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SUMMARY REPORT

on

SILVER - LEAD MINERALIZATION

in the

UPPER WHITE CREEK AREA

Y.T.

Submitted to British Yukon Exploration Company, Ltd.

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SUMMARY STATEMENT

This report describes and evaluates silver-lead showings discovered in 1955 by British Yukon Exploration in the upper White Creek vicinity 100 miles northeast of Whitehorse, Y.T. The showings consist of veins and irregular replacement bodies of lead sulfides which vary considerably in grade but have an average silver-lead ratio ($\frac{\text{oz/ton silver}}{\% \text{ lead}}$) of about 0.70; i.e. a concentrate of about 70% lead would contain 50 oz/ton silver (total value \$240 per ton). 50% Pb \$172/ton

Of over a dozen showings discovered several deserve further work and two are particularly promising. One of these consists of a sizeable area of mineralized boulders of low grade, with one boulder exceptionally high in silver. The other consists of a strong mineralized zone with nearby silver-lead boulders and a possible vein extension.

It is recommended that next season a geologist and two good men carry out a program of geologic and geophysical work, and trenching to evaluate the possibilities of the most promising showings before more serious exploration is justified. A pair of prospectors should also cover the vicinity (White Creek vicinity) further, as well as several adjoining promising areas.

INTRODUCTION

Location and Accessibility

The upper White Creek area lies in the Pelly Mountains of Whitehorse Mining District, about 110 miles due northeast of Whitehorse, Yukon. At present the area can be reached best from two lakes on which planes can land: (a) Bruce Lake from which 30 miles of good trail lead up Ketzka River, (b) Grayling Lake, from which it is a 15-mile hike up White Creek. The area can also be reached in two days by horses from the Canol Road which runs in a north-south direction about 30 miles east of the area. The Canol Road is in fair shape for travel and the White Creek area could be easily connected to it at Quiet Lake by building 35 miles of road up Nisutlin River, McConnell River, and White Creek. Such a road would place the area within a trucking distance of about 180 miles from Whitehorse, Y.T.

Topography, Climate, etc.

The White Creek area is one of the higher and more rugged parts of the Pelly Mountains, with peaks reaching up to 7000 feet elevation and valleys lying at 3500 feet or less. The Pelly Mountains form a pronounced weather barrier; snowfall is moderate to heavy (6 feet or more), and storms are common even in summer. The area is largely clear of snow in early or mid-June and becomes blanketed again in mid-or late September. Timber suitable for exploration purposes (spruce and balsam) grows to elevations of 4500 feet and water is plentiful especially early in the season. The north slopes and other local areas are underlain by permafrost which hampers stripping

of mineral showings.

History

The Pelly Mountains have remained relatively unprospected until the last few seasons, particularly 1954 and 1955 when Conwest's rich silver-lead discovery up Ketzka River drew attention to the region. Over 500 claims were staked on this discovery and around adjoining showings of similar mineralization late in 1954. British Yukon Exploration staked the Kay Group of 32 claims, south of Conwest's ground on the divide between the upper West fork of Ketzka River and upper White Creek.

The general Ketzka Area did not attract as many prospectors as it deserved in 1955, probably because of its relative inaccessibility for short trips and because of the late spring. However, a number of new showings were found and Conwest's main showing is continuing to be promising enough to attract attention to the possibilities of the area. At present, it appears that the area is promising enough to merit at least several seasons further prospecting and exploration.

From May 11 to October 2nd British Yukon Exploration employed two to four men in the general Ketzka area doing prospecting, geologic mapping, and trenching. Most of the time was spent in upper White Creek where plans had called for prospecting and mapping of the Kay Group of claims and adjoining ground. Several promising silver-lead discoveries were made along White Creek and much of the effort was devoted to tracing these, until snow at the end of September prevented further work. Twenty-seven claims (Yak No. 1 and 2, Yak fraction, Rain Nos. 1-16 and 25-28, and Pyrite 1-4 inclusive) were staked

in 1955 to cover the new discoveries. The reader should refer to maps included with this report.

GEOLOGY OF THE AREA

The mountains and bedrock of the White Creek area consist chiefly of layers of sedimentary rocks which accumulated on top of each other as mud, limy coral reefs, and sand in a sea bottom some 500 million years ago (Cambrian time). These sediments have been deeply buried by other deposits and squeezed by earth movements over ~~the~~ periods of millions of years so that heat and pressure have hardened the sands into quartzite, the limy reefs into limestone and dolomite, and the mud into slate and phyllite. The layers are not flat-lying as originally deposited but have been crumpled into broad folds up to a mile or two across. Squeezing of the softer rocks such as the slates during this folding has resulted in great complexity of detailed structure. At the head of White Creek these rocks can be seen now as they lie exposed once again by stream and ice erosion. The original layers still lie in the same order in which they were deposited, showing the following approximate thicknesses and sequence (stratigraphic section):

<u>Top</u>	200-500	ft	-- quartzite, impure limy quartzite.
	100	ft	-- black slate and phyllite.
	150	ft	-- brown dolomite
	500	ft	-- black and brown slate and phyllite.
	150	ft	-- grey limestone.
	200+	ft	-- grey phyllite with small limestone layers near the top.
<u>Bottom</u>			

After the rocks had been folded and hardened, further earth pressures produced numerous breaks or faults which cut

the rocks mainly in northerly and northwesterly directions. In some places the rocks have been displaced up to 500 feet or more by movements along these breaks. Hot solutions carrying silver, lead, iron, and silica have ascended from depth along the breaks, have chemically changed the wall rocks, and have deposited silver and lead as veins along the breaks and as replacements of the wall rocks near the breaks. Most of the silver-lead showings discovered at White Creek occur where the grey limestone layer is cut by such a break or fault, and several tend to occur near the top of the limestone as if the silver-lead solutions were dammed by the impervious overlying slate or phyllite.

MINERALIZATION

Mineralization in the White Creek area consists mainly of lead sulfide (galena) and local zinc and copper sulfides (sphalerite and chalcopyrite) with appreciable silver values, especially when the copper-antimony sulfide "grey copper" (tetrahedrite) is present. No appreciable gold values (over 0.06 oz per ton) were encountered. Iron sulfides (pyrite and pyrrhotite) and manganiferous iron carbonate (siderite) accompany much of the mineralization, producing characteristic iron rust that helps in prospecting. Quartz (silica) is present in some of the mineralization.

The silver-lead mineralization occurs in two types which grade into one another: (a) as veins or open-space fillings along breaks or faults in any of the several rock types, (b) as irregular-shaped replacements in limestone.

Some of the veins consist chiefly of galena and carry up to 70% lead and 50 to 60 oz/ton or more silver while others are less pure and contain quartz, iron sulfides, iron carbonates, or zinc as well. The replacements consist of iron carbonate with or without iron sulfides in which galena is scattered giving 12 to 15% lead and about 10 oz silver per ton. Although smaller, the veins can carry higher values while the replacements, although larger, are lower in grade. In most of the mineralization the ratio of silver (oz/ton) to lead (%) averages about 0.7, being about 0.6 in iron-rich replacements and 0.9 or more in certain veinlets. Exceptionally high silver values were encountered in two localities in vein type mineralization which contained grey copper, a silver-carrier in this area.

Locality A

10 In a low-lying forested area of overburden at locality A on Rain No.7 claim, numerous boulders of replacement-type silver-lead mineralization were found along with one boulder of grey copper exceptionally rich in silver. The silver-lead boulders occur over a restricted area several hundred feet across and do not appear to have moved far from their source; however several trenches dug failed to reach bedrock and digging was locally hindered by permafrost. Samples of the mineralized boulders average 12.8% lead, 9.4 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.73). Only one boulder of grey copper was found but a grab sample from this contained 498 oz/ton silver, a trace of gold, and 3.8% copper.

From the amount of strongly mineralized boulders found

in this locality it would appear that a considerable tonnage of the low grade silver-lead ore might be found, and the presence of silver-rich grey copper encourages further work in an effort to find the high silver ~~silver~~ values in place. Digging has already outlined the area of loose boulders (float), but a brief geophysical survey should be made to determine their source, which should then be tested by further trenching and followed by drilling if warranted.

Scattered silver-lead-zinc mineralization and much manganese iron carbonate was found as boulders on the hillside about a thousand feet southeast of Locality A. This may be another mineralized zone or an extension of the one at Locality A. Another area of similar manganese carbonate boulders carrying silver-lead and some copper lies about 2500 feet west of Locality A and may represent another mineralized zone.

Locality B (Shorty showing)

Mineralization at Locality B on Rain No. 13 and 14 claims consists of irregular replacements of iron sulfides (pyrrhotite and pyrite) with evenly scattered silver-lead (galena) found near the top of the grey limestone formation where it is cut by a break. Trenching exposed the sulfides over 6.3 feet and 13.3 feet in two separate exposures which are apparently unconnected on the surface, but may connect at depth. The northeasterly body apparently continues for a few tens of feet northeast along the hillside. Three channel samples and one sample of the loose sulfide boulders averaged 11.4% lead, 7.9 oz/ton silver, and 0.03 oz/ton gold (silver/lead = 0.69). Although there is no evidence of higher silver values around

this showing and its size possibilities appear limited, the mineralization ~~===~~^{could} be traced by magnetometer and trenched easily on the steep hillside. Enough such work should be done to indicate the size of the showing and any possibilities of better silver values.

More mineralized boulders containing silver-lead were found about 300 feet to the south and also about 500 feet to the west of the above showing. These localities should be investigated more closely.

Locality C

A few boulders similar to the mineralization at Locality B were found on an east-sloping hillside at Locality C and have apparently originated on the hillside to the west on Rain No. 16 claim. One boulder assayed 23.9% lead, 18.2 oz/ton silver, and a trace in gold (silver/lead = 0.76) -- some copper was also observed. The source of these boulders, although low in grade, should be located by magnetometer and exposed by trenching.

Much iron and some copper mineralization were found at the head of the creek south of Locality C.

Locality D

12 Two small silver-lead showings with associated iron carbonate (siderite) were found near breaks in the limestone at Locality D on Rain No. 27 claim.

The north showing consists of about a ton of boulders, nearly in place, from which grab samples yielded 39.1% lead, 28.0 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.72).

The source could be easily exposed by trenching.

The south showing consists of numerous small boulders which assayed 33.8% lead, 42.9 oz/ton silver, and 0.04 oz/ton gold (silver/lead = 1.26). Some of the mineralization was found in place as irregular veins and pods in the limestone. This hillside should be prospected more closely in view of the higher than average silver-lead ratio.

About half a mile east of Locality D, a vein a few inches wide of iron sulfide (pyrrhotite) and silver-lead assayed 22.0% lead, 20.2 oz/ton silver, and a trace of gold (silver/lead = 0.92).

Locality E

At the head of White Creek at Locality E on Pyrite No. 2 and 4 claims, a strong mineralized break in the limestone was exposed for at least 60 feet by trenching. Iron carbonate (siderite), iron sulfides (pyrite) and arsenides (arsenopyrite) occur in crushed (brecciated) limestone in most of this showing but they contain only a trace of gold, and in two places a small amount of silver-lead from which the best sample assayed 20.9% lead, 12.7 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.61). Some well-mineralized boulders of silver-lead found below the showing assayed 14.6% lead, 9.9 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.68). About 100 feet southeast of the showing several sizeable boulders, a total of about a ton of solid silver-lead, yielded an assay of 68.2% lead, 51.3 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.75). A small amount of grey copper, a carrier of high silver values, was found nearby.

With such a strong mineralized zone and associated boulders of good silver-lead mineralization as well as better silver possibilities, Locality E appears well worth further work. The showing in the creek should be trenched both east and west since the full width is not yet exposed and may contain more silver-lead. However, trenching by hand to the southeast would be impractical because of depth of overburden and permafrost -- a bulldozer would be needed. A small electrical geophysical survey should be very helpful in tracing the mineralization and determining its extent.

Locality F

On the steep mountain side at Locality E on Pyrite No. 1 claim, a well-exposed vein 12 to 14 inches wide was traced in phyllites for about 300 feet vertically and about 300 feet horizontally to the southeast. The vein consists chiefly of quartz (silica), a grey lead mineral, lead sulfide (galena), and zinc sulfide (sphalerite), from which one 20-inch channel sample and three grab samples averaged about 11.4% lead, 10.3 oz/ton silver, 8.4% or less zinc, and 0.02 oz/ton gold (silver/lead=0.90). This vein may well be a southeast continuation of the mineralized zone at Locality E, about 2000 feet to the northwest, but unless higher precious metal values can be found in it, it will be too small to warrant further work even though the silver-lead ratio is slightly higher than average. Some silver-lead mineralization was found in dolomite cliffs above the vein. In the underlying limestone, however, the vein may widen out and this possibility should be checked in conjunction with any geophysical work

on Locality E. Localities E and F are covered by four claims, Pyrite Nos. 1 to 4 inclusive.

Locality G

15 On Kay No. 25 claim at Locality G, a small quartz vein (striking north-south and dipping 70 degrees east) containing some massive silver-lead lenses was traced for about 70 feet in dolomitic wall rock. A 3-foot channel sample yielded 23.8% lead, 17.0 oz/ton silver, and 0.02 oz/ton gold (silver/lead = 0.71); while grab samples with grey copper from a small branch veinlet 2 to 4 inches wide assayed 131 oz/ton silver, a trace of gold, and 1.4% copper. One sample of float which appeared to contain much grey copper did not carry any exceptional silver values. Trenching did not reveal any better widths and the vein appears to pinch out at both ends.

A small amount of trenching and more detailed prospecting should be done in this locality in an effort to find more of the high silver values.

Locality H

16 A small amount of trenching on Yak No. 1 claim at Locality H exposed blebs and veinlets of silver-lead mineralization in broken up (brecciated) dolomite. A sample of the better mineralization assayed 26.6% lead, 30.4 oz/ton silver, and a trace of gold (silver/lead = 1.14). Mineralization of this type can be found in several places nearby so this locality deserves more prospecting and trenching especially because of the slightly higher than average silver-lead ratio.

About 2000 feet southwest of Locality H a silver-lead

veinlet 2 inches wide in a dolomite cliff assayed 78.2% lead, and 95.3 oz/ton silver (silver/lead = 1.22). A nearby limestone bed contains scattered zinc-lead mineralization which, although non-economic, is a favourable indication.

Other Mineralized Areas

Small amounts of silver-lead mineralization can be found in many parts of the upper White Creek vicinity -- several such areas deserve further prospecting in the hope of discovering further showings.

A strong crushed (brecciated) zone of quartz with iron and some copper stain cuts phyllites at the south end of the Key Group of claims. A nearby find of boulders of massive iron sulfide (pyrite) with silver-lead assayed 3% lead, 1.8 oz/ton silver, and a trace in gold (silver/lead = 0.60). Another silver-lead-zinc vein several miles to the west assayed only 4.4% lead, 1.8 oz/ton silver, and a trace in gold (silver/lead = 0.41).

CONCLUSIONS AND RECOMMENDATIONS

Prospecting by British Yukon Exploration in the upper White Creek vicinity has revealed promising silver-lead mineralization similar to the rich discoveries being explored by Conwest at Ketzka River several miles to the northeast.

The most promising discovery (Locality A) is a sizeable low-lying area 3 miles down White Creek with many tons of mineralized boulders containing about 12.8% lead and 9.4 oz/ton silver, and one rich boulder containing 498 oz/ton silver. Another promising area at the head of White Creek contains a strong mineralized zone with small lenses of silver-lead and nearby boulders of richer silver-lead mineralization (Locality E); and also a low grade silver-lead-zinc vein (Locality F) which may be an extension. Other silver-lead discoveries include a low grade showing with modest size possibilities (Locality B), a modest area of low grade boulders (Locality C), two small showings of fair grade (Locality D), a small vein with an associated high-grade veinlet (Locality G), a zone with scattered fair values (Locality H), and numerous other localities in which lesser amounts of mineralization were found.

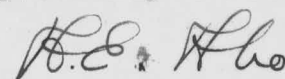
The above discoveries, especially those at Locality A and Localities E and F, should be exposed by trenching and traced by careful prospecting, geologic mapping, and detailed geophysical work. The upper White Creek area deserves more detailed prospecting in conjunction with the other work and adjoining promising areas including part of the Kay claims should also be prospected.

The following program is recommended for the White Creek area to accomplish the maximum results with minimum expense next season:

Starting ⁱⁿ early or mid-June when the area is largely free of snow, a good geologist should map each showing and its vicinity in detail, trace the magnetic ones with a small magnetometer, and the others with a small electro-magnetic (EM) unit. To expose the discoveries he should have two good men capable of trenching, using powder, and doing some local prospecting. This work, which could be continued until mid-or late September, should provide sufficient information to decide if more costly drilling or underground work would be justified.

A pair of prospectors should prospect from June 15 to late September in the same area, in adjoining areas to the south and west, and also west of McConnell River. The chief prospector and geologist would have to be employed in early May -- they could prospect another promising but more accessible area until June.

Respectfully submitted,



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