

LEGEND

Concentration of heavy metal, 10 or greater in stream sediments 10
in spring sediments 11

Concentration of heavy metal, 5 to 9 ppm in stream sediments 5
in spring sediments 6

Concentration of heavy metal, 0 to 4 ppm in stream sediments 4
in spring sediments 5

Location of known veins Pb x

Mineral occurrence Pb x

Mineral deposit 3

Mineral Symbols

| | |
|---------------------------|------------------------------|
| Arsenic As | Lead Pb |
| Antimony Sb | Silver Ag |
| Copper Cu | Tungsten (placer) W(P) |
| Cadmium Cd | Zinc Zn |
| Gold (placer) Au(P) | |

Index to Mineral Deposits

| | |
|---------------------------------|-----------------------------|
| 1. Silver King (Ag, Pb, Zn, Cd) | 4. Lookout (Pb, Ag, Zn) |
| 2. Gerlitzky (Pb, Zn, Ag) | 5. Rex (Pb, Sb, Zn, Cu, Ag) |
| 3. Shanghai (Zn, Pb, Ag) | |

Field work by C. F. Gleason, W.M. Tupper, A. Suparman, K. Demai, M. Shafiqullah, J.A. Colwell, J.R. Deighton, C.H. Yurchak, J.K. Worth, H.R. James, A.G. Troup, G. Wind, L. Hogr, and F.R. Campbell

Geological cartography by the Geological Survey of Canada, 1965

Roads, all weather ————

Other roads - - - - -

Intermittent lake and stream ~~~~~

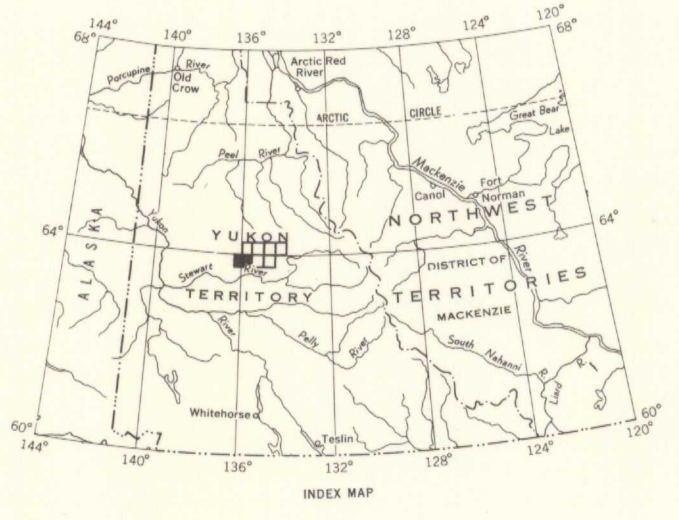
Marsh [Symbol]

Horizontal control point [Symbol]

Elevation in feet above mean sea-level [Symbol]

Base-map produced by the Surveys and Mapping Branch, 1956.61

Approximate magnetic declination, 33° 36' East, decreasing 4.1' annually



DESCRIPTIVE NOTES

Geological

The Mount Haldane area is underlain by a series of metamorphosed sedimentary rocks, mainly quartzites, phyllites, chlorite, sericite and graphite schists, and minor limestones. Basic igneous sills and lenses now altered to greenschists, are interlayered within these rocks. Quartz porphyry dykes and granitic stocks intrude the metamorphosed sedimentary rocks at several places.

The area has undergone several stages of glaciation, and thick glacial deposits occupy the major valleys and hill slopes below an elevation of 3,000 feet. Permafrost is common throughout the region.

Early vein fillings contain pyrite and/or arsenopyrite with or without silver and lead minerals. Later silver-lead-zinc veins occur in brecciated fault zones and contain essentially siderite, sphalerite, galena, and argentiferous tetrahedrite. The veins are best developed in competent quartzites or gneiss. Disseminated arsenopyrite is common in some of the quartz porphyry dykes that cut the rocks of the Mount Haldane area.

The near-surface parts of the veins have been deeply oxidized, with the formation of limonite, manganese oxides, cerussite, anglesite, malachite, azurite and scorodite.

Further details on the geology and mineralization of the area can be obtained from reports by Bostock (1947, 1964), McTaggart (1960), Aho (1964), Boyle (1965), and Poole (1965a, 1965b).

Geochemical

The data on the map are based on samples of sediment collected from the channels of the streams and on the sediments and precipitates in the vicinity of springs. Where possible the active channel was sampled. However, as the field work progressed it was found that moss on the creek banks below the water line had trapped considerable amounts of fine sediment. This kind of sample proved to be adequate, and in many instances this was the type of stream sediment sample analyzed. The wet sediment was analyzed at the sample site for cold citrate-soluble heavy metals (principally zinc, copper, and lead) using the method described by Smith (1964).

The values are expressed as total heavy metal in parts per million. The quantitative laboratory work done to date indicates that most of the heavy metal detected by the field tests is zinc.

The creeks not accessible by roads were reached by helicopter. An attempt was made to maintain a sample interval of 1,500 feet along all creeks.

Most of the known mineral occurrences in the area are marked by heavy metal silt anomalies. A significant series of anomalies occur in the creeks draining Mount Haldane. This area, and the area underlain by massive quartzite east and west of the mountain, warrant further investigation.

Arsenopyrite mineralization is known to occur in the upper parts of Corkery Creek, and the anomalies found in this area may be associated with this type of mineralization. It is not known whether or not the arsenopyrite deposits contain gold values.

The anomalies on Secret Creek are due in part to contamination from the camp of Pease Silver Mines Ltd. and in part to the lead-antimony-silver veins upstream.

The heavy metal content of the stream and spring sediments and precipitates shown on this map should be compared with the heavy metal content of the water shown on Map 22-1964.

Aho, A. E.: Mineral potential of the Mayo district; Western Miner, vol. 37, No. 10, pp. 50-58 (1964).

Bostock, H.S.: Mayo, Yukon Territory; Geol. Surv. Can., Map 890A (1947).

Bostock, H.S.: McQuesten, Yukon Territory; Geol. Surv. Can., Map 1143A (1964).

Boyle, R.W., Illaley, C.T., and Green, R.N.: Geochemical investigation of the heavy metal content of stream and spring waters in the Keno Hill - Galena Hill area, Yukon Territory; Geol. Surv. Can., Bull. 32 (1955).

Boyle, R.W., Pelkar, E.L., and Patterson, P.R.: Geochemical investigation of heavy metal content of streams and springs in the Galena Hill - Mount Haldane area, Yukon Territory; Geol. Surv. Can., Bull. 36 (1956).

Boyle, R.W.: Geology, geochemistry, and origin of the lead-zinc-silver deposits of the Keno Hill - Galena Hill area, Yukon Territory; Geol. Surv. Can., Bull. 111 (1964).

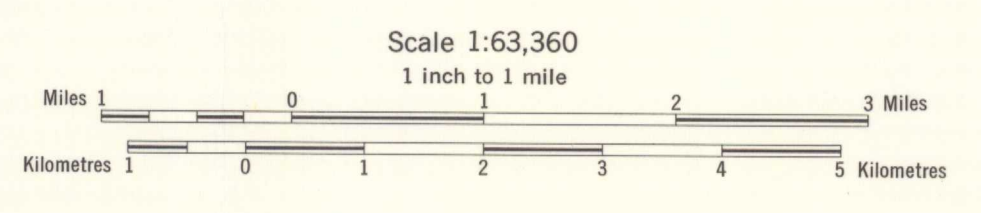
McTaggart, K.C.: The geology of Keno and Galena Hills, Yukon Territory; Geol. Surv. Can., Bull. 58 (1960).

Poole, W.H.: Reports of activities: field, 1964; Geol. Surv. Can., Paper 65-1 (1965a).

Mount Haldane and Dublin Gulch map-areas, Yukon Territory; Geol. Surv. Can., Prelim. Map Sheets (in press) (1965b).

Smith, A.Y.: Cold extractable "heavy metal" in soil and alluvium; Geol. Surv. Can., Paper 63-49 (1964).

MAP 23-1964
HEAVY METAL CONTENT OF STREAM AND SPRING SEDIMENTS
MOUNT HALDANE
YUKON TERRITORY



This map has been produced from a scanned version of the original map
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