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**SQUIRREL RIVER EVALUATION UNIT 22 - BAIRD MOUNTAINS, SELAWIK
AND NOATAK QUADRANGLES, NORTHWEST ALASKA: GEOLOGIC SUMMARY
AND BIBLIOGRAPHY**

by

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GEOLOGIC SUMMARY

Introduction

Evaluation unit 22 encompasses 1,273 thousand acres, mainly in the Baird Mountains quadrangle with its southern and western edges in the Selawik and Noatak quadrangles, respectively (fig. 1). The evaluation unit is within the southern edge of the Brooks Range fold and thrust belt and is largely underlain by metamorphosed lower Paleozoic marine carbonate, clastic and pelitic rocks (Till and others, 1988). In the evaluation unit potential ore and gold placer deposits occur within three separate stratigraphic successions (Karl and others, 1989): the Nakolik sequence (which includes the Omar, Frost and Powdermilk prospects); the Tukpahlearik Creek sequence; and the Kallarichuk Hills sequence (coal and Klerly Creek gold placers). Geochemical data utilized in the evaluation process is published in Aamodt and others (1978), Bailey and others (1987), Folger and others, (1987), Goldfarb and others (1991), Karl and others (1985), Schmidt and Allegro (1988), Zayatz and others (1988), and Zinkl and others (1981). A bibliography of references used in the evaluation process follows the geologic summary section.

Nakolik sequence

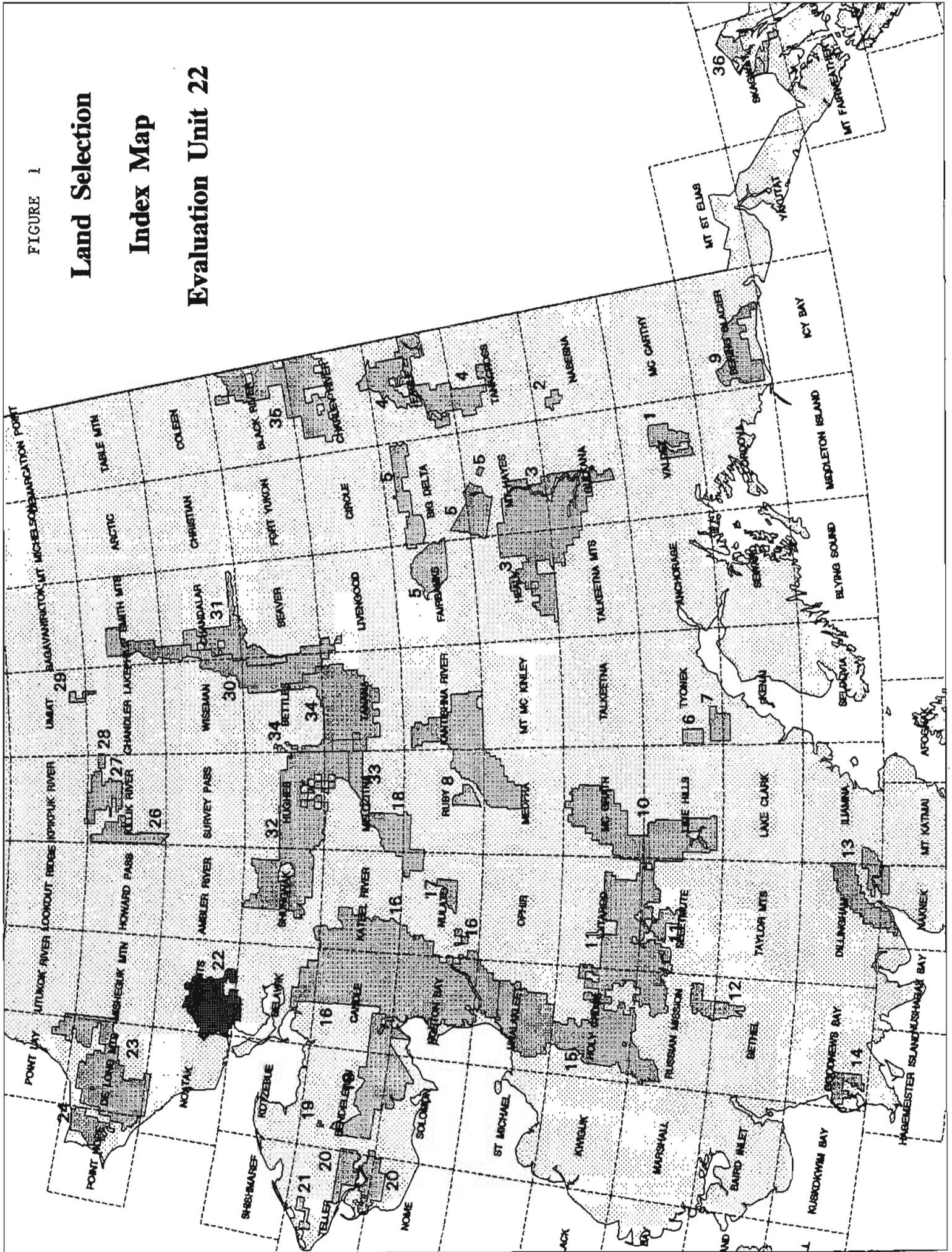
The Nakolik sequence consists of the undivided Devonian to Ordovician age Baird Group, and Devonian-age limestone, phyllite and clastic rocks of the Nakolik River. Mineralization at the Omar (Folger and Schmidt, 1986; Folger, 1988), Frost and Powdermilk (Schmidt and Folger, 1986) prospects occurs mainly in the Baird Group which is a thinly laminated metalimestone and argillaceous to silty metalimestone, dolostone and marble.

Tukpahlearik Creek sequence

The Tukpahlearik Creek sequence contains Ordovician to Devonian metamorphic sedimentary and possibly Mesozoic-age intrusive rocks in northeast-southwest trending thrust fault-bounded belts. Rock types include: chloritic quartz schist and siliceous chlorite schists; pelitic schist with intercalated masses of dark green metabasite, mafic dikes, mafic extrusives and metachert; micaceous marble with chloritic partings and relict cross-lamination structures along with meter-scale lenses of black carbonaceous calcareous or siliceous semischist; massive to thick-bedded marble in lenses tens of meters thick, intercalated with chloritic schist, calcareous quartz schist, and black carbonaceous schist; black carbonaceous quartzite and quartz metaconglomerate, metaconglomerate is mostly clast supported but some is matrix supported suggesting debris flow origin; and semischistose metadiorite and metagabbro with relict igneous textures, intrudes metasedimentary and metabasite rocks of the Tukpahlearik Creek sequence, possibly Mesozoic in age.

FIGURE 1

Land Selection Index Map Evaluation Unit 22



Kallarichuk Hills sequence

The Kallarichuk Hills sequence includes Paleozoic and/or Proterozoic age garnet-mica-quartz schist; calcareous quartz-mica schist and marble; massive to gneissic, granitic to dioritic meta-intrusive rocks in km-scale or smaller bodies that have crosscutting relationships with other rocks of the Kallarichuk Hills; and intrusive dikes of gabbro, leucogabbro, granite and granodiorite of Mount Angayukaqraq. The Kallarichuk Hills sequence contains gold placers in rivers and streams which drain west from the Kallarichuk Hills.

Cretaceous-age rocks in the Kallarichuk River area are known to contain bituminous coal in beds up to 3 ft thick to the east along the Kallarichuk River outside of evaluation unit 22 (Clough and others, 1982). Similar Cretaceous rocks are mapped within the evaluation unit in Kallarichuk Hills. Two small-scale coal mines, Haralan and Kobuk River mines, outside of the evaluation unit produced several hundred tons of coal from 1886 to 1932 (Plangraphics, 1983).

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