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SB 2360
February 6, 2025
Senate Energy & Natural Resources Committee
Testimony of Ned Kruger

Introduced by Senators Hogan, Cory, Patten

A BILL for an Act to provide for a legislative management study regarding geothermal energy.

The Geological Survey Division of the Department of Minerals Resources is charged with the duty of enforcing regulations and orders of the Industrial Commission applicable to geothermal energy extraction facilities, while encouraging and promoting the proper use of geothermal resources, and since 1984 has regulated Geothermal Resource Development under North Dakota Century Code Chapter 38-19 (NDAC 43-02-07 for shallow geothermal installation projects). Under this program, the NDGS has issued 1,936 permits. Of those 600 have been for commercial properties and 1,338 have been residential. A typical well field of vertical loops will range from 3-10 well-borings for residential systems and from the tens to hundreds of borings for commercial systems. These loops are generally installed to depths of 200-300 feet. Cumulatively more than 41,000 holes and over 8,600,000 drilling feet of loop depth have been permitted.

In anticipation of future interest in deep geothermal power production facilities within the state utilizing wells measuring thousands of feet in depth, the NDGS promulgated a new chapter of Administrative Code (43-02-7.1) in 2020. To date no permits have been issued under this chapter. We are however, monitoring the developments of DEEP Energy Production Corp. which has drilled deep geothermal production wells as nearby as two miles north of the US-Canadian border near the town of Torquay, Saskatchewan, from which it has measured water temperatures as high as 261°F (127°C) in the Deadwood Formation. It should be noted that the deepest portion of the Williston Basin, where temperatures are expected to be the highest, is in North Dakota.

In 2014, the NDGS initiated a temperature logging program in the Williston Basin. The primary goal of the program is to gain further insight into the thermal history of the basin that may result in the development of improved models for use in exploration for oil and natural gas. The program has also been designed to gather data useful in the evaluation of the geothermal potential of the Williston Basin. The NDGS has recorded temperatures of 297 and 299°F (147 and 148°C) at depths of approximately 13,000 feet (3,962 m) within the Interlake and Stony Mountain Formations, respectively in McKenzie County. These temperatures were obtained 1,700 to 1,800 feet (518 to 549 m) above the Deadwood Formation at those locations. This program has generated multiple reports and temperature gradient maps of various formations.

The Department of Mineral Resources is supportive of SB 2360.

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Examples of maps generated from the NDGS Temperature Logging Program.