



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

June 15, 2021
Honolulu, Hawai'i

Approve Order to Moloka'i Properties Limited to Grant U.S. Geological Survey
Access to Re-establish USGS Long-Term Monitoring Station 16415000
On East Fork Kawela Stream to Address Top Priority Monitoring Needs for the State and
Provide Current Hydrologic Data to Partially Address the Complaint (CDR.5310.4)
Filed by Earthjustice on Behalf of Moloka'i Nō Ka Heke, Moloka'i

SUMMARY OF REQUEST

Staff is requesting that the Commission on Water Resource Management (Commission) approve the Order to Moloka'i Properties Limited (MPL) to grant the U.S. Geological Survey (USGS) access to install and maintain a continuous streamflow gaging station to monitor streamflow in real-time at the former USGS station 16415000 on TMK 4-5-4-003:026, Moloka'i. The high-altitude station on East Fork Kawela Stream is an essential component of the water-resource monitoring program designed to meet State needs for water-resource assessment, management, and protection. The station is intended to characterize water availability upstream from the MPL diversion and append the 25-year record of natural streamflow collected from the high priority area from 1946 to 1971.

LOCATION MAP See Figure 1

LEGAL AUTHORITY

Under the General powers and duties of the Commission as stated in the State Water Code (Code) §174C-5, Hawaii Revised Statutes (HRS), and associated administrative rules HAR §13-167-3, the Commission has the power to carry out all necessary data collection to support the implementation of the Code. Notably, the Commission:

- (1) Shall carry out topographic surveys, research, and investigations into all aspects of water use and water quality;

- (5) May conduct hearings, issue declaratory or adjudicatory rulings and orders, fashion conditions, limitations, and remedies, and otherwise exercise such other powers as may be necessary and proper in aid of its jurisdiction consistent with law;
- (10) May enter, after obtaining the consent of the property owner, at all reasonable times upon any property other than dwelling places for the purposes of conducting investigations and studies, or enforcing any of the provisions of this code, being liable, however, for actual damage done. If consent cannot be obtained, reasonable notice shall be given prior to entry;
- (13) May appoint specialists and consultants necessary to carry out the purposes of this chapter without regard to the requirements of chapters 76 and 77 and section 78-1, HRS.
- (18) Shall catalog and maintain an inventory of all water uses and water resources

Further, the Code provides that under the Hawaii Water Plan (HRS §174C-31(c)), the Water Resource Protection Plan shall, in pertinent part:

- (1) Study and inventory the existing water resources of the State;
- (2) Study the quantity and quality of water needed for existing and contemplated uses;

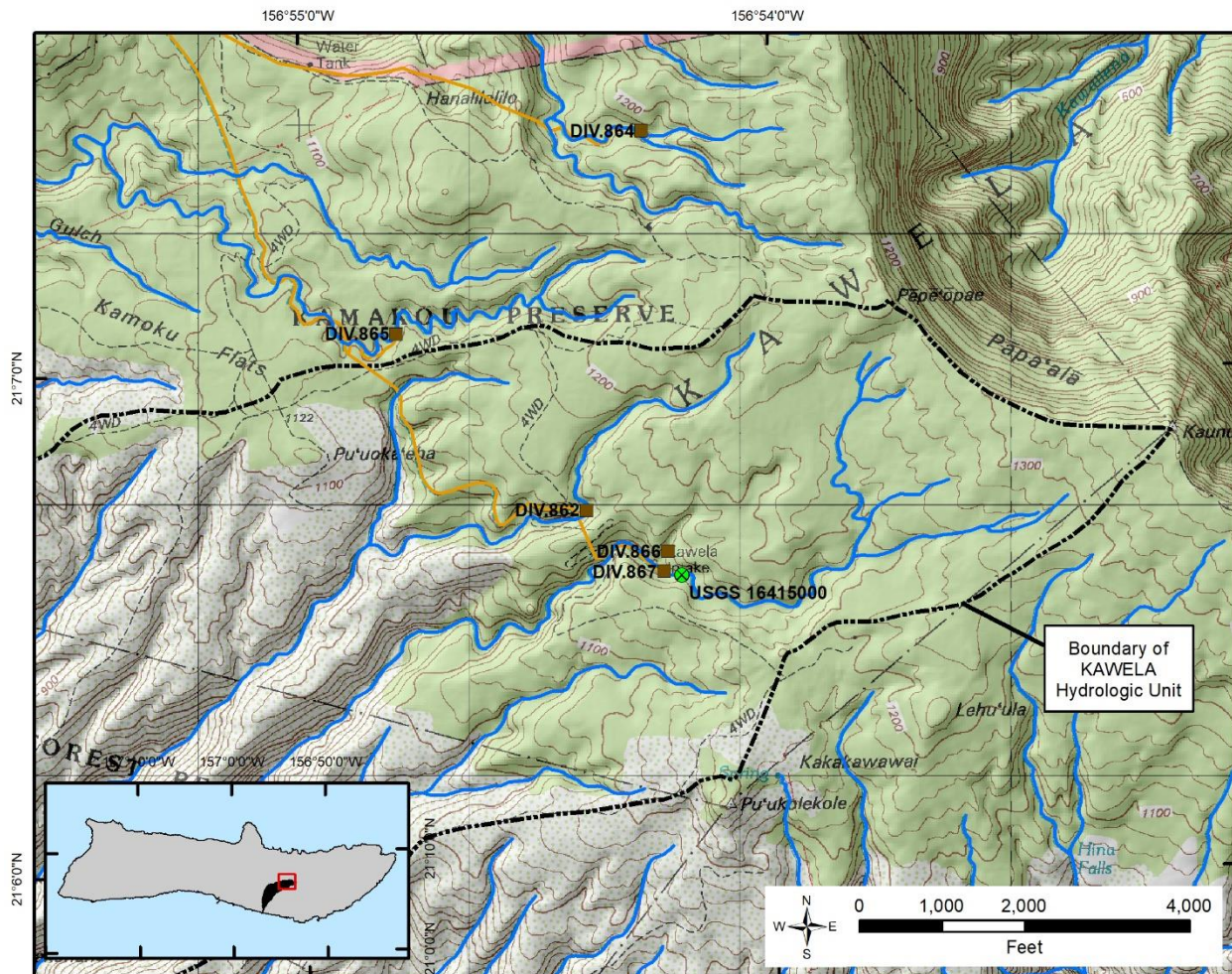
and HRS §174C-31(d) states that the Commission shall study:

- (1) The nature and occurrence of water resources in the State;
- (2) Hydrologic units and their characteristics, including the quantity and quality of available resources, requirements for beneficial instream uses and environmental protection;

The updated Water Resource Protection Plan approved by the Commission in 2019, clearly identifies the need to monitor and plan for the consequences of climate change through “strategic and coordinated resource monitoring”¹.

¹ p.14 https://files.hawaii.gov/dlnr/cwrm/planning/wrpp2019update/WRPP_ALL_201907.pdf

Figure 1. Topographic map of the Kawela hydrologic unit with diversions registered to Moloka'i Properties Limited and the location of proposed USGS station 16415000 on East Kawela Stream.



BACKGROUND

The island of Moloka'i currently has three real-time continuous monitoring stations operated by the US Geological Survey (USGS): one on Halawa Stream at 210 feet in elevation (station 16400000) in operation since 1917 (funded by Maui County and USGS), one on Kawela Stream at 40 feet in elevation (station 16415600) in operation since 2004 (funded by The Nature Conservancy), and one on Kaunakakai Stream at 75 feet (station 16414200) in operation since 2003 (funded by USGS). Only the Halawa Stream station monitors perennial flow as Kawela and Kaunakakai streams are intermittent in their lower reaches. The lack of continuous flow data at high elevations limits our understanding of (1) the consequences of climate change on streamflow characteristics; (2) water available for instream and off-stream uses; and (3) the availability of index stations for evaluating instream flow standard compliance.

Station 16415000 was operated by the USGS from 1946 to 1971 on the East Fork Kawela Stream at an elevation of 3,625 feet on the island of Moloka'i. The site was located on MPL

land (TMK: 4-5-4-003:026), upstream of MPL’s largest diversion (in terms of quantity diverted) within the Kawela watershed, and the optimal location to measure natural flow in the stream.

Moloka‘i Properties Limited (MPL), formerly Moloka‘i Ranch, operates the Mountain Water System (MWS) that consists of seven stream diversions, six reservoirs, and one well.

A 1982 report by Belt, Collins, and Associates for Maui County described the average water use of the MWS as about 0.32 mgd, broken down to Kalae-Kipu (0.015 mgd), Manawainui (0.010 mgd), Mauna loa domestic use (0.075 mgd), irrigation (0.050 mgd), and Del Monte (0.08 mgd). Maunaloa domestic use was via the Libby pipeline from the Puu Nana water treatment facility.

A summary of the sources of water for the MWS are provided in Table 1.

Table 1. Water source, elevation (feet), drainage area (square miles), estimated minimum flow rate (million gallons per day, mgd) and estimated maximum divertable flow rate (mgd) for the Moloka‘i Ranch Mountain Water System (Belt, Collins, and Associates, 1982).

Source	elevation (ft)	drainage area (mi ²)	minimum flow (mgd)	maximum divertable flow (mgd)
East Kawela	3625	0.52	0.05	0.50
East Kawela Tributary	3775	--	--	--
West Kawela	3675	0.086	0.00	0.10
Kamoku Gulch	3675	0.13	0.015	0.15
Ohialele (Hanaliholiho) Gulch	3775	0.11	0.015	0.15
Lualohi Tunnel	2550	1000-ft tunnel	0.03	0.05
Lualohi Gulch	2300	0.23	0.00	0.10
Kalihi Gulch	2320	0.10	0.00	0.07

In their 1989 registration of stream diversion works, Moloka‘i Ranch identified slightly different values than those listed in Table 1, based on more recent annual use data, listed in Table 2.

Table 2. Registered stream diversions, estimated annual flow rate (million gallons, mg) and estimated average daily flow rate (mgd) for the Moloka‘i Ranch Mountain Water System as provided in supplemental data submitted on 7/16/1991..

Source	CWRM Diversion ID	period of record used	annual use (mg)	mean daily flow (mgd)
East Kawela	867	1986-1987	410	0.562
East Kawela Tributary	866	1988	24.3	0.067
West Kawela	862	1988	24.3	0.067
Kamoku Gulch	865	1986-1987	51.8	0.071
Ohialele (Hanaliholiho) Gulch	864	--	--	0.130
Lualohi Gulch	863	1986-1987	197.3	0.270
Kalihi Gulch	868	1986-1987	51.8	0.071

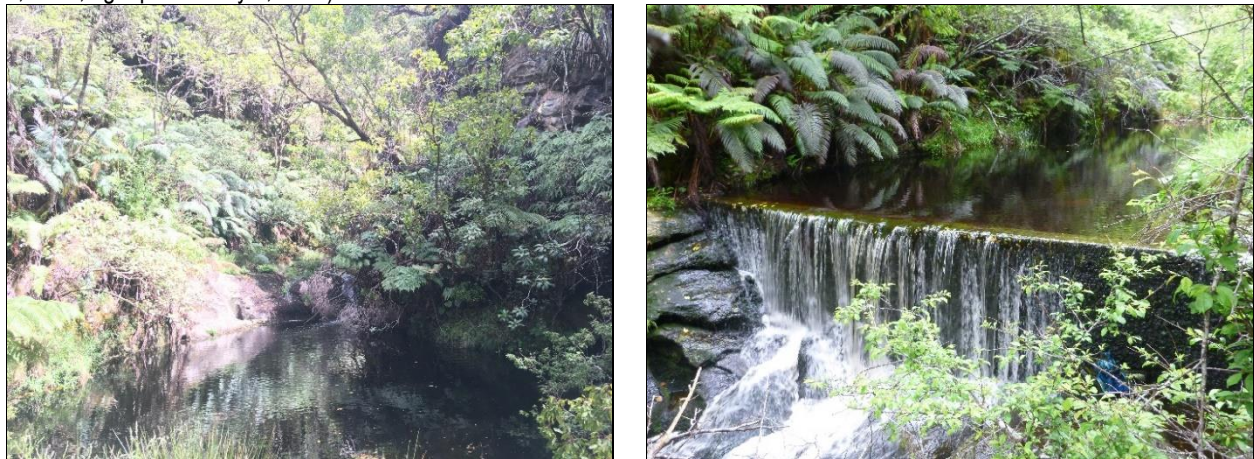
The three stream diversions in the Kawela hydrologic unit, the Kamoku intake in the Kaunakakai hydrologic unit, and the Hanaliholiho intake (sometimes referred to as the Hanalilolilo intake or Ohialele intake) in the Waikolu hydrologic unit, are all connected to the “Ranch” line, a pipeline

that services Molokai Ranch’s cattle operation, and various metered users in Manawainui Gulch area.

Prior to March 1993, the Kalihi and Lualohei stream diversions and overflow from the “Ranch” line fed the “Dole” line, which was a pipeline that transported water to Manualoa Town. With the closure of Dole’s pineapple operation on Molokai, the Dole line was connected to the Molokai Irrigation System (MIS), where excess flows could be stored in the large Kualapuu Reservoir and withdrawn as needed during low-flow periods. The County of Maui Department of Water Supply used this water to meet potable water demands in Maunaloa Town.

A photograph of East Kawela Stream at the former USGS 16415000 station location and Diversion 867 are provided in Figure 2.

Figure 2. Gage pool location of USGS 16415000 on East Kawela stream (left) above diversion 867 (right). (left photo: October 5, 2017; right photo: May 2, 2016)



In 2016, Commission staff began conducting site visits and diversion verifications of certain stream diversions on Moloka‘i, particularly those diversions associated with MPL’s Mountain Water System and the Hawai‘i Department of Agriculture’s Molokai Irrigation System.

In 2018, the USGS utilized station 16415000 to establish a temporary continuous low-flow monitoring station as part of the statewide low-flow study funded by the Commission in 2017.

On July 1, 2019, Earthjustice, on behalf of Moloka‘i Nō Ka Heke (an unincorporated community association of Moloka‘i residents), filed a combined petition to amend the instream flow standard for Kawela, Waikolu, Manawainui, and Kaunakakai streams and their tributaries, a complaint regarding waste, and a petition for declaratory order addressing a lack of water use reporting and the abandonment of unused stream diversions (Complain/Dispute Resolution, CDR.5310.4).

The lack of long-term continuous monitoring data has limited Commission staff’s ability to estimate the frequency and magnitude of stream flow in tributaries that are diverted by the MWS, especially under current and future climate conditions. Projected shifts in rainfall intensity and

frequency are likely to affect surface runoff and groundwater recharge on Moloka‘i, but without an appropriate network of streamflow monitoring stations, the extent of this affect is unknown.

In August 2019, the Commission approved the funding of permitting and installation costs for a real-time continuous monitoring station at USGS 16415000. This station is to be added to the annually renewed joint funding agreement usually addressed at the regularly scheduled August Commission meeting. Permitting to install the gage requires the landowner’s permission to access the site.

In 2020, USGS published the water resource monitoring needs assessment for the State of Hawai‘i² which identified reactivating USGS station 16415000 as a top priority.

In part due to travel restrictions associated with the SARS-COV-2 pandemic, further field investigations and water monitoring efforts on Moloka‘i have been considerably hampered and limited staff efforts to adequately address the Earthjustice petition and complaint. Currently, Commission staff is continuing to request and review data from Moloka‘i Properties Limited.

On May 28, 2021 USGS informed Commission staff that Moloka‘i Properties Limited refused to grant them access to install and maintain a continuous real-time streamflow monitoring station.

SUMMARY OF ISSUE

In order to effectively evaluate the consequences of changing climate conditions on the availability of streamflow for off-stream and instream uses, continuous monitoring data needs to be collected. Such data will be valuable to evaluate and frequency, magnitude, and temporal variability of streamflow to appropriately amend to instream flow standards and evaluate surface water flow regimes at nearby stream diversions as an index station. The availability of real-time data will provide transparency to the community and improve data available to evaluate competing water uses.

In 2019, the Commission approved the funding for the permitting and installation of USGS 16415000 as part of the annual renewal of the USGS joint funding agreement for the statewide monitoring program³. Due to delays associated with the SARS-COV-2 pandemic, USGS is now ready to move forward with station installation but the landowner, MPL, has refused to grant them access.

HAR §13-167-3 clearly states that the Commission has jurisdiction to inventory and monitor all surface water resources in the State of Hawai‘i. Commission staff does not have the time to install and maintain this station or provide the quality control and quality assurances necessary to produce high quality data from additional monitoring stations. The USGS, acting on behalf of the Commission, has the expertise to support the Commission’s duty to monitor the impacts of

² Cheng, CL, Izuka, SK, Kennedy, JJ, Frazier, AG, Giambelluca, TW. 2020. Water-Resource Management Monitoring Needs, State of Hawai‘i. USGS 2020-5115. 114 p.

³ <https://files.hawaii.gov/dlnr/cwrm/submittal/2019/sb20190829B1.pdf>

climate change and gather data necessary to address the petition to amend instream flow standards.

RECOMMENDATION:

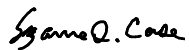
1. Staff recommends that the Commission order Moloka‘i Properties Limited to grant U.S. Geological Survey staff access to re-establish USGS station 16415000, including all activities necessary for the installation and maintenance of equipment and measurement of streamflow to collect real-time data on the flow of water in East Kawela Stream above Diversion 867. Data from this station will support Commission staff in monitoring the consequences of climate change on the availability for off-stream water use and aide in the amendment of instream flow standards on East Kawela and nearby streams diverted by the Mountain Water System. This action will help Commission staff address the complaint (CDR.5310.4) filed by Earthjustice on behalf of Moloka‘i Nō Ka Heke, Moloka‘i.

Ola i ka wai,



M. KALEO MANUEL
Deputy Director

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE
Chairperson