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by P.S.V.

PRELIMINARY REPORT ON THE ENTERPRISE PROPERTY,
LIMESTONE INLET---JUNEAU MINING DISTRICT.

KX 113-4

Location:

The Enterprise property is located on the north shore of Limestone Inlet, 21 miles southeasterly from Juneau, Alaska. The property embraces three unpatented claims: The Enterprise and the Enterprise Nos. 1 and 2. The Enterprise claim is a relocation of an old claim of the same name discovered prior to 1907.

A trail leads from a cabin on the beach up an incline distance of about 3,000 feet to the workings.

History:

The Enterprise property was operated prior to 1914, during which time two tunnels were driven and considerable surface work was done, such as trenching, the building of an aerial tramway and the erection of a small mill. A total of 195 feet of drifting also was done. According to old reports, between 100 and 200 tons of ore taken from these drifts was milled in a small Johnson rod mill that was located on the beach. No exact record of the amount of production is available. One assay return issued by the Canada Assay Office, Vancouver, B. C., in September, 1914, to Bank of Montreal, Chilliwack, B. C., reported gold bullion with a little silver to the value of \$298.68. This amount was reported to have been derived from the cleanup of the Johnson rod mill.

In 1914 the property was taken over by B. L. Thane, of Juneau, who installed a 5-stamp mill to replace the Johnson rod mill. A small compressor was also installed at No. 2 tunnel, and over 200 feet of drift was driven. A raise was put through to No. 1 tunnel and some ore was stoped. Another raise 40 feet in height was driven up from No. 1 tunnel and a small amount of ore was stoped from it. According to a statement by the management, 300 tons of ore was milled that averaged \$5.80 per ton. Concentrates from one table are said to have averaged \$110 per ton. Due to the high cost for miners and the low ore values, operations ceased.

In 1934 the property was relocated by H. E. Jackson, of Sardis, B. C. and A. H. Westall, of Juneau, Alaska. A raise was driven by them at the face of No. 2 tunnel on an incline of 35° up the dip of the vein a distance of 52 feet, as shown on the accompanying sketch map.

At the date of visit to the property there was unassembled on the beach a 5-stamp mill, nearly complete, and in good condition; a Blake crusher, 10x12-inch; and a 48-inch Pelton wheel with shaft. The old mill building, which stands a few feet back from the beach, is in a dilapidated condition. A small Johnson rod mill was observed outside the building and in bad condition.

Rock Formations:

The rock formation of this area has been designated by Brooks* as slate and greenstone intruded by granitic rock. The principal quartz vein on the Enterprise property is inclosed over its entire outcropping length in this granitic rock. This rock has two closely related phases, one grading into the other. One is the dioritic phase which contains green hornblende, with 30 to 40 per cent quartz, and white to pinkish feldspar. The other phase is composed of black hornblende or augite with a small percentage of quartz, and large porphyritic crystals of feldspar among a ground mass of smaller feldspar crystals. This rock turns whitish upon weathering. The greenstones and slates strike in a northwesterly direction and appear on the north and south extremities of the property.

Ore Deposit:

The orebody on the Enterprise property consists of a very regular quartz vein, which has an average width of 2 feet, and which occupies a fault fissure. The outcrop of the vein is exposed on the Enterprise claim over a distance of about 500 feet between elevations of 1200 and 1430 feet above sea level. This exposure is at a horizontal distance of about 2300 feet back from tidewater. The vein strikes N. 25° E. and has an average dip of 45° to the NW. It has well defined walls and the quartz is free, with a very thin gouge on both walls. Distinct bands occur in the vein and some of the dark streaks between the bands contain decomposed granitic material. This banding seems to indicate several re-openings of the fissure. Small slickensides occur both on the hanging wall and the foot wall of the vein. Their direction is at right angles to the strike of the vein and downward on the same angle as the dip.

Two small normal faults cut the vein, which they displace but slightly. No. 1 fault crosses No. 2 tunnel at a point 160 feet north of the portal. It has a strike of N. 75° E.; a dip of 74° S.; and a displacement of 20 inches. No. 2 fault shows in No. 2 stope at a point

*U. S. Geol. Survey Bull. 379, "Mineral Resources of Alaska, 1908," by A. H. Brooks, p. 72.

17 feet below No. 1 tunnel. The strike is nearly the same as that of the vein: N. 23° E.; the dip 63° SE.; and the displacement 12 inches. No. 1 fault is evident in the stope 60 feet below No. 1 tunnel. Two facts are evident with regard to the effect of these faults: The vein shows a marked tendency to narrow below them; and according to old assay reports, the values are also considerably lower below them.

The Enterprise vein is very persistent over its exposed length. There is a slight curve in the line of its strike. The width varies from 10 inches at the lowest outcropping to a maximum of 34 inches in No. 1 stope. The highest values obtained from the vein were in samples from the cut and within a few feet of the surface. Samples taken from No. 1 tunnel have averaged higher than those taken in No. 2 or the lower tunnel.

The amount and value of the ore at present developed do not appear to warrant the expenditures that would be required in mining and milling it. Since values still show in the faces of both tunnels, however, there is a chance of obtaining more ore by further development work, and possibly enough to justify a small milling operation, provided values average high enough above mining and milling costs.

Mineralization:

The important content of the ore is free gold. Galena, sphalerite, chalcopyrite and pyrite are present in the vein in small amounts. The gold is found mainly in the seams of the bands in the vein. Some gold is also scattered very irregularly in the quartz, and some is associated with pyrite. Both fine and fairly coarse gold were seen in pannings.

The gangue minerals include quartz, and decomposed granitic minerals which occur along the seams in the vein. The oxide of iron, limonite, is also present in the vein material. It results from the oxidization of pyrite. Numerous vugs were observed that were lined with both small and large quartz crystals. Associated with the walls of the vugs at the base of the crystal aggregates were masses of pyrite, galena, chalcopyrite and occasional crystals of sphalerite. Inclusions, consisting of angular pieces of granitic rock suspended in the quartz were also noted. Pyrite crystals were also seen inclosed in galena crystals. Finer crystals of these minerals are irregularly distributed along the vein, being most numerous on the footwall bands. Some very fine pyrite is disseminated in the hangwall rock, but it is reported to be non-auriferous.

Assays:

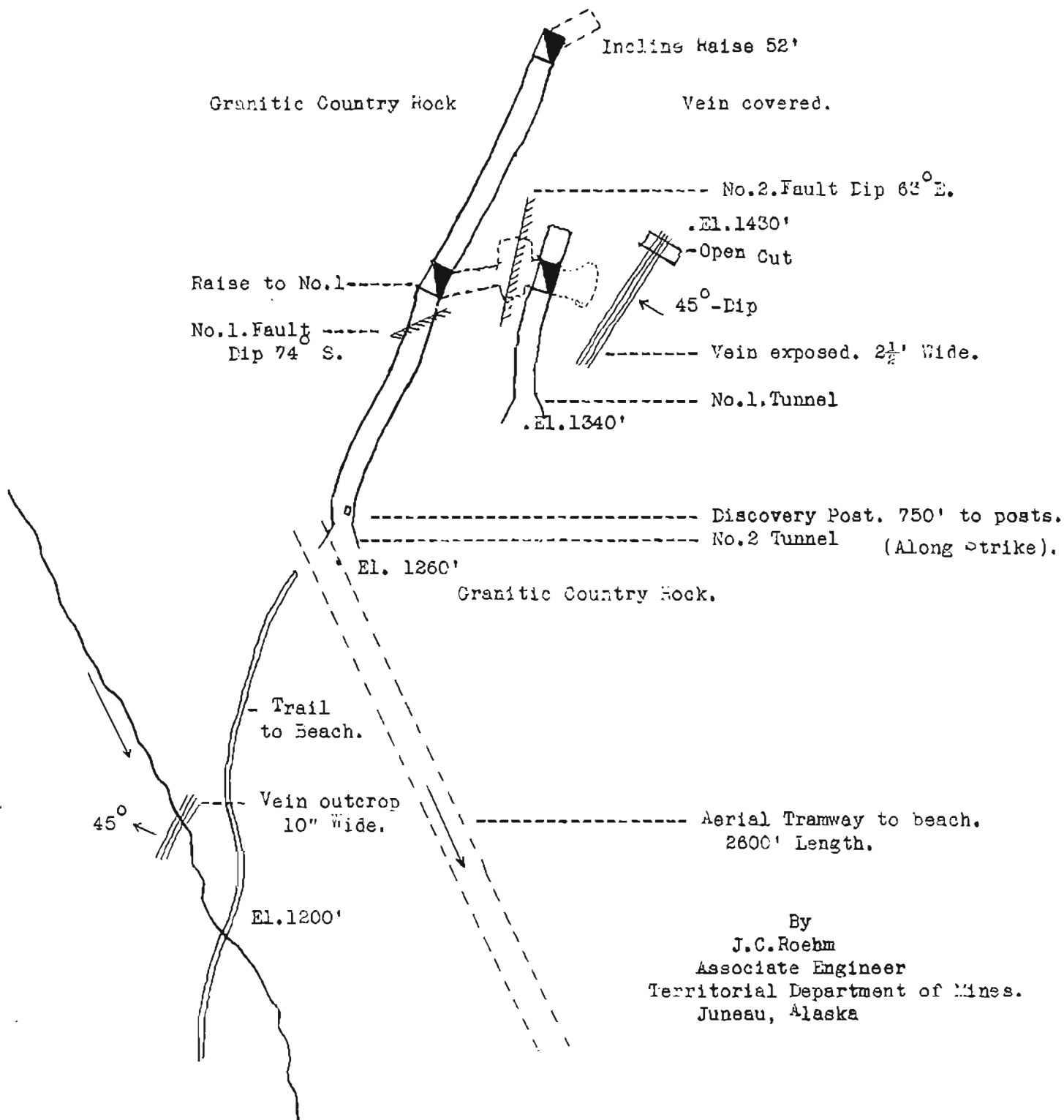
Assay values given in old reports that are said to have been returned on samples taken during former mining operations, are very irregular and reveal a spotty distribution of the gold. No attempt has been made to determine the average value of the ore taken from the property, with the new value of gold applied. Channel samples, said to have come from No. 2 stope, are reported to have assayed from \$0.40 to \$7.70 per ton. Samples taken in the raise at the end of No. 2 tunnel by the owners are said to have shown better values: \$2.24 to \$16.94 per ton. Channel samples similarly taken in No. 1 stope are said to have run from \$4.20 to \$34.30 per ton. A channel sample, 27 inches in width taken by the owners in the small opencut above No. 1 tunnel, is reported to have assayed \$46.80 per ton. The above assay values are based on a price of \$35 per oz. for gold.

Six samples were taken by the writer for the purpose of checking some of the former assays and to show the relation of the values in the vein to vertical depth beneath the surface. Descriptions of these samples and assay results obtained are as follows:

Sample No.	Location & Description	Width Inches	Ounces per ton		Value
			Gold	Silver	
1	Top incline raise, end of No. 2 tunnel 52' up. Across vein. Banded quartz.	15	0.32	0.80	\$11.76
2	Opencut 127' above No. 1 tunnel. Across vein. Oxidized, banded quartz.	24	1.08	0.80	38.36
3	No. 1 tunnel. Face of drift 116' from portal. Top of drift. (1/2" gouge on footwall included). Banded drusy quartz.	24	0.30	0.40	10.78
4	No. 1 stope, 40' above track, back in center of stope, 5' above 6th floor. Banded quartz, crystals showing.	28	0.04	0.30	1.61
5	No. 2 stope, 15' below No. 1 drift. North end of stope, 3' above No. 2 fault. Across vein.	34	0.16	0.60	6.02
6	No. 2 stope, 23' below No. 1 drift. North end, 5' below fault, 8' below No. 5 sample. Across vein.	31	0.08	0.40	3.08

Further References: U. S. G. S. Bull. 480, "Mineral Resources of Alaska, 1910," by Brooks, A. H., etc., p. 97.

Plate No.1.
 Sketch Showing
 Underground workings
 Enterprise Claim
 Jackson & Westall
 Juneau District
 May 16, 1936.
 Scale 1" = 100'



By
 J.C. Roehm
 Associate Engineer
 Territorial Department of Mines.
 Juneau, Alaska

N. 25° E.

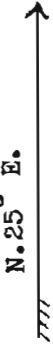
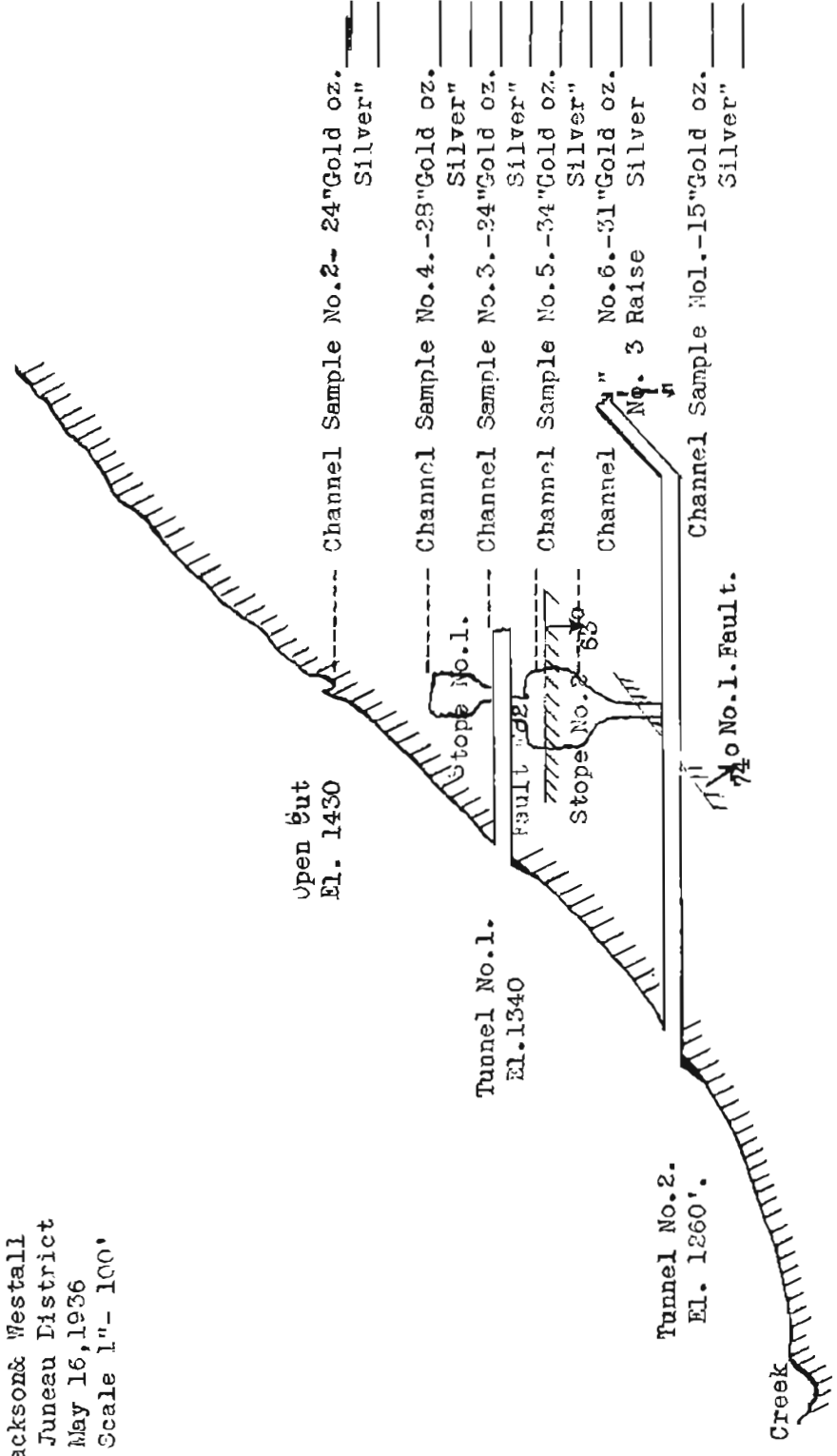


PLATE No. 2.
 Longitudinal Section
 Showing
 Stopped Areas & Assays
 Enterprise Claim
 Jackson & Westall
 Juneau District
 May 16, 1936
 Scale 1" = 100'



By
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 Associate Engineer
 Territorial Department of Mines
 Juneau, Alaska

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LIMESTONE INLET--JUNEAU MINING DISTRICT.

Location

The Enterprise gold property is located on the north shore of Limestone Inlet, 21 miles southeasterly from Juneau, Alaska. This property consists of three unpatented claims, the Enterprise, Enterprise Nos. 1 and 2. A quartz vein, which averages 2 feet occurs on the Enterprise claim, with an exposed length of 500 feet, at an elevation from 1200 to 1430 feet above sealevel, and a horizontal distance of 2300 feet from tidewater. This claim is a relocation of the old Enterprise claim discovered prior to 1907. A trail leads from a cabin on the beach up an incline distance of nearly 3000 feet.

History

This property was operated prior to 1914 at which time two tunnels were driven and considerable surface work done such as trenching, building an aerial tramway and building a small mill. A total of 195 feet of drifting was done. According to old reports, 100 to 200 tons of ore was milled from these drifts by a small Johnson rod mill on the beach. No exact records of the amount of production are known. One assay report from Canada Assay Office, Vancouver, B. C., Sept., 1914 to Bank of Montreal, Chilliwack, B. C., showed gold bullion with a little silver to the amount of \$298.68. This amount was reported from the cleanup of the Johnson rod mill.

In 1914 this property was taken over by B. L. Thane for the payment of an indebtedness of \$2,021.25 owed mainly to Juneau merchants. A 5-stamp mill replaced the Johnson rod mill. A small compressor was installed at No. 2 tunnel, and over 290 feet of drift was driven. A raise was put through to No. 1 tunnel and some ore was stoped. Another raise was put up 40 feet above No. 1 tunnel and a small amount of ore was stoped. According to a statement of the management, 300 tons of ore was milled that averaged \$5.80 per ton. Concentrates from one concentrating table averaged \$110 per ton. Due to high cost of miners and low ore values, operations ceased.

In 1934 this property was relocated by H. E. Jackson and A. H. Westall, the latter of Juneau, Alaska. An incline raise was driven 52 feet on an incline of 35° on the dip of the vein by hand methods.

At the date of visit to this property there was un-assembled on the beach a 5-stamp mill, nearly complete, and in good condition; Blake crusher, 10x12-inch; 48-inch Pelton wheel with shaft. The old mill building which sets a few feet back from the beach is in a dilapidated condition. One small Johnson rod mill was outside in bad condition.

The formations of this area were mentioned by Brooks*

Rock
Formations

*Mineral Resources of Alaska, 1908, by A. H. Brooks; U. S. Geol. Survey Bull. 379, p. 72.

as slate and greenstone intruded by a granitic rock. The quartz vein is inclosed over its entire outcropping length in this granitic rock. This granitic rock has two closely related phases, one grading into the other. One phase is the dioritic phase showing green hornblende with 30 to 40 per cent quartz, and a white to pinkish feldspar. The other phase shows a black hornblende or augite with a small percentage of quartz, and large porphyritic crystals of feldspar among a ground mass of smaller feldspar crystals. This rock turns whitish upon weathering. The greenstone and slates strike in a northwesterly direction and appear on the north and south extremities of the property.

Ore
Deposit

The orebody consists of a very regular quartz vein, occurring on a fault fissure, with an average width of 2 feet. This vein strikes N. 25° E. and has an average dip of 45° to NW. It has well defined walls and the quartz is free with a very thin gouge on both walls. Well defined bands occur in the vein, some of the dark streaks between the bands contain decomposed granitic material. This shows several re-openings of the fissure. Small slickensides occur both on the hanging wall and the foot wall. Their direction is at right angles to the strike of the vein, downward with the same angles as the dip of the vein.

Two small normal faults cut the vein, which are later, and they show only small displacement. No. 1 fault occurs in No. 2 tunnel, 160 feet north of adit. It has a strike of N. 75° E., and a dip of 74° S. with a displacement of 20 inches. No. 2 fault occurs in No. 2 stope, 17 feet below No. 1 tunnel. The strike is nearly the same as vein, N. 23° E., with a dip 63° SE., and a displacement of 12 inches. No. 1 fault is evident in stope 60 feet below No. 1 tunnel. Two facts were evident in regard to these faults. The vein showed a marked tendency to narrow below them. According to old assays, the values were considerably lower below.

This vein is very persistent, over its exposed length, with a slight curve in its strike. Its width is also persistent with a width of 10 inches in its lowest outcropping to a maximum of 34 inches in No. 1 stope. Since the movement is at a right angle to the strike a gradual narrowing of the vein in depth would be expected. Another fact that was evident was the highest assays were on the upper surface cut and within a few feet of the surface. No. 1 tunnel averaged higher than No. 2 or lower tunnel. Since values still show in the faces of both tunnels, there is a chance of obtaining more ore and possibly enough to consider a small milling operation providing values average high enough above mining and milling costs. However, the amount and value of the ore at present developed does not warrant milling expenditures.

Minerali-
zation

The important content of the ore is free gold. Galena, sphalerite, chalcopyrite and pyrite are present in the vein in small amounts. The gold is found mainly in the seams of the bands with some scattered very irregularly in the quartz, and some associated with the pyrite. Both fine and fairly coarse gold was seen in pannings.

The gangue minerals were quartz with decomposed granitic minerals along the seams. The oxide of iron, limonite, was present caused from the oxidization of the pyrite. Numerous vugs were present showing both small to large quartz crystals. Inclusions consisting of angular pieces of granitic rock were suspended in the quartz. Associated with the walls of the vugs at the base of the crystal masses were masses of pyrite, galena, chalcopyrite and occasional crystals of sphalerite. Pyrite crystals were seen inclosed in galena crystals. Finer crystals of these minerals were irregularly distributed along the vein, most numerous on the footwall bands. Some very fine pyrite was disseminated into the hangwall rock, but was reported not auriferous.

Assays


The assay values taken from old reports, said to have been taken during operation, were very irregular, showing spotty distribution of the gold. No attempt was made to arrive at an average value of the ore under the new price. Reported channel samples from No. 2 stope were from \$0.40 to \$7.70. The raise at the end of No. 2 tunnel showed better values of \$2.24 to \$16.94. No. 1 stope channel samples ran from \$4.20 to \$34.30.

The small opencut above No. 1 tunnel, a channel sample of 27 inches was \$48.80. These assay values are for \$35 gold.

Six samples were taken with the purpose of checking some of the former assays at points in close proximity. Further, to show the relation of the values in vertical depth from the surface.

Sample No.	Location & Description	Width inches	Gold oz.	Silver oz.	Value		Total Value
					Gold	Silver	
1	Top incline raise, end of No. 2 tunnel 52' up. Across vein. Banded quartz.	15					
2	Opencut 127' above No. 1 tunnel. Across vein. Oxidized, banded quartz.	24					
3	No. 1 tunnel. Face of drift 116' from adit. Top of drift, 1/2" gouge on footwall included. Banded drusy quartz.	24					
4	No. 1 stope. 40' above track, 28 back in center of stope. 5' above 6th floor. Banded quartz, crystals showing.	28					
5	No. 2 stope--15' below No. 1 drift. North end of stope. 3' above No. 2 fault. Across vein.	34					
6	No. 2 stope--23' below No. 1 drift. North end. 5' below fault, 8' below No. 5 sample. Across vein.	31					

May 16, 1936


 J.C. Roehm

Further references,

* Brooks A.H.etc. Mineral Resources of Alaska,1910. U.S.G.S. Bull. 480.p97.

X ENTERPRISE PROPERTY

PE Taku River 113-1

(Limestone Inlet)

By: J. C. Roehm

1936

113-1