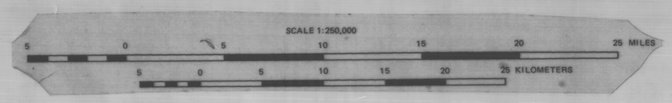
This report is a preliminary publication of DGGS. The author is solely responsible for its content and will appreciate candid comments on the accuracy of the data as well as suggestions to improve the report.

Alaska Department of NATURAL RESOURCES



Data used in the preparation of this map were compiled and analyzed by T.K. Bundtzen, J.T. Kline, K.H. Clautice, S.E. Cutler, G.D. March, A.Z. Rodes, and D.D. Adams, January to June 1986.

MINERAL POTENTIAL, MT. MCKINLEY QUADRANGLE, ALASKA

Compiled by
T.K. Bundtzen, J.T. Kline, K.H. Clautice,
S.E. Cutler, G.D. March, A.Z. Rodes,
and D.D. Adams
1986

EXPLANATION

INTRODUCTION

The data presented on this quadrangle were prepared to provide mineral potential rankings of 1,070 townships comprising the Kuskokwim area plan, which is currently being worked on by the Alaska Department of Natural Resources.

Mineral potential was determined by compiling and analyzing a comprehensive data stack, which included most elements traditionally utilized in assessing mineral endowment by both the public and private sectors. They include 1) geology, 2) mineral terranes, 3) geophysics, 4) geochemistry, 5) mineral occurrences, 6) claim density, 7) production, 8) reserves, and 9) industry interest nominations. Each element was assigned a score on the basis of assigned algarithms. A total raw score was obtained by adding the individual element scores. Township scores for the entire planning area were then statistically analyzed; a percentile ranking was obtained for each township which enables one to compare any township to the total population. Finally all available data was utilized to obtain a mineral ranking of 1 (lowest) to 5 (highest) as summarized below:

MINERAL POTENTIAL

1 — Very Low Geologic environment generally unfavorable; little or no bedrock is exposed. Low potential for geologic units to host either lode or placer mineral deposits. Generally little or no mining activity, poor metallogenic terrane, few or no geophysical or geochemical anomalies, and no mineral production or reserves. Rank in 42nd percentile or lower of total township population.

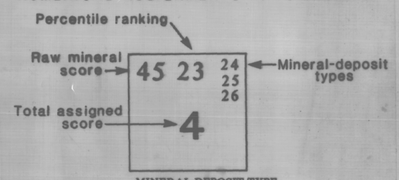
2 — Low Geologic environment may be favorable, but generally poor or moderate; few or no known mineral occurrences or geochemical anomalies. Geophysical anomalies may exist, but bedrock indicators for such anomalies generally unfavorable. Seldom occurs in mineral terrane. No production or reserves of minerals. Rank in 43-72 percentile or lower of total township population.

3 — Moderate Geologic environment generally favorable; low claim density, geochemical or geophysical anomalies can exist and generally contains one or more mineral occurrences. Township may be on trend with group of townships defining mining district or mineral belt. Can contain modest mineral production or reserves. Rank in 73-92 percentile of total population.

4 — High Geologic environment very favorable and usually includes mineral terranes that contains some or all of the following: geochemical anomalies, geophysical target areas, significant mineral occurrences or deposits, and mining claim activity. About 10 percent of the townships with this ranking have had past metal production or contain proven reserves of minerals. Ranks in 92-97.5 percentile bracket.

5 — Very High Geologic environment very favorable and always part of significant mineral terranes. Contains significant geophysical and geochemical anomalies, mineral occurrences and deposits, high claim density, and have been nominated by the mineral industry for activity or selection interests. About 90 percent of townships with this rank have sustained past or present metal production and contain significant reserves of mineral resources. Rank comprises top 2.5 percentile of total township population.

NUMERICAL ASSIGNMENTS IN TOWNSHIPS



MINERAL-DEPOSIT TYPE
(commodities expressed in decreasing importance)

1 Stratiform Pb-Zn-Cu-Ag
2 Stratiform Ba
3 Vein Ag-Pb-Zn ± Au
4 Vein Cu-Pb-Zn-Ag
5 Vein W-Au-Ag
6 Vein Hg-Sb ± Au
7 Vein unclassified
8 Stockwork Au ± Hg
9 Porphyry Cu-Mo
10 Porphyry Mo-W
11 Skarn Au-Cu-Fe-Ag
12 Skarn W-Cu
13 Skarn Zn-Pb-Ag
14 Greisen Sn-F
15 Stockwork/greisen Sn-Cu-Ag-Bi ± REE
16 Ultramafic Ni-Co-Cu
17 Ultramafic Cr
18 Zoned ultramafic (PGE)
19 Asbestos
20 Metamorphosed Cu
21 Carbonate hosted Pb-Zn
22 Carbonate hosted Cu
23 Sandstone hosted U
24 Igneous hosted U-Th-REE
25 Miscellaneous igneous hosted, unclassified
26 Placer Au ± W ± Sn ± Sb ± Hg ± Zr ± REE

QUADRANGLE INDEX OF THE KUSKOKWIM PLANNING AREA