

Investigating the critical mineral potential of Upper Cretaceous to Paleogene coals and carbonaceous shales in southwestern Saskatchewan, Canada

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Summary

In 2023, the Government of Saskatchewan launched a critical minerals strategy (Securing the Future: Saskatchewan's Critical Minerals Strategy) to drive growth and development of the sector in the province. Coal deposits are known to contain most of the elements of the periodic table in trace amounts, but under certain favorable conditions, can become enriched in valuable trace elements. As such, coal is considered a potential viable source of critical mineral extraction. A study is presently underway to evaluate the potential of lignite and carbonaceous shale as a source of critical minerals in shallow, coal bearing formations across the Cretaceous and Paleogene of Saskatchewan. More than 200 samples were collected from coal seams spanning the Upper Cretaceous to Paleogene (Eastend to Ravenscrag formations) in southwest Saskatchewan. Samples were collected from outcrop exposures along exposed coal seams in the Frenchman River Valley near the Shaunavon Coalfield. Ultimately, this study seeks to characterize and quantify the critical mineral potential of the regions coal seams and their mode of occurrence in the study area.