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

May 25, 2017

Mr. Robert Carroll, Vice-Chair
County Council
County of Maui
200 S. High Street
Wailuku, HI 96793

Dear Mr. Carroll:

**RE: AFFORDABLE HOUSING PROJECTS
(CHAPTER 201H, HAWAII REVISED STATUTES)
(INDEPENDENT DEVELOPMENT OF MAKILA KAI; LAHAINA) (LU-2(1))**

We respond to your May 18, 2017 inquiry as follows:

1. Identify each well the LWC draws from and confirm the pumpage capacity of each. What capacity can be drawn without negatively impacting the salinity level of each well? and
2. What is the draw rate for these wells?

The three (3) wells listed under DOH Public Water System - HI0000251 MAHANALUA NUI SUBDIVISION:

Well	Capacity (mgd)	Reported 12-month moving average as of April 2017 (mgd)	%
Launiupoko 1	0.720	0.093	12.9%
Launiupoko 2	0.144	0.016	11.1%
Launiupoko 3	0.720	0.107	14.9%
Total	1.584	0.216	13.6%

Salinity varies but in general all the wells have shown chlorides to be below 100 mg/l during operations, while pump tests performed up to their capacities have gone as high as 170 mg/l in Launiupoko 1. These values are below the U.S. Environmental Protection Agency (EPA) secondary guideline of 250 mg/l.

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3. When considering a draw rate for a specific project, to what extent is future development in the area taken into account?

The Commission relies on the County to help answer this question through the Maui County Water Use and Development Plan (MWUDP) of the overall Hawaii Water Plan (HWP). The latest approved MWUDP is from March 1990 (<http://files.hawaii.gov/dlnr/cwrmp/planning/wudpma1990.pdf>). However, an updated draft is going to the Maui Board of Water Supply for approval on June 9, 2017, which will then go to the Maui Council Council for approval and ultimately the Commission on Water Resource Management for adoption into the overall HWP.

The 1990 MWUDP only specified a State Housing, Finance and Development Corporation (HFDC) residential community project over 1,000 acres between Kahana and Launiupoko streams with a projected demand of approximately 3 mgd. The updated draft 2017 MWUDP specifies that the projected 2035 demand based on population growth for Launiupoko ASA is 4.3 mgd. Agricultural irrigation demand for Launiupoko ASA is not projected to change much from 2015 demand of 0.4 mgd. The 2017 MWUDP also notes that portions of projected growth and agricultural uses within the Launiupoko ASA are served by ground and surface water imported from other aquifer system areas.

Additionally, the State Water Projects Plan (SWPP) of the Hawaii Water Plan (HWP), recently adopted by our Commission at its last meeting on May 16, 2017 should be considered and consistent with the MWUDP. The SWPP specifies that the State Department of Hawaiian Home Lands (DHHL) has no projected demands within or from the Launiupoko ASA up to 2031. No other demands for State Projects are specified.

The Commission basically uses these estimates to determine if designation of water management areas are warranted to ensure public trust uses are protected and uses are reasonable and beneficial through an additional water use permit. Based on the 2017 draft MWUDP it appears that designation would not be warranted up through 2035 for ground water.

4. The developer states that Kaua'ula Stream and Launiupoko Stream[s] are the nearest to the project, and are "part of the Launiupoko aquifer." To what extent, if at all, does the LWC draw from nearby surface water streams?

Commission staff had recently conducted a field investigation regarding the two subject streams. Attached are diagrams of potable and non-potable systems with respect to those streams. Both streams are diverted 100% (of baseflows). Some water is returned to the stream from the siphon below the hydroelectric power plant on Kaua'ula for loi. We currently have a stream monitoring station on Kaua'ula Stream below the auwai return. LWC is reporting their diverted amounts for Launiupoko with a diverted amount of 0.275 mgd for April 2017 and the highest reported diverted amount is 0.808 mgd in November 2015.

5. The developer estimates that the daily water demand for the Makila Kai Project is expected to average 98,000 gallons per day to service the 49 main dwellings. What impact will the project have on the Launiupoko Aquifer?

In terms of sustainable quantity impacts to the Launiupoko ASA, current reported pumpage in the Launiupoko ASA from 12 major wells out of 29 existing wells in the ASA as of April 2017 is 0.402 million gallons per day (mgd) based on a 12-month moving average. The highest reported pumpage since the cessation of large agriculture occurred in July 2015 at 0.765 mgd. Adding the anticipated 0.098 mgd demand from this project, it would be reasonable to expect the total pumpage to increase to about 0.863 mgd, or less than 13% of the ASA's estimated sustainable supply.

Mr. Robert Carroll
Page 3
May 25, 2017

However, two (2) major well sources formerly operated by Pioneer Mill Company, LLC; 1) Lahaina Shaft-Pump A (Well No. 6-5240-002) & 2) Lahaina Shaft-Pump B (Well No. 6-5240-003), have not reported any pumpage or non-pumpage since 2000. These sources appear to be under the operation of Makila Land Company, LLC and appear to be on State lands. As part of our water use reporting outreach program we will soon be entering into a contract with a consultant to follow-up on these shaft sources status and train the responsible well operator in online water use reporting.

6. The developer also indicated an intention to drill a well for non-potable water usage for the project. Will the drilling of a well for non-potable water uses for the project impact or compromise the Launiupoko Aquifer? Please explain.

A future well would be required to obtain a well construction and pump installation permit from the Commission to ensure it is constructed and tested in accordance with the Hawaii Well Construction and Pump Installation Standards (2004) to protect the aquifer source from contamination from surface pollution and potential upconing from saltwater underlying the freshwater of the aquifer. Whatever is pumped from the non-potable well would be counted against the Launiupoko ASA sustainable yield of 7 mgd.

I hope you find this response helpful and informative. If you have any questions please do not hesitate to call Mr. Roy Hardy at 808-587-0274.

Sincerely,



JEFFREY T. PEARSON, P.E.
Deputy Director

RH:ss
Attachments



