

(5,000.9)

PE-087-03

PE
87-3

61°05'N
143°24'W

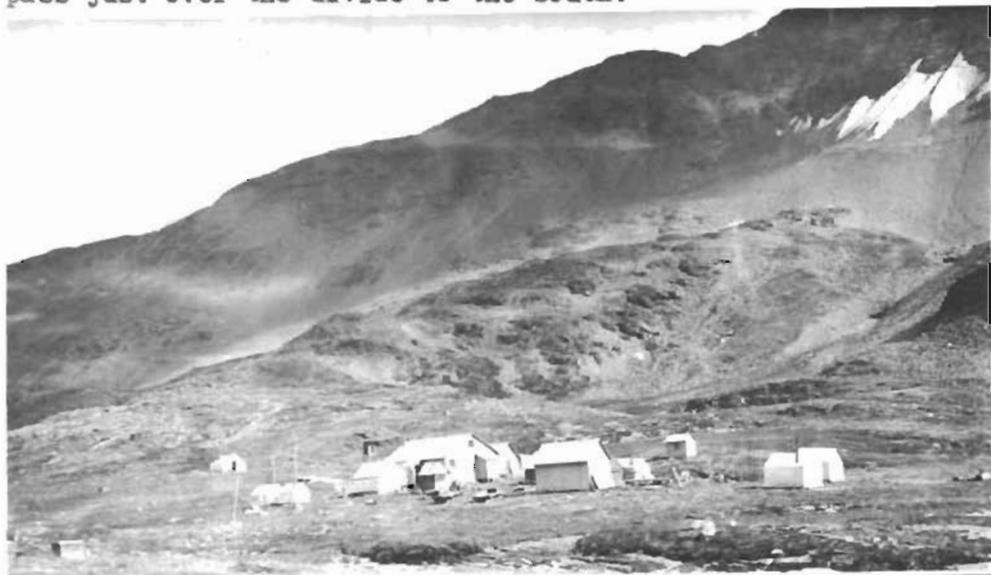
PRELIMINARY REPORT OF BREMNER MINING COMPANY,
HANAGITA-BREMNER MINING DISTRICT,
August 14, 1936.

R+ 87-17
87-18

87-3

Location and Accessibility:

The Bremner Mining District, with its location between the Chitina and Copper Rivers, its high rugged mountains and glacial filled U-shaped valleys, and high gradient streams, affords many difficulties to travel. The mountain range in the southern portion of the Chugach Range which is walled in on the south and east by the great ice field of the Bering and Malaspina glaciers. Due to the continual swelling and rising with changing courses of the Chitina River fed by volumes of water from melting snow and ice in the summer, this region is almost inaccessible for transportation of supplies and heavy equipment. Plane travel is in itself very hazardous due to the many different changing air currents up and down the valleys, the high ranges with peaks between 6000' and 7000', and the rough poorly drained landing fields. During the winter season conditions are more favorable. Caterpillar tractors can be used over the ice and snow and such is the means used by the Bremner Mining Company over a winter route, 60 miles in length from McCarthy on the Copper River & Northwestern Railway. The airplane route nearly a straight line from McCarthy covers a distance of 45 miles south and west. In summer some supplies are brought in with this means. The new road that branches from the Dan Creek road at the Nizina River bridge has been extended a few miles further this year. With a bridge across the Chitina River this district will be afforded summer transportation. The Bremner mine is located along the west mountain-side of the divide between Golconda and the west branch of Monohan Creeks. Golconda Creek flows south a distance of ten miles into the north fork of the Bremner River. The camp is located in the center of the pass just over the divide to the south.



Camp of Bremner Mining Company,
Head of Golconda Creek.

History:

Gold was first discovered in the form of placer in the bed of Golconda Creek, a few miles south of the Bremner Mine, during the summer of 1901. This led to the first interest in the district with several claims staked and considerable prospecting. Hand methods of placer operations were carried on for several seasons and in 1911 the Golconda Mining Company operated a hydraulic plant on Golconda Creek. Two lode claims known as the Golconda and Mammoth were staked. A short description is given of them in U. S. G. S. Bull 576, "Geology of the Hanagita-Bremner Region, Alaska," by F. H. Moffit, pp. 49-50. A short history of placer and lode operations is also given in this report.

The first group of claims known as the Topsy Group were staked by S. L. Ramer in 1927. Later the Grand Prize vein was discovered by Chas. A. Nelson. This is located 3000' north of the Topsy Group. Between the two groups the Divide Group was staked. Thus all three groups were combined into one, a total of 42 claims and one placer claim, and they are held by the present Bremner Mining Company. In 1931 the Topsy Group of 12 claims was optioned for examination to B. B. Neiding, A. C. Baldwin and J. B. O'Neill. This option was dropped after examination and the Bremner Mining Company was organized. Development work continued and a mill was installed two years ago. A short description of development in 1932 is given in "Mining Investigations and Mine Inspection in Alaska," 1933, by B. D. Stewart, pp. 84-85. Further information regarding the capitalization, description of property, geology, etc., is given in the company's prospectus issued by Wilson-Fairbanks Company (stock brokers), Seattle, held on file.

Development:

Since it was not the wish of the management to give out exact measurements of development work, the workings were not measured or mapped. The following estimates are based on pacing, aneroid readings and occasional measurements given while on route underground through the mine. The amount of development work on the Topsy Group, known also as the Lucky Girl Vein, on which the major development has been done, was estimated including the four tunnels, eight raises and a few short crosscuts at over 2500' on the date of visit. Two small stopes from which approximately 2000 tons have been milled is in addition to above. Stopping, raising and drifting were in operation at the time on three levels.

No. 1 tunnel, elevation 4200', or approximately 200' above the floor of the valley is the mill level tunnel. The ore from the above levels is passed by tramming by gravity down raise shoots to this level. Its approximate length is between 600 and 700' with two

short crosscuts. One raise used as an oreway connects with No. 2 tunnel above, its approximate length being 100'. A small stope was started for a short distance which encountered a flat fault which cuts off the ore.

No. 2 tunnel, El. 4290', has a length of approximately 700'. It contains three raises, with one through to the surface, a distance of 135', the other two have lengths of 90' and 40', respectively. No stoping has been done on this level. Considerable quartz shows in this tunnel, but was reported as of low value.

No. 3 tunnel, El. 4495', has a length of approximately 200'. It contains four raises, two of which lead into a small stope 50' long, 35' in height and a width of 5 to 6'. From this stope the greater part of the ore milled has been taken. This is within a few feet of the surface and most of the mineralization is oxidized.

No. 4 tunnel, El. 4085', is a new tunnel started to get below the ore in No. 2 tunnel. This tunnel was only in 60' and rock in place had just been struck. The fissure was not thus far encountered. Since this level is 115' below vertically the top of the mill or No. 2 tunnel, the ore mined will necessarily have to be hoisted to No. 2 level. No. 4 tunnel nearly to the floor of the valley represents the last level in depth that will have a tunnel adit.

Several opencuts have been made on the surface extending well up to the top of the mountain which has a height over 6000'. A short description is given same under geology.

Power, Mining and Milling Equipment:

The power for the mine and mill is furnished by a 185 H. P. Westinghouse generator run by a 24" Pelton wheel with 400' head. The power site is located half a mile south of the mine on the same side of the valley. A small glacial hanging valley through which a small stream flows and drops over the valley wall affords the power. This power is seasonal, dependent upon melting snow and ice. The power house is a 16x20' sheet metal building. 2300 volts are generated and led over a three-stage power line to the mill.

The mining machinery consists of a 600 cu. foot Gardner-Denver, 2-stage compressor. Cylinders are 15"x9"x10" and a maximum pressure of 125 pounds is developed. This is run by a 100 H. P. Westinghouse motor. The compressor is combined in a building with the blacksmith shop at the mouth of No. 2 tunnel directly above the mill. Steel

is sharpened by hand and flat bits are used. Gardner-Denver mine machines are used. A small single cylinder steam hoist run by air is installed at the mouth of No. 3 tunnel which pulls supplies to that level over a short aerial tram. A two bucket aerial gravity tram, length 3600' is maintained to the Grand Prize Group.

The milling machinery consists of a TelSmith crusher with 8x10" jaws, an automatic ore feeder, No. 54 - 50-ton Marcy ball mill, a Clark-Todd amalgamator, six ~~small~~ amalgam plates, a Dorr classifier and a Wilfley concentrating table. A 50 H. P. motor runs the ball mill, crusher, and feeder, and a 5 H. P. motor runs the table and classifier. The ore is dumped from the mine cars into a grizzly of 1½" mesh, larger pieces are broken by hand into the crusher. The crushed ore is fed to the Marcy ball mill with an automatic feeder. It is ground to 60 mesh and run over the amalgamator and over three plates to the classifier. The oversize is returned to the ball mill and the fine passes over three slime plates to the concentrating tables. A \$55 concentrate is made from the table and the balance to tails. Very little concentrate is collected on the table since most of the mineralization is oxidized and passes off in the tails. The amount of concentrate was reported by the management to average between two and three tons per season. These are not shipped. The value of the mill run was reported to average from \$10 to \$12 per ton. (not for publication) The recovery was not given. Last season 1500 tons were milled. 1,000 tons have been milled to date this season. Due to the water supply which is dependent upon the melting snow and rain from the mountainside, the milling season extends from June to late in September. One man per shift operates the mill and the trammer breaks the ore in the grizzly. This season makes the second season of operation for the mill.

A dry room is maintained at the portal of No. 1 tunnel above the mill. The camp located 1500' north and on the valley floor consists of a log office building, a sheet metal cook house, sheet metal store house, tractor shed and several small tents used as living quarters. A small assay office is maintained located 500' east of the camp. A small landing field has been leveled and drained a fourth of a mile north of camp. This field is rough and short. A new field has been made 2 miles south of camp which has a longer runway. It also is rough and landings can only be made in two directions. The company owns and operates two diesel caterpillars with which freighting is done in the winter time on sleds.

Geology:

The geology of the Hanagita-Bremmer district is given in aforementioned report by F. H. Moffit, Bull. 576. In the vicinity of the Bremmer Mine the formations are interbedded flat-lying slates and

graywackes of Mesozoic age. The general strike is N. 40° W. with a flat dip to the southwest. The slates and graywacke are highly schistose and metamorphosed. A nearly vertical system of jointing has developed which has formed a blocky structure. Two dike systems cut the formations. The largest group with which most of the quartz filled fissures are associated and parallel, strike N. 40° W. generally. The other system strikes nearly at right angles or N. 45° E. This later system is cut by the fissures and dikes of the northwest system. These dikes are of a granitoid nature and composition and are referred to as monzonite dikes by Moffit, Bull. 576.



A 12' Monzonite Dike - 1500' North of Lucky Girl Vein.
(Note the whitish weathering nature of the dike. The blocky fracturing caused by jointing of the schistose graywacke.)

In the vicinity of the dikes and fissure zones the slates and graywacke are mineralized which on the surface is oxidized making yellowish to reddish zones. The general appearance of the sediments with the developed dike systems and joint systems of nearly vertical dip is one of an uplifted nature. The main dike system traced to the southeast leads to a large granitic mass intruded into the southeastern border of the sediments. These latter observations were noted from the air.

Ore Deposits:

On page 50, Bull. 576, "Geology of Hanagita-Bremner Region, Alaska," Moffit gives a short description of the outcroppings now being mined known as the Lucky Girl vein and located on the Topsy group. Two lenses of quartz are described along a fault fissure. Development work since has uncovered these lenses showing somewhat greater widths and lengths. Along this fault fissure higher up on the mountainside more but considerably smaller lenses have been uncovered. The lowest or largest lenses, located above No. 2 tunnel is associated with a fine grained dike, contains a banded quartz, calcite and altered dike materials. Its width is nearly 12' and outcrops as a reddish to brown mass for a distance of 70'. The movement along the vein is nearly horizontal and was in progress during the vein filling. Considerable calcite is associated with the quartz on the hanging wall portion. Above No. 3 tunnel another small lense outcrops with a width of 6' to 8' narrowing to a few inches on the ends. This is exposed over a hundred feet and the hanging wall portion is mainly calcite. Most of the ore milled has been mined from No. 3 tunnel below this outcrop. The stope was only a few feet below this outcrop on date of visit. For a considerable distance above this outcrop, through a massive bed of schistose graywacke, no outcrop occurs. At an elevation of 5175' the vein outcrops in slates exposed in opencuts and varies from 14" to 18" in width. The slates are mineralized and altered. This vein at this elevation cuts and displaces a 12" quartz vein about 10'. This latter vein strikes N. 45° E. and dips 85° S., paralleling several granitoid dikes in this vicinity. At 5500' elevation the fault fissure vein shows 12" of quartz and is the last quartz outcrop. Low to high grade values were reported from these opencuts. Generally, these large to small lenses are scattered along the fault fissure zone for a distance of 2000' and which can be readily traced up the mountainside by the small depression occupied by the fissure zone.

In No. 1 tunnel level a quartz lense is exposed for a considerable length of the tunnel approximately 500' to where the flat fault dips into the tunnel cutting off the ore. Below the fault the formation is black slate and above rather dense schistose graywacke. The fault fissure along its strike is not offset. This flat fault strikes north and south with a 18° dip to the west. It contains a gouge that varies from 4 to 12" in thickness. While development has not been sufficient to show the amount of displacement on this fault, from observations the quartz lense below the flat fault appears to be the continuation in depth of the quartz lense that outcrops above No. 2 tunnel approximately 200 to 300' northwest along the fissure. High values were reported in close proximity to this fault.

In No. 2 tunnel level considerable quartz was encountered which is the lower portion of the outcrop above. Only spots in this quartz were reported to contain sufficient values to mine. As a result no ore has been mined. The raise 135' to the surface is used as an oreway for the ore mined in No. 3 level.

No. 3 tunnel level, which is directly under the No. 2 quartz lense outcrop, contained the best values. A considerable portion of this was altered wall rock which is either altered graywacke or a portion of the fine grained dike found below. The values are found both in the quartz and oxidized portion of the wall rock. Widths of 5 to 6' are mined in this stope. Stulls are used as supports for floors as mining proceeds upward. The ore is broken down and pulled from chutes on the tunnel level.

The No. 4 tunnel level was being driven to undercut the long lense of quartz exposed in No. 1 tunnel. Values in this lense were not given. It was reported as ore with the values somewhat spotty. One channel sample was taken by the writer across the lense in back of drift at a point approximately 345' from the adit. This is nearly the center of the lense as exposed in this tunnel, and approximately 15 to 20' below the flat fault above. This sample No. 57 consisted of a milky white quartz with pieces of wall rock and sparse mineralization of pyrite, and values received were only a trace of gold and silver. However, average value of the body cannot be judged from this one sample, it does prove that the values are not uniform throughout the lense. This lense with its continuation downward, its length and width with commercial values, would provide nearly two seasons milling at the present rate of capacity per season.

Mineralization:

Generally the amount of mineralization in the quartz must be classified as sparse. This is apparent from general lack, a portion has oxidized, and a certain portion is of a fine nature. Pyrite is the most abundant and it occurs both as fine crystals around the dike and wall rock pieces found embedded in the quartz and in the pieces themselves, the other occurs as larger pyrite crystals generally scattered throughout the quartz. Associated with the pyrite and scattered through the vein in lesser amounts, are galena, chalcopyrite, and a small amount of sphalerite, and free gold.

The gangue minerals are a granular quartz, calcite, wall rock, pieces of slate, graywacke and fine grained greenish dike material, and the iron oxide limonite.

In summing up the general geological conditions pertaining to the Lucky Girl vein, based upon preliminary observations and reported ore values these conditions were evident:

1. The vein is a fault fissure in flat-lying inter-bedded graywacke and slate formation.
2. Re-opening and horizontal movement are evident along the fissure.
3. Large to small quartz lenses in places associated with altered fine grained dike material are scattered along for a traceable distance of 2000' on this fault fissure.
4. Wall rock alteration both from solutions and movement is evident from the outcroppings.
5. The quartz lenses are mainly confined to the slates near the contacts with the graywacke.
6. Faulting later than ore deposition is evident.
7. Values are spotty and found both in the altered dike materials and the quartz.
8. The vicinities of highest values are near the surface and in close proximity to the flat fault.

General conditions pertaining to mine and mill operations:

1. Mining and milling under the present installed power is seasonal.
2. Future mining on the present ore shoots developed underground will necessitate hoisting thereby increasing costs.
3. The general character of the ore in lenses scattered along the fault fissure makes high development costs.
4. The uneven distribution of values in the ore.
5. The lack of timber in the vicinity.
6. High transportation costs.

The Grand Prize Group:

The Grand Prize group adjoins the Divide Group on the northwest, and is 3600' via aerial tram from the mill on the Topsy Group to the showing at an elevation of 6000' of the Grand Prize. The showing consists of a small quartz vein which has an exposed length of 540' and varies in width from 6" to 2". This vein occurs on the hanging wall of a 12' granitoid dike. The strike is N. 50° W. and dips 45° NE. A tunnel was driven below the outcrop and a stope was started.

500 tons of ore ~~was~~ mined and trammed over the gravity aerial tram to the mill last year. This year this property was inactive.

The Divide Group covers the remaining ground between the two veins and contains the site of the tramway and the camp on the valley floor. No operation has been attempted in the placer claims held by the company. The amount of gold produced in the two seasons of milling or any information as to the financial standing of the company were not given out by the management. The authorized capitalization of the company consists of one million shares with a 25 cent par value, of which 779,586 shares were outstanding as of July 15, 1934. The shares are full paid and non-assessable and carry full voting power. The latter statements were taken from a publication by Wilson-Fairbanks Company, stock brokers, Seattle, on Bremner Gold Mining Company.