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MR 194-3

NOTES ON LODE MINING AND DEVELOPMENT DURING 1946, IN THE
FAIRBANKS DISTRICT, ALASKA

By - H. L. Linnler

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The Mohawk Mining Company and the Eva Quartz Company mined and milled ore during the season of 1946, in the Ester Creek section, while a third company, the Elmas Gold Mining Company developed its property on Happy Creek and is now installing a mill. Krize and Feldman on Fairbanks milled a small tonnage and are now doing development work. Work done by others was principally prospecting or development. No statistics on the gold produced by these lode properties are available at this time.

ESTER CREEK SECTION:

The Mohawk Mining Company (Henderson) - operated its mill and expected to produce about \$35,000 in gold this year. Up to September 21, 2250 tons of ore had been milled yielding an average of \$15.00 in gold per ton on the plates. The mill was operated one shift per day. Nine men were employed, seven being in the mine.

The Eva Quartz Company on the Ready Bullion Creek employed from 8 to 10 men during the summer, and up to September 21 had milled about 400 tons of ore, averaging about \$15.00 in gold per ton. This company, Kinney, Gillis, Borovich & Stay, developed its property on Ready Bullion Hill last winter and spring and acquired the old Boegler Mill. The mill contains two 1000-lb Kassen stamps and handles about eleven (11) tons of this sticky ore in 24 hours. A 300-ft adit has been driven along a sheared zone in schist having a maximum width of 12 ft. Further development is under way and it is planned to increase the milling capacity. A detailed report on this property accompanies these notes.

Dan Kadovich to the west and over the hill from the Eva Quartz Company, on the Baby Fraction claim, is reported to have found a small vein of high grade quartz showing much visible gold. The contention is that this vein is a branch of the lode being mined by the Eva Quartz Co.

Geo. McDonald who has quartz claims on Eva Creek did a little work, as usual, mainly for annual assessment purposes.

Elmas Gold Mining Company on Happy Creek sank two shafts, one 110 feet deep, the other 66 ft., and did a little drifting from each one, on its vein which is apparently a continuation of the lode mined by the Mohawk Mining Company. Four to five men were employed on this work. The company considers that sufficient ore has been developed to justify a mill, so has purchased the old Chena 10 stamp mill and is now installing

five of these stamps at its property. An adit is now being driven along the strike of the vein from a point near the mill site which is about 1200 ft northeast of the No. 2 shaft, and about 200 ft lower in elevation. The expectation of the company is to operate the mill this winter on ore to be mined from a high grade shoot developed in the vicinity of the two shafts. A detailed report of this property accompanies these notes.

CHLORAFIKA SECTION:

Clary Hill Mining Company (formerly Rhodes-Hall) at Clary and Bedrock Creeks was idle during the summer. It is stated that mining would be resumed this winter.

Kaskwitz Bros., three men, did a little development on this quartz vein on Bedrock Creek, but did not operate their small Herzan rod mill.

Spaulding Group on Home Creek - two men did a little development work on this group of claims during the summer for reported Colorado interests.

FAIRBANKS CREEK:

Krise & Feldman milled about 200 tons of ore this summer--production at this time not known. They are doing all the work without hired help, and are extending the main 1300-foot drift for 300 to 400 ft with the object of opening up their high grade ore shoot at this level.

EVA QUARTZ COMPANY

The Eva Quartz Company: K+58-E

This property consists of eight lode claims located on Ready Bullion Hill west of Ready Bullion Creek, a tributary of Ester Creek, about 9 miles from Fairbanks. The mill is located on Ester Creek at an elevation of about 900 ft above sea level. The elevation of the main adit and mine workings is 300 ft higher.

This property is also referred to as the Kinney, Gillis, Berovich & Stay property, the latter's interest being recently acquired by Bert Stevens. Prior to this year this company was interested in developing a quartz lode on Eva Creek, a mile or so to the east but became interested in the Ready Bullion holdings this year.

The lode has now been traced by a series of pits from the eastern end of the Horseshoe claim into the Roseana and Ready Bullion claims, a total distance of about 2000 feet. The ~~stri~~ topography along the strike is gently sloping, so that very little depth is gained from the level of the main adit. This adit started near the easterly end line of the Horseshoe claim at the face of a 40 ft open cut in soil, from where it continued for 35 ft thru soil and slide rock before encountering solid formation and the lode. See sketch. On September 21 this adit was 315 feet long, following the lode for about 260 feet, then encountering a fault of small displacement, and for the following 20 feet has been in mixed up lode material.

The lode is similar in character to that on the Mohawk Mining Company and the Elmer Gold Mining Company properties, although apparently being in no way connected. Intense movement has occurred as a strike fault along a fissure in schist containing lenses and veinlets of quartz, and has developed a lode ranging from 6 to 12 ft in width. Cross-faulting is also much in evidence, and while the lode material of quartz, schist and clay is generally crushed and mixed up, the quartz occurrence is quite continuous for a distance of 200 feet as exposed in the adit. The general strike of the lode is $N.16^{\circ} E.$, the dip $N.E. 80 \text{ deg. to } 85 \text{ deg.}$, cutting the schist formation.

The quartz is mineralized with arsenopyrite, pyrite and stibnite and contains the principal gold content, although the schist and clay also carry some gold. The ore apparently occurs in shoots but their occurrence and size have not yet been determined. No samples were taken but the owners state that some of the quartz carries high gold values. Two small stopes have been opened where a 6 to 8 ft width of ore consisting of oxidized quartz schist and clay has been mined and stated to carry \$20 to \$25 per ton in gold. This does not show in the mill returns. Similar ore has been milled which was extracted in driving the adit, although much of this lode material was low grade and went on the dump.

Eva Quartz Co. - continued

The ore is dumped into bins from where it is hauled down a steep grade by horses and wagon for a distance of about 1500 feet to another bin from which it is drawn into a car and transported to the crusher for reduction to one-inch size. It then goes to two 1000-lb Niassen stamps, the pulp passing over amalgam plates and then to waste. A 40 h.p. boiler provides steam for the Atlas engine. Coal is used for fuel. About 400 tons of sticky oxidized quartz schist and clay have been milled to date. The mill treats about 11 tons in 24 hours, two 12-hr. shifts being worked. The character of the ore causes clogging of the screens and sticks to the stamp shoe reducing the mill capacity.

The owners state that the first clean-up produced \$12.80 in gold per ton, the next \$15 to \$16 per ton, and the present heads average \$18 to \$19 per ton. No doubt there is also an appreciable loss in the tailings as no concentrating is done.

Eight to ten men are employed. The company plans to increase its milling capacity next season, giving proper preference to a ball mill.

The property is still in the early prospect stage but fully justifies more development. Like the lodes of similar character that are being either mined or developed in the near vicinity, the principal values occur in shoots in the quartz, with the quartz none too much in evidence, so that a great portion of the lode may not justify its mining, and along with the faulted condition, a large amount of development will be necessary before a reasonable tonnage of ore can be developed and the possibility of the property definitely determined.

I. L. Winkler

September 21, 1926.

ELMES GOLD MINING COMPANY

Elmes Gold Mining Company:

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An Alaska corporation with a capitalization of \$150,000---
Byron Elmes, Pres., O. A. Matheson, Vice-Pres., L. J. Loussac, Sec.-Treas.,
E. Pilgrim, General Manager.

Company has option on the P. J. Rickloff group of 7 lode and one placer claim located on Happy Creek, Fairbanks, District, and has recently located another placer claim and two lode claims. See sketch map of claims.

The property is easily accessible by auto road, being about 8 miles from Fairbanks; or can be reached from Happy, a station on the Alaska Railroad, where a 1-1/4 mile wagon road connects with the camp.

Intense movement along a fissure vein in schist has developed an ore zone varying up to 7 feet in maximum width. Its general strike is North 30 deg. east, and the dip is practically vertical, varying from east to west and cuts across the formation on both strike and dip. The greatest movement has been along the strike and dip of this vein with minor faulting crossing it at differing angles. At least three periods of movement are apparent.

The lode, where developed, has a width of 5 to 7 feet and consists of quartz, mica schist and clay, with fairly well defined schist walls although locally showing irregularities. The quartz, which contains a mineralization of arsenopyrite, pyrite and stibnite, generally holds to the footwall portion of the lode and in the main developed area ranges from a few inches to 2-1/2 feet in width. The quartz is, however, erratic in occurrence and irregular in extent. The higher grade ore is confined to the quartz, the better values appearing to occur in relatively small but long flat lying shoots. The clay, and schist also carry some gold, especially where mixed with ground up quartz. Gold is occasionally visible in selected quartz specimens and most of the quartz will pan. While distinct narrowings in the width of the lode have been encountered and quartz may be lacking in places, the lode has so far been traced by a series of open cuts for a distance of about 2000 feet on this property, and it is apparently the same lode that is being mined by the Mohawk Mining Company, more than a mile to the southwest following the its general strike; it also has the same mineralization and general characteristics.

The main underground development has been done on the "Principal" claim where two shafts 350 feet apart have been sunk on the lode. Shaft No.1 is 110 ft deep and drifts have been driven from the bottom for ten feet each direction. Shaft No.2 is 66 ft deep and from a point 41 ft down a drift has been driven 21 ft south and 23 ft north. See sketch of longitudinal section. Pits sunk thru 10 to 15 feet of soil

have traced the lode into the American claim to a point about 1200 ft to the northeast of the No. 1 shaft. An adit is now being driven along the lode at this place at an elevation of about 200 feet lower than the collar of the No. 2 shaft. On Sept. 21 this adit was in 60 feet and while in mixed up clayey lode material, had not yet struck any ore. Recent reports, however, state some good ore has been found.

The underground workings have not been thoroughly sampled and I did not take samples. The management, however, has taken numerous samples and states that the highest assay obtained from quartz ore was \$142.00 in gold per ton, and contends that this quartz ore, which in the main developed shoot between shafts No. 1 and No. 2, ranges from 6 inches to 2-1/2 ft in width, will average \$30 to \$40 in gold per ton. Some good assays are at times also obtained from samples of mixed schist, clay and finely ground up quartz, so that it is thought practical to mine an average width of about 4 feet producing an ore that will average about \$12 in gold per ton. Good ore has been found to a depth of about 40 ft in the both shafts, indicating a flat lying ore-shoot.

The management states that sufficient ore has been developed to justify the installation of a mill, which is now being done. The ton stamp mill formerly installed at Chena has been obtained and is now being transported to the property. This mill consists of a 9 x 13 Blake-Hendy Crusher, ten 1000-lb Hendy stamps, and copper plates for amalgamation. One battery of five stamps will first be installed and straight amalgamation will be practiced. Steam power will be provided, the plant being a 60 h.p. boiler and a 10 x 13 double cylinder engine. Wood will be used as fuel. A 135-foot drill hole put down in the schist at the mill site apparently struck a fault below the frozen horizon, and provides flowing water. With this water available the company plans to operate thruout the year. The large amount of soft schist and clay in the ore, as it will be mined, will not be advantageous for stamp milling, however, for it is sticky and will tend to greatly reduce the mill capacity.

All of the lode material so far encountered is much oxidized, and an enrichment of the gold content no doubt exists in this oxidized zone. This feature may be more pronounced in the crushed areas so that deeper mining may have to be more closely confined to the ore-shoots in the quartz in order to obtain a profitable grade of ore. Much further development is necessary to determine the occurrence and nature of the ore-shoots, and conditions indicate that a large amount of development will be required to develop relatively small tonnages of ore. The work done to date has given much encouragement and is being economically done. The property is, however, still a prospect and its possibilities are still to be determined.

This is not to be considered a detailed or complete report, for while brief visits were made to the property on July 5 and Sept. 21, a detailed examination was not the object.

M. H. Winkler, Oct. 13-1916.