Title: **Radionuclides in Drinking Water of Northcentral Wisconsin (Study No. 49)**

Investigators:

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Objectives: To determine whether groundwater in the north central part of Wisconsin contained radioactive elements which would endanger the drinking water supply.

Background/Need: North Central Wisconsin is vulnerable to radioactive groundwater contamination from crystalline bedrock. Previous monitoring had indicated elevated levels of radium in the public water supply.

Methods: Monitoring wells were sampled throughout the district and analyzed for naturally occurring radioactive isotopes between 1985 and 1989.

Results: A dramatic difference was found in levels of naturally occurring radioactive elements in the groundwater of the different aquifers of the district and in specific areas of each aquifer. The crystalline Precambrian bedrock had elevated radon levels in 139 of the 157 groundwater samples taken (88.5%).

Conclusions: The Cambrian sandstone aquifer showed little potential for containing radioactive elements which would be of a health concern. The Pleistocene aquifer showed a moderate potential for groundwater contamination from radioactive elements. The crystalline Precambrian bedrock aquifer exhibited a strong tendency for groundwater to contain significant levels of naturally occurring radioactive constituents.

Recommendations/ Implications: Investigators recommend that public agencies which have a regulatory or advisory function in the protection of public health should continue with radon monitoring and research in the following areas: other precambrian crystalline bedrock locations, common water holding or treatment devices which may concentrate radioactive materials, the potential ingestion hazard by radon and its decay products and identify areas of concern for future sampling. Water supply owners in suspect areas should also be notified of the need for analysis.

Availability of Report: This report is available for viewing and loan at:

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