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Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
867-360-6338

Re: Reconstructing ancient sea level and seafloor conditions in the 1.9-billion-year-old Rocknest Formation

Dear Nunavut Water Board Manager of Licensing,

I have compiled the required documents for a new application for **Approval for the Use of Water and Deposit of Waste Without a License** from the Nunavut Water Board (NWB). Our project involves setting up a temporary remote field camp for three people (myself and two other geologists) for approximately 6 weeks from early July to mid-August, 2022 in the Kitikmeot region of western Nunavut.

As described in the attached application, our research interest is the 1.9-billion-year-old Rocknest Formation, a sequence of carbonate rocks that are superbly exposed in this region of western Nunavut. The Rocknest Formation gives a unique window into the seafloor conditions and sea level change early in Earth's history. Our aim is to document how the rock characteristics (grain size, ripples, etc.) change from layer to layer in this ~1-km-thick sedimentary sequence, and use this information to reconstruct the patterns of sea level change that occurred on Earth 1.9 billion years ago, which can inform our understanding of modern climate dynamics and sea level change. Also included in our application materials is a summary of our research project in Inuktitut.

Our temporary field camp will be located next to Eokuk Lake (67.410, -112.995), and we will be dropped off and picked up by a Cessna float plane (Air Tindi) out of Yellowknife. Our camp will consist of 3 personal tents (one for each member of the field team) and one group cook tent. We will collect our water by bucket from Eokuk Lake or a tributary stream and filter it through a gravity filter. Our only water needs are for drinking and cooking, and we expect to use an estimated 6-8 liters of fresh water per person per day. Our work will not alter the natural state of Eokuk Lake or any of the other nearby fresh water sources. Our temporary camp will be completely removed at the end of the field season, and we will pack out everything that we bring in (equipment, garbage, etc.) and dispose of garbage and recycling in Yellowknife.

Details of our planned use of water and deposit of waste is included in the attached application. Please do not hesitate to contact me if you have any questions regarding our field plans.

Thank you for your time and consideration.

Sincerely,

Emily Geyman
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