



THOMAS NANCE

Hydrologist/Water Resource Engineer

Introduction to Thomas Nance

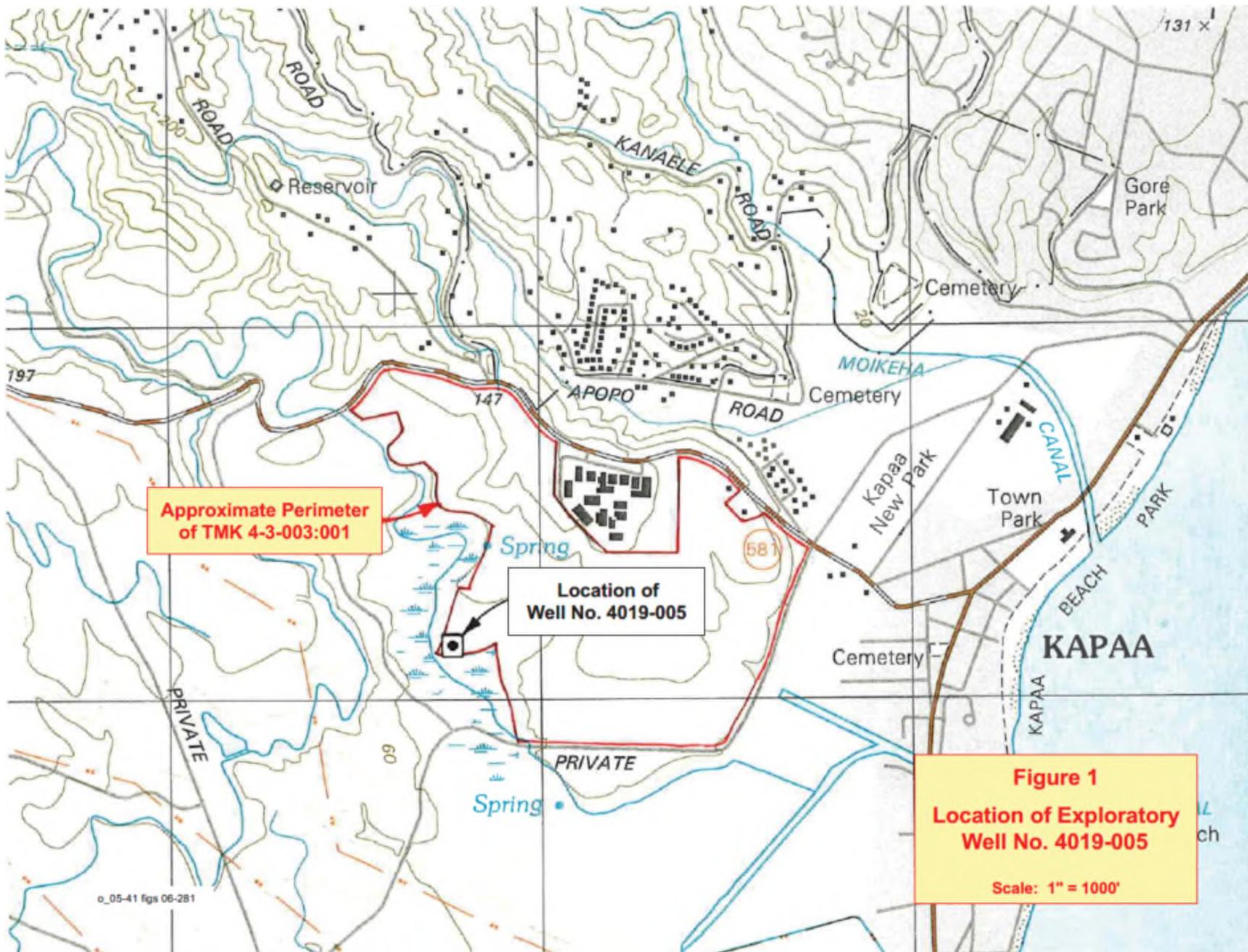
- ▶ Hydrologist/Water Resource Engineer
- ▶ Expertise: groundwater and surface water development, hydraulics and water system design, flood control and drainage, coastal engineering
- ▶ President of Tom Nance Water Resource Engineering

SUPPLY REQUIREMENTS OF HOKUA PLACE

- ▶ At full build out, the Project's maximum day supply requirement is calculated to be 610,383 gallons per day.
- ▶ Applying the Kauai Department of Water design requirements for well pump capacity, the Project's supply requirement translates to a well pumping capacity of 424 gallons per minute (GPM). A 500 GPM well pump capacity is recommended.

HOKUA PLACE TEST WELL

- ▶ Well site at 25 feet elevation
- ▶ Well is located in the southwest corner of the property
- ▶ Test well was drilled to 260-foot depth and was pump tested for 12 hours with the last 10.5 hours at 530 GPM



HOKUA PLACE WELL TEST RESULTS

- ▶ First 80 feet of depth was alluvial material
- ▶ 80 - 210 feet of depth was impermeable volcanic rock and clay which functions as an aquiclude
- ▶ 210- 260 feet of depth was a confined aquifer
- ▶ Aquifer in the water-bearing volcanics produced fresh drinking water with no organic contaminants

CONCLUSIONS AND RECOMMENDATIONS

- ▶ Properly designed and developed onsite well could produce a drinking water supply for HoKua Place
- ▶ Proposed well depth of 300 feet
 - ▶ 220 feet of solid and 80 feet of louvered casing with grouting of the annular space to ensure the pumped water comes exclusively from confined aquifer
- ▶ Well will require variance from COWRM standard depth limitation of $\frac{1}{4}$ of theoretical basal aquifer thickness
- ▶ Precedent for DOH Safe Drinking Water Branch to approve well on makai side of Underground Injection Control line

