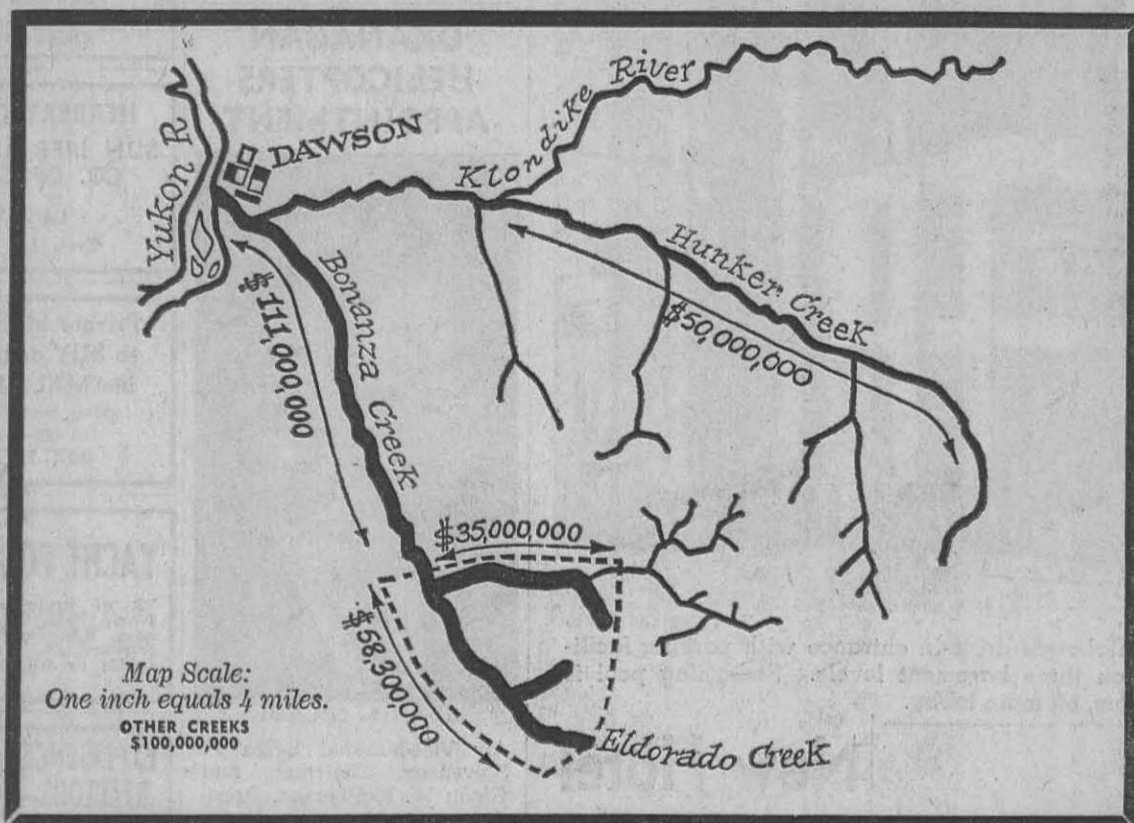


# SEARCH FOR THE KLONDIKE MOTHER LODE

Source of \$200 million in placer gold in the Bonanza-Eldorado Valley... diamond drilling to begin immediately



## History of the Klondike

In 1896, George Carmacks and two Indians, Skookum Jim and Tagish Charlie, discovered placer gold on Bonanza Creek, a tributary of the Klondike River, and on the 17th of August, Carmacks staked Discovery claim.

There were a number of prospectors and adventurers in the area and within two or three weeks they had staked the entire creek and its tributary, Eldorado. The excitement, already great because of the new discovery and the scramble to stake claims, became almost unbelievable as the owners of the claims found gold in the gravel beyond their wildest dreams.

Most of the claim owners stayed in the Klondike area that winter to mine their claims. The gravel was thawed by wood fires and stock-piled until it could be sluiced out the next summer and the gold recovered.

After sluicing their winter stock piles or dumps, some of the miners went down the Yukon River and took passage to the United States. The first boat landed at San Francisco where news of the gold and the stories of the men that mined it and brought it out caused great excitement. A few days later, the steamer, "Portland" docked at Seattle with more rich miners. A news reporter felt that he should make the story really good and proclaimed that there was a ton of gold on board. There was about two tons. The stampede of 1897-98 was born!

## Production totalled \$300,000,000

Dr. McConnell of the Geological Survey of Canada, after years of field work in the area, estimated the total production. His figures have been converted to the present price of gold (\$35.00 U.S.) and consolidated on the accompanying map of the Klondike. This map shows that almost one-third of the total production of the Klondike was derived from Eldorado Creek and Bonanza Creek above Grand Forks (the mouth of Eldorado) and over one-third was derived from Bonanza Creek below the Forks.

Eldorado Creek was probably the richest creek ever found anywhere in the world. From the lower three-and-one-half miles was taken much more gold than from either the entire Atlin camp or the Barkerville area. The Bonanza Creek pay gravels averaged \$10,000,000 a mile for about 14 miles.

## The source of \$200,000,000 in placer gold

Where did the gold of the Klondike come from? Where is the source — the "mother lode"? Studies of the geology show that the gold could not have been brought into the area by glaciers or by streams that have since changed their courses. The gold must have been derived from the bedrock of the valleys in which it is or was found.

Gold-bearing pieces of bedrock were eroded by the stream. Some broke up almost immediately and dropped their gold. Others were carried down the stream, pieces were broken off, and some of the gold dropped out until the original chunk was reduced to sand and all the gold was free. This gold, being very heavy, settled on or close to bedrock and was moved very little after that.

Going up stream, the placer becomes richer and there is more coarse and rough gold approaching the source. Then, rather abruptly, there is much less gold, the pieces are smaller, less rough, and differ in appearance as the source is passed. This pattern is repeated farther upstream as the next source is approached and passed. Source areas, along the valley can be found in this way, but the gold could be coming from anywhere between the valley bottom and the divide on either side of the valley.

A source on the side hill will break up under the influence of weathering and the gold-bearing rock will gradually move down the side hill. As this breaking up of the source material continues, gold will fall out of this disintegrated rock and be found loose in the overburden. If loose gold can be found in the overburden of the side hill, it can then be easily traced up-slope to the source.

If there is strong evidence of a nearby source in the character of the placer deposit and gold cannot be found on the side hill in adequate amounts to explain the placer, then the source must be in or very close to the bed of the creek. This restricted area in the bottom of the valley must then be prospected for the source, especially if there is supporting evidence that the valley bottom is geologically favourable.

## Why the source has never been found

The search for the mother lode started in 1897. Quartz veins were discovered which contained a few specks of gold and rarely a real "show piece". But in spite of all the early efforts, these discoveries did not yield bodies of gold-bearing rock big enough and rich enough to mine profitably. It was therefore concluded by many that the entire area was underlain by many hundreds or thousands of these small quartz veins with a few specks of gold. That was the easy way out — there was no need to look for a rich "mother lode" if none existed.

But there were certain defects in the approach of the early prospectors:

1. There is no reason why the principal lode sources have to be quartz veins. In many gold mines, including the famous Homestake Mine, the ore is not in quartz veins. Some "show pieces" are found in

quartz veinlets but the bulk of the gold is in the nearby wall rock. This aspect seems to have been largely or entirely overlooked.

2. Few have considered the possibility — rather an almost certainty — that there would be a "halo" of small occurrences of gold in the veins and rocks for some distance from the principal sources. This would result in a more-or-less gradual fading-out of the placer gold up the small tributary creeks and up the slopes away from the source. This normal expectation was undoubtedly the father of the idea that no workable lode existed.

3. No attention was paid to geological structure or rock alteration by hot, chemically active fluids — two of the most important keys in the search for mineral deposits.

4. There is no evidence of prospecting of the lower sides or bottoms of the valleys. Admittedly this area is hard to prospect because of steep frozen slopes and deep overburden.

## Process of elimination

Klondike Lode Gold Mines Ltd. (N.P.L.) was formed to acquire lode (hardrock) claims staked in the Upper Bonanza and Eldorado areas — the heart of the richest placer ground of the Klondike. A study of the placer mining records indicated some half-dozen source areas — rich claims followed upstream by leaner claims and coinciding with a marked change in the character of the gold. Modern equipment has made possible thorough prospecting of these areas for the first time.

The source areas can be divided into two parts — the sidehills with shallow overburden and the valley bottoms with deep overburden. The sidehills, much larger in area and easier to prospect, were tested first. During the field seasons of 1960 and 1961, horizontal trenches were cut along the sides of the valleys with a bulldozer. The undisturbed overburden on the uphill side was sampled and the samples were taken to the creek and panned to recover any gold. Where gold was found, it was traced uphill to its source with additional trenches. This work showed that large areas contained little or no gold although additional work is required to expose two sources of some promise. Essentially, however, work to date has shown that the principal sources must lie along the valley bottoms and the lowest parts of the valley sides near the rich claims. These areas have not yet been prospected.

It has been discovered that the bottom of the Bonanza-Eldorado valley is occupied by a fault. A fault is a fracture in the earth's crust parallel to which the rock on one side has moved with respect to the other. Faults are common in the earth's crust and most have no economic importance but some are very closely associated with ore bodies. Lode gold mines in particular have a habit of lying along or very close to a fault.

The rock along the Bonanza-Eldorado fault has been altered by hot fluids of the type that precede or accompany ore deposition. Furthermore, gold-bearing rock has been found in these altered zones near the fault a short distance from the rich claims. Finally, the fault is not straight but has several abrupt changes of direction along it — these could be points of localization of ore. This is not an uncommon occurrence. The rich claims of this section of the Bonanza-Eldorado valley lie only at these bends in the fault and every bend in the fault lies on an unusually rich claim. The coincidence is amazing.

By a process of elimination we have thus established some of the most important source areas of the Klondike gold. These areas are small enough to form satisfactory diamond drill targets but large enough to contain mine-sized ore deposits. The geology of these target areas is uniquely favourable. The three most promising of these "hot" areas, in the bottom of the Eldorado valley, will be tested by diamond drilling during 1962.

THIS VENTURE IS ONE OF THE MOST CHALLENGING IN THE HISTORY OF MINING EXPLORATION.



KLONDIKE LODE GOLD MINES LTD. (N.P.L.)  
620 - 837 West Hastings Street, Vancouver 1, B.C.

Late in 1959, Mr. Gordon Hillehey, a graduate of the Universities of British Columbia and Alaska and a registered professional engineer, came to me with some challenging facts and ideas.

He showed that the source of the \$200,000,000 of gold that was taken from Bonanza and Eldorado creeks had never been found. He explained that with financial assistance for thorough prospecting with modern equipment this elusive mother lode could be found.

Work was started in 1960 and was continued in 1961. Approximately \$125,000 — mostly private money — has been spent to date on bulldozer prospecting. This work has resulted in pinpointing the sources of the gold which will be tested by diamond drilling this year.

We invite you to join with us in one of the most fascinating mining ventures in Canadian history.

Yours very truly,

*F. C. Buckland*  
Dr. F. C. Buckland, Ph.D., P.Eng.  
President



Dr. Francis Channing Buckland is the President of Klondike Lode Gold Mines Ltd. (N.P.L.). He was born in Vancouver in 1908, graduated in mining engineering from the University of B.C., and later earned a Doctor's degree in geology at McGill.

In 1932 Dr. Buckland joined the late James P. Norrie in the staking and early development of the East Malartic and Malartic Goldfields mines. Later, for four years, he was manager of the 300-ton Cournoir mine at Perron, Quebec. He joined the staff of Ventures Ltd. in 1940 and was transferred to Panminas Inc. to operate a tungsten project at Bishop, California, for the Metals Reserve Co. of the U.S. War Production Board.

At the end of the war Dr. Buckland returned to Toronto as consulting engineer of the Quebec Gold Mining Corporation and carried out exploration work in Quebec, Ontario, Manitoba and British Columbia. In 1949, he moved his office to Vancouver and soon afterwards became a partner of E. H. Lovitt in opening the Gold King mine at Wenatchee, Washington, which is an important gold producer.

700,000 shares at 17¢ per share are available to the public through licensed brokers or banks or direct from the company...

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