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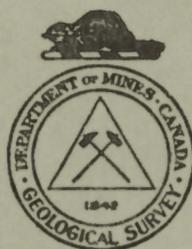
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CANADA
DEPARTMENT OF MINES
HON. T. A. CRERAR, MINISTER; CHARLES CAMSELL, DEPUTY MINISTER
BUREAU OF ECONOMIC GEOLOGY
GEOLOGICAL SURVEY

MEMOIR 193

Mining Industry of Yukon, 1935

BY
H. S. Bostock



OTTAWA
J. O. PATENAUDE, I.S.O.
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1936

Price, 10 cents

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CONTENTS

	PAGE
Preface	v
Placer mining.....	1
Lode mining.....	6

PREFACE

The following notes on mining activities in Yukon during 1935 were gathered by the writer during the field season, with the assistance of E. J. Lees and J. R. Johnston, who were in charge of Geological Survey parties on Teslin and Pelly rivers. Much information has been added by means of correspondence. The writer expresses his appreciation to all who assisted him by supplying information during the field season, and subsequently by correspondence.

Mining Industry of Yukon, 1935

PLACER MINING

Fortymile River

During 1935 the small dredge constructed under the direction of Mr. H. G. Blankman, on Fortymile river a short distance below the mouth of Bear creek, was run for a very short time making a test of the ground. The recoveries are reported to have been satisfactory.

Sixtymile River District

The Holbrook Dredging Company continued their operations. The dredge started the season on the lower end of claim Fourteen above Discovery in the valley of Sixtymile river. Digging was begun on June 15 and ended on October 25 and although the season was short, 172,347 cubic yards of gravel were dug yielding 3,700.95 ounces of crude gold. Thirty-four men were employed. The operations in addition to dredging included surface stripping with a hydraulic plant, prospect drilling, and wood cutting.

Some details regarding the previous year's operations may be of interest because they were not mentioned in last year's report. In 1934 thirty men were employed and 207,216 cubic yards were dug yielding 5,817.80 ounces of crude gold. A line of hydraulic pipe 2,000 feet long and 20 inches in diameter at the intake was installed to bring water from the creek on the right limit of Sixtymile river opposite claim Thirteen, above Discovery. This water, as well as that obtained from Miller creek, is used for stripping and thawing. At the dredge camp an electric arc welder was added to the equipment of the repair shop. The dredge started operation on June 1, but was forced to close down on November 6 owing to the stacker cables breaking, although the autumn was unusually mild and would have permitted another month's dredging had there been no accident. The camp and dredge used 1,300 cords of wood.

On Miller creek Messrs. Stewart and McCormick are reported to have found another paystreak in the locality they were prospecting in 1934 on the left limit downstream from the old roadhouse.

Mr. W. A. Williams has been prospecting, sluicing, and stripping his ground near the mouth of Glacier creek.

It is reported that there are more individuals working on their own claims or on leases in this district than for many years.

Klondike District

In July a stampede took place from Dawson to Swede creek and Discovery claim was staked on July 7 between 1 and 1½ miles up from the mouth of the creek. By the end of the month the creek was staked from the mouth to claim Twentyone above Discovery.

During the season of 1935 the Yukon Consolidated Gold Corporation, Limited, continued to operate their five dredges. In Klondike valley Canadian No. 2 is located near the middle of the valley below Bear creek and is working downstream towards an area on the right limit where values have been found; Canadian No. 3 is on the east side of the tailings in Bonanza basin; and Canadian No. 4 is working its way upstream along the right of Klondike valley on its way to Hunker creek. Some thawing was done ahead of Canadian No. 3, but little, if any, will be required in this area in 1936. The canal diverting water from Klondike river on the left limit below Bear creek for the purpose of thawing the undredged ground is in operation. Extensive preparations—including stripping—for dredge Canadian No. 4 have been carried on at the mouth of Hunker creek. These preparations will be continued in 1936 and the thawing plant will be installed. The problem of hydraulicking the remaining high level benches on Hunker creek is also being studied.

On the Indian River side, Northwest No. 1 is now on claim Six below Upper Discovery on Dominion creek. Northwest No. 2 has been digging on the right limit of Dominion creek a mile above the mouth of Sulphur creek.

The new dredge, Yukon No. 7, on Quartz creek was built during the spring and early summer and began digging on August 4, 1935. It is smaller than the others and has 5 cubic foot buckets. As soon as this dredge was put into operation the construction of a second new dredge, Yukon No. 6, to work on Dominion creek near Northwest No. 2, was begun, the machinery and materials having been hauled to the site of construction in the winter and early summer. Yukon No. 6 is a 7½ cubic foot bucket boat and is similar to Northwest No. 2. It is now complete and is ready to operate as soon as the season opens in the spring. The thawing plant working ahead of Northwest No. 2 was more than doubled in size and additional pumps were installed, during the summer, in order to prepare ground ahead for the increased capacity of the two dredges.

During 1935, the corporation completed the detailed prospecting and drilling on Granville flats down to the upper end of the Kruger concession at the head of Indian river. Sulphur creek was also prospected up to Discovery, and about a mile of ground was prospected on Dominion creek in the area below the point where Northwest No. 1 began operations in 1921.

Another important development is the new canal carrying water from Klondike river (South fork) to the North fork above the intake of the power plant. This was completed in the latter part of the summer and has been in use during the winter. It guarantees a steadier flow of water to the power plant during the low water periods and the difficult times at freeze-up and break-up. In addition the new unit in the power

plant is now installed and has been running during the winter. It has increased the power available by 50 per cent.

The drilling program carried on by the corporation during the last two years has proved the existence of a large reserve of good dredging ground on different creeks. Included in this is a large area of particularly good ground on Sulphur creek and plans are made to install two, or possibly three, dredges on this creek in the next few years.

A large section of Black Hills creek has been taken over by the Yukon Consolidated Gold Corporation as the result of their exploration and prospecting program of the last two years. On this creek, besides taking up a large lease, they have bought the claims of a number of individual owners. Detailed prospecting on the creek will begin in the spring.

The expansion of operations and new developments of the corporation on creeks more remote from Dawson and Bear creek have necessitated the use of the roads of the district for transport and communication to a degree far in excess of previous years.

A total volume of 5,224,144 cubic yards of gravel was handled by the six dredges of the corporation in 1935. This is over 900,000 cubic yards less than last year, although the new dredge on Quartz creek handled 222,311 cubic yards. The season of 1934, however, was exceptionally long, whereas that of 1935 was comparatively short. For the five older dredges there was a total difference in the length of season of ninety-eight days. In 1935 the first dredge started on May 20, but it was June 12 before all five were running and four dredges, including Yukon No. 7, closed down between October 20 and 25, and the remaining two on November 13.

Besides the operations of the Yukon Consolidated Gold Corporation in this district a large number of individual miners and small groups are working along Bonanza, Eldorado, Hunker, Dominion, Goldrun, Quartz, and other creeks.

Clear Creek

During the last few years some placer work has been in progress east of Klondike district. Coarse gold has been brought into Dawson from workings on tributaries of Clear creek. Barlow creek seems to be receiving most attention and Zinc creek on the left fork of Barlow has also been staked. At the end of July eight claims and 6½ miles of placer leases had been taken up on Barlow creek and its tributaries. During the summer some of the miners took sawmill machinery into their claims.

An individual placer miner worked on a south branch of Florence creek, a tributary of the South fork of Klondike river.

Mayo District

The amount of placer gold turned in at Mayo this year was 759·56 ounces, which is a slight increase over last year. This gold was recovered from different parts of the district. A number of men are doing well on Haggart creek and Dublin gulch. Mr. Elmer Middlecoff continued to operate on Hight creek. A number of other miners are also working on this creek. Lower Duncan creek and the creeks along the south side

and south arm of Mayo lake, including Owl (or Gull), Anderson, Steep, Cascade, and Ledge, are also being worked. There is a single miner on each of these except Ledge, where Mr. George Reynolds has been employing one or two men for several years.

Stewart-Selwyn District

Nearly every one of the streams tributary to the lower part of Stewart river on its south side, and to Yukon river between Stewart river and Selkirk, that have been worked in the past, have a few men on them. These streams include Thistle, Kirkman, Brewer, Barker, Ballarat, Scroggie, and Canadian creeks, and Selwyn river. Two men have also been working on Rude creek, a tributary of Klotassin river. Although one or two of the miners have barely made a living, most of them are known to have made a good summer's earnings, and two or three men are reported to have made appreciable stakes. A miner working on a bench of Scroggie creek below the mouth of Walhalla creek has been recovering a considerable percentage of platinum with his gold.

A few miners have continued to work on Nansen and Victoria creeks.

Pelly River District

J. R. Johnston gives the following notes of placer work on Pelly river. There was no placer mining during 1935 in the Pelly River country, though in recent years some of the trappers in the district have recovered a little gold. Their placer work, however, is of an intermittent character. Gold has been found on the bars of Pelly river as far up as Campbell creek, and on several of its tributaries such as Lapie river and Horton creek running from Pelly mountains. The most important placer workings in the drainage basin of Pelly river are those on Russell creek, a tributary of Macmillan river, but these have not received attention for some years.

Big Salmon and Teslin Districts

The following notes on this part of the territory have been supplied by E. J. Lees, who visited all of its placer creeks during the course of the season.

During the summer of 1935, seventeen white men and a number of Indians were working in the neighbourhood of Livingstone. One miner has been operating on Little Violet creek for a number of years. On Cottoneva creek Messrs. C. Emminger and L. Angle have been working five claims. During 1935 they washed some 1,000 cubic yards of gravel, making a total for the last few years of 35,000 cubic yards. They are planning to continue their work to the limit of their claims.

On Lake creek Mr. T. Kerruish has been working steadily since 1930 and has washed some 50,000 cubic yards of gravel. He plans to continue his operations.

Three partners, Messrs. P. Sharpe, W. Woods, and J. Peters, are working on Summit creek in a small channel on the north side and report good paying ground.

The same partners plan to work ground on Livingstone creek during the winter by drifting. Messrs. H. Berry and H. Apt are also working on claims on Livingstone creek and six other white men and a number of Indians have been sniping on the worked-over ground and are reported to find it paying work.

On Martin creek Messrs. R. Churchill and M. Murphy are prospecting and have driven two drifts 100 feet apart, one 450 feet long and the other 120 feet long. They have also sunk several deep prospect pits along the side of the valley of the south fork of Big Salmon river near the mouth of Martin creek.

Farther south a number of placer creeks are distributed at intervals along Teslin river, chiefly on the east side and across the mountains to Quiet lake. No very important strike has been made at any time on these creeks, but a few of them have always been worked in a small way. Gold has been recovered from fifteen creeks in this area, but the only creeks receiving attention this season are Johnson (112 Mile), Iron, and Cottonwood. In 1934 work was also done on Little Bear, Geary, and Brown creeks. Johnson and Cottonwood creeks were each worked by one miner during the season.

Iron creek has received by far the most attention in this area since gold was first discovered in these creeks, and still is the most important. During the last few years the Inca Mining Company of Carcross and Detroit has been doing development work on the creek under the management of Mr. L. W. Staples. During 1935, three monitors were put into operation and including the work done in the autumn of 1934 some 18,000 cubic yards of gravel was washed, chiefly along the present creek. The recovery was not high, but more than half of the gold was coarse, the heaviest piece being a little over half an ounce. In the earlier part of the season a dozen or more men were employed, but during August and September the operations were reduced to drilling with a small placer drill. Mr. Staples reports that he believes the drilling has disclosed the presence of a deep channel on the east side of the creek above the present camp. The results obtained by drilling are not very encouraging, but it is probable that these first holes are still on the rim. The holes reached solid bedrock at 57 feet after going through 20 feet of decomposed schist. It is proposed to do extensive drilling next season in the large drift-covered areas on both sides of the creek to try to prove the presence of a paystreak. The occurrence of coarse gold, of early Pleistocene or pre-Pleistocene, decomposed gravels under Glacial and Recent deposits along the creek, is thought to suggest that a paystreak is present.

Liard River

In 1933 and 1934 there was considerable activity in placer prospecting on the tributaries of Upper Liard river. The work was done by individual miners, the Northern Aerial Minerals Exploration Company, and by the Yukon Border Placer Gold, Limited, of Toronto. The companies' explorations are reported to have shown that although there are considerable areas of gold-bearing gravels, the undeveloped state of the dis-

trict would make mining costs too high, and exploration was dropped. It is reported that the work in 1935 was restricted to that of a few individual miners.

Southwestern Yukon

A small amount of placer mining has gone on for years in the country between Whitehorse and White river on widely scattered creeks. During the last year placer mining has been reported on seven creeks, but it is probable that some work has also been done on other creeks. On Bullion creek the success of two miners working above the canyon in 1934 led to considerable staking in its upper part this year, but how many men have actually been working there is uncertain. Three or four miners have been working on Burwash creek during the season and two men are reported to be at work on Ferguson creek. Only the lower mile or so of Squaw creek is in Yukon, and the Victoria Ventures, Limited, which held most of the ground on the Yukon side, are reported to be moving their operations up the creek into British Columbia next season. On Iron creek, which enters Tatsshenshini river opposite Squaw creek, a strike was made in 1933 by two miners who are still working on their claims. Three or four miners are reported to have been working near Kloo lake and others are on Gladstone and Ruby creeks.

Production

The total placer gold production in Yukon for 1935 was 44,631.87 ounces, which is 3,747.47 ounces less than in 1934. The decrease is mainly in the returns at Dawson and is due to the shortness of the dredging season. Next year with the two additional dredges running for the full season an increase in production can be confidently expected.

LODE MINING

Lode mining has been increasing in importance during the last few years. The chief centres of interest are Carmacks and Mayo districts. In Carmacks district prospecting received a setback when the N. A. Timmins Corporation stopped work and gave up their holdings on Freegold mountain. However, after a brief interval, the Yukon Consolidated Gold Corporation took over the chief claims dropped by the former corporation and promptly resumed prospecting. Other gold-bearing quartz veins have been discovered in Freegold Mountain area recently.

Renewal of operations by the Treadwell Yukon Company, Limited, in Mayo district, was an important event. The company, which has been the chief producer of silver-lead ore in Mayo district, ceased operations in 1934. When the price of silver rose the company promptly renewed their activities in the district, preparing for a larger scale of production than ever before. These developments include the exploration of new ore-bodies on Keno hill to be treated in the Wernecke mill, the construction of a new and slightly larger mill on Galena hill, and a considerable amount of surface and underground work on the different properties. Discoveries have also been made by prospectors on Galena hill and these have been taken over by the Treadwell Yukon Company, Limited. The lowering of

the price of silver in the autumn was discouraging, but so far it has not led to the stopping of any of the new developments mentioned.

Klondike District

The presence of gold-bearing quartz veins in Klondike district has been known since 1898, and a number of unsuccessful attempts have been made to work some of these veins. The successful establishment of lode gold mining in the Cariboo placer district of British Columbia after many years of failure, is encouraging for the Klondike placer district which has produced nearly three times as much placer gold as the Cariboo.

In the Klondike, the Lone Star mine on the ridge between Upper Bonanza and Eldorado creeks has received the most attention. It has been described by T. A. MacLean¹ and W. E. Cockfield.² Since 1930 a little development has been done from time to time and the property has been visited by several mining engineers.

During the summer of 1935 Mr. J. H. Farrell, a consulting mining engineer and geologist from California who was formerly in the Klondike, spent several weeks investigating the mine. Mr. Farrell believes that the distribution of the placer gold in the creeks is significant. Bonanza and Eldorado creeks are reported to have yielded \$65,000,000 and he points out that the only tributaries carrying any quantity of gold are those of Eldorado and of Upper Bonanza up to Victoria gulch. This leads him to believe that the gold that became concentrated in the placers of Eldorado and Bonanza creeks was not widely and thinly distributed over the greater part of the drainage of Bonanza creek, but was concentrated in the area in which the tributaries contained placer, that is between Eldorado, Victoria gulch, and Upper Bonanza up to Victoria gulch. The Lone Star mine is situated in this area. Encouraged by this line of reasoning he has made a detailed and careful examination of the Lone Star mine workings and of surrounding claims. To facilitate this he had a large number of trenches dug and has sampled the deposits very thoroughly. The following notes are taken from a summary of his results. The surface workings of the Lone Star mine have exposed a zone of mineralized schist 200 feet wide, part of which averages over \$4 a ton in gold at \$35 an ounce. The zone has not been extensively prospected on the surface and the underground workings are so located that they have only crossed its extreme end where it is not so rich as elsewhere. Study of the ore shows that there is an earlier stage of quartz-pyrite mineralization which, near the Lone Star workings, averages 35 cents or less a ton in gold. Besides this there is a later gold-quartz vein stage in which rather coarse gold occurs, in some cases associated with pyrite and galena. Many assays of these later veins, most of which are small, show \$100 to \$200 a ton in gold and some show much more. In places these veins have enriched the schists sufficiently to make low-grade ore. The extent and grade of such ore-bodies may be determined only by systematic trenching to depths of 3 feet or more. There is also the possibility that somewhere in the belt of mineralized schist there may exist veins of the later type large enough

¹ MacLean, T. A.: Lode Mining in Yukon; Mines Branch, Dept. of Mines, Ottawa, pp. 20-31 (1914).

² Cockfield, W. E.: Geol. Surv., Canada, Sum. Rept. 1929, pt. A, pp. 2-4.

Geol. Surv., Canada, Sum. Rept. 1930, pt. A, p. 9.

to mine separately as high-grade ore. The earlier veins are commonly large and solid bodies of quartz, whereas those of the later rich type are easily broken up by erosion and become covered by soil and vegetation. Most of the prospecting in the past has been done on large, barren masses of pegmatitic quartz which form prominent outcrops and are easily traced by float fragments. Mr. Farrell adds that the most important fact determined by his examination is the presence of this later vein stage. The veinlets of this stage have not been disturbed by local or regional shearing, and appear to have been affected by only one set of later faults of small displacement. They undoubtedly account for the greater part of the value of the material milled by the Lone Star from 1912 to 1914. He strongly recommends the Lone Star property for careful prospecting and systematic exploration.

KENO HILL

On Keno hill the Treadwell Yukon Company, Limited, has negotiated a 10-year lease on the Keno Hill, Limited's, property. From the beginning of August, ten men were employed building a new camp and extending the road from the top of the hill to the Porcupine claim at the head of Hope gulch. As soon as suitable dwellings were put up the operation of cleaning out the adit on the Porcupine claim was begun and additional men employed. It is planned to develop this property and to treat the ore in the Wernecke mill.

Some smaller operations are also in progress on Keno hill. Mr. A. H. Berry has sunk a shaft on a small fraction in the Onec group and by the middle of August had shipped 8 tons of ore. A new showing of galena and grey copper ore has been discovered on the Gold Star claim. A vein of arsenopyrite has been discovered on the Ladue fraction owned by Mr. V. Grant. A new showing of ore has been found on the North Star claim owned by Mr. R. Mercure.

GALENA HILL

The most important development on Galena hill is the building of the new 150-ton mill of the Treadwell Yukon Company, Limited, on the Elsa group. During the summer and autumn the new mill and a modern camp were erected. The mill was to begin operation about the beginning of 1936. Fifty-five men have been employed on the construction since August 1. In addition the company reopened the Silver King property. It was dewatered in September and a shaft has been sunk to the 200-foot level. Development is in progress on the 100- and 200-foot levels preparatory to production. It is reported that a new shoot of high-grade ore has been discovered on the property. This operation has necessitated the employment of twenty men, most of them underground. The road connecting the Elsa camp with the Mayo-Keno road was resurfaced for hauling equipment. The road between the Silver King and Elsa was regraded and partly gravelled for hauling ore from the Silver King to the Elsa mill. For this two new 10-ton trucks have been purchased.

In March Messrs. C. Sinyard and McCown discovered a vein of galena approximately 7 feet thick on the Hector mineral claim. They have sunk a shaft in the ore and shipped 42 tons which averaged about 250 ounces of silver to the ton. Approximately 300 feet away to the north-

east on the X Fraction Messrs. D. Morrison and Colley discovered a similar vein of galena 3 feet wide, from which they have shipped 39 tons of ore. Options to purchase both these properties have been secured by the Treadwell Yukon Company, Limited, and development will be begun on them early in the season of 1936. They will be connected with the Elsa mill by a wire rope tramway about 3 miles long. The company has also acquired options on a number of other claims on Galena hill, the ore of which will be treated in the new mill.

During the earlier part of the summer Messrs. Brefalt and Tolmie deepened the shaft 100 feet on their No Cash claim and planned to do some development work from the new level. They are reported to have mined some high-grade ore from the shaft and to have shipped 20 tons. Later they took over the Arctic claim of the Settlemier and Birmingham property where they have recently uncovered a new lead yielding good assays.

During last winter and spring, on the Mastiff claim of Messrs. Settlemier and Birmingham, the very high-grade ore discovered in 1934 was followed up and a small tonnage mined. Some development work was also done in the shaft sunk by the Treadwell Yukon Company, Limited, during their tenure of the ground. This shaft had become filled with water to the collar, but the water has dropped steadily lower in the last year or so and in 1935 the water-level was more than 35 feet from the top of the shaft. A crosscut a few feet long just above the water-level in the shaft exposed the vein. Twelve tons were shipped by the owners during the summer.

A number of prospectors are working on other properties on Galena and Keno hills.

The Treadwell Yukon Company, Limited, shipped no ore in 1935. The total shipment by small operators is not known, but it was probably about 200 tons.

Pelly River District

The following note of the Pelly River district is given by J. R. Johnston.

No regular prospecting has been carried on in the district during the last few years. In the autumn three men who said they had been prospecting near Pelly lakes came down Pelly river to Selkirk and some prospectors are reported to have been near Frances lake, but these may have been the same men. Apparently very little prospecting has ever been done in Pelly district, though it is accessible and probably contains promising prospecting areas.

Carmacks District

Freegold mountain has continued to hold the leading place in lode gold prospecting in Yukon. During the autumn the Territorial Government improved the pack trail from the Whitehorse-Dawson wagon road to the foot of the mountain. The chief operation has been on the Laforma group of Messrs. W. J. Langham, E. Forrest, and R. Major. In August 1934 the N. A. Timmins Corporation optioned this and the adjoining groups. Until June 1935, they employed ten to twenty men on development work, concentrating on No. 2 adit. Twenty-four miles of winter tractor road and many bridges were built from the Whitehorse-Dawson road to the locality. A small camp was built and machinery and supplies hauled in.

An adit and crosscuts were driven on the Goose mineral claim of the Laforma group. In June 1935 the options were dropped by the corporation. Very shortly afterwards Mr. A. K. Schellinger, who was examining some other properties in the district for the Yukon Consolidated Gold Corporation, visited the property. He recommended it to this corporation which at once obtained an option on it for a short period and employed Mr. J. H. Farrell to make a detailed examination. Mr. Farrell supported Mr. Schellinger's recommendation. The corporation took over the property, and also the supplies and equipment left by the N. A. Timmins Corporation. Mr. H. G. Randlesome has been placed in charge of the operation.

In addition to the men employed by the N. A. Timmins Corporation over forty men were prospecting the slopes of Freegold mountain and vicinity for a month or more during the summer. About half of these spent most of the summer working on their own properties and a dozen or more planned to carry on through the winter. The writer visited the locality at the beginning of August and was amazed to see the number of cabins that had been built, particularly along the north side of Seymour creek where wood, water, and sheltered, sunny sites are to be had.

Mr. P. F. Guder, the original discoverer of lode gold in the locality, during the autumn, winter, and spring confined his work to his claims. He reports that he has discovered a new vein composed of fine-grained, blue-grey coloured quartz with fine, disseminated sulphides, on the Concord claim, on the north slope of Freegold mountain east of Liberty creek. It was exposed for a width of 12 feet and strikes approximately east. On the north side the wall-rock is gneiss and schist; on the south side altered quartz porphyry and coarse granite. In addition to this he has located veins in place by trenching on five other claims. One of these on the Peerless mineral claim is exposed in a small shaft. The vein is of blue-grey quartz, tourmaline, and sulphide in altered quartz porphyry. Since the summer Mr. Guder has been sinking a shaft on a large vein on the Gold Star mineral claim.

Mr. A. Morrison and associates hold a number of claims on the north side of Freegold mountain in the forks of Liberty gulch. The development done on these claims includes a number of trenches and shafts. Two shafts referred to here as the east and west shafts were examined. The west shaft was 8 feet deep and showed a vein 12 to 16 inches wide striking north 80 degrees west and dipping very steeply south. The wall-rock is an altered, granitic rock. The vein matter is quartz containing finely crystalline pyrite, but most of the sulphide originally present in the vein appears to have been leached out. Some limonite and some copper stain are also present. A small fault fracture along the vein contains gouge from which gold is said to have been panned. Fifty feet to the south of the west shaft is a parallel vein of blue-grey, fine-grained quartz and pyrite. The east shaft is approximately 300 yards east of the west shaft. At the time of the writer's visit the east shaft was filled with water. It is said to show a vein 7 feet 10 inches wide, striking approximately east. The vein matter on the dump is blue-grey quartz with pyrite.

On the Laforma group, the adit on the Goose mineral claim, known as No. 2, was driven at an elevation of 3,600 feet. This is some 800 feet south of, and over 300 feet below, adit No. 1, which is the small adit

driven on the vein by the owners. The workings comprise 800 feet or more of drifts and crosscuts. They are described in detail in the report on Carmacks district.¹ The vein was found as expected, approximately 165 feet from the entry of No. 2 adit, and was followed by a drift with short crosscuts for 400 feet to a point 350 feet vertically underneath No. 1 adit. The workings expose a shear zone 20 to 30 feet wide in altered granodiorite. The shear zone strikes north 22 degrees east and dips from vertical to 80 degrees west. It is occupied by veins of quartz, crushed and altered wall-rock, seams of gouge, and seams of sulphide. On the west or hanging-wall side the shear zone is bordered by a quartz porphyry dyke 5 to 8 feet wide. The most persistent vein of quartz is on the east or foot-wall side. It varies in width from 9 inches to 4 feet. Some seams of sulphide and gouge are present in the wider parts of the vein. In the central part of the shear zone a number of prominent fractures or faults containing seams of gouge and sulphide occur over a width of approximately 2 feet. On the hanging-wall side of the shear zone adjacent to the dyke other veins of quartz and seams of sulphides are present and in one place a quartz vein is present on the west side of the dyke.

Opposite the beginning of the drift a west crosscut extends north 70 degrees west for 170 feet. It cuts through, first, the shear zone, then three veins separated by country rock, and then continues across a body of quartz porphyry and into unaltered granodiorite. The three veins are about 2½ feet wide and consist of quartz, sulphide, and gouge.

The quartz of the veins is fine grained and contains here and there small cavities into which small crystals project. The pyrite in the quartz is fine grained as a whole, but in places there are crystals $\frac{1}{8}$ inch across. The pyrite occurs as disseminated crystals and in small seams in the quartz parallel to the vein walls. Specks of gold were noted in a number of specimens of the vein quartz. The seams of sulphide in the shear zone are composed of crushed pyrite. Arsenopyrite, tourmaline, sphalerite, and galena are present in the vein material.

Samples are reported to have given assays up to several ounces of gold a ton from the vein quartz itself. The underground development confirms the persistent character of the vein and also shows that the gold continues to the depth attained in the workings.

The Yukon Consolidated Gold Corporation have built bunkhouses, a small assay office, and other buildings. They have put in proper ventilation facilities in the workings and are continuing the north drift along the vein. An adit has been started on the adjoining Alpha mineral claim. During the autumn eighteen men were employed on construction, but this number has been reduced to twelve for the winter.

On the adjoining group of Messrs. A. Brown and associates a considerable amount of trenching was done during the summer and several good veins similar to those on the Laforma group have been exposed. Some good gold assays have been reported from these claims.

A number of claims have been staked on Emmons hill, a prominent nose projecting northward from the divide which extends east from Free-gold mountain between Seymour and Stoddart creeks. The most important workings are those of Mr. T. Bee and associates. In August they had discovered a vein of coarse stibnite, barite, quartz, and carbonate. They

¹ Bostock, H. S.: Carmacks District; Geol. Surv., Canada, Mem. 189.

had also exposed a large body of grey quartz with some pyrite. During the autumn they are reported to have sunk a shaft 25 feet deep and to have exposed a vein 4 feet wide assaying as high as \$60 to the ton.

Two prospectors are reported to have promising lode gold prospects in the Selwyn River section, and some lode gold prospecting has also been in progress in the Nansen Creek district.

Teslin District

The following notes are supplied by E. J. Lees:

From time to time gold and silver assays have been reported from the country drained by Teslin river. In the last two or three years interest in that district has increased and several groups of mineral claims have been staked.

At Loon lakes a number of mineral claims were restaked covering old gold-copper prospects, but little new work was done.

On the north side of Boswell river groups of silver-lead claims have been staked at two localities, 15 and 20 miles from the mouth. At the upper locality there are a large number of open-cuts, pits, trenches, and an adit 120 feet long. The veins are in a group of metamorphic rocks including schist, quartzite, limestone, and greenstone, and within 1½ miles of the contact of a large area of granite which forms the mountains to the north. Many quartz veins have been discovered. They carry galena, and some near the granite contain molybdenite. An assay of 94.14 ounces of silver and a trace of gold to the ton was obtained from a sample of quartz and galena taken by Mr. Lees. Purer fragments of galena are reported to have assayed as high as 400 ounces of silver. Some assessment work and restaking have been done on these claims during the last two years. A number of mineral claims have been staked on the west side of Slate mountain and at the head of Slate creek which are on the south side of Boswell river.

Farther south at the head of Johnson (112 Mile) creek about twenty-five or thirty mineral claims have been staked by Mr. G. Wilson and associates of Whitehorse and by a number of Indians, including two brothers, Johnson by name, who are reported to be the original discoverers of mineral in the locality. The veins are of quartz and pyrite. One high gold assay has been reported from the locality.

Whitehorse District

Some prospectors were in the Wheaton River country last year. A large vein showing gold, silver, and lead is said to have been discovered.

Southwestern District

In the last two years there have been a number of reports of lode gold prospects being found in the southwestern part of Yukon.

Near Hutshi some lode gold prospecting is reported to have been in progress and assays are described as encouraging.

Two prospectors are reported to have been working on a lode gold property 20 miles from Bear creek, on the Kluane trail near Jarvis river. An engineer who visited the locality in the autumn is said to have been favourably impressed by its possibilities.