Geomagnetic Survey of the Tioga Area, North Dakota

by

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ABSTRACT

The primary purpose of the field study was to determine the strength of the vertical magnetic field within the vicinity of the Tioga Field, Tioga County, North Dakota. The field study was carried out in cooperation with Babbitt Nickel, Tioga Field, Tioga County, North Dakota, and the Bureau of Mines, U.S. Department of Interior.

Introduction

The Tioga area is characterized by its proximity to the Red River, which separates the state of North Dakota from the province of Manitoba, Canada. The area is also marked by its rich oil and gas deposits, which have been a source of economic growth for the region. The study was conducted using a variety of magnetic surveying techniques, including ground surveys and aerial surveys.

Methods

The magnetic field was measured using a proton precession magnetometer, which is a device that measures the intensity of magnetic fields by detecting the precession of a proton's magnetic moment in an external magnetic field. The data was collected at a variety of locations within the survey area, and the results were analyzed using a variety of statistical and mathematical techniques.

Results

The results of the study show that the magnetic field within the Tioga area is strongest in the vicinity of the Tioga Field, where the oil and gas deposits are located. The field strength decreases as one moves away from the field, with the magnetic field weakening as one moves towards the Red River.

Conclusions

The study confirms that the Tioga area is a viable site for further exploration and development of oil and gas deposits. The magnetic field data can be used to guide future exploration efforts, and the results can also be used to inform decisions regarding the environmental impact of future development.

References

