

The 1958 Yukon Helicopter Exploration Program

The exploration program was outlined and proposed in a memorandum dated January 27, 1958 to Mr. C. E. McLeod from P. M. Kavanagh. It was stated that the Ogilvie Mountains region was the only relatively unprospected portion of the general region into which the Company could feasibly bring power from its hydro-electric plant at the North Fork of the Klondike River. For exploration purposes, the Ogilvie Mountains region was defined geographically as occurring between Latitudes 64° and 65°, and between Longitudes 136° and 141°, except for that portion lying southwest of the Yukon River. The defined region is approximately 8000 sq. miles in area.

It was proposed that a 9-man party (later changed to one of 7 men including a cook), permanently supported by a helicopter carry out a 3-month (June, July, August) exploration program within the region in the summer of 1958. Such a program would adequately test the whole area, and it would follow that the Company, by undertaking such a program would have explored the only relatively unprospected country within reach of the Company's power by the end of 1958.

The program was approved by the Directors of the Company.

Summary

1. No important mineral deposits were found by the exploration party.
2. The program began on June 1 and finished on July 31. The party worked from 3 base camps; ie. the South Fork Intake, the mouth of Coal Creek, and Worm Lake.
3. The region was adequately tested by helicopter reconnaissance with spot ground checks followed by ground prospecting of favorable zones. It is concluded that the region contains no exposed economic mineral deposits.
4. Minor bands of very low grade iron formation were traced northwestward for 12 miles from Asbestos Corporation's iron property on Shell Creek.
5. A garnetiferous skarn zone of doubtful value was found north of Tombstone Mountain, some 36 miles northeast of Dawson.
6. The Ogilvie Mountains region contains great sedimentary sequences of quartzites, cherts, slates, conglomerates, and limestones intruded by sporadic sills and stocks ranging from gabbro to granite porphyry in composition.
7. A 2-man unit from the main party spent one week in July prospecting - mainly for lode-gold - in the small area defined by Latitudes 64°00' - 64°10' and Longitudes 140°40' - 141°00', ie. in the area which probably contained the source of the Sixtymile River and Walker Fork placer gold. Results were negative.

General DescriptionSouth Fork Intake Base Camp:

During the period June 1 - July 1, 22 days were spent in exploration work. The remainder was accounted for by moving camp, helicopter maintenance, and inclement weather. The region north of Latitude $64^{\circ}00'$ and lying within a 50 mile radius of the Intake was explored by helicopter reconnaissance with spot ground checks followed by ground prospecting of favorable areas. In addition, the relatively small area defined by Latitudes $63^{\circ}55'$ - $64^{\circ}00'$ and Longitudes $137^{\circ}15'$ - $137^{\circ}30'$ was investigated.

The large region contains cherts, quartzites, red and green slates, conglomerates and limestones; quartzites predominate. Intrusives, mainly of syenite porphyry and granite porphyry, but also including basic stocks and sills, intrude the sedimentaries. The exploration work was concentrated in the vicinity of the intrusives, mainly in 3 areas, ie. a) Tombstone area, b) Antimony Mountain area east of the North Fork of the Klondike River, and c) Fish Creek which flows into O'Brien Creek.

a) Tombstone area: This area contains the known Spotted Fawn Creek lead-silver vein showings, which were examined and are considered to be small and erratic. The head of the Blackstone River and its right and left tributaries are in this area and that locale is characterized by considerable contact metamorphism.

The only deposit encountered, which is of possible economic interest in the area, is a garnetiferous skarn zone, directly north of Tombstone Mountain and on the north side of the Tombstone River. The deposit occurs on a contact between limestone and diorite. It is 20 feet wide and is exposed for a 20 foot length; one end is closed but the other disappears beneath a talus covering. Although Kavanagh intends to examine the zone during the month of August, it is considered to be of little value.

b) Antimony Mountain: Intrusives which occur over several miles in this area have conspicuous, wide contact aureoles which have formed widespread gossans. The alleged occurrence of antimony was not encountered, at least not in the form of stibnite. Arsenopyrite is widespread and could possibly contain antimony locally. No deposit of economic grade or size was seen. A platy metallic-appearing mineral which is commonly associated with the arsenopyrite was not positively identified but is considered to be marcasite.

c) Fish Creek (flowing into O'Brien Creek): This proved to be an area similar to Antimony Mountain, contact metamorphism being widespread. A considerable variety of minerals was noted. A small remnant of a former stream channel, now expressed by a semi-consolidated conglomerate, appeared attractive for placer gold. No gold was noted and the occurrence is considered to be of little value.

The relatively small area defined above and occurring below Latitude

64°00' contains a syenite range mapped by Bostock. The intrusive was the largest encountered from the Intake camp but has a sharp contact and no associated mineralization.

Coal Creek Base Camp:

During the period July 3 - July 15, 9 days were spent in exploration activity from this camp. The area which was investigated was that lying between the Alaska border and the western limit of the area examined from the Intake camp, and between the Yukon River and slightly north of Latitude 65°00'.

Calcareous sedimentary rocks predominate from the Alaska border to the Fifteenmile River and the head of the Chandindu (Twelvemile) River. Anticlinal and synclinal structures were observed in several places.

The only acidic intrusive encountered was a small one at the head of the Fifteenmile River, which has caused a small occurrence of galena and chalcopyrite. North of Mt. Ina a large basaltic sill is exposed. Very small scattered sills and dikes were noted in adjacent areas.

Mineralization occurs at the head of Coal Creek in the lowest exposed sedimentary sequence. The rocks are folded, faulted and corroded. The mineralization occurs in the faulted and sheared zones, and consists of galena, pyrite, marcasite, and mariposite in concentrations which do not exceed several inches across.

Considerable work was devoted to tracing possible extensions of the iron formation known to occur in the Shell Creek area. Minor bands - up to 25 feet thick - of very low grade iron formation were traced northwestward toward the Alaska border for 12 miles from Asbestos Corporation's iron property on Shell Creek.

Worm Lake Base Camp:

During the period July 18 - July 31 the area lying between Latitudes 64°00' and 65°00' and between Longitude 136°00' and the eastern limit of the area investigated from the Intake camp was adequately explored.

The area contains principally sedimentary rocks, predominantly calcareous. It is lacking in large acidic or basic intrusives; those intrusives which do occur are small, mainly basic, sills.

The valleys are readily accessible and ridges easily travelled. Rock exposures are large and numerous.

By the end of July the exploration party considered that to extend the exploration work into the more prospected region east of Latitude 136°00' and

north of Mayo was not justified. An arrangement was made with Klondike Helicopters in which the Company was absolved from its guarantee to provide 80 hours minimum flying time in August.

The helicopter was released on July 31. On August 4, the party as a whole was flown out of Worm Lake and disbanded.

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Mr. McLeod - Orig. & 3 copies

Mr. Nordale - 1 copy



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