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LĀNA'I RESORTS, LLC

LAND USE COMMISSION STATE OF HAWAII

2016 SEP -2 P 1: 20

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of

LĀNA'I RESORTS, LLC

To consider further matters relating to an Order To Show Cause as to whether certain land located at Mānele, Lāna'i, should revert to its former Agricultural and/or Rural land use classification due to Petitioner's failure to comply with Condition No. 10 of the Land Use Commission's Findings of Fact, Conclusions of Law, and Decision and Order filed April 16, 1991. Tax Map Key No. 4-9-002:049 (por.), formerly Tax Map Key No. 4-9-002:001 (por.).

DOCKET NO. A89-649

WRITTEN DIRECT TESTIMONY OF TOM NANCE; CERTIFICATE OF SERVICE

WRITTEN DIRECT TESTIMONY OF TOM NANCE

Tom Nance (**Mr. Nance**) is a professional Registered Civil Engineer working in hydrology, and he has his own consulting business. He began working for the Petitioner and its predecessors around late 1992. Since that time, he has been working on and off on a continuous consulting basis with Petitioner on all of the wells in their system. He has previously testified before the State Land Use Commission (**LUC**), and he was qualified by the LUC as an expert in hydrology and water resource engineering in this docket. He testified during the initial Order to Show Cause proceedings in 1993 and once again in 2006.²

Mr. Nance will provide analysis and testimony regarding Lāna'i's water resources.

Among other things, Mr. Nance will address the brackish quality of the wells at issue (i.e., Wells 1 and 9) during the Order to Show Cause proceedings. Mr. Nance will testify about testing results that show that the chloride levels of brackish Wells 1 and 9 have remained constant since the time of the Order to Show Cause proceedings to the present. Since 1991, Lāna'i Water Company has monitored the wells in its system and has submitted Periodic Water Reports (PWRs), each covering a 28-day period, to the State Commission on Water Resource Management. The PWRs show that the average chloride levels in Well 9 have been constant in the high 400s mg/l. Average chloride levels for Well 1 have been in the low 300s mg/l. Mr. Nance will testify that to his knowledge, chloride levels in both wells have never dropped below 250 mg/l.

Mr. Nance will also address a concern raised in prior proceedings which alleges that the chloride levels of Wells 1 and 9 appeared to be dropping over time. Intervenor Lanaians for

¹ Petitioner LĀNA'I RESORTS, LLC and its predecessors are collectively referred to herein as **Petitioner**.

² Transcript, June 16, 1994 LUC hearing, at 31-32; Transcript, June 7, 2006 LUC hearing at 87-89.

Sensible Growth submitted written testimony from their witness, William Meyer, theorizing that this drop in chlorides was caused by non-brackish water with much lower chloride levels flowing into the brackish wells as the brackish wells were being pumped.³ However, these wells have been continuously monitored in the ten years since the last proceedings, and Mr. Nance will testify that the data does not support this testimony regarding a drop in chloride levels.

During the prior proceedings, Mr. Nance also testified on an extended well pump test that he conducted in 1993. During that test, Wells 1 and 9 were pumped nonstop for 17 days. The test showed no significant change in the water levels and chloride levels of the potable wells, and the results did not support a correlation of the potable wells to pumpage from Wells 1 and 9.

Mr. Nance testified that the critical issue is not whether there is leakage, but whether leakage is being induced beyond natural or normal amounts by pumping activity. There may be leakage of potable water by and between compartments. However, because the aquifer system contains hundreds of compartments and is not well understood, it is difficult, if not impossible, to explain how or why the leakage occurs. Mr. Nance testified that based on the extended well pump test results and his knowledge of the aquifer, there was no evidence that pumpage of brackish Wells 1 and 9 induces or causes leakage of potable water to the wells in the Palawai Basin.

Mr. Nance will provide further testimony addressing this theory of "leakage" of potable water. Mr. Nance will opine that at present, he is still not aware of any evidence or indication that pumpage of the brackish wells induces leakage. His opinion is based on the evidence from prior proceedings, as well as more recent data such as the PWRs. Mr. Nance is also researching additional testing methods that may be relevant to this leakage theory. Petitioner will provide

³ Exhibit LSG-017-R, filed May 31, 2006, at 8.

supplemental written direct testimony as soon as it is available, and Mr. Nance will testify about his analysis and methods at the hearing.

Dated: Honolulu, Hawaii, September 2, 2016.

BENJAMIN A. KUDO

CLARA PARK

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CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that on this date a true and correct copy of the WRITTEN DIRECT

TESTIMONY OF TOM NANCE; CERTIFICATE OF SERVICE was served upon the

following as indicated below:

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DATED: Honolulu, Hawaii, September 2, 2016.

BENJAMIN A. KUDO CLARA PARK

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