

ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE

January 21, 2022

1:04 p.m.

MEMBERS PRESENT

Representative Josiah Patkotak, Chair
Representative Grier Hopkins, Vice Chair
Representative Zack Fields
Representative Calvin Schrage
Representative Sara Hannan
Representative George Rauscher
Representative Mike Cronk
Representative Ronald Gillham
Representative Tom McKay

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

HOUSE BILL NO. 135

"An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

- HEARD & HELD

PREVIOUS COMMITTEE ACTION

BILL: HB 135

SHORT TITLE: GEOTHERMAL RESOURCES

SPONSOR(s): RULES BY REQUEST OF THE GOVERNOR

03/10/21	(H)	READ THE FIRST TIME - REFERRALS
03/10/21	(H)	RES, FIN
04/22/21	(H)	RES WAIVED PUBLIC HEARING NOTICE, RULE 23(A) UC
04/23/21	(H)	RES AT 10:30 AM BARNES 124
04/23/21	(H)	Heard & Held
04/23/21	(H)	MINUTE(RES)
04/23/21	(H)	RES AT 1:00 PM BARNES 124
04/23/21	(H)	-- MEETING CANCELED --
04/26/21	(H)	RES AT 1:00 PM BARNES 124

04/26/21 (H) Heard & Held
04/26/21 (H) MINUTE (RES)
04/30/21 (H) RES AT 1:00 PM BARNES 124
04/30/21 (H) Heard & Held
04/30/21 (H) MINUTE (RES)
01/21/22 (H) RES AT 1:00 PM BARNES 124

WITNESS REGISTER

HALEY PAINE, Deputy Director
Central Office
Division of Oil and Gas (DO&G)
Department of Natural Resources (DNR)
Anchorage, Alaska

POSITION STATEMENT: On behalf of the administration, co-provided a PowerPoint presentation titled, "HB 135 GEOTHERMAL RESOURCES," dated 1/21/22.

STEVE MASTERMAN, Director
Division of Geological & Geophysical Surveys (DGGS)
Department of Natural Resources (DNR)
Fairbanks, Alaska

POSITION STATEMENT: On behalf of the administration, co-provided a PowerPoint presentation titled, "HB 135 GEOTHERMAL RESOURCES," dated 1/21/22.

SEAN CLIFTON, Policy and Program Specialist
Central Office
Division of Oil and Gas (DO&G)
Department of Natural Resources (DNR)
Anchorage, Alaska

POSITION STATEMENT: During the hearing on HB 135, answered a question.

ACTION NARRATIVE

[1:04:16 PM](#)

CHAIR JOSIAH PATKOTAK called the House Resources Standing Committee meeting to order at 1:04 p.m. Representatives Schrage, Gillham, Hannan, Rauscher, Hopkins, Cronk, McKay, and Patkotak were present at the call to order. Representative Fields arrived as the meeting was in progress.

[1:06:05 PM](#)

HB 135-GEOTHERMAL RESOURCES

CHAIR PATKOTAK announced that the first order of business would be HOUSE BILL NO. 135, "An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

CHAIR PATKOTAK reminded committee members that HB 135 is by the [House Rules Committee by request of the governor].

[1:07:21 PM](#)

HALEY PAINE, Deputy Director, Central Office, Division of Oil and Gas (DO&G), Department of Natural Resources (DNR), on behalf of the administration, co-provided a PowerPoint presentation titled, "HB 135 GEOTHERMAL RESOURCES," dated 1/21/22. She began with slide 2, "AGENDA," and said she would review the purpose of HB 135, review DNR's geothermal leasing history, and provide a sectional analysis and summary of the bill.

MS. PAINE proceeded to slide 4, "PURPOSE OF HB 135," which read as follows [original punctuation provided with some formatting changes]:

- **Modernize Alaska's geothermal exploration program**
 - Greater potential for providing affordable, renewable energy to rural communities and remote natural resource extraction projects
 - Promote clean energy industry job creation
- **Align geothermal licensing with the oil and gas exploration license program, thereby increasing feasibility for companies to develop resources**
 - More time for a company to identify and prove resource to convert to leases
 - Conversion to leases based on completion of work commitment and submission of exploration plan instead of proving discovery of commercial resource
 - Doubles maximum acreage allowed for exploration
- **Reforms definitions for geothermal resources to focus on Commercial Use**
 - Explicitly excludes domestic, noncommercial, or small-scale industrial use from the need for a geothermal license or lease

MS. PAINE stated that the purpose of HB 135 is to modernize Alaska's geothermal exploration license program given there are

opportunities to develop the state's resources. The bill would increase the feasibility for companies to develop those resources and benefits would include providing affordable, renewable energy and creating jobs. The bill would also ensure the consideration of geothermal resources in line with commercial use.

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REPRESENTATIVE HANNAN asked whether it is currently required that domestic non-commercial, small-scale industrial use have a lease or permit from the state. She further asked whether that would be continued. She said she understands that HB 135 would move and modernize the commercial aspect.

MS. PAINE replied that current state statute does not require a permit or lease for a small-scale or home industrial system. However, she pointed out, that is implicit, not explicit, so [DNR] wants to explicitly state that homeowners or individuals would not be impacted. This explicit statement allows for some of these other changes to be made in the bill.

REPRESENTATIVE HANNAN noted that the underlying premise under the state's oil and gas leasing is about subsurface rights. She inquired about the amount of subsurface use of geothermal that is not commercial. She further inquired whether currently a property owner would need a permit to enjoy hot springs located on their property.

MS. PAINE responded that a homeowner is not going to require a permit from DNR to access the geothermal under their property, the use of a heat pump being an example. She deferred to her DNR colleagues to answer in terms of the quantity or number or known locations of the duration of use of those sorts of products within the state.

REPRESENTATIVE HANNAN said she is okay with having the question answered later since it doesn't directly pertain to the bill. However, she related, she is now thinking about subsurface rights that are [currently] closely monitored and permitted in the backyards of homeowners.

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REPRESENTATIVE HOPKINS drew attention to the bullet point on slide 4 that states, "Doubles maximum acreage allowed for

exploration." He surmised it is a doubling from 50,000 to 100,000 acres for what an individual can get for a lease.

MS. PAINE confirmed that that is correct.

REPRESENTATIVE HOPKINS asked whether that was a concern for current lessees or others trying to get leases for geothermal production.

MS. PAINE answered that it hasn't been found to be a problem per se, but that any time the acreage can be increased it will maximize the potential. For example, it can sometimes be a challenge to find the location of the actual resource for a hot spring found at the surface because it isn't typically directly underneath; this would expand the field for being able to search. She noted that in the agency's exploration licensing program, an individual may seek 500,000 acres, and therefore this [proposed] change from 50,000 acres to 100,000 acres would not be anything out of par with the mineral leasing program.

REPRESENTATIVE HOPKINS remarked that that is a lot of land. He asked the 100,000 acres would be roped off from any other type of development, exploration, or sale during the five-year lease for proving the source and completing the work commitment.

MS. PAINE replied that it is not. She said the state would not be granting exclusive rights to access the property or any other mineral, but it would be exclusive to the geothermal. These are not mineral closing orders; this just allows someone to enter an area and begin to explore for those resources. All access provisions are guided through a plan of exploration and lease plan of operations and are vetted accordingly through there.

[1:17:23 PM](#)

REPRESENTATIVE SCHRAGE asked whether the development of geothermal energy could make the acreage unviable for other exploration.

MS. PAINE responded that when evaluating specific plans for operations, the agency takes into mind the beneficial uses of the region more generally speaking. Without a specific plan and an understanding of the resource size it would be speculative to say whether something may hurt or progress into a plan. For example, if there is an oil and gas facility, certain competing uses would have to be considered, but allowing the opportunity

to explore for geothermal would not necessarily preclude the agency from advancing the other resources in the area.

REPRESENTATIVE SCHRAGE asked whether a process exists for evaluating the different opportunities within an area.

MS. PAINE replied that multiple processes exist, with the first and foremost being the best interest finding (BIF) process. An applicant would apply for a permit on a set area and then the state would conduct a BIF under which all potential uses of the area are evaluated, including potential cumulative impacts to resources and uses as a result of said permit activities being permitted in that area. After balancing the potential positive and net negative effects the director makes a final determination. AS a public process it is noticed, and the comments incorporated. Following that, the applicant goes through a permitting process to indicate actual activities. The first phase in BIF disposal allows the applicant to enter the land. The second phase of public process and notice is when the applicant has a specific plan for specific metrics and sizes that [DO&G] can take into account and let the public know about and then provide comment on.

[1:20:32 PM](#)

REPRESENTATIVE GILLHAM said his concern is not so much another company coming in but whether someone with a permit could lock up the 500,000 acres so there would be no access to Alaska residents who have used that land for centuries to hunt.

MS. PAINE responded that the 500,000 acres was in result to the agency's oil and gas exploration licensing program, whereas this bill is seeking to change from 50,000 acres to approximately 100,000 acres. She said HB 135 would not do anything to change, impact, or impede the ability of folks to access the area for uses such as subsistence, all of which is taken into accord. Licensing is simply to the mineral estate. The aforementioned issues have not been encountered under the agency's current geothermal program.

[1:22:12 PM](#)

STEVE MASTERMAN, Director, Division of Geological & Geophysical Surveys (DGGS), Department of Natural Resources (DNR), stated that he doesn't have anything more to add to Ms. Paine's response to Representative Gillham.

[1:22:33 PM](#)

REPRESENTATIVE FIELDS inquired about the expanded area and the size of a facility.

MS. PAINE answered that that would not necessarily indicate a change in size of the facility. The sizing for the facilities would be based on the what the resource requires. This merely allows [the applicant] to look in a greater space to see what resource may be there. The type of facility that would be placed on an area would be at the size and scale that makes sense for the resource itself.

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MS. PAINE resumed her presentation. She turned to slide 5, "DNR GEOTHERMAL LEASING/PERMITTING HISTORY," which read as follows [original punctuation provided with some formatting changes]:

Present

Mount Spurr Currently there are two geothermal exploration prospecting permits in the Mount Spurr area, both issued during 2021.

Augustine Island An application for a prospecting permit is under review for Augustine Island.

2013

Augustine Island 26 tracts were offered. Only one tract was leased to a private individual and no exploration work was conducted as a result of that lease sale.

2008

Mount Spurr 16 tracts leased to Ormat and one private individual. Ormat purchased 15 leases in the 2008 sale and drilled on southern flank of volcano. They didn't find adequate temperatures in wells to pursue the project. The state has the data available on DO&G's website.

1986

Mount Spurr On June 24, 1986, DNR offered 2,640 acres in two tracts. Both tracts received bids. The lease for Tract 1 expired in 1996, and the lease for Tract 2 was terminated in 1990.

1983

Mount Spurr DNR held its first geothermal lease sale in the Mount Spurr area on May 17, 1983. 10,240 acres in 16 tracts were offered in Competitive Geothermal Lease Sale 1. One tract received a bid. The lease for that tract was terminated in 1992.

MS. PAINE noted that since its start in 1983 the geothermal program has not been a significantly large program, and the tracts in which interest was shown were in the Mount Spurr area. All the activities from 1983-2013 were done through a competitive leasing program, which would not be changed or affected by HB 135. The competitive leasing program is designed for when multiple parties show an interest, and competitively making the resources available ensures the maximizing of value to the state. She explained that HB 135 seeks to address those times when there is only a single interested party and there is not competitive process. It is currently called a prospecting permit, but it can be better characterized as an exploration license. Two parties presently have prospecting permits located in the Mount Spurr area and are in their two-year prospecting permit stage. Should HB 135 pass, these two existing permittees would benefit from the ability to extend from a two-year to a five-year. An application is in place for Augustine Island, with the preliminary BIF forthcoming in the next few months.

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MS. PAINE spoke to slide 6, "SECTIONAL SUMMARY," which highlights everything that is being sought and that would be changed through HB 135. The slide read as follows [original punctuation provided with some formatting changes]:

- 1 (AOGCC)** Removes unnecessary reference to AS 41.06 from AS 31.05.030(m) because of changes made by Section 9.
- 2 (DNR)** Changes permits to licenses. Explicit exemption for geothermal resources intended for domestic, noncommercial, or small-scale industrial use (See also Section 9). Removes preferential rights clause. This provision is not appropriate for commercial development of State resources.
- 3 (DNR)** Changes permit to license. Extends term of licenses (formerly permits) from two to five years. Replaces lease conversion requirement of commercial discovery and development plan with work commitment and exploration plan.
- 4 (DNR)** Changes permit to license.

5 (DNR) Changes permits to licenses. Increases maximum acreage from 51,200 to 100,000. Adds provision for rental fees to be defined in regulation, rather than statute (easier to update).

6 (DNR) Adds new subsections to AS 38.05.181 to modernize unitization statute for geothermal leases to match the model we use for oil & gas under AS 38.05.180.

7 (DNR) Replaces AS 38.05.965(6) definition of geothermal resources (Same as Section 11).

8 (AOGCC) Amends AS 41.06.020(e), clarifies that AS 41.06 does not limit DNR's authority over geothermal resource management on state land.

9 (AOGCC) Amends AS 41.06.020(f) to add explicit exemption for geothermal resources intended for domestic, noncommercial, or small-scale industrial use (See also Section 2).

10 (AOGCC) Amends AS 41.06.060(4) definition of geothermal fluid to remove temperature references and better conform with other changes in this bill.

11 (AOGCC) Replaces AS 41.06.060(5) definition of geothermal resources (Same as Section 7).

12 (AOGCC) Repeals AS 41.06.005(b) and AS 41.06.030, since geothermal units are managed by DNR.

13-16 General provisions for applicability and effective dates. Includes applicability provision for prospecting permits currently being processed.

[1:27:26 PM](#)

MS. PAINE discussed slide 8, "SECTION 2: PRIVATE USE EXEMPTION," which read as follows [original punctuation provided with some formatting changes]:

• **New language added:**

A prospecting license or lease is not required under this section to explore for, develop, or use geothermal resources if the geothermal resource is intended for domestic, noncommercial, or small-scale industrial use.

• **This explicitly excludes private geothermal users from a requirement to apply for a license or lease.**

MS. PAINE stated that Section 2 would provide private landowners the certainty that their ability to access geothermal for something like a ground source heat pump is protected in law.

[1:28:20 PM](#)

REPRESENTATIVE SCHRAGE asked what the largest project would be that someone could put in place under this provision for domestic, noncommercial, or small-scale industrial use.

MS. PAINE replied that it is intentionally not limited to a specific size so that it can be considered based on the use. She said [the department] did not want to set a cap for a certain number of kilowatts given it was found that the caps put on the definition of geothermal and temperature may have restricted folks unnecessarily. "So," she continued, "when we are thinking about this, we're really focused on some resource that's going to be produced and then sold, distributed to multiple clients, so that is why we didn't really set a specific kilowatt or megawatt exemption on there."

REPRESENTATIVE SCHRAGE asked whether there is any risk that someone who is using this for a non-commercial use or someone who developed geothermal infrastructure for non-commercial use could impact other uses unintentionally.

MS. PAINE responded that despite the type of project that would go in, if someone is immaterially using state land or creating a large project, that project may not require a specific geothermal prospecting permit. However, it would no doubt require other sorts of permits and authorization that may come out of DNR, or the Department of Environmental Conservation (DEC), or another agency. Therefore, that sort of risk would be vetted through the public processes that are in place through those other permits that might be required.

[1:30:41 PM](#)

MS. PAINE addressed slide 9, "SECTION 2: PREFERENTIAL RIGHTS," which read as follows [original punctuation provided with some formatting changes]:

- **The preferential rights provision is being deleted because it is inappropriate to the situation (it's more relevant to water rights or other surface use cases not associated with the mineral estate).**
- **Surface owner rights are protected under AS 38.05.130.**

- If conflict arises, DNR ensures private landowners would not be left without heat or power, or otherwise damaged by commercial development.
 - Scenario is unlikely because private landowners usually don't have financial resources to develop a commercially-viable geothermal resource.
- **Rights to access the mineral estate are reserved under AS 38.05.125.**
 - Surface owners must provide reasonable access to resource developers.
 - The same condition exists for oil & gas or mining.
- **If a surface use agreement can't be reached, resolution process is in 11 AAC 86.145.**
 - DNR holds a hearing wherein the developer must prove there is no other alternative location for the well or data acquisition.
 - If the Commissioner concurs, developer posts a bond to compensate landowner for any impacts and work progresses.
- **Public notice is a part of the license issuance process, and surface owners would be included.**

MS. PAINE said the preferential rights clause currently allows that a surface owner may exercise the preferential right within 30 days after receiving notice of the application for a permit, or by agreeing to meet the terms of a bid within 60 days after receiving notice of the acceptance of the bid for a lease. Under current statute, the department makes it known through the public notice process when someone applies for a prospecting permit. The surface owner could then put a permit over the top of that and say, "I would like to use that."

[1:31:50 PM](#)

MS. PAINE specified that this is where it gets to DNR's point about the explicit exemption. She said the department wants to ensure that anything in the realm of non-commercial and small-scale would not be impacted. These types of projects would only be of the size and magnitude that an individual would not most likely be able to fund and continue with the exploration of a large-scale program. This provides the certainty that someone who has spent money on surveys and exploration for geothermal

doesn't have to run the risk of someone placing a permit application on top of them and then thereby selling that permit back to them at a fee; that is essentially what the removal of the preferential rights clause is seeking to prevent.

MS. PAINE said another reason DNR wants to explicitly state that this does not apply is so surface landowners are not concerned that their domestic use would in any way be infringed upon. Several different provisions and processes are in place in which the surface owner's rights are protected. If a concern arises between a surface owner and someone entering their property to explore for a mineral resource that has been granted through geothermal, oil and gas, or another sort of lease, DNR will intervene under AS 38.05.130 and a robust public process will take place to ensure that the landowner is not harmed financially and that everything is bonded sufficiently. She reminded the committee that this is where members had questions during a previous hearing.

[1:34:23 PM](#)

REPRESENTATIVE HOPKINS observed the statement on slide 9 that under AS 38.05.130 private landowners would be protected from being left without heat or power. He further observed the statement that this scenario is unlikely because private landowners usually don't have financial resources to develop a commercially viable geothermal resource. He posed a scenario in which an individual has a heat pump for private home use, but somebody develops the resource on 100,000 acres surrounding the home and it drains the geothermal potential for that private home. He asked whether HB 135 would protect a homeowner that loses access to a geothermal resource due to the commercial development of a larger one.

MS. PAINE replied that that scenario may be highly unlikely, but DNR believes these provisions would absolutely protect that landowner. The sort of resource used to power a home heat pump may not actually be connected to something on the scale that would be large enough to warrant some sort of commercial development. She deferred to Mr. Masterman to answer further.

MR. MASTERMAN responded that in such a scenario it would be a scale issue as well as a depth issue. A home heat pump system, he explained, is at very shallow depths, generally tens of feet, whereas a commercial scale and commercial temperature geothermal system is at depths of a thousand feet or more. The depth separation between these two systems is going to be substantial

and very likely tapping into different sources of either fluids or heat. They are going to be very distinct geologically and thermally, and therefore the scenario described by Representative Hopkins would be very unlikely.

[1:37:13 PM](#)

REPRESENTATIVE HOPKINS recalled Ms. Paine's statement about a robust public notice process. He inquired as to whether a private landowner who would be impacted by a lease submission would be mailed a notice or whether it would just be posted on a state website or public domain.

MS. PAINE answered that the first step in the general disposal process is done by posting, and under statute posting is through the newspaper, the agency's website, and so forth. When it moves into specific sorts of operations there is a more specified notification process. To receive a plan of operations the agency requires the applicant to identify the surface landowners that may be impacted. At the scale addressed in HB 135, which is the disposal phase, it is more of a general posting; then, as there is a known project and a known plan, it becomes more specific.

[1:38:41 PM](#)

REPRESENTATIVE HANNAN observed the statement on slide 9 that preferential rights would be deleted under HB 135. However, she observed, the presentation later states that hydrothermal systems are the most common form of energy extraction from the geothermal heat. She inquired about where in the permitting water rights come in once there is a finding that the geothermal is substantial enough for commercial development.

MS. PAINE replied that the water rights would take place under a separate permitting process through DEC. She said she could follow up with more details if the committee so wanted.

MR. MASTERMAN responded that most people obtaining water rights are doing so for either agriculture or domestic use, so they typically want high quality water that is not full of minerals, chemicals, or dissolved constituents. Geothermal systems are often very brine rich and may have chemical attributes that make them unsuitable for drinking or agricultural use. So, he advised, while there is potential for overlap of water rights or competitive needs for water, the chemical attributes of the

water for geothermal use and for agricultural and domestic use are quite distinct.

[1:42:19 PM](#)

REPRESENTATIVE HANNAN requested that the committee hear formally from DEC on water rights. She noted that while it may not be in DNR's purview, in many parts of Alaska the water use rights and preferential water use rights about salmon spawning streams are frequently close to where there is geothermal evidence, with Bristol Bay being one such area. She said she wants to ensure that a water conflict is not created by geothermal being siloed from water rights when it is known that they are integrated.

CHAIR PATKOTAK agreed to invite DEC to come before the committee regarding where in the permitting process water rights are interjected.

[1:43:46 PM](#)

REPRESENTATIVE SCHRAGE stated he understands that most of the water rights issues are currently over non-brine rich waters. However, he said, as more exploration for geothermal occurs he is concerned about an industrial project impacting the heat potential of other non-commercial private users. He asked whether, at the point of putting in a development, assessments and tracking would be done to see if there is a loss of efficiency or loss of heat potential due to the development.

MS. PAINE reiterated that a process is in place to identify whether anyone's heat, power, or other beneficial use of their property would be impacted; so DNR would be able to evaluate, intervene, and make sure compensation is in place. She deferred to Mr. Masterman to address any competitions that could arise but recalled his earlier description of the differences in locations and depths.

[1:45:27 PM](#)

SEAN CLIFTON, Policy and Program Specialist, Central Office, Division of Oil and Gas (DO&G), Department of Natural Resources (DNR), clarified slide 9 is not saying that this has anything to do with water rights, but rather that the concept is similar or more relevant to water rights. He said none of the cases being discussed here have anything to do with water rights, which are managed by the Water Section in [DNR's] Division of Mining, Land and Water. Those seeking to secure water rights or to have a

water rights dispute handled would do that through the Division of Mining, Land and Water. As pointed out by Mr. Masterson, he continued, the typical water rights issues are with clean water to drink or water a crop, not the type of fluids that might be used for geothermal resources. He confirmed that DEC handles matters where contamination of surface water might be an issue and said permits would have to be applied for in the case of a development scenario.

CHAIR PATKOTAK stated the committee would still look for a more in-depth understanding of the different types of water rights and how they could be affected by HB 135.

[1:47:38 PM](#)

MS. PAINE spoke to slide 10, "SECTION 3: WORK COMMITMENT," which read as follows [original punctuation provided with some formatting changes]:

- **Changes prospecting permit to license and increases term from 2 to 5 years**
 - Creates greater opportunity for success of noncompetitive geothermal program
- **Conversion to noncompetitive lease through completion of agreed upon work commitment**
 - Current process for oil and gas exploration license
 - Commitment expressed in dollar figure
 - Annual reporting and performance objectives

MS. PAINE explained that the term prospecting "permit" would be changed to "license," and the time would be increased from two years to five years. To provide context, she noted that a lease is granted for 10 years. She said the bar to prove a commercial resource is a high bar that can take a significant amount of time, whether for oil and gas or for geothermal. This is a more robust and more consistent way of moving forward for a party that has completed a specified work commitment. The bill seeks to align the geothermal program with the oil and gas program in terms of the requirements.

[1:49:28 PM](#)

REPRESENTATIVE HOPKINS offered his understanding that "permit" would be changed to "license," and that expanding from two years

to five years would be a five-year extension of the work commitment. He asked whether the lease for up to 100,000 acres is for ten years.

MS. PAINE replied that as a part of the competitive leasing program, [leases] are issued for a primary term of 10 years and can be for parcel sizes smaller than 100,000 acres. Under the competitive geothermal program, which HB 135 does not impact, 10 years are being granted in which to explore the area. Because this is noncompetitive it is a slightly shorter duration of time because [the department] wants to encourage as many folks as possible to get out there and compete to explore Alaska's resources.

REPRESENTATIVE HOPKINS offered his understanding that the lease is for 10 years on sizes up to 100,000 acres and the work commitment is for five years. He posed a scenario in which the work commitment is not completed in five years and asked whether the individual would still have that same lease for another five years.

MS. PAINE responded that [DNR's] competitive leasing program does not include a work commitment for decision. To maintain a lease beyond the 10 years the individual would have to either move to unitization or achieve production. This work permit commitment component is separate, unique, and specific to what [DNR] is calling an exploration license program, she explained. The five-year work commitment aligns with the five-year term of the exploration license itself. In the case of an exploration license, if an individual has not been able to successfully complete their work commitment, there are provisions where an extension of time can be applied for to complete the work commitment, but that would go through the commissioner's or director's office and there could be some further requirements in terms of performance guarantees along with that.

[1:52:23 PM](#)

MR. MASTERMAN resumed the PowerPoint presentation with slide 11, "SECTION 10: GEOTHERMAL FLUIDS," which read as follows [original punctuation provided with some formatting changes]:

AS 41.06.060(4) is amended to read:

(4) "geothermal fluid" means liquids, brines, water, gases, or ~~and steam at temperatures greater than 120 degrees celcius or any commercial use of liquids and~~

~~steam naturally or artificially present in a geothermal system; "geothermal fluid" does not include oil, hydrocarbon gases, or other hydrocarbon substances at temperatures less than 120 degrees celsius;"~~

- Aligns with modernized definition for geothermal resources.
- Not limited by temperature because current technology enables development of cooler geothermal systems.
- Distinguishes geothermal fluids from hydrocarbon resources.

MR. MASTERMAN explained that HB 135 would update the definitions for a geothermal fluid and a geothermal resource. He noted that in addition to modernizing the definition of geothermal fluids, it is distinguished that hydrocarbon resources cannot be considered a geothermal fluid. Further, the updated definition would allow for situations where an explorer might encounter hot and dry rocks, inject a fluid into those rocks, and then extract the heat by recovering that "artificially present fluid" from the geothermal system. He said the biggest change is removal of the temperature criteria for geothermal fluid. Technology for geothermal systems is advancing to allow exploitation of lower temperature systems, so having a temperature limit constrains the definition of geothermal fluid.

[1:54:30 PM](#)

MR. MASTERMAN moved to slide 12, "SECTIONS 7 & 11: NEW DEFINITION," which read as follows [original punctuation provided with some formatting changes]:

"Geothermal resources" means the natural heat of the earth; the energy, in whatever form, below the surface of the earth present in, resulting from, or created by, or which may be extracted from, such natural heat; and all minerals in solution or other products obtained from naturally heated fluids, brines, associated gases, and steam, in whatever form, found below the surface of the earth; but excluding oil, hydrocarbon gases, or other hydrocarbon substances.

- Modern definition for geothermal resources.

- Not limited by temperature because current technology enables development of cooler geothermal systems.
- Ensures all the State's mineral estate resources are captured in definition.
- Same definition being applied to both DNR & AOGCC statutes.

MR. MASTERMAN specified that this [proposed] new definition of geothermal resource comports with the [proposed] definition of a geothermal fluid: it does not have a temperature limitation, it allows for artificial fluids to be used to extract the heat, and it separates clearly that oil, natural gas, or other hydrocarbon fluids are not considered a geothermal resource.

[1:55:54 PM](#)

REPRESENTATIVE HOPKINS asked whether geothermal potential is included in the "Alaska Mapper" system which allows the public to look at mineral mapping and exploration opportunities.

MR. MASTERMAN answered that he does not know if geothermal is included in the Alaska Map app. However, he said, a page on the DGGs web site has the locations of all known thermal springs, and each one has a live link to access the information that is available.

[1:57:11 PM](#)

REPRESENTATIVE HANNAN inquired about the department's insights on large volcanic eruptions.

MR. MASTERMAN replied that when the bell is rung anywhere on the planet, there will be repercussions elsewhere. He related that in a recent conversation with someone at the Alaska Volcano Observatory about putting out a notice on what the possibilities are in Alaska for a large eruption, he was told that the possibilities are not that high for now.

[2:00:49 PM](#)

The committee took an at-ease from 2:00 p.m. to 2:01 p.m.

[2:01:22 PM](#)

CHAIR PATKOTAK opened public testimony on HB 135. After ascertaining that no one wished to testify, he closed public testimony.

[HB 135 was held over.]

[2:02:40 PM](#)

ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 2:03 p.m.