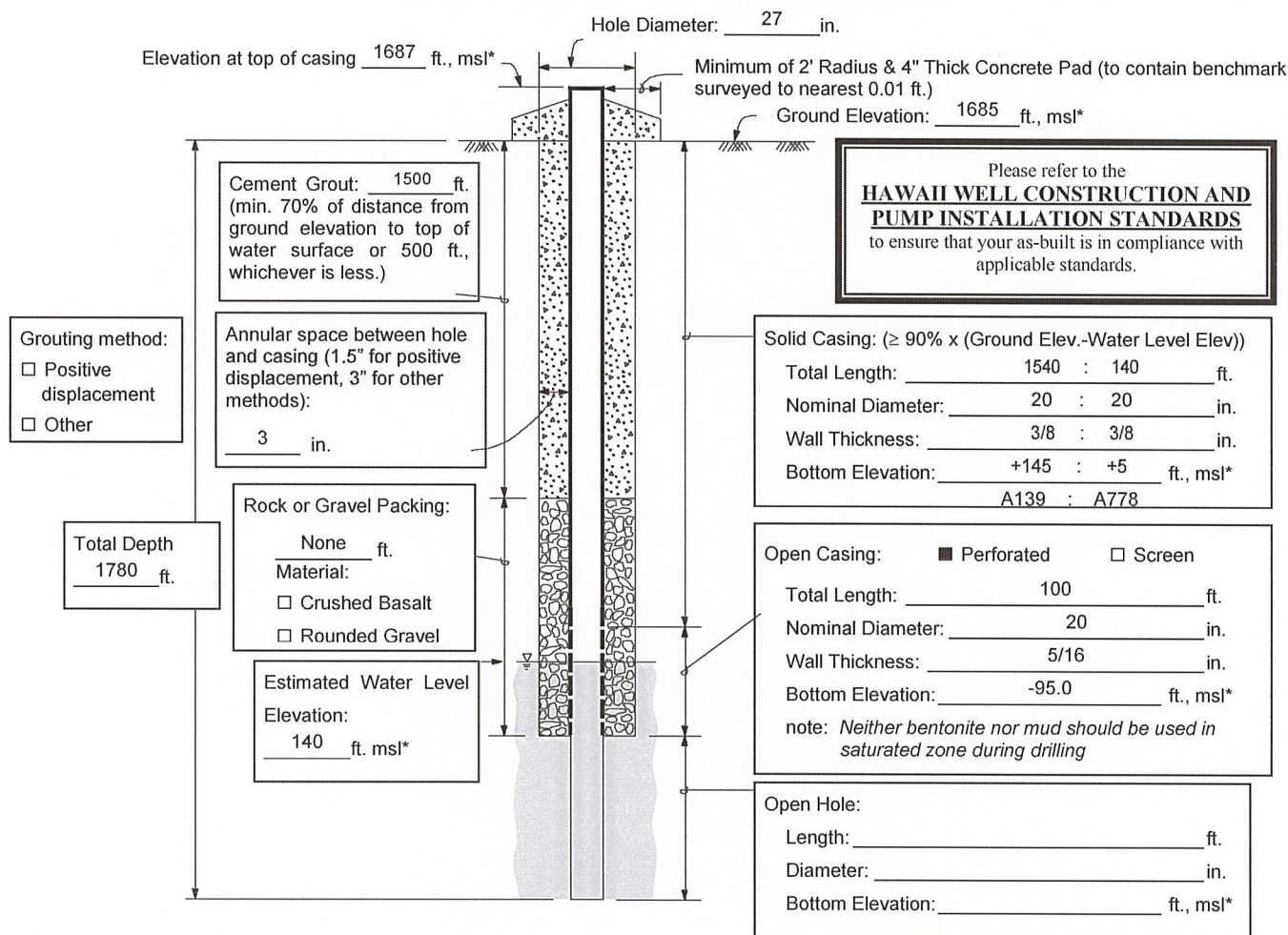
Licensee business name **C-57/C-57a/A License No.**

Signature Print Date

Address

Phone Fax E-mail

PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below. Also, if this proposed well is a dug well, attach a grading plan with cross section profiles showing existing and finished grades)



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

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

$$\text{Bottom Elevation of Well Limit} = \left(\text{Water Elevation} - \frac{41 \times \text{Water Level Elevation}}{4} \right)$$

Example: Estimated + 2 ft. Water Level Elev. → Bottom Elevation of Well Limit = $\left(2 - \frac{41 \times (2)}{4} \right) = -18.5 \text{ ft.}$

Note: Unless a variance is requested and approved, if the well is greater than 1/4 of the theoretical aquifer thickness, the well may have to be backfilled to bring the depth into compliance.

Solid Casing Material:

Carbon Steel: compliant with (check one or more): ANS/AWWA C200 API Spec. 5L ASTM A53 ASTM A139

Lowest 100 Feet of Solid Casing will be ASTM-A778

And compliant with (check one or more): ASTM A242 (or A606) Type E Type S Grade B Other

Stainless Steel: (check one): **ASTM-A778** ASTM A409 (production wells) ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) Schedule 40 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): Schedule 40 Schedule 80 Schedule 120

Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2996 Centrifugally Cast Resin Pipe conforming to ASTM D2997 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950 PTFE Fluorocarbon Tubing conforming to ASTM D3296 FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more): ANS/AWWA C200 API Spec. 5L ASTM A53 ASTM A139

And compliant with (check one or more): ASTM A242 (or A606) Type E Type S Grade B Other

Stainless Steel: (check one): **ASTM-A778** ASTM A409 (production wells) ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) Schedule 40 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one): Schedule 40 Schedule 80 Schedule 120

Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2996 Centrifugally Cast Resin Pipe conforming to ASTM D2997 Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517 Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950 PTFE Fluorocarbon Tubing conforming to ASTM D3296 FEP Fluorocarbon Tubing conforming to ASTM D3296

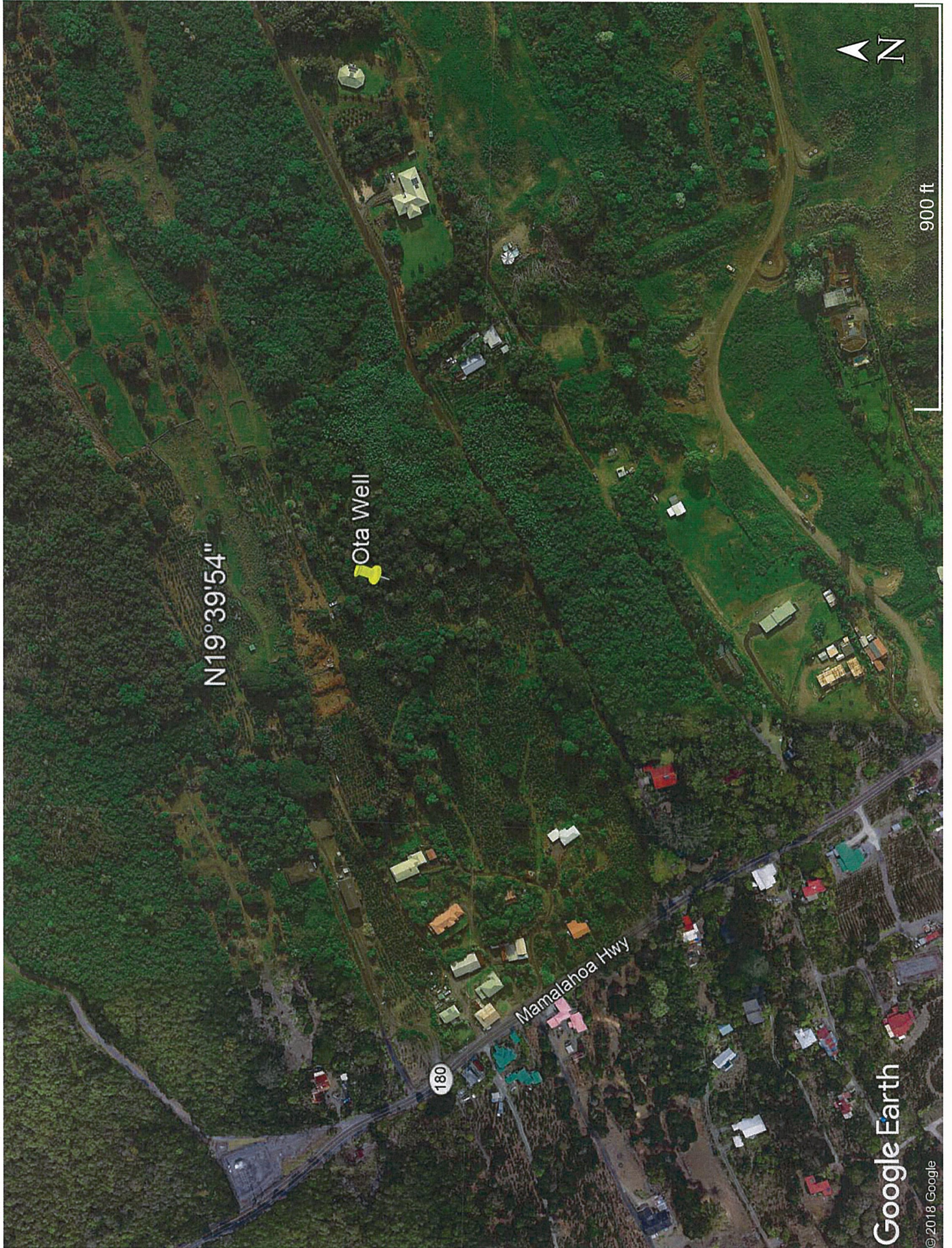


Exhibit 1 - Well Application

JUL 2 1974
 11:58 AM
 1702
 2300



REVISED: APRIL 2, 1953

SOURCE: TAX MAPS BUREAU

BY: HOK & BIRD

SCALE 1" = 300 FT.

PARCELS APPROXIMATE

SUBJECT TO CHANGE

NOTE: Parcels 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200

UNALLOCATED

L.C. No. 10855

MAKANA LAND CO. CORP.

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Exhibit 1 - Well Application

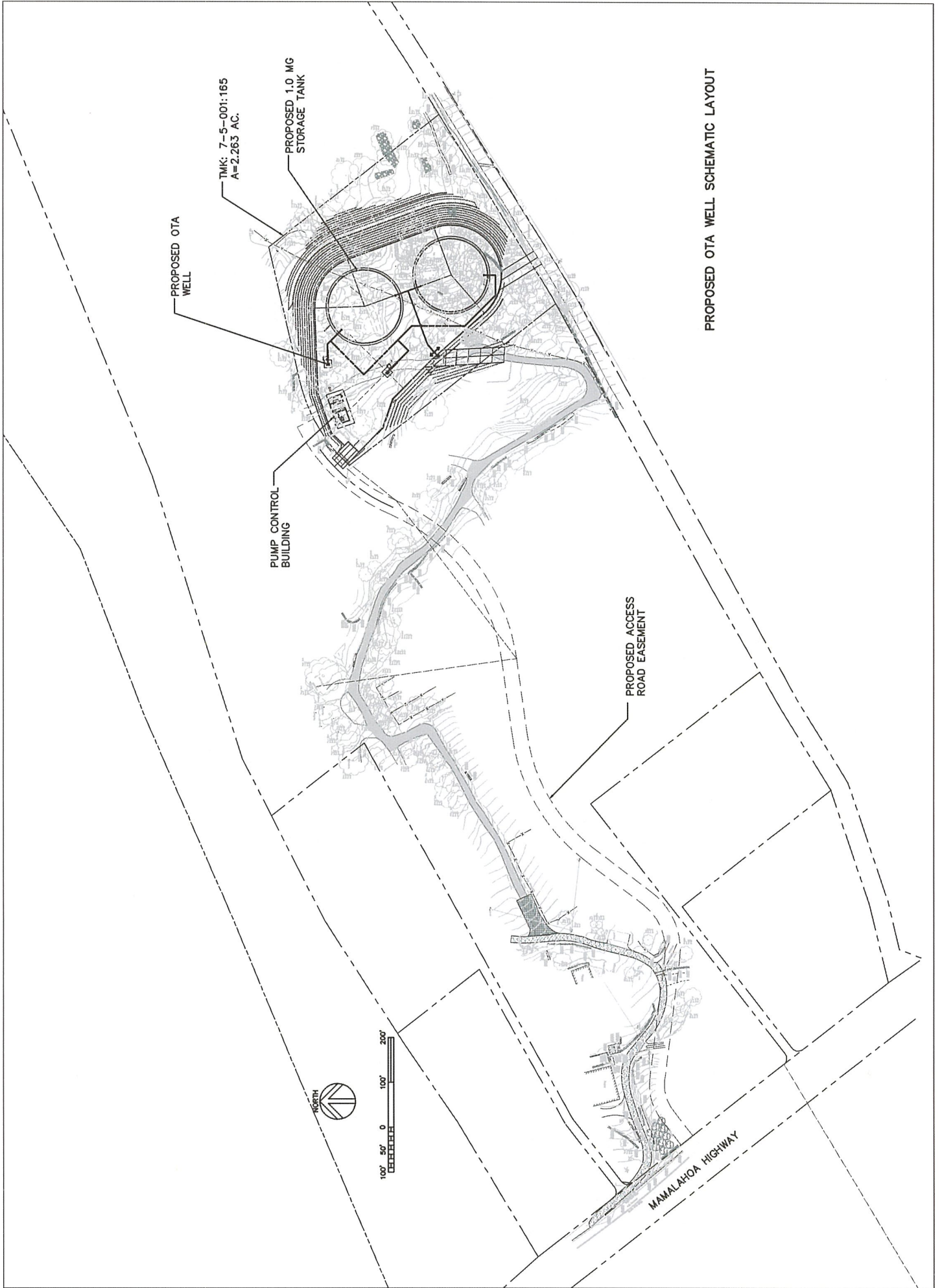


Exhibit 1 - Well Application

From: [Blaise Clay](#)
To: [Komori, Queenie K](#)
Cc: [Tom Nance \(tom@tnwre.com\)](#); [Leonard, Alexander](#); [Kristin Piltz](#); [Denise Miyasato](#)
Subject: RE: well no 3959-010 Ota Well
Date: Monday, September 17, 2018 5:16:34 PM
Attachments: [image003.png](#)

Hi Queenie,

We are processing a COI and ROE, before we can get the permission from the landowner. We should have soon. Please process it as **well only and not both well and pump.**

Thanks,

Blaise Clay
Executive Vice President
Water Resources Int'l Inc.
P.O. 44520
Kamuela, Hawaii 96743
P- 808-882-7207
F- 808-882-7655
C- 808-936-4941
bclay@wri.us.com

Physical address:

*Water Resources Int'l Inc.
61-3295 Maluokalani Street. Bay #1
Kawaihae, Hawaii 96743*

From: Komori, Queenie K <queenie.k.komori@hawaii.gov>
Sent: Monday, September 17, 2018 2:23 PM
To: Nance, Tom <tom@tnwre.com>; Blaise Clay <bclay@wri.us.com>
Subject: RE: well no 3959-010 Ota Well

Good Afternoon,

Do you have any update for me on the subject well?

- The application is deemed incomplete until we receive a written permission from the landowner.
- Also, should I process this as well only and not both (well/pump)? Please confirm.

Thanks,
Queenie

FHT KAMAKANA, LLC
201 Merchant Street, Suite 2000
Honolulu, HI 96813

October 17, 2018

Dept. of Land & Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, HI 96813
Attn. Queenie Komori, P.E.

Dear Sir or Madam:

Subject: Water Well Construction and Pump Installation Permit
TMK: (3)7-5-01: 165 – NELHA-HHFDC Ota Well
Letter of Landowner's Acknowledgment of Construction Activities

Subject to execution of a Revocable Right of Entry described in the Memorandum of Understanding dated June 29, 2016 between FHT Kamakana, LLC, the Natural Energy Laboratory of Hawaii Authority (NELHA), the Hawaii Housing Finance and Development Corporation (HHFDC), and Forest City Hawaii Kona, LLC¹, this letter is to affirm landowner's permission for the development of a potable water well on the subject property. The project is a joint effort by NELHA and of HHFDC / SCD to develop a potable water well. Once complete, this is to be dedicated to the Hawaii Department of Water Supply (DWS).

The current exploration phase - under NELHA's coordination, is contracted to Water Resources International, Inc., and is to construct a well shaft and to determine the hydrologic suitability of the site for water development. If the results of the pump-testing are acceptable and in conformance with current requirements, a subsequent project will install a permanent DWS-approved pump, a 1MG concrete water storage tank and the piping appurtenances necessary to deliver potable water from the well to the Hawaii County public water system.

Sincerely,



James Galbraith
General Counsel, FHT Kamakana, LLC
Title Holder / Landowner

¹ SCD Kamakana, LLC (SCD) is the successor-in-interest to Forest City Hawaii Kona, LLC at Kamakana Villages at Keahuolu pursuant to the following: Development Agreement Kamakana Villages at Keahuolu Keahuolu, Kailua-Kona, Hawaii dated March 31, 2009; Fifth Amendment to Development Agreement dated September 05, 2017; Sixth Amendment to Development Agreement dated April 17, 2018; Assignment of Development Agreement and Consent of HHFDC dated April 17, 2018; and Memorandum of Assignment of Development Agreement and Consent of HHFDC; Consent of HHFDC; Consent of Fee Owner dated July 20, 2018.

RECOMMENDATION:

That the Commission approve the well construction permit to Water Resources International, Inc. subject the standards conditions in Exhibit 10 and the following special conditions:

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
 - 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.

2. During the standard 96-hour constant rate aquifer and step-drawdown pump tests, applicant to provide additional monitoring well data collection during pump tests. Specifically, the wells to be monitored and coordinated for water-level data collection during the constant rate pump test shall be:
 - 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 KAHO 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 monitoring shall be subject to well owner and chairperson agreement prior to the pump test.
3. Pump tests will be used to evaluate the following impacts based on the pump test coordinated with HDWS, USGS, NPS and CWRM, subject to the approval of the chairperson:
 - a. Impacts to high-level production wells of HDWS Keauhou QLT Well (4057-001), HDWS Keopu Deep (3957-001), Douter Coffee #1 (3957-004), HHFDC Keopu #4 (3957-005), by identifying and determining what reduction in water levels would be considered unacceptable in these nearby production wells.
 - b. Impacts and connection between the Ota Well pump test and the basal portions of the KASA by monitoring water-levels at basal observation wells Kamakana Deep Monitor Well (3959-001), Keopu Basal Monitor Well (3858-001), and three (3) existing NPS monitor wells Kaho 1-3 (4061-001, 4161-003 & 002, respectively). and other adjacent high-level production wells (monitor wells (USGS Komo Well (3957-002) and CWRM Keopu 2 Deep Monitor Well (3858-001).
4. Require a tracer/isotope study to gather data and assess differences between the summer/winter seasons to assist in determining flow direction of high-level water from OTA well and possible quantification of the connection between the high-level and basal water in the proximity to the well.
 - a. This study shall be funded by HHFDC and NELHA under the guidance and subject to the approval of the chairperson.
 - b. A draft scope of work for this study shall be submitted to the chairperson for approval no later than August 1, 2021.
5. CWRM staff, 'Aha Moku, HHFDC, NELHA, DHHL, NPS, and HDWS shall meet at least once a year to continue collaboration on bulleted proposed "mitigation measures" recommended by NPS and these special conditions above.

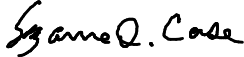
Ola i ka wai,



M. KALEO MANUEL
Deputy Director

- Exhibits:
1. Location Maps
 2. DHHL December 2018 and August 2020 Letters
 3. NPS Letters - Dec 2018 Feb 2021 Mar 2021
 4. Hawaii DWS March 2019 Letter
 5. Megan Lamson September 2018 email on draft EA FONSI
 6. Janice Palma-Glennie December 2018 email
 7. HHFDC, NELHA, DHHL October 14, 2020 MOU
 8. AMAC December 2020 Letter
 9. NELHA January 2021 letter
 10. Well Construction Permit
 11. List of Wells missing water use reporting
 12. Agency review comments received
 13. Honua'ula Forest Reserve Watershed Protection Costs

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE
Chairperson

WELL CONSTRUCTION PERMIT

Ota Well, Well No. 8-3957-006

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

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Ota Well (Well No. 8-3957-006) at TMK (3) 7-5-001:165, Island of Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIIS - February 2004) 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 (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 HWCPIIS (the latest pump test worksheet can be obtained by contacting Commission staff or at <http://files.hawaii.gov/dlnr/cwrm/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 thirty (30) days after completion of work (please contact staff or visit <http://files.hawaii.gov/dlnr/cwrm/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 HWCPIIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.
12. Any variances from the HWCPIIS 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.

Date of Approval:

Expiration Date: **Two (2) years from approval date**

Dawn N.S. Chang, 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 have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to \$5,000 per day starting from the permit date of approval.

Driller's Signature: _____ C-57 License #: _____ Date: _____

Printed Name: _____ Firm or Title: _____

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

Attachment