REPORT ON MINERAL DEPOSITS EXAMINED IN THE WHEATON DISTRICT IN 1953

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INTRODUCTION

The Wheaton area lies in the Whitehorse Mining District of southwest Yukon, about 30 miles south and slightly west of Whitehorse, and some 12 miles northwest of Bennett Lake. From Robinson, a station on the White Pass & Yukon Railway, a 19-mile unsurfaced road leads to a cable crossing over the Wheaton River which drains the area. The Wheaton River may be difficult to ford even by horse during high water in early summer, but may be waded on foot in fall and early spring. Beyond the cable crossing, nine miles of rough road passable by truck extend up the south side of the river, and branch roads extend to prospects on Mt. Anderson and up Becker Creek. Trails lead to other prospects in the area.

Topography in the Wheaton district is mountaineus but, except in the rugged western part of the area, an old plateau surface forms the tops of ridges at elevations between 5000 and 6000 feet. This surface is flat or undulating and covered in part by thick overburden which hinders prospecting.

The chief known mineral deposits in the district are in the vicinity of Mt. Stevens, Mt. Anderson, Carbon Hill, Chieftain Hill, Mt. Reid, Gold Hill, and Idaho Hill. The deposits are mainly veins containing gold, silver, or antimony, with lead secondary in importance. Many of these veins show mineralogic and textural characteristics of shallow-depth, low-temperature deposition, and are probably related genetically to small stocklike bodies and dikes of granite porphyry and felsite which also display evidence of shallow depth of formation. Some of the veins continue for distances of two or three thousand feet but most tend to be lenticular and narrow, with small widely separated mineralized sections. Since an early period of interest in the Wheaton district in the early 1900's , the area has been prospected from time to time but no economically mineable deposit has been discovered.

The district was briefly examined between June 23 and July 1, 1953, by W.H. Mathews, E.D. Dodson, and the writer under the guidance of Walter McAllister, a local prospector. Further work was done by E.D. Dodson and a crew of five men in September, 1953. Results of this examination, and recommendations arising therefrom are given below for the following areas investigated:

MT. STEVENS

An overgrown wagon trail leads from Wheaton River to an abandoned tent camp on the slope of Mt. Stevens, from which a trail leads to showings at elevations between 5000 and 5500 feet on the mountain. The wagon road could be quickly rehabilitated if necessary.

The showings, exposed in small cuts and short adits, consist of several massive to drusy quartz veins carrying minor galena and pyrite in places. Most of the veins are in granitic rocks containing inclusions of massive to schistose greenstone. Cairnes (1912, p.107), who describes the veins more extensively, reports the presence of native gold and sylvanite. All the veins examined, namely those of the Buffalo Hump Group (crown-granted to Anderson of Milwaukee), and several others on the hillside to the south, are thin and lenticular, rarely exceeding two feet in thickness or 50 feet in exposed length. According to Walter McAllister, assays average about 0.03 to 0.04 oz/ton gold with some silver, but some erratic high values up to 10 ounces in gold have been obtained from rich float. Short adits seen by the writer were all caved at the portals and little information was obtainable on the attitudes of the veins. Good bedrock exposures are too few to provide much useful structural information. Although float of vein quartz was found over much of the top of Mt. Stevens, few pieces exceed more than 6 to 8 inches across. This float could be easily derived from a few small, lenticular veins with small local pockets of mineralization.

Except on the steeper slopes, overburden is thick and difficulties of finding the source of vein float would make prospecting or exploration too costly and uncertain in view of the narrow widths and erratic mineralization. No further work is recommended on these deposits.

Similar gold veins on the Midnight Property on the other side of Mt. Stevens were not seen.

MT. WHEATON AND TALLY-HO GULCH

Showings on the west slope of Mt. Wheaton were not visited, but judging from Cairnes' report (1910, p 108) these deposits are similar to those of Mt. Wheaton. One such vein was seen in Tally-Ho Gulch. An adit driven in on a similar vein a quarter mile south of Tally-Ho Gulch (Cairnes, 1910, pp 108-110) is now caved at the portal and could not be examined. The vein is said by Cairnes to occur in granitic rocks in a fault zone 4 to 12 feet wide, which is followed by a drift 290 feet long from which a 40-foot raise and a 15-foot crosscut was driven.

According to Cairnes (p 109) ... "In the first 100 feet of the drift the vein is from 12 to 20 inches in thickness, then for 6 feet it is from 30 to 36 inches, whence it rapidly decreases to 12 inches and for the last 150 feet does not average more than 6 inches in thickness." Cairnes reports assays from $9 to $80 per ton combined gold and silver, with a probable average of $20 per ton (1910 prices). From Cairnes' report it would seem that the Tally-Ho vein would not merit any further work in the forseeable future.

MT. ANDERSON

Showings on Mt. Anderson are accessible from the Partridge Creek side by means of bulldozer road passable for 4-wheel drive, which extends to the top of Mt. Anderson but is washed out within a quarter mile of the top; or from the Becker Creek side by means of a rough bulldozer road and a trail.

Two different types of veins cut granodiorite on Mt. Anderson:

(a) Mesothermal gold-silver-lead-zinc-bearing quartz veins;
(b) Epithermal fluorite-bearing chalcedonic quartz veins.

Most of these known veins lie on the M.A. group of 8 claims held by Walter McAllister (deceased Sept. 1953) and Johnny and Arthur Johns of Tagish, Yukon.

Mesothermal Veins:

On the southwest slope of Mt. Anderson two mesothermal veins, striking N 70-80° W and dipping steeply north, occur in granodiorite about 200 feet apart and extend 3000 feet eastward to the top of Mt. Anderson. The westernmost and larger vein has been explored by two 300-foot adits. Numerous smaller adits and cuts expose both these veins in several places. These workings (on the former Rip and Wolf claims, now M.A.#7 M.C.) were driven during and after World War I by Becker and Cochrane. In 1952 the present owners built a bulldozer road up the Partridge Creek slope of Mt. Anderson and stripped for eastward extensions of these veins by bulldozer.

In the larger adits the veins consist of quartz up to widths of three feet, with small amounts of galena, sphalerite and pyrite in places. According to Cairnes (1910, pp.110,111), who examined the property before extensive development, the better parts of the vein assayed from $20 to $40 per ton combined gold and silver (1910 prices). In places the veins are cut and subdivided by vesicular basic dikes. In the early days, a small amount of ore was stoped from the lower adit and a small mill was erected in a gulch below the adit.

In a 37-foot adit at the west edge of the mountain top, the main vein consists of several lenses of quartz up to 6 inches wide with some bands of galena, pyrite, and sphalerite. The aggregate thickness of vein matter is 2 feet; the entire zone is 52 inches wide and strikes N 80°W and dips steeply north. Fourteen tons of picked ore on the dump were said by McAllister to average about $40 per ton combined metals with selected samples running as high as $189 per ton (1952 prices).

The 1952 bulldozer work exposed some vein matter up to 18 inches in width with lenses and stringers of galena up to 6 inches across; other cuts yielded narrower widths of massive or drusy quartz, chalcedonic in places, with or without sulfides. Rusty chalcedonic quartz from one of the cuts is said by McAllister to assay $9 in gold ($35/oz).

The veins of type (a) are not thought to warrant further work at present. Some further geologic investigation, stripping and sampling might be justified if it can be carried out cheaply in conjunction with other work in the area.

Epithermal Veins:

On the top of Mt. Anderson, a few hundred yards south of the bulldozer cuts on the mesothermal veins, are epithermal veins of drusy, brecciated and recemented, chalcedonic quartz containing central zone or zones with fluorite and quartz pseudomorphs after fluorite. The only other constituents seen were occasional pseudomorphs of limonite after pyrite and a boxwork from weathered-out carbonate. A vein of this type, from two to four feet thick, striking N 30°E and dipping about 60° NW, was traced for over 500 feet. No such veins had previously been sampled or worked on and the presence of fluorite was hitherto unrecognized.

Since these veins are almost identical to those of the Engineer Mine and show general characteristics of shallow-depth bonanza type gold-silver deposits, the outcropping vein was trenched and sampled in September, 1953, by five men under the supervision of Mr. Dodson. Assay results showed little or no gold. The amount of fluorite is too small to be economic.

Prospecting by Dodson during the course of this work revealed more such vein matter and fluorite up Becker Creek. On the north side of Upper Skukum Creek valley similar drusy chalcedonic quartz float, carrying fluorite and brecciated volcanic rocks, indicates the presence of veins of this epithermal type at least 10 inches wide in the Skukum volcanics. In spite of the discouraging results from the Mt. Anderson vein, such veins should not be neglected in prospecting. However, extreme caution would have to be exercised in any work on such a vein because the

mineralization is characteristically erratic, and shallow, and extensive sampling of unweathered material would be required.

Pyrometasomatic zinc:

During the course of work on the epithermal vein on Mt. Anderson, Dodson discovered zinc mineralization in a skarn north of the camp. This skarn consists chiefly of sphalerite, diopside and other skarn minerals, with minor scheelite, apparently replacing silicated limestone. Time and circumstances did not allow enough investigation to determine the full extent of this mineralization, but it appears to be limited in size.

CARBON HILL

Numerous antimony veins are found on Carbon Hill and on Chieftain Hill, across the Wheaton River from Carbon Hill. The best showings are on Carbon Hill, and only these were visited. Showings on the west slope of Carbon Hill are accessible from the Wheaton River by means of trails, and those on the southeast side are accessible from a bulldozer road up Becker Creek.

Carbon No.8:

On the northwest crest of Carbon Hill a barite-stibnite vein about two feet in width is exposed in a small open cut on the Carbon No.8 mineral claim, one of a group of eight claims staked by Walter Green in 1952 and now held by Yukon Exploration Co. of Whitehorse. The vein is banded and consists principally of barite, some quartz, radiating blades and massive fine-grained lenses of stibnite, and minor sphalerite and possibly jamesonite. The wall rocks are slightly metamorphosed andesite and rhyolite. The vein apparently continues northwestward and float from the vein was traced southeast for about 600 feet, indicating a strike of N 65° W. The dip, although probably steep southwest, is uncertain because of slumpage. The vein was said by McAllister to assay $6 to $7 per ton in gold and other metals. A channel sample was taken by the writer across an exposed width of 2 ft 4 in., 10 inches, part of which may be repeated by slumping, gave the following results:

Sb	8.1%
As	Tr (less than 0.05)
Ag	0.5 oz/ton
Pb	Tr
Zn	0.70%
Cu	Tr
Au	Tr

Empire Group:

Showings on the Empire Group of crown-granted claims, now held by Yukon Exploration Co., are located halfway down the northwest slope of Carbon Hill, on the nose of a red-weathering spur of granite porphyry and pyritized felsite. The vein matter seen in dumps of slumped open cuts shows widths and mineralogy similar to that of the Carbon No.8 showing. Several veins are apparently present, the attitudes of which are unknown, but which appear to strike in the same general direction (N 60°W) as the Carbon No.8 vein. Thicknesses range up to 2½ feet and the grade is probably comparable to that of the Carbon No.8 sample. Red-weathering pyritized quartz porphyry or felsite, and grey-weathering granite, both cut by vesicular andesitic dikes, form most of the country rock. An assay of the most strongly altered and pyritized quartz porphyry yielded only a trace of gold.

Porter-Fleming Property:

The Porter Group of claims, now held by Yukon Exploration Co., are on the west side of Carbon Hill, on the steep north slope of a deep gulch. Cutting granite country rock is a 10-inch-wide quartz vein carrying stibnite and argentiferous tetrahedrite, and striking N 65°W and dipping 55°NE. Selected specimens from this vein were said by McAllister to assay up to 400 ounces of silver per ton. In 1915 an adit 350 feet long, with four crosscuts totalling over 500 feet in length were driven to intersect and follow narrow shears and quartz stringers in the granite country rock. In one place a stibnite-bearing quartz vein, 5 inches wide, was intersected.

Because of late evening darkness, (1 P.M.) not all the showings on this property could be visited. It does not appear to be economically promising.

Goddell's Gulch:

Showings in Goddell's Gulch were not visited because of rain and the possible threat of a rising Wheaton River to cross when moving to Skukum Creek. Descriptions by Cockfield and Bell (1926) and by H.S. Bostock (1940) indicate two veins, 3 inches to 4 feet wide, composed of jamesonite and arsenopyrite in quartz, and striking N 83°W in granite. One sample by Bostock gave 5.49% Sb, and another picked sample by him (1940) gave:

Bi	Nil	Cu	0.03
As	0.11	Au	0.09 oz
Sb	7.74	Ag	0.28 oz
Pb,Zn	Nil		

Cockfield and Bell report several other veins on Carbon Hill, generally under 2 feet thick. They state that

average samples rarely exceed 20 to 25% Sb, gold is leasthan $1 per ton, with silver probably averaging less that 5 ounces, Pb less than 5%. R.M. Thompson gives the mineralogy as quartz, occasional pyrite, sphalerite, chalcopyrite, zinkenite, and stibnite.

Mac No.1 Showing:

The Mac No.1 showing, held by Walter McAllister and James Cox of Whitehorse, is situated in a gulch on the southeast side of Carbon Hill and is accessible by bulldozer road up Becker Creek. The road is extremely rough with boulder creek crossings and mudholes in several places, but with slight improvement four-wheel drive vehicles could be taken up to a tent camp within about a mile of the showing in the drier, later part of the summer and fall. From this tent camp a bulldozer road, now largely slumped, leads to the showing where some stripping was done by bulldozer in 1952.

The showing consists of quartz lenses and stringers with stibnite and minor sphalerite and realgar, which occur over a width of 6 to 8 feet in a highly altered shear zone striking about N 65°W and dipping nearly vertically. The mineralized shear has been traced for 200 feet to the southeast where two caved bulldozer cuts apparently encountered some high grade stibnite. A 95-foot adit driven northwest along the shear shows a maximum width of 3 feet of solid vein matter, with some mineralization in the sheared rock. The wall rocks of the zone consist of highly carbonatized and sheared volcanics. Rhyolite, probably a dike, forms part of the northeast wall and a banded rhyolite dike showing incipient spherulites strikes parallel to the shear, 25 feet southwest of the zone.

In the adit, samples across a width of 6 feet over a section 45 feet long were said by McAllister to average about 5% Sb. This sampling was reported done by Gordon F. Dickson of Springer Explorations and by Baker of Comwest Exploration Co. who examined the property a couple of years ago. Reports have not yet been obtained from these companies. A high grade grab sample selected from the dump by H.S. Bostock of the Geological Survey of Canada gave:

Bi	nil	Zn	0.10
As	0.18	Cu	0.06
Sb	30.13	Au	0.005
Pb	nil	Ag	0.19

A channel sample taken across the face by Bostock averaged 5.72% Sb. Two six-foot channel samples cut by the writer across the back at points 45 feet and 65 feet within the adit gave the following results:

Sample at 45 feet		Sample at 65 feet	
Sb -- 1.0	Pb -- Tr	Sb -- 13.3	Pb -- tr
As -- 0.5	Zn -- Tr	As -- 0.40	Zn -- tr
Ag -- 0.10	Cu -- Tr	Ag -- tr	Cu -- tr
Au -- 0.02		Au -- tr	

The vein is reported by McAllister to average about 6% antimony with about 0.18% arsenic.

Although the overall grade of mineralization exposed appears to be low (about 5%), the amount of arsenic in the richer ore is tolerable and the shear is strong enough to suggest reasonable continuity of the structure with possibilities for considerable tonnage. Further stripping and sampling would be needed to evaluate continuity and average grade of the showing. The shear zone could be conveniently trenched by hand on the steep hillside above the adit but work on top of the ridge above the adit, on the former bulldozer cuts, and on the hillside to the east would probably be done best by a bulldozer. It might prove difficult to assess the value of the property without considerable expenditure. The badly sheared wall rocks would present problems in support of mine workings and core recovery in drilling. Hand cobbing of ore would seem necessary because of dilution by sheared rock which, even if mineralized, contains an undesirable amount of arsenic.

A few days of geologic study, perhaps followed by stripping and sampling, is recommended in order to evaluate structural continuity and average grade.

In view of the widespread presence of antimony veins on Carbon Hill and Chieftain Hill, some of which carry small amounts of gold and silver as well as other metals, a few days of careful examination and prospecting for better widths and grades is recommended in conjunction with further work on the Mac Showing.

MT. REID

Skukum Creek Copper Mineralization:

On the south side of Skukum Creek valley chalcopyrite-bearing float was found in talus which was traced to an andesite breccia member of the Skukum volcanics. The copper-bearing zone of the breccia is reported by Dodson, upon cursory examination, to be from 2 to 12 feet thick and, where exposed on a cliff, forms an anticlinal arch approximately 150 feet across with an apparent closure of 40 feet and plunge of 30°SSE. Chalcopyrite is erratically distributed through the zone chiefly as replacement and pore filling with associated quartz and epidote. Although this showing is small and of low grade, the Skukum volcanics would seem to be favourable host rocks for mineralization and therefore should be carefully examined wherever encountered, especially for copper deposits of this type.

Mascot Showing:

The Mascot showing consists of a gold-bearing quartz

vein in granite at the headwall of a cirque on the Watson River side (west slope) of Mt. Reid. It is accessible by trail from Skukum Creek or from the Watson River. Mathew Watson of Carcross, Yukon, holds a single claim which covers the showing.

The deposit consists of a quartz vein with minor bands of galena, sphalerite, and pyrite; it ranges from a few inches to nearly two feet in thickness, and strikes S 30°E and dips 30°NE. A fault offsets the vein about 60 feet vertically downhill on the northwest side. An adit, blocked with ice, is driven along the southeast segment of the vein, which is 14 inches thick at the portal. A 45-foot adit intersects the northwest segment at the face. Rain and blizzard conditions decreased the efficiency of the examination and a fresh snowfall of several inches prevented surface examination.

The vein is said to average less than 0.3 oz/ton gold, although values over an ounce have been obtained. It is too narrow and too low in grade to be economic under forseeable conditions.

GENERAL CONCLUSIONS AND RECOMMENDATIONS ON WHEATON DISTRICT

1. Property Examination:

Of the various known prospects examined, only the Mac showing (antimony) is considered worthy of further investigation. Several days of geologic study, perhaps followed by stripping and sampling, should be carried out on this showing to evaluate structural continuity and grade. A few additional days, perhaps weeks, might be profitably spent in examining and prospecting other parts of Carbon Hill.

Showings on Mt. Reid, Chieftain Hill, Gold Hill, and Idaho Hill, which have not yet been visited should be examined during the course of this work, if convenient.

2. Prospecting:

In spite of the previous activity in the Wheaton area, easily discoverable deposits of copper (Skukum Creek), zinc and fluorite (Mt. Anderson) had apparently been overlooked prior to this investigation. While these deposits in themselves are unimportant, they are an indication that economic deposits of these and of other minerals might be found by careful prospecting. It is therefore recommended that at least a month be spent by one party of two men in systematically prospecting the Wheaton area, especially in the vicinity of Mt. Stevens, Mt. Anderson, Carbon Hill, and Mt. Skukum or Bute Creek. Attention should be

paid to possibilities of replacement deposits of copper, zinc, or lead in favourable rocks such as limestone and volcanics. The folded Yukon Group rocks in the vicinity of Rose and Primrose Lakes are in a favourable regional environment and should be prospected in reconnaissance fashion.

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