

GeoAlaska, LLC

2440 East Tudor Road, # 230
Anchorage, AK 99507

Phone (907) 830-1151
pcraig@geoalaska.com

March 9, 2022

To: Alaska House Finance Committee

From: Paul L. Craig, President
GeoAlaska, LLC

Re: HB 135 – Geothermal Resources

To begin, I would like to personally thank you for your service to the people of Alaska as an elected member of the Alaska House of Representatives.

By way of background, GeoAlaska, LLC is an Alaska company established on 5/1/2020 to identify, acquire, and develop commercially viable geothermal resources in Alaska. GeoAlaska, LLC has acquired a 10 square mile prospecting permit propitiously located on the Crater Peak flank of Mt. Spurr, overlying the Capps Glacier Fault and related geological structures comprising world-class geothermal targets.

Since acquiring this prospecting permit, GeoAlaska has been communicating with a variety of experts in geothermal energy located in Kenya, Iceland, Italy, the Lower-48, and Australia. For commercial reasons, I am not at liberty to disclose most of the companies and individuals with whom GeoAlaska is communicating at this time. However, an example I can disclose is GeothermEx – a Schlumberger subsidiary that specializes in geothermal energy. The other parties with whom we are working regarding development of the Mt. Spurr prospect are similarly specialized in geothermal energy ranging from exploration financing to full project buildout.

In addition to providing non-carbon electrical power available to the Alaska Railbelt, GeoAlaska is researching the viability of exporting green hydrogen to the West Coast – a fuel that the US Department of Energy is prioritizing for our country's future. Green hydrogen is manufactured by electrolysis of water. Electrolyzed water breaks into hydrogen and oxygen. When hydrogen is used in a vehicle or any other form of equipment that currently burns hydrocarbon-based fuels, the emission from the vehicle's fuel cell is H₂O - pure water.

Through Trading Bay Oil & Gas, LLC and related corporate entities in which I am the majority owner (e.g., Amaroq Resources, LLC – the owner and operator of the Nicolai Creek Unit) I have been actively involved in the oil and gas business in Alaska since 1993. I am very pro-oil as an important energy source. At the same time, I understand

that the sources of BTUs of energy that we use for transportation, agriculture, and industry must grow beyond oil and gas for many reasons. Geothermal energy is one important component of the evolution from carbon-based energy to green energy.

Geothermal power in Alaska will allow our State to create new jobs, deliver reasonably priced power to our citizens, and will spawn new industries that will be attracted to inexpensive green power. In summary, geothermal energy will benefit Alaskans environmentally and economically for generations to come. It is an important component of Alaska's future.

RECOMMENDATION #1:

Consistent with the State of Alaska's recommendations, GeoAlaska, LLC fully supports the passage of HB 135 for the reasons already articulated by the Governor and the Department of Natural Resources.

RECOMMENDATION #2:

AS 38.05.181(f) currently states:

(f) A geothermal lease shall be issued for a primary term of 10 years and may be renewed for an additional term of five years if the lessee is actively engaged in drilling operations. A geothermal lease is valid for the duration of commercial production. **Beginning 20 years after the initiation of commercial production and at 10-year intervals thereafter, the commissioner may renegotiate the rentals and royalties due on a geothermal lease.** [bold added to emphasize the last sentence]

GeoAlaska, LLC encourages the legislature to delete the last sentence of paragraph (f) shown in bold for the reasons stated below. GeoAlaska, LLC is aware that the Department of Natural Resources has not recommended removing the last sentence of paragraph (f) when preparing HB 135 for consideration by the Legislature. GeoAlaska, LLC understands and respects the DNR's position regarding the last sentence of paragraph (f). However, GeoAlaska is in the trenches as a private company focused on developing Alaska's geothermal resources. From this perspective as a start-up company, GeoAlaska strongly believes that it is the best interest of the citizens of Alaska to remove the last sentence of paragraph (f) from Alaska's geothermal statutory framework.

Specifically, GeoAlaska has been discussing power purchase agreements (PPA) with various entities (e.g., a proximate hard rock mining company). When engaging in financial modeling to establish the cost of power, the last sentence in paragraph (f) forces GeoAlaska to amortize all expenses across a 20 year interval instead of a longer time frame as would be possible absent the economically ambiguous language contained in the last sentence of paragraph (f). To the extent that sentence remains in the Alaska geothermal statutes, Alaska Railbelt rate payors would necessarily pay more per unit of geothermal electricity consumed than would be the case if this sentence is removed. The

financial ambiguity created by the terms stated in the last sentence of paragraph (f) will require geothermal energy companies developing State of Alaska geothermal resources to amortize expenses over 20 years rather than a longer time-frame.

Likewise, financiers who are considering investing hundreds of millions of dollars into GeoAlaska's project at Mt. Spurr have explicitly indicated that the last sentence of paragraph (f) is problematic.

A geothermal energy project is essentially a utility business, which is quite different than the upstream oil and gas business. If properly designed and scoped to a size consistent with the identified geothermal resource, electrical generation from a geothermal reservoir can continue in perpetuity without depletion. Components of the power generation plant and related infrastructure will need maintenance and upgrades over time. But the geothermal energy source will not deplete like an oil and gas reservoir. Consequently, pricing of energy in a PPA can involve amortization over several decades if the statutes governing geothermal leases provide royalty and rental stability.

The DNR may harbor the belief that it needs to include financial flexibility in its geothermal lease terms. However, investors need well-defined terms when entering into a long-term financial commitment. State of Alaska oil and gas lease royalties and rentals are defined as stable for the duration of each lease. Similar levels of predictability should be afforded to geothermal leases by way of removing the last sentence in paragraph (f).

Financing of the geothermal project at Mt. Spurr will occur in tranches. The first tranche involves high risk capital used to explore for and delineate the geothermal reservoir. Once a commercial-grade reservoir and a PPA are in place, then a much larger tranche of financing is required for power plant construction, transmission lines, and related infrastructure. The potential financiers for the second tranche of financing, which will involve several hundred million dollars, have already expressed concern about the last sentence of paragraph (f). The first tranche of financing will be reluctant to inject risk capital into exploration, because those investors will know that a statutory roadblock stands in the way of enjoying a return on their high-risk investment by way of follow-along capitalization of the project.

FISCAL IMPLICATIONS OF RECOMMENDATION #2:

1. If the last sentence of (f) *is* removed, there is no fiscal impact to the State of Alaska for about a quarter of a century (at least through 2050; namely, 20 years plus three years to account for the time between today and when commercial production might begin).
2. If the last sentence of (f) *is not* removed, then Alaska rate payors will be required to pay more for geothermal electricity because the capital costs must be amortized over 20 years instead of 30+ years.
3. If the last sentence of (f) *is not* removed, GeoAlaska's financial model for exploration at Mt. Spurr may not meet the ROI benchmarks required by financiers involved in each tranche of financing.

In summary, removal of the last sentence in paragraph (f) will have no negative fiscal impact on the State of Alaska in the foreseeable future.

Failure to remove the last sentence in paragraph (f) may be inflationary, causing Alaskans to pay significantly more for their electricity than would be the case if costs could be amortized over more than 20 years. Likewise, hundreds of jobs for Alaskans may not be created if the last sentence in paragraph (f) remains in the geothermal statutes. Big money is smart money. Smart money turns over every stone during due diligence. The last sentence of paragraph (f) has been identified by one or more financiers as a non-starter when running the numbers on a project of this scope.

Again, thank you for your consideration and service to all Alaskans. Your support of HB 135 is appreciated. And, the deletion of the last sentence of paragraph (f) is a simple fix that would demonstrate to the financial community that Alaska is serious about moving forward toward a greener economic future.

If you have any questions, please do not hesitate to contact me directly.