

SB 2360
March 20, 2025
House Agriculture 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 Mineral Resources enforces the 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 and NDAC 43-02-07 for shallow geothermal installation projects). Nearly 2,000 permits have been issued for commercial and residential shallow geothermal systems. 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 where ground temperatures are approximately 45°F throughout the year.

Anticipating future interest in deep geothermal power production facilities utilizing higher temperature 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. However, there is a geothermal-power production project underway just several miles north of the US-Canadian border near the town of Torquay, Saskatchewan. There, DEEP Energy Production Corp. has performed test-drilling and measured water temperatures as high as 261°F (127°C) in a sandstone layer of the Deadwood Formation. They anticipate a phase one construction of a 5 MW facility consisting of two injection wells and two extraction wells drilled horizontally to a depth of approximately 3.5 km to be completed in 2026. Phase two construction could add 18 more wells and bring the facility up to 25 MW of power generation. It should be noted that the deepest areas of the Williston Basin, where temperatures are expected to be the highest, are in North Dakota.

In 2014, the NDGS initiated a static temperature logging program in the Williston Basin utilizing oil wells which were no longer producing but had not yet been permanently abandoned. 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.

Mark F. Bohrer
ASSISTANT DIRECTOR
OIL AND GAS DIVISION

Nathan D. Anderson
DIRECTOR
DEPT. OF MINERAL RESOURCES

Edward C. Murphy
STATE GEOLOGIST
GEOLOGICAL SURVEY

Example of map generated from the NDGS Temperature Logging Program.

