



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

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

April 19, 2022
Honolulu, Hawai'i

Approve Temporary Relief for a Period of 60 Days from the
Interim Instream Flow Standard for Kaua'ula Stream, Kaua'ula Stream, Lahaina, Maui,
To Provide for the Continued Diversion of 300,000 Gallons Per Day During
Low-Flow Conditions to Kuleana Users and Kamehameha Schools' Tenants
Whose Sole Source of Water is Kaua'ula Stream

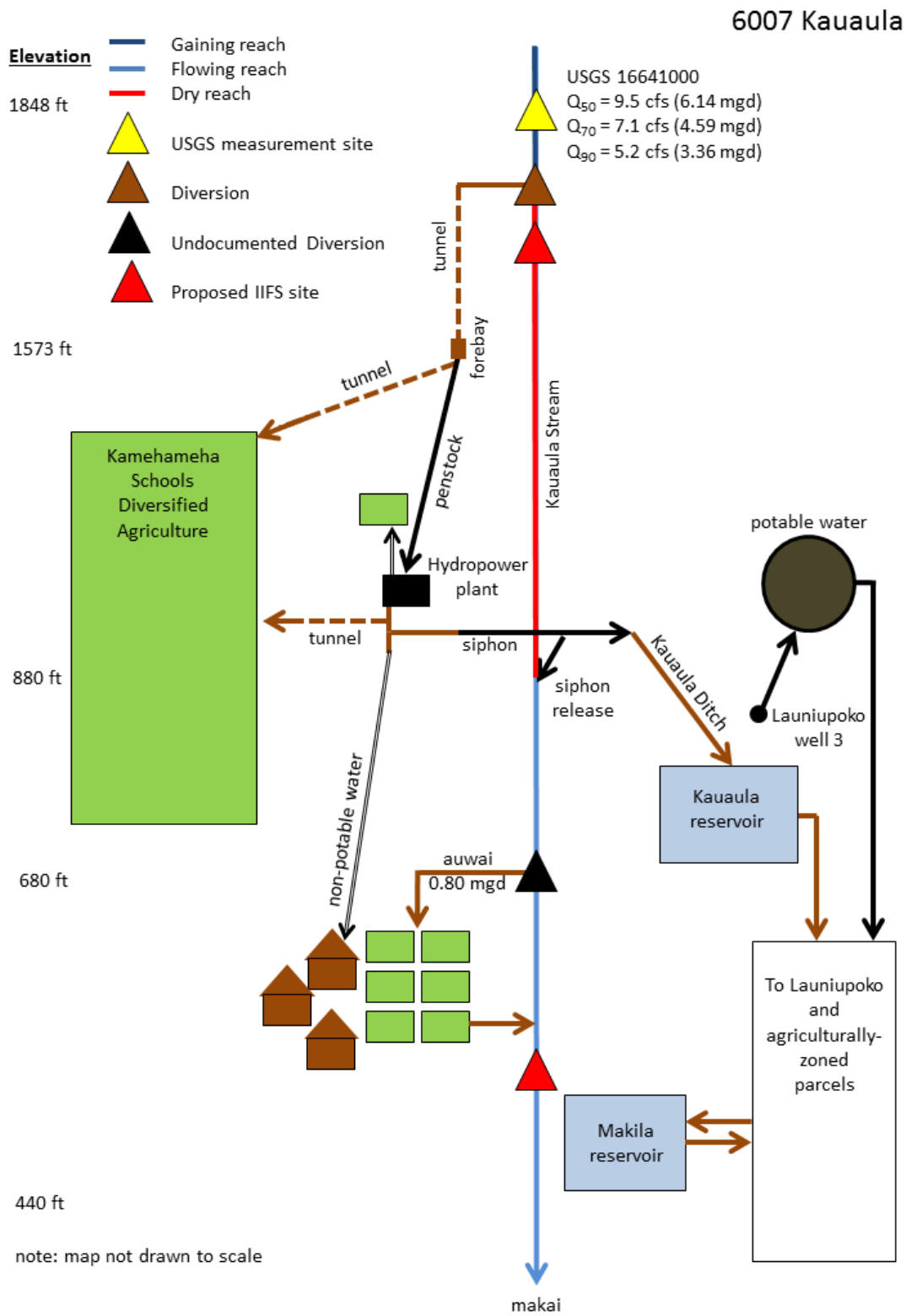
SUMMARY OF REQUEST

Staff is requesting that the Commission on Water Resource Management (Commission) approve the temporary relief of interim instream flow standards (interim IFS) on Kaua'ula Stream at Diversion 957 to ensure the continued use of 300,000 gallons per day of water to meet the immediate needs of public trust uses of Kuleana tenants, including water for traditional and customary practices (150,000 gallons per day) and domestic uses (50,000 gallons per day), and the reasonable irrigation use for agricultural and cultural education purposes of Kamehameha Schools' tenants with no alternative water sources (100,000 gallons per day), for a period of 60 days, so that staff can reassess the balance of water for public trust uses during drought conditions.

LEGAL AUTHORITY

Under the State Water Code (Code), the Commission shall have jurisdiction statewide to hear any dispute regarding water resource protection, water permits, or constitutionally protected water interests, or where there is insufficient water to meet competing needs for water, whether or not the area involved has been designated as a water management area under this chapter. The final decision on any matter shall be made by the Commission. HRS § 174C-10.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Figure 1: Simplified schematic diagram for the hydrologic unit of Kaua'ula (6007).

Temporary Relief from the Interim Instream Flow Standard for Kaua‘ula Stream

BACKGROUND

On March 20, 2018, the Commission approved amendment of the interim instream flow standard (interim IFS) for the hydrologic unit of Kaua‘ula (ID: 6007), as follows:.

Interim IFS A: The interim IFS below the main diversion (REG.957.6), near an altitude of 1,540 feet, shall be established at an estimated flow of 5.2 cubic feet per second (3.36 million gallons per day) based on U.S. Geological Survey (USGS) estimates of total flow Q_{90} . This interim IFS is designed to provide habitat and maintain a wetted pathway between the diversion and the siphon release point. Due to the uncertainty of existing hydrogeologic conditions of Kaua‘ula Stream, this interim IFS will be subject to a conditional release of water and monitoring by Commission staff. Should an estimated flow of 5.2 cubic feet per second not be sufficient, the interim IFS may be revised by a future Commission action.

Interim IFS B: The interim IFS below the Kuleana users near an altitude of 270 feet, shall be established at an estimated flow of 6.35 cubic feet per second (4.1 million gallons per day) based on USGS estimates of total flow Q_{70} and seepage losses. This interim IFS is designed to provide habitat and maintain a wetted pathway between the siphon release point and the ocean while providing for Kuleana water needs downstream of the siphon. Due to the uncertainty of existing hydrogeologic conditions of Kaua‘ula Stream, this interim IFS will be subject to a conditional release of water and monitoring by Commission staff. Should an estimated flow of 6.35 cubic feet per second not be sufficient, the interim IFS may be revised by a future Commission action. This interim IFS allows Launiupoko Irrigation Company to meet the 0.4 mgd agricultural demand for Kamehameha Schools 100-percent of the time and when combined with water diverted from Launiupoko Stream, allows Launiupoko Irrigation Company to meet their 0.303 mgd agricultural water demand 100-percent of the time.

On October 18, 2018 Commission staff updated the Commission on the implementation of the interim IFS for Kaua‘ula Stream, documenting the measured flow values diverted at Diversion 957, returned to the stream below Diversion 957, and transmitted to Kaua‘ula Reservoir.

On September 28, 2021, the Commission sent a letter (Exhibit 1) to Mr. Glenn Tremble, of Launiupoko Irrigation Company (LIC), which sought implementation of required follow-up actions including modification of LIC’s main diversion (No. 957) and monitoring and reporting of water use for the amount of water distributed to Maui Ku‘ia Estate Chocolate Inc. (KEC), the Kaua‘ula Valley homes, Kaua‘ula Reservoir, and returned to the stream at the siphon.

On November 4, 2021 and December 2, 2021, the Commission received response letters from LIC (Exhibits 2 and 3, respectively), that commencement of the diversion modification would be conditioned on LIC’s receipt of a revised temporary rate increase from the Hawai‘i Public Utilities Commission (PUC) “providing LIC with the funds required to fund pumping costs and to meet other operating expenses...”

On November 19, 2022, at Maui County Councilmember Tamara Paltin’s request, Commission staff coordinated a meeting with KEC and Ku‘ia Agricultural Education Center (KAEC) to discuss the impacts of water curtailment by LIC on their irrigation needs.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

On March 31, 2022, the Commission issued a Notice of Alleged Violation (NOAV) that LIC continued to be in violation of the two interim IFS established on Kaua'ula Stream (Exhibit 4). This Notice was forwarded to the PUC on April 8, 2022, as Additional Information to Request for Public Comment in Docket No. 2020-0089.

On April 3, Mr. Gunars Valkirs, of KEC, sent an email to Commission staff indicating that he had been made aware of the NOAV issued to LIC and that the Commission actions "may cause LIC to greatly reduce or eliminate altogether the diverted stream water that is the sole source of water for Ku'ia and the kuleana families."

On April 4, 2022, Mr. Tremble responded that the March 31, 2022 NOAV was received and that the release valves adjacent to the main diversion on Kaua'ula Stream were set at approximately 2,150 to 2,350 gpm, to comply with the interim IFS of 3.36 mgd.

On April 10, 2022, Mr. Valkirs forwarded a Water Update, dated April 8, 2022, sent from LIC to all of its paying customers. The Update indicated that "Unfortunately, as a result, we expect there will be many days of little to no irrigation water available. If there's anything that might prompt action by the PUC, it's the personalized requests of LIC's consumers to grant LIC's temporary rate increase that will facilitate supplementing the lack of surface water with pumped ground water. We urge you to write or email the PUC at the email address below with your support for LIC's Temporary Rate Case that, if approved as requested by LIC, will help replace the surface water that is no longer available from Kaua'ula Stream due to the IIFS."

On April 13, 2022, Mr. Valkirs notified Commission staff via email that he "warned that LIC was setting the stage to take this action and now they have. Today there is no water in the diversion and all water has been directed into the stream. Kamehameha Schools land has been cut off so that Maui Ku'ia Estate Chocolate and Ku'ia Agricultural Education Center have no water. The Kuleana users have no water. There is no water in the diversion.

"If this is what CWRM hopes to accomplish with its Notice of Alleged Violation then you have succeeded. If not then something must be done IMMEDIATELY to get water back into the diversion. In one week I will lose the rest of this year's harvest of cacao. In 2-3 weeks the trees will be irreparably damaged and the farm will be lost."

On April 14, 2022, Mr. Tremble further explained that LIC took the following actions: 1) LIC staff visited the intake seven (7) times and adjusted the release to 2,200 gpm (3.17 mgd) to try and meet the interim IFS exactly, while allowing remaining water to enter the Kaua'ula Ditch; 2) the second release at the siphon was adjusted to 400 to 700 gpm to achieve the 4.1 mgd below).

On April 14, the Commission also notified Mr. Valkirs that the Commission staff was working on a staff submittal to seek temporary relief for a period of 60 days from the interim IFS for Kaua'ula Stream to provide for the continued diversion of 300,000 gallons per day during low-flow conditions to kuleana users and Kamehameha Schools tenants whose sole source of water is Kaua'ula Stream.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

On April 14, the Commission staff received an email from Maui County Councilmember Tamara Paltin, with a forwarded message from Rita Lei Medina, Family Services and Administrative Assistant with The Salvation Army Lahaina Lighthouse Corps. Ms. Medina's email states the following:

"Aloha Councilmember Paltin,

"This morning I received a visit from a Kaua'ula Valley resident who shared with me that effective today there will be no water available for her home. She alleges that Peter Martin will be denying water access to the ohana's in the valley. Additionally, she claims that there will likely be no access to the reservoir, which she says is always full, but is now depleted to almost empty.

"She is a young mother of 5.....all of whom are under the age of 8. She is now forced to exercise her options. One of which is to leave the valley until there is water accessibility again. She is currently applying for entry into the Homeless shelter. I am not sure if that will be available to her family as they are not actually "homeless", but we will see. At her request, I am sharing the resident's name and contact number should your office care to reach out to her. I believe she is hoping your office may be able to shed some light on this situation."

On April 14, the Commission was notified by Attorney Bianca Isaki that, on behalf of Kuleana tenants, a lawsuit was filed against LIC with 1) A complaint; 2) A motion for preliminary injunction; and 3) An Ex Parte motion for a ten day stay and to advance hearing on motion for preliminary injunction.

ANALYSIS

Kaua'ula Stream is gaining in the uppermost reaches in the watershed but in the reach immediately above the diversion, from about 1850 ft in elevation to the partial-record gaging station (USGS station number 205239156372101) at 1,560 ft in elevation, the stream was losing flow in 2008. One-hundred percent of the low-flows are diverted at the diversion at 1,560 and the stream has been dry until water is released at the Kaua'ula Ditch siphon at 940 ft in elevation. The stream then loses flow at about 1.1 cfs mi⁻¹ in the channel down to the 'auwai diversion.

In 2014, USGS published low-flow duration statistics for Kaua'ula Stream above Diversion 957 (Table 1). These statistics were consistent with the monthly reported amount of water diverted from Kaua'ula Stream via Kaua'ula Ditch provided by LIC: mean diverted flow from 2009-2015 was 4.162 mgd. However, they represent larger estimated flows than what Hatton (1976) reported as the Q₅₀ and Q₉₀ flows of 6.92 cfs (4.47 mgd) and 4.56 cfs (2.95 mgd), respectively.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Table 1. Low-flow duration discharge statistics in cubic feet per second (cfs) and million gallons per day (mgd) for Kaua'ula Stream at 1540 ft, Maui (Source: Cheng, 2014; USGS SIR 2014-5087)

Discharge (Q) for a selected percentage (xx) discharge was equaled or exceeded										
1984-2013	Q ₅₀	Q ₅₅	Q ₆₀	Q ₆₅	Q ₇₀	Q ₇₅	Q ₈₀	Q ₈₅	Q ₉₀	Q ₉₅
cfs	9.5	8.6	8.1	7.6	7.1	6.6	6.2	5.7	5.2	4.8
mgd	6.14	5.56	5.24	4.91	4.59	4.27	4.01	3.68	3.36	3.10

On March 22, 2022, Commission staff measured 1.18 cfs (0.76 mgd) in Kaua'ula Stream at the 'auwai diversion when 1.81 cfs (1.172 mgd) was being returned to the stream at Kaua'ula siphon. On this day, 5.48 cfs (3.54 mgd) was flowing in the stream above Diversion 957 and only 0.51 cfs (0.33 mgd) was being returned below Diversion 957.

ISSUES

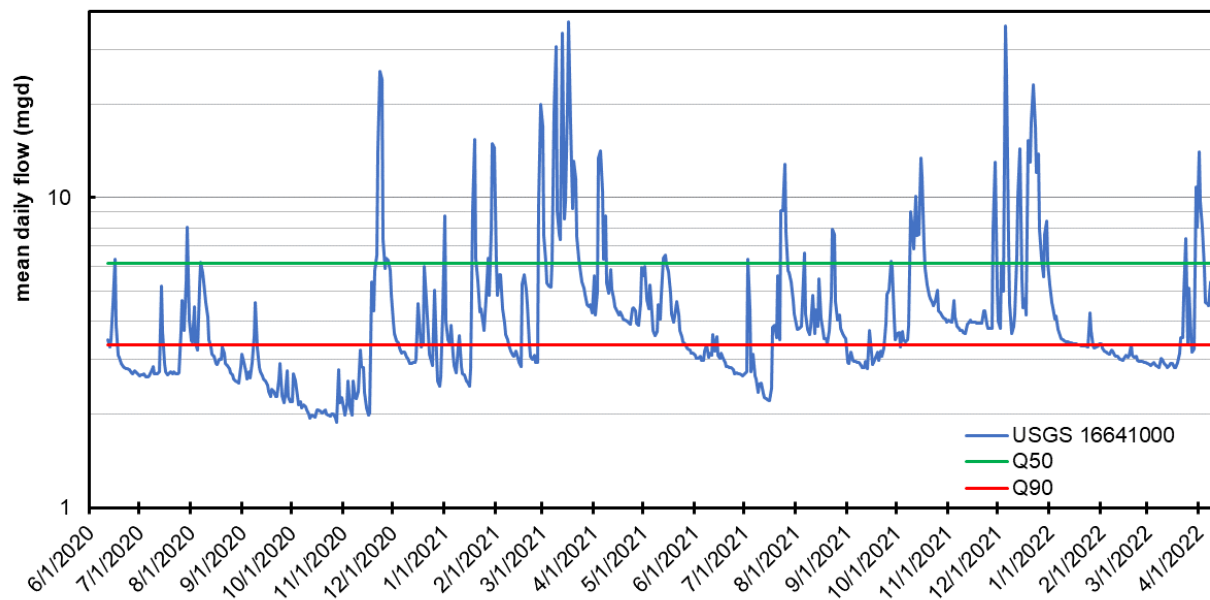
Kaua'ula Stream once supported traditional agriculture and domestic needs for a large population of Native Hawaiians in the Kaua'ula ahupua'a as well as in neighboring ahupua'a (e.g., Waine'e, Ku'ia Makila, Puehuehuiki, and others). At the time of the Māhele, there were three main 'auwai on the Lahaina (North) side of Kaua'ula Stream: Pi'ilani, Waimana, Pu'uhulilole. At an elevation higher than the existing Diversion 957, Pi'ilani 'Auwai transported water from Kaua'ula Stream to support wetland and dryland agriculture on the plateau of Kaua'ula Valley high above the stream channel. This 'auwai was displaced when Pioneer Mill Company (Pioneer Mill) constructed the constructed Diversion 957 to collect water from Kaua'ula Stream for plantation use. Remnants of the Pi'ilani 'Auwai are visible along the pali for great distances. On the Olowalu (South) side of Kaua'ula Stream two 'auwai Pu'upapai and Muliwaikane. Descriptions of additional smaller 'auwai which fed riparian lo'i have also been noted. Pioneer Mill destroyed portions (e.g., Pi'ilani) or restricted downstream flow (e.g., Pu'upapai) of all the 'auwai and only the Waimana 'Auwai is currently in use.

Pioneer Mill Company constructed Kaua'ula Ditch to transport water from Kaua'ula Stream via the 0.8 mile Kaua'ula Tunnel to the "600" fields in sugar cane cultivation. At the tunnel exit, a forebay and penstock were built to produce power at the Makila Hydropower Plant. The penstock is connected to two pipelines which support traditional and customary practices (primarily lo'i kalo) originally dependent on the Pi'ilani 'Auwai. The return flow (approximately 80%) from the lo'i complex re-enters the ditch via a 2-inch PVC pipe (Figure 4). Below the tailrace of the hydropower plant, non-potable water is distributed to tenants of Kamehameha Schools and to Kuleana families.

On March 20, 2018, the Commission established an interim IFS of 3.32 mgd immediately below Diversion 957, representing the Q₉₀ flow. In order to ensure that sufficient water was available to meet recognized uses and enforce the interim IFS, Commission approved funding for the establishment of a real-time USGS stream gaging in August 2018. Due to delays associated with permitting and the pandemic, the stations were finally installed in June 2020 (Figure 2)

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

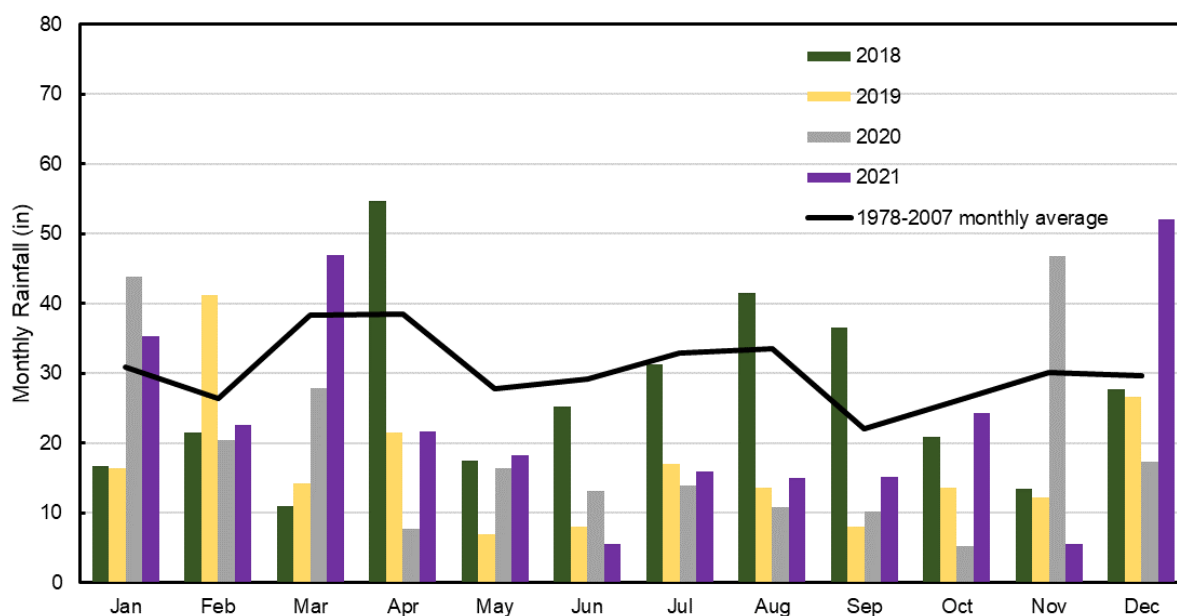
Figure 2. Mean daily flow above Diversion 957 at USGS 16641000 on Kaua'ula Stream at 1550 ft with estimated Q_{50} and Q_{90} flow duration statistics superimposed.



Current rainfall trends and projects predict significant declines in rainfall in leeward Maui. Following almost two years of continuous data at USGS 16641000 on Kaua'ula Stream, Maui has experienced multiple, prolonged periods of drought resulting in sustained rainfall deficits that have limited groundwater recharge and streamflow (Figure 3). Consequently, mean daily flow has been below the estimated Q_{50} flow 86% of the time, and below the estimated Q_{90} flow 46% of the time. This has affected the availability of water for both instream and non-instream public trust uses as well as reasonable irrigation needs of non-public trust uses.

Kamehameha Schools owns multiple parcels of land in the adjoining ahupua'a which were originally dependent on the Pi'ilani 'auwai. Kamehameha Schools has two long-term tenants conducting commercially-viable, educational, and/or cultural agricultural activities that do not have alternative sources of water readily available.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Figure 3. Total monthly rainfall (vertical bars) from 2018-2021 and 30-year mean monthly rainfall (black line) at USGS rainfall station 25327156351102 Puu Kukui**Alternative Water Sources**

Launiupoko Irrigation Company was established to distribute non-potable water to customers in three subdivisions of Launiupoko: Mahanalua Nui, Makila, and Pu'unua. All customers in these subdivisions have access to both potable and non-potable water. Potable water is supplied by two large capacity wells: 6-5138-001 (Launiupoko 1; 12-month average pumpage of 0.363) and 6-5137-001 (Launiupoko 2; 12-month average pumpage <0.001 mgd). Non-potable water is supplied by water diverted from Launiupoko Stream and Kaua'ula Stream. Since 2004, diverted flow from Launiupoko Stream has averaged 0.41 mgd.

The Kuleana families in Kaua'ula Valley and the agricultural tenants of Kamehameha Schools do not have alternative sources of water to rely upon. Recent metered usage by these entities totals approximately 300,000 gallons per day of water for public trust uses, including water for traditional and customary practices (150,000 gallons per day) and domestic uses (50,000 gallons per day), and the reasonable irrigation use for agricultural and cultural education purposes with no alternative water sources (100,000 gallons per day).

KEC has applied for and received a well construction permit (October 2020) to develop a well for their agricultural irrigation needs knowing that reliance on stream water would be limited in the future. It is staff's understanding that development of the well has been delayed due to COVID-19.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Figure 4. Kaua'ula Ditch below the hydropower tailrace. Flow of water to Kamehameha Schools tenants is indicated by the green arrow (water is conveyed in a pipeline located in the ditch, with its intake situated further upstream in the tailrace tunnel to the right), return flow from lo'i complex mauka of hydropower plant indicated in orange circle, pipeline to Kuleana families in valley is indicated by the red arrow (water is conveyed in a pipeline located in the ditch), and downstream direction of flow in ditch to siphon indicated by the blue arrow.



RECOMMENDATIONS

Staff recommends that the Commission:

- 1) Approve a temporary relief for a period of 60 days from the interim IFS for Kaua'ula Stream to provide for the continued diversion of 300,000 gallons per day (0.300 mgd; 0.46 cfs) during low-flow conditions (e.g., when flow measured at USGS 16641000 drops below 5.60 cfs (3.62 mgd)) such that the interim IFS becomes the mean daily flow minus 300,000 gallons; at all other times the interim IFS should be met.
- 2) Order Launiupoko Irrigation Company, Inc. to continue to meet the public trust water needs of Kuleana tenants at all times, including their traditional and customary and domestic uses.
- 3) Order Launiupoko Irrigation Company, Inc. to continue to meet the water needs of tenants of Kamehameha Schools for reasonable irrigation use for agricultural and cultural education purposes who currently have no other alternative source of water.

Ola i ka wai,

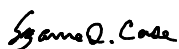


M. KALEO MANUEL
Deputy Director

Exhibits:

1. Letter from the Commission to LIC, dated September 28, 2021, Launiupoko Irrigation Company (LIC) Actions Required For Compliance with Interim Instream Flow Standards (IIFS), Kaua'ula Stream.
2. Letter from LIC to the Commission, dated October 28, 2021, Responses to the Commission letter dated September 28, 2021.
3. Letter from LIC to the Commission, dated November 29, 2021, Responses to the Commission letter dated September 28, 2021, including Diversion Modification Schematic.
4. Letter from the Commission to LIC, dated March 31, 2022, Notice of Alleged Violation, Interim Instream Flow Standard Kaua'ula Stream, Lahaina, Maui

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE
Chairperson

Staff Submittal
Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

April 19, 2022

DAVID Y. IGE
GOVERNOR OF HAWAII



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

SUZANNE D. CASE
CHAIRPERSON

MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

September 28, 2021

Ref.: CWRM.5783.6

Glenn Tremble
Launiupoko Irrigation Company
305 E. Wakea Ave, Suite 100
Kahului, Hawaii 96732

Aloha Mr. Tremble:

**Launiupoko Irrigation Company (LIC) Actions Required
For Compliance with Interim Instream Flow Standards (IIFS), Kaua'ula Stream**

On March 20, 2018, the Commission on Water Resource Management (Commission) established an interim instream flow standard (interim IFS) of 5.2 cubic feet per second (3.36 million gallons per day, mgd) on Kaua'ula Stream immediately below Diversion 957 at 1,560 feet operated by Launiupoko Irrigation Company (LIC)¹. The magnitude of the median (Q_{50}) and low (Q_{90}) flow duration values was estimated by the U.S. Geological Survey (USGS) at 9.5 cfs (6.14 mgd) and 5.2 cfs (3.36 mgd), respectively. The interim IFS was established to allow the continued use of 0.400 mgd of water to meet the diversified agricultural needs of Kamehameha School's lessee Ku'ia Estate Chocolate (KEC), 0.303 mgd of various diversified agricultural entities within the LIC Service Area, as well as the unknown off-stream needs of kuleana families in Kaua'ula Valley. Because surface water availability is highly dependent on rainfall, the interim IFS was established with the understanding that uncertainty in actual daily streamflow would result in zero flow available for off-stream usage approximately 10% of the time.

Follow-up Actions Required

1. Modification of Diversion

In its March 20, 2018 Decision, the Commission also ordered LIC to modify the intake in order to provide for continual mauka to makai flow. Based on subsequent site visits, this has not occurred (Table 2). The current setup ensures that 100-percent of the stream is diverted and then a small portion is returned. Staff are requesting that LIC provide a timeline for diversion modifications that will ensure mauka to makai streamflow at diversion 957 within 30 days from the date of this letter. Modifications to the sluice gate need to be made to divert only flows in

¹ Commission on Water Resource Management. (March 20, 2018) Amended Interim Instream Flow Standards For the Surface Water Hydrologic Units of Ukumehame (6004), Olowalu (6005), Launiupoko (600), and Kaua'ula (6007), Maui. <https://files.hawaii.gov/dlnr/cwrmsubmittal/2018/sb20180320B1.pdf>

Launiupoko Irrigation Company
September 28, 2021

excess of the interim IFS. Commission staff will continue working with LIC to implement an improved system to monitor resources, as well as seek to improve system efficiencies while enforcing the State Water Code. Upon submission of your proposed diversion modifications, the Commission staff will make a determination if a Stream Diversion Works Permit will be required.

2. Monitoring of Water Use

Commission staff is requesting that LIC begin to report the amount of water distributed to KEC, the Kaua'ula Valley homes, Kaua'ula Reservoir, and returned to the stream at the siphon immediately. Based on previous fieldwork, the flow to KEC and Kaua'ula Valley homes is metered and LIC needs to report the metered flow at whatever interval the meter is already read. Staff is requesting that LIC install appropriate measuring devices (e.g., rated flume, weir with staff plate) to monitor the amount of water flowing to Kaua'ula Reservoir above the siphon (see photos C and D in Table 3) within 90 days.

Implementation and Monitoring of the Kaua'ula Interim IFS

Following the March 20, 2018 Decision, Commission staff worked with LIC to implement the interim IFS given the logistical challenges of modifying a 100-year old plantation system. Further, it was understood that the cross-connections to meet the non-potable demands of LIC customers with potable water would take time. Additional delivery costs associated with pumping groundwater could not be recovered until the Public Utilities Commission approved a modification to the LIC rate structure.

While in 2019, Commission staff observed improvements to instream flow and mauka to makai streamflow. Follow-up site visits were limited in 2020 and 2021 due to the ongoing pandemic and restrictions in interisland travel limiting fieldwork. Further, Commission staff and LIC staff were awaiting the installation of real-time streamflow monitoring by US Geological Survey (USGS) on Kaua'ula Stream above and below the diversion in order to better understand the natural variability and availability in flow. In June 2020, USGS was able to complete the installation of the real-time monitoring stations and all stakeholders now have access to the available data.²

On Wednesday, July 1, 2020, Commission staff had a phone call with representatives from West Maui Land Co. and discussed the following, in summary:

1. Any stream water being diverted is delivered only to the KEC and to Kaua'ula Valley families; no surface water is being delivered to the Launiupoko area subdivisions.
2. The interim IFS could not be met while still delivering water to KEC or the Kaua'ula Valley families
3. USGS stream gaging needs additional calibration measurements before the rating curve is complete; but that the real-time data should assist with all water management.

² <https://waterdata.usgs.gov/hi/nwis/current/?type=flow>

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

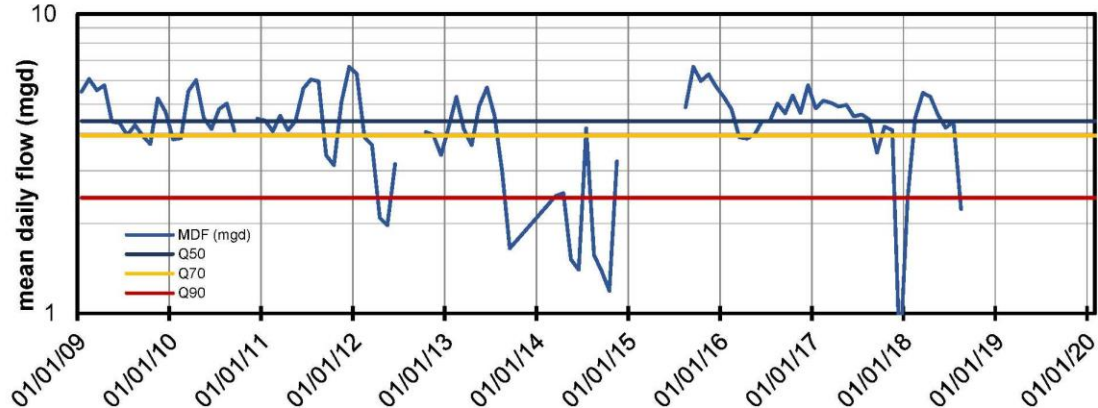
Launiupoko Irrigation Company
September 28, 2021

4. Since the adoption of the interim IFS, LIC has had to pump groundwater from its wells to make up for the deficit of water which has added cost to the utility that cannot be reclaimed until their PUC docket is revised and a rate increase can be adopted. The PUC docket is vague about delivery water to the Kaua'ula Valley families, but that they are not in the defined service area (i.e., the families should continue to receive water but not be charged).
5. Various management scenarios were discussed, but no way forward to meet the interim IFS and water delivery requirements while being in compliance with the PUC was clear.

On Thursday, August 26, 2021, Commission staff received informal complaints regarding a lack of streamflow in Kaua'ula Stream.

In this communication, Commission staff is following up with the diversion operator and other beneficiaries of surface water from Kaua'ula Stream to better understand the situation. In a conversation with KEC, their water use has varied from 60,000 gallons per day in winter months to 100,000 gallons per day in summer months. An unknown amount of water is delivered to the Kaua'ula Valley families.

Figure 1. Reported diverted mean flow (in million gallons per day, mgd) from Kaua'ula Stream at Kaua'ula Tunnel (CWRM gage 6-21) by Launiupoko Irrigation System from 2009 to 2019 and estimated long-term natural Q_{50} , Q_{70} , and Q_{90} from Cheng (2016).



Unfortunately, since prior to the adoption of an amended interim IFS by the Commission, West Maui (including Kaua'ula Stream) has experienced an unprecedented period of drought.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Launiupoko Irrigation Company

September 28, 2021

Figure 2. (A) Mean daily streamflow (in million gallons per day, mgd) at US Geological Survey (USGS) station 16641000 on Kaua'ula Stream above the Launiupoko Irrigation System diversion (diversion 957) and at USGS 16643100 below diversion 957 with estimated long-term natural Q_{50} , Q_{70} , and Q_{90} from Cheng (2016)³ for the period June 12, 2020 to August 31, 2021; (B) Mean daily streamflow (mgd) at USGS station 16620000 on Honokōhau Stream with estimated long-term natural Q_{50} , Q_{70} , and Q_{90} from Cheng (2016) for the concurrent period.

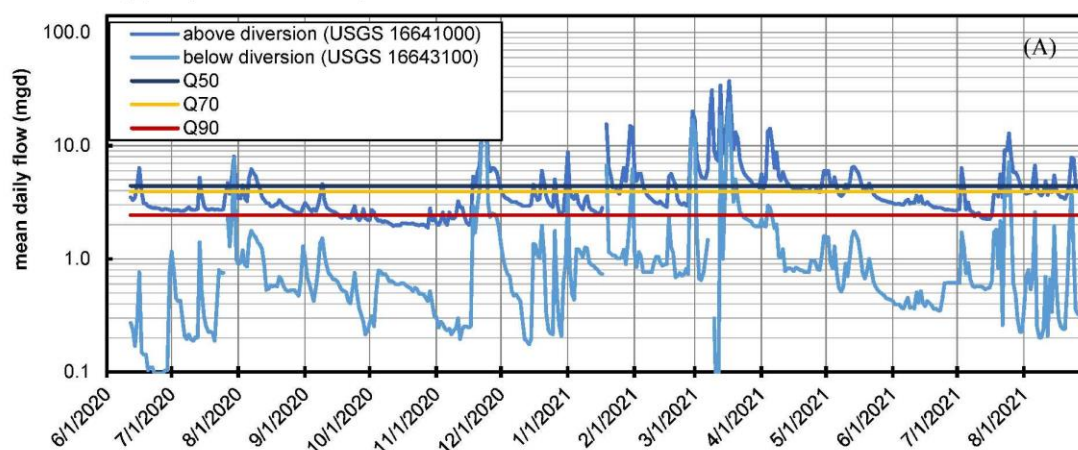
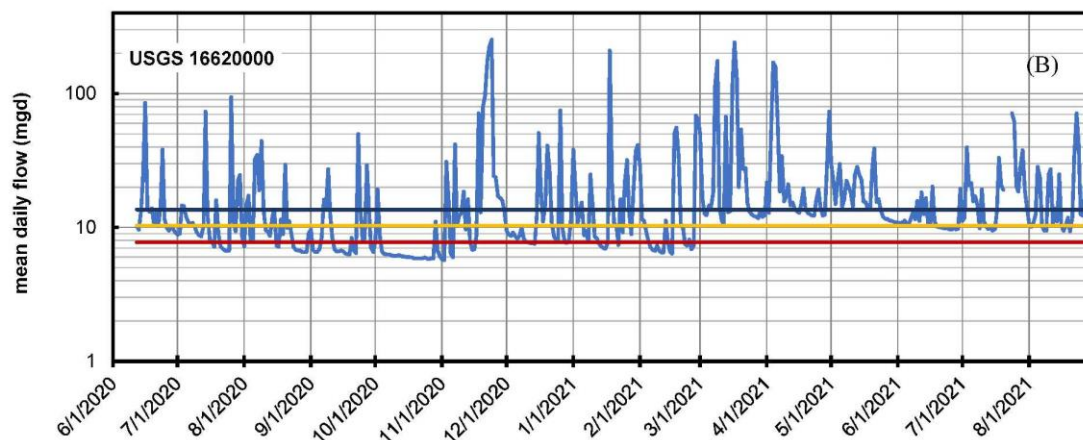


Figure 3. Mean daily streamflow (in million gallons per day, mgd) at US Geological Survey (USGS) station 16620000 on Honokōhau Stream



We understand that the current (2021) and recent (2018-2021) rainfall conditions in West Maui has led to a dramatic decline in runoff and groundwater recharge, resulting in reduced streamflow in Kaua'ula and other streams. Based on total monthly rainfall measured on Pu'u Kukui at SKN 380 (USGS station 205327156351102) from January 2018 to September 2021, West Maui has a cumulative rainfall deficit of 422.14 inches (Figure 4). In other words, since January 2018, there have been 422.14 inches fewer rainfall on Pu'u Kukui compared to the long-term average (Figure 5).

³ Cheng, C.L. (2016) Low-Flow characteristics for Streams on the Islands of Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i, State of Hawai'i. Scientific Investigations Report 2016-5103.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Launiupoko Irrigation Company

September 28, 2021

Table 1. Flow duration characteristics (in million gallons per day, mgd) for Kaua'ula Stream at USGS 16641000 above diversion 957, USGS 16643100 below diversion 957, and an index station at USGS 16620000 on Honokōhau Stream for the period June 12, 2020 to August 31, 2021.

12, 2020 to August 31, 2021.					
	USGS 16641000		USGS 16643100	USGS 1662000	
	2020-2021	1984-2013 ¹	2020-2021	2020-2021	1984-2013 ¹
Q ₅₀	3.34	6.14	0.66	11.25	13.57
Q ₇₀	2.82	4.59	0.47	9.11	10.34
Q ₉₀	2.28	3.36	0.23	6.59	7.76
Q ₉₅	2.07	3.10	0.19	6.15	7.11

¹from Cheng (2016)

Figure 4. Total monthly rainfall (inches, in) from January 2018 to September 2021 (bars) with long-term mean monthly rainfall (black line) measured at Pu'u Kukui (SKN 380) by US Geological Survey (station 205327156351102) at 5,771 feet, Maui.

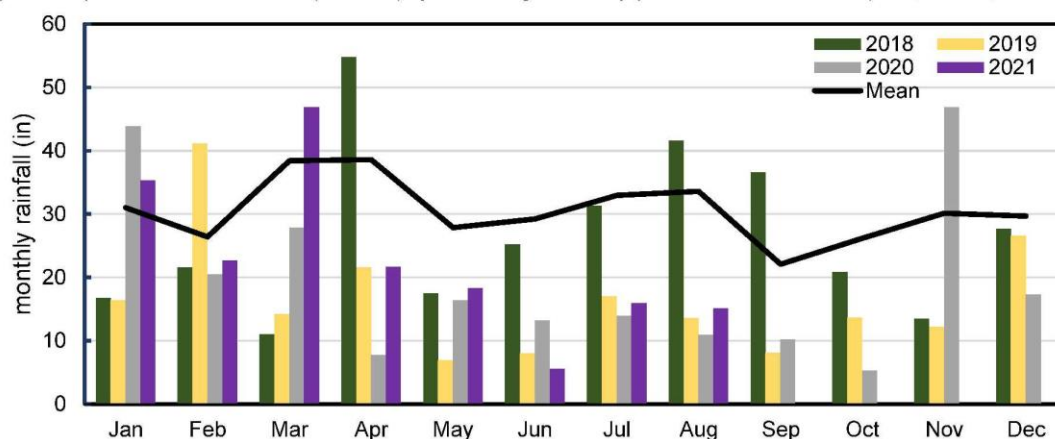
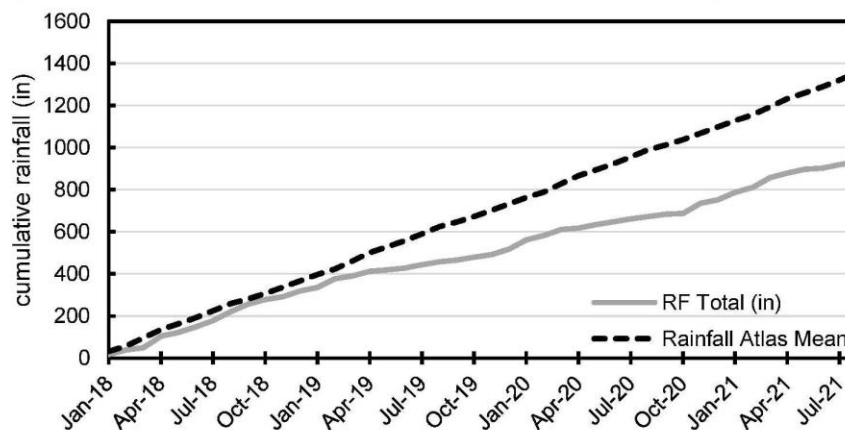


Figure 5. Cumulative rainfall measured at Pu'u Kukui (SKN 380) by US Geological Survey (station 205327156351102) relative to the 1978-2007 base period mean monthly rainfall.



Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Launiupoko Irrigation Company
September 28, 2021

Table 2. Representative photos of (A) Diversion 957 dam across Kaua'ula Stream with intake gate on right bank; (B) close up of intake control gate on right bank; (C) outflow at original sluice basin pre-modification; (D) additional outflow at original sluice basin; (E) returned flow below diversion 957 on Kaua'ula Stream; (F) returned flow from siphon.



Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Launiupoko Irrigation Company
September 28, 2021

Table 3. Representative photos of Kaua'ula Ditch below intake at diversion 957 from Kaua'ula Stream at 1,560 ft elevation (A and B); Kaua'ula Ditch past siphon above pipeline to Kaua'ula Reservoir (C and D).

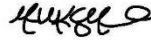


Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Launiupoko Irrigation Company
September 28, 2021

We appreciate your attention to this matter and the follow-up actions required. Should you have any questions, please contact Dr. Ayron Strauch of the Commission staff via email at ayron.m.strauch@hawaii.gov.

Ola i ka wai,



M. KALEO MANUEL
Deputy Director

cc: West Maui Land Co, LLC, Mr. Peter Martin

Launiupoko Irrigation Company, Inc.

305 E. Wakea Ave., Suite 100
Kahului, Maui, Hawaii 96732

Phone: (808) 877-4202
Fax: (808) 877-9409

October 28, 2021

BY EMAIL AND U.S. MAIL

M. Kaleo Manuel
Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Suite 227
Honolulu, HI 96813

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2021 NOV -4 AM 11:00

Dear Mr. Manuel:

Please see our responses below to your letter dated September 28, 2021 Ref.: CWRM. 5783.6 requiring modifications to the Kaua'ula Stream diversion to comply with the IIFS.

1. *Staff are requesting that LIC provide a timeline for diversion modifications that will ensure mauka to makai streamflow at diversion 957 within 30 days from the date of this letter.*
 - a. LIC intends to submit conceptual plans for the modifications requested within 30 days of the date of this letter and will commence implementing the proposed diversion modifications within 30 days of CWRM's approval of said modifications.
 - b. Commencement of these modifications will be conditioned on LIC's receipt of a revised temporary rate increase from the PUC providing LIC with the funds required to fund pumping costs and to meet other operating expenses not objected to by the Consumer Advocate and to remove the condition to discontinue rationing in drought conditions.
 - c. The timeframe for completion will be subject to any permitting required and the sourcing of any specialized equipment required and the receipt of all governmental and other approvals required for the modifications.
2. *Commission staff is requesting that LIC begin to report the amount of water distributed to KEC, the Kaua 'ula Valley homes, Kaua 'ula Reservoir, and returned to the stream at the siphon immediately.*
 - a. Presently, LIC monitors the volume of stream water distributed to each of the above end-users and the amount of water returned to the stream at the siphon through flow meters, with the exception of Kaua'ula Reservoir. In response to CWRM's request, LIC will be working to design a way to remotely meter the flow of stream water into the Kaua'ula Reservoir.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Deputy Director Manuel

October 28, 2021

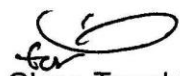
Page 2

- b. Please find attached the past 8 months of flow meter reports from water delivery to KEC, valley homes, and siphon release. Please clarify how future reporting is to be made. LIC currently provides diversion data to CWRM electronically but without the ability to specify the report format and content.
 - c. LIC expects that releasing water to meet the Interim Instream Flow Standards mandated by CWRM will likely result in all users of LIC's system to be without water 40% of the time.
3. *Staff is requesting that LIC install appropriate measuring devices (e.g., rated flume, weir with staff plate) to monitor the amount of water flowing to Kaua'ula Reservoir above the siphon (see photos C and D in Table 3) within 90 days.*
 - a. Please clarify the location that CWRM is requesting to be monitored. The attached photos C & D to your letter show locations after the siphon rather than "above the siphon".
 - b. LIC is evaluating alternative locations and devices that will allow remote metering of stream water that flows into Kaua'ula Reservoir. LIC will provide a recommendation to CWRM for comment within 60 days with the intent of implementing such metering within 90 days, subject to CWRM's approval, the receipt of all governmental and other required approvals and the sourcing time for devices.
4. *Commission staff will continue working with LIC to implement an improved system to monitor resources, as well as seek to improve system efficiencies while enforcing the State Water Code.*

LIC is grateful for CWRM's cooperation in working to improve the monitoring of the Kaua'ula Stream water resource while allowing LIC to provide a limited allocation of surface water to its users.

Should you have any questions or comments, please feel free to contact the undersigned at (808) 877-4202 or via email at glenn@westmauland.com.

Sincerely,



Glenn Tremble

CC: Dr. Ayron Strauch, via email ayron.m.strauch@hawaii.gov

Attachment

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

RETURNED to
STREAM

Siphon
7,837,569
48,376,400
57,715,000
54,807,000
45,810,000
41,340,000
42,210,000

MONTHLY USAGE (LIC, North Side of Stream)

Lower Valley Homes*	Kapu 1"	Kapu 1.5"	TOTAL KAPU
*see below			
1,763,102	337,677	2,737,980	3,075,657
1,763,102	124,944	839,060	964,004
1,763,102	231,176	765,060	996,236
1,763,102	356,060	3,010,070	3,366,130
1,763,102	171,471	1,386,860	1,558,331
1,763,102	269,807	1,540,510	1,810,317
1,763,102	253,283	1,667,754	1,921,037
1,763,102	145,745	1,049,746	1,195,491

KEC-GUNNERS
2,039,400
1,772,500
2,657,800
3,259,800
2,902,100
2,378,700
3,075,700
1,840,800

READ DATE

3/1/2021

4/1/2021

5/1/2021

6/1/2021

7/1/2021

8/1/2021

9/1/2021

10/1/2021

*Valley Homes (meter is not read monthly)

10/1/21 READ	12,993,600.00
3/1/21 READ	651,883.00
7 MOS	12,341,717.00
AVERAGE MONTHLY USAGE	1,763,102.43
DAILY	58,770.08
GPH	2,448.75
GPM	40.81

April 19, 2022

Launiupoko Irrigation Company, Inc.

305 E. Wakea Ave., Suite 100
Kahului, Maui, Hawaii 96732

Phone: (808) 877-4202
Fax: (808) 877-9409

November 29, 2021

BY EMAIL AND U.S. MAIL

M. Kaleo Manuel
Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Suite 227
Honolulu, HI 96813
Manuel, Kaleo L <kaleo.l.manuel@hawaii.gov>

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2021 DEC -2 AM 10:59

Subject: Kaua'ula Stream IIFS
Diversion Modification Schematic
Ref.: CWRM. 5783.6

Dear Mr. Manuel:

In response to your letter dated September 28, 2021 Ref.: CWRM. 5783.6 requiring modifications to the Kaua'ula Stream diversion to comply with the IIFS and in accordance 1.a. of our Oct. 28, 2021 reply LIC is hereby submitting conceptual plans for the modifications to the diversion to ensure the IIFS of 5.2 cfs (or 3.36 mgd) remains in the stream. Both letters are attached for your reference.

The proposed design modifications include:

- 1) Removing an approximately 5 foot wide by 4 foot deep section or notch from the top of the diversion ("Diversion Notch").
- 2) Installing a steel plate that covers approximately 5 feet x 3 feet 6 inches of the new Diversion Notch that will provide gap of 6 +/- inches at the bottom to allow 5.2 cfs (or 3.36 mgd) to flow into the stream first before any water may be diverted into the ditch. Note that the ditch and diversion Elevations and C Factor for the Weir Flow are to be field verified. Adjustments to the gap between the steel plate and bottom of the Diversion Notch will be made to ensure the IIFS of 5.2 cfs is met.
- 3) A clean-out mechanism will need to be designed and installed to keep the gap free of debris.

EXHIBIT 3

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Deputy Director Manuel

November 29, 2021

Page 2

Please see attached plan and profile of the proposed modifications for your review and comment. Please advise if additional information, permits or other approvals will be required for CWRM's approval for the work to begin.

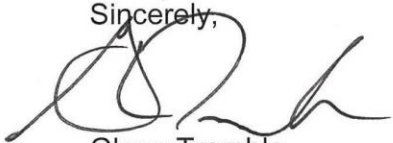
As stated in the Oct. 28, 2021 letter:

- a. Commencement of these modifications will be conditioned on LIC's receipt of a revised temporary rate increase from the PUC providing LIC with the funds required to fund pumping costs and to meet other operating expenses not objected to by the Consumer Advocate and to remove the condition to discontinue rationing in drought conditions.
- b. The timeframe for completion will be subject to any permitting required and the sourcing of any specialized equipment required and the receipt of all governmental and other approvals required for the modifications.

Once these permanent modifications are made, no water will be diverted until the IIFS is met. Using the USGS data over a 473 day period between June 2020 and Sept. 2021, stream flows were at or below the IIFS of 5.2 cfs for 245 days during the 15 month period. Using this period as an example, zero water will be diverted about 51% of the time

Should you have any questions or comments, please feel free to contact the undersigned at (808) 877-4202 or via email at glenn@westmauland.com.

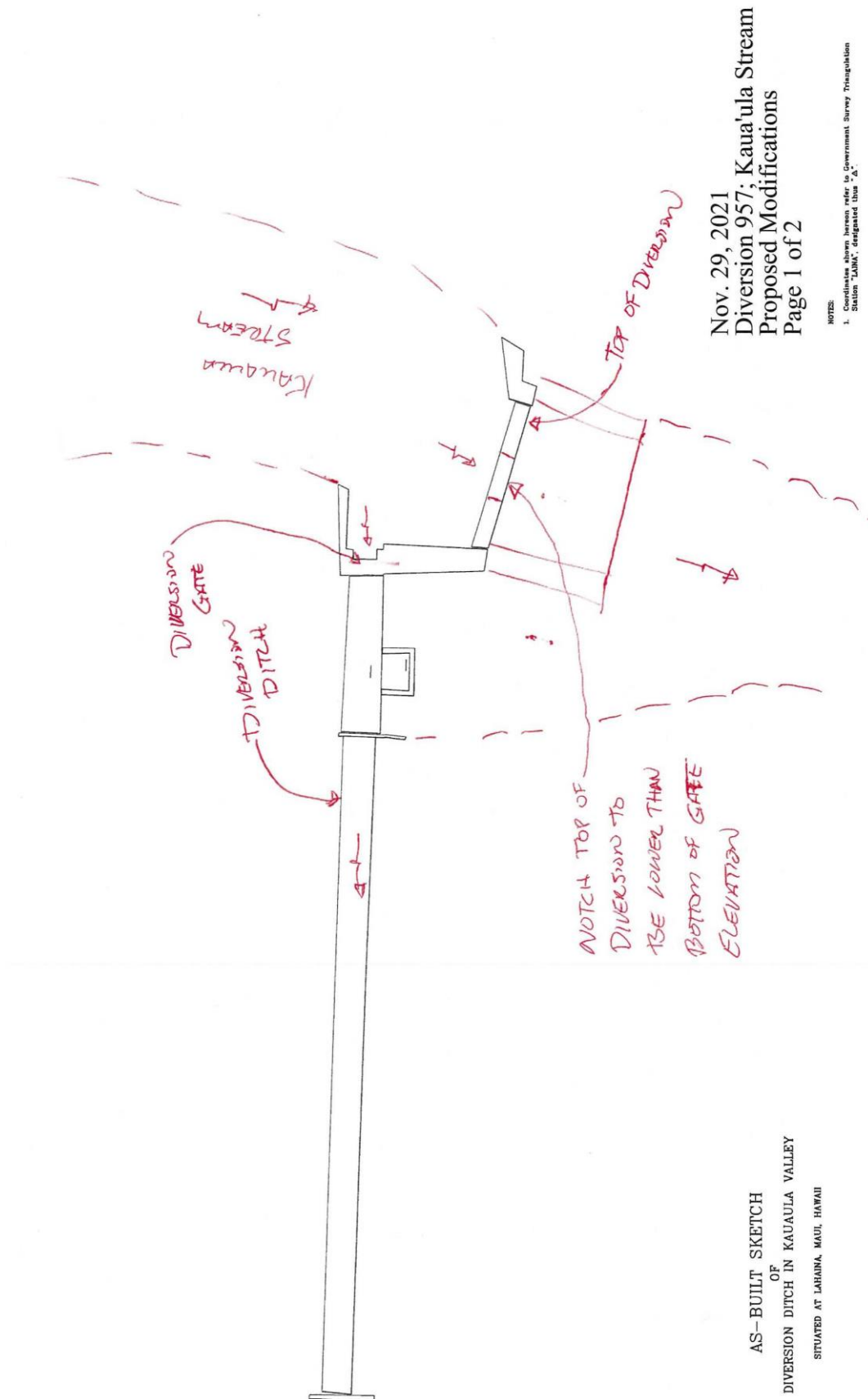
Sincerely,

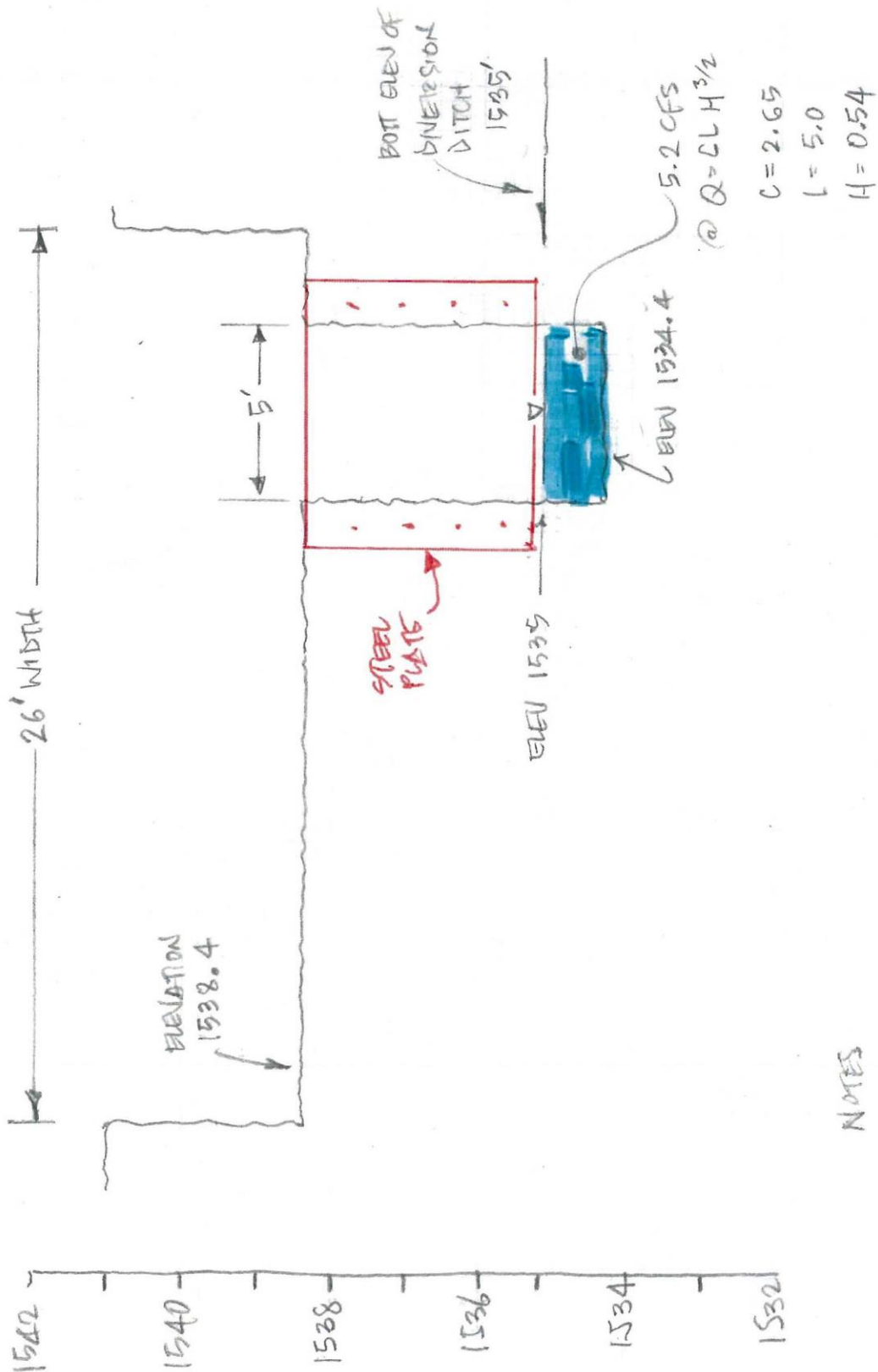


Glenn Tremble

CC: Dr. Ayron Strauch, via email ayron.m.strauch@hawaii.gov
Dean Uyeno, via email dean.d.uyeno@hawaii.gov

Attachments





Nov. 29, 2021
 Diversion 957; Kaua'ula Stream
 Proposed Modifications
 Page 2 of 2

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

DAVID Y. IGE
GOVERNOR OF HAWAII



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

SUZANNE D. CASE
CHAIRPERSON

MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

March 31, 2022

Ref.: CWRM.5783.6

**CERTIFIED COPY MAIL IS FORTHCOMING
RETURN RECEIPT REQUESTED**

Glenn Tremble
Launiupoko Irrigation Company, LLC
305 East Wakea Ave., Suite 100
Kahului, HI 96732

Aloha Mr. Tremble:

NOTICE OF ALLEGED VIOLATION
Interim Instream Flow Standard
Kaua'ula Stream, Lahaina, Maui

Notice is hereby given by the Commission on Water Resource Management (Commission) that Launiupoko Irrigation Company, LLC (LIC) may be in violation of the following:

1. The measurable interim instream flow standard for Kaua'ula Stream, below the main diversion (REG.957.6) near an altitude of 1,540 feet, established by the Commission on March 20, 2018, in the amount of 5.2 cubic feet per second (3.36 million gallons per day) based on U.S. Geological Survey (USGS) estimates of total flow Q_{90} .
2. The measurable interim instream flow standard for Kaua'ula Stream, below the kuleana users near an altitude of 270 feet, established by the Commission on March 20, 2018, in the amount of 6.35 cubic feet per second (4.1 million gallons per day) based on USGS estimates of total flow Q_{70} and seepage losses.

Hawaii Revised Statutes §174C-71(2) and Hawaii Administrative Rules §13-169-30(b) directs the Commission to establish instream flow standards on a stream-by-stream basis whenever necessary to protect the public interest in waters of the State. The staff of the Commission monitors and regulates these established instream flow standards to ensure the protection of instream uses and adequate sharing of this limited resource for non-instream purposes.

According to HRS §174C-15, HAR §13-168-3, and Administrative and Civil Penalty Guideline (G14-01), any person who violates any provision of this chapter, or any rule adopted pursuant to this chapter, may be subject to a fine imposed by the Commission. Such fine shall not exceed \$5,000 per violation. For a continuing offense, each day's continuance is a separate violation.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

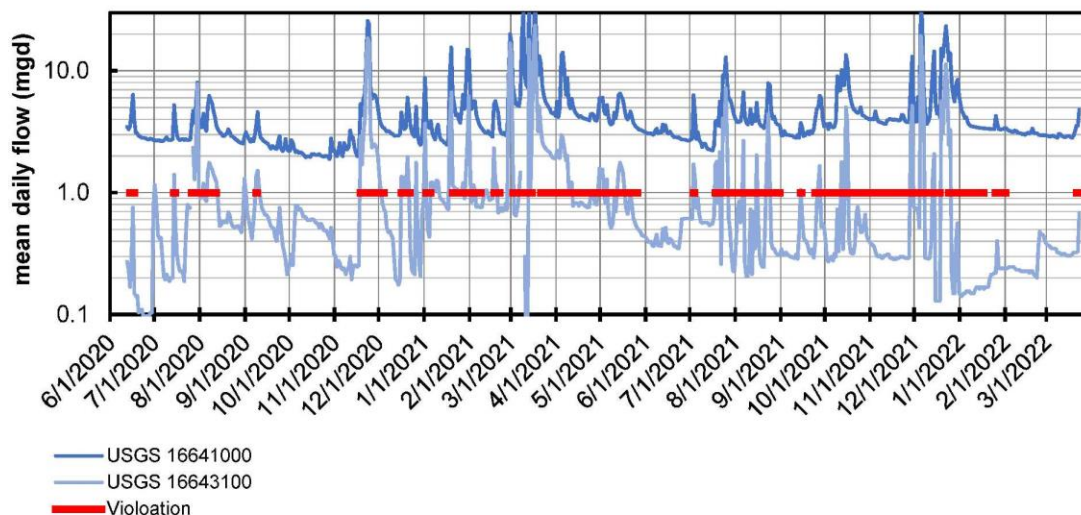
Mr. Glenn Tremble

March 31, 2022

Page 2

Our records indicate that from June 12, 2020 to March 23, 2022 (650 days), Kaua'ula Stream had a mean daily flow of 4.55 mgd and that only below Diversion 957. There were 315 days (48.5%) where the mean daily flow at USGS 16643100 below Diversion 957 violated the interim IFS while there was sufficient flow above Diversion 957 at USGS 16641000. On days when there was insufficient flow above Diversion 957 at USGS 16641000 to meet the interim IFS, an average of 2.33 mgd continued to be diverted. For the period from June 12, 2020 to March 23, 2022, an average of 3.46 mgd (interquartile range: 2.44 – 3.66 mgd) was diverted from Kaua'ula Stream at Diversion 957.

Figure 1. Mean daily flow (million gallons per day, mgd) above diversion 957 at USGS 16641000 and below diversion 957 at USGS 16643100 with dates where flow at USGS 16643100 was below the interim IFS of 3.36 mgd and the flow at USGS 16641000 was above the interim IFS.



On September 28, 2021, Commission staff contacted LIC via letter (*CWRM.5783.6*) and reminded LIC of its obligation to comply with the interim IFS, requested LIC to submit a proposal of the stream diversion modification within 30 days the date of the letter, requested LIC to begin reporting the amount of water distributed to Ku'ia Estate Chocolate (KEC), the Kaua'ula valley homes, Kaua'ula Reservoir, and returned to the stream at the siphon immediately, and requested LIC to install appropriate measuring devices (e.g., rated flume, weir with staff plate) to monitor the amount of water flowing to Kaua'ula Reservoir above the siphon within 90 days.

On October 28, 2021, LIC responded via letter stating LIC will submit conceptional plans for the stream diversion modification within 30 days and commencement of these modifications LIC conditions on the receipt of a temporary rate increase by the Public Utilities Commission (PUC). LIC also submitted data on the amount of water distributed to KEC, the Kaua'ula valley homes, Kaua'ula Reservoir, and returned to the stream at the siphon and stated that LIC will provide a recommendation to the Commission within 60 days for the installation of a measuring device to monitor streamflow into Kaua'ula reservoir.

Temporary Relief from the Interim Instream Flow Standard for Kaua'ula Stream

Mr. Glenn Tremble

March 31, 2022

Page 3

On November 29, 2021, LIC submitted conceptual plans for the stream diversion modification and repeated LIC's condition on a revised temporary rate increase. LIC also stated that "[u]sing USGS data over a 473 day period between June 2020 and Sept. 2021, streams flows were at or below the IIFS of 5.2 cfs for 245 days during the 15 month period."

Based on data submitted by LIC, in letter dated October 28, 2021, and recreated in Table 1, there is a substantial amount of diverted flow that continues to be used by LIC, even during drought periods. Follow up site visits to the LIC service area have documented the continued use of water for landscape irrigation, particularly the watering of lawns during the mid-day with full sun. Such usage of water while violating the interim IFS constitutes clear waste of limited water resources.

Table 1. Daily mean diverted flow (gallons) at Diversion 957, metered usage by KEC, valley homes, Kapu homestead, return flow from Kapu homestead (80%), and release from the siphon back to Kaua'ula Stream.

Month	Diverted Flow	Maui Kuia Estate Chocolate Farm	Valley Homes	Kapu homestead	Kapu return (80%)	Siphon release	Balance
March 2021	6,999,846	65,787	50,374	99,215	79,372	1,583,204	5,280,637
April 2021	4,282,599	59,083	50,374	32,133	25,707	1,753,133	2,413,582
May 2021	3,505,865	85,735	50,374	32,137	25,709	1,861,774	1,501,553
June 2021	2,561,071	108,660	50,374	112,204	89,763	1,826,900	552,696
July 2021	3,077,639	93,616	50,374	50,269	40,215	1,477,742	1,445,853
August 2021	3,579,043	76,732	50,374	58,397	46,718	1,333,548	2,106,708
September 2021	2,973,195	102,523	50,374	64,035	51,228	1,407,000	1,400,491
October 2021	4,892,908	59,381	50,374	38,564	30,851	1,481,484	3,293,956

Based on the information and analysis above, we expect LIC to immediately comply with the IIFS on Kaua'ula Stream. The Commission staff is of the opinion that the PUC's order granting LIC's temporary rate relief request, Order No. 37872 in PUC Docket No. 2020-0089, is sufficient for LIC to implement the requested stream diversion modifications and installation of a measuring device at Kaua'ula reservoir.

We welcome LIC to provide a response within thirty (30) days of the date of this letter, as we intend to schedule this case before the Commission for final disposition. You will be notified at that time concerning the meeting time and place.

We appreciate your attention to this matter. Should you have any questions, please contact Dr. Ayron Strauch of the Commission staff at (808) 587-0265, or via email at ayron.m.strauch@hawaii.gov.

Ola i ka wai,



M. KALEO MANUEL
Deputy Director