KETCHIKAN, WRANGELL AND HYDER PRECINCTS

IR 195-28

Summary Report by Roehm June 1940

IR - 195-28

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MINING PROPERTIES

KETCHIKAN PRECINCT

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SUMMARY REPORT OF MINING INVESTIGATIONS IN THE KETCHIKAN AND WRANGELL DISTRICTS AND ITINERARY OF J. C. ROEHM, ASSOCIATE ENGINEER
TO
COMMISSIONER OF MINES, TERRITORIAL DEPARTMENT OF MINES, JUNEAU, ALASKA
May 24 to June 18, 1940.

A total of 16 properties were examined, 14 of which were situated in the Ketchikan district and 2 in the wrangell district, from May 24 to June 18, 1940.

The Ketchikan district as a whole, experienced during the last year several attempts at mining development, most of which have at the present time ceased. Of the total of ten active developments during last year, only four remain active this spring. The causes for these conditions have been many, however, the main causes fall under headings familiar to the mining industry such as misrepresentation, lack of efficient management, lack of knowledge of geological conditions, and the ever present condition that goes along with the above, lack of capital. The most discouraging feature has been the closing down of the property of the Flagstaff Mining Company. So unwisely has money been spent and so poor has been the management, even in the face of sound advice, that an engineer sent by the major interests gave the following as a final conclusion in his report:

"Recommendations--That you cease operations at once and pocket your loss. In this connection your lease provides that you can cease operations for three months each year. You might take advantage of this clause and endeavor to interest others to pay something--even if in the future--for your equity."

This only shows the result of placing all the costs of poor management included in the total, with construction and development costs, against an undeveloped prospect, assuming this prospect to be a proven mine, and to be producing a profit. Thus this organization is nearly where it started three years ago, faced with the necessity of hiring a capable man to manage and to do considerable development work, two factors of which they have been personally advised, and now, plus an allowance for improvements, the company is faced with a handicap of the total sum spent amounting to a reported figure of $160,000. Of this amount, after an investigation and an evaluation placed on all equipment, expenses, labor and supplies, there is an amount of $43,000 unaccounted for and the company is at present in debt.

The Ketchikan district as a whole does show increased activity over prior years. A total of 1800 feet of underground development consisting of drifts, shafts, raises and crosscuts have been accomplished during the past year. A total of 14,000* tons of ore has either been

*Approximate - await returns of Alaska Gold & Metals Co.

milled or shipped during the last year. The outlook for this season is not at the present time as good as last year. Operators have noticed an increase in prices of commodities in Ketchikan. The war conditions will no doubt have an effect on the amount of outside capital. The promise of leasing portions of Annette Island, if and when such is done, may lead to the development of promising prospects. The developments in Helm Bay have shown considerable enlightenment as to the type, size, and shape of the orebodies. The fault problem on the Free Gold or Kasaan Gold property on Harris Creek has been solved to the extent that the apparent cross vein was only a segment of the original vein faulted on a hinge type fault and the continuation of the orebody located underground under normal dip and strike conditions and the vein unfaulted and in place located on the surface. This latter information, brought about by the last year of development, is encouraging and may lead to more development and a greater production.

The following is a summary of conditions according to itinerary:

May 24-27 - En route Juneau to Ketchikan and Helm Bay.

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KX-119-123
KX-120-89

The Free Gold property, located along the west shore of Helm Bay, and adjoining the Gold Standard property on the north, was optioned to J. L. Freeburn on January 5, 1940 for a period of three years with a purchase price of $50,000, the latter to be paid from royalties on gross production. Four men were employed from January 15 to March 14, and since then one man has been retained on the property doing assessment work. A total of 208 feet of development was done underground during the above period. This work consisted of two drifts driven off the main Free Gold crosscut tunnel at a point 250 feet in from the portal. At this point a mineralized and quartz intercalated drag fold formed by faulted block movement in greenstone schist has formed a zone approximately 20 feet in width measured along the crosscut, which contains gold values. Drifts were started, both north and south, on this zone. The drift north was extended nearly 40 feet and the values stopped in a length less than 30 feet. Thence a crosscut was driven to the footwall from a point 20 feet from the start of the drift. Since this crosscut shows mineralization, and various folded quartz stringers, channel samples Nos. 806, 807 and 808 were taken across 5-foot widths beginning 5 feet back from the face. Thence a drift was driven on the south side following a small post mineral fault a distance of 90 feet, thence a 40-foot crosscut was driven to the east, and thence a short drift off the crosscut. Samples Nos. 801 to 805 were taken across 5-foot widths along the 40-foot crosscut.

The ore zone has a strike of N. 10 to 20° W. with a dip of schistosity averaging 45° to the east, and a plunge along the line of strike which ranges from 29 to 32° to the north. This low degree plunge has not been taken into account, and accounts for, along with the 45° dip, the termination of values in the drifts in each direction both south and north, since they have been driven on a horizontal and have passed through the extremities of the ore. In other words, the north drift has passed in its extremity over the orebody and the south drift has passed into the footwall due to following the post mineral fault and is under the orebody. Further, the small post mineral fault, which strikes nearly north and south and has a 60° dip, cuts the ore zone obliquely, has a movement of either the hanging wall down or the footwall thrust up, has caused a few feet of displacement, and adds to the difficulty of obtaining the original shape and measurements of the orebody. However, in comparing this orebody with the orebody at the Blue Jay mine, where as yet no post-mineral fault has been observed, its original shape was similar or the shape of a letter S drawn backwards, while the Blue Jay mine orebody has the shape of a letter S. Both orebodies have formed on similar structures and movement between blocks. However, the movement as to walls on each orebody has been reversed. Both orebodies end along the dip both up and down in a small fold, one the reverse of the other. These folds have been formed by pressure and movement along block walls and to follow on the continuation of the ore means to develop along the rake of the orebody.

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Mr. Homer Bradford was in charge of operations for J. L. Freeburn. Dr. Peterson of Ketchikan is also interested in the development. Their problems were taken up with both Dr. Peterson and Mr. Bradford. The present activity at the property is limited to the work of one man. Other development is uncertain. As a matter of advice, I suggested surface work in blasting off the tops or leached quartz outcrops in all the cuts such as the Mahoney cut, etc. One trench after blasting away the surface weathered quartz began, showing assay values as shown on assay sheet of June 4, Ketchikan Assay Office, marked Dr. Peterson Nos. 1 to 5, inclusive. These samples were taken by the workman over reported lengths of 5 feet each. Thus a continuation of this type of work will add to the value of the property. The number of surface outcrops indicates there may be several small ore shoots similar to the one described in the crosscut tunnel. Whether or not these orebodies will contain both commercial values and quantities of ore depends upon further development.

A total of four men were employed during the period of development underground from January 15 to March 14.

A sketch map was made of the crosscut tunnel and the new developments.

May 28 - Since the visit of last year to the Blue Jay Mine, located one and a half miles north of the Free Gold property on the west side of Helm Bay, a 25-ton mill has been erected and a total of 300 tons of ore has been milled. Both mill and mine have been closed since December 1, 1939. Preparations are being made to begin milling within a few days. This will consist of mining and milling one shift with a small crew. Considerable difficulty was experienced both in mining and milling. The mill heads were reported as ranging from six to seven dollars per ton. The concentrate ratio averaged 1-50, with concentrates valued at $100 per ton. Considerable trouble was experienced with the plates and a poor recovery was made, which resulted in operating at a loss for the above period. Further development in the mine consisted of an additional 15 feet of drift on the south end of the ore which followed a small stringer cutting into the footwall, one round into the hanging wall, 10 feet back from the south face, and four raises connecting with four small stopes. These stopes are up respectively 30, 25, 20 and 40 feet. The difficulty encountered in mining was due to not taking into consideration both rake and dip of the orebody. The first two raises on the north end were through the ore at distances of 15 and 25 feet up. The other two raises on the southern portion topped the ore at 35 and 40 feet above the drift on the dip and due to the shape of the S-type orebody are in the footwall. Further, due to the nature of the ore zone not being confined to definite walls and the major portion of the values in the schist combined in the pyrite mineralization, considerable low grade rock was broken and mined with the ore. The nature, shape, dip and plunge of the orebody was discussed with Mr. Libe, owner. He intends to mine and mill on a small scale and possibly sink on the ore.

A total expenditure, including cost of development, cost of mill and erection, plus tramway and buildings, including a small assay office, was reported as amounting to nearly $50,000. This amount has been well spent with considerable value to show. The failure at milling was partly due to Mr. Libe's illness during this period. Mr. Love, engineer and mill man hired for the Alaska Gold Mountain Mines, was in charge during this latter period. All machinery is housed in the mill building which is well constructed. Ore is trammed by hand to a 5'x30", 3/4" railroad rail grizzly, with fines dropping to a 35-ton ore bin, and the coarse is fed to a No. 3 Gibson jaw crusher. In the bottom of the ore bin a plunger type feeder, feeds a 25-ton Denver Iron Works ball mill. Four pound steel balls are used and the ball mill has a scoop feeder. The overflow of the ball mill goes to a spiral classifier with coarse material returning to the ball mill and fine pulp, 40-mesh, flows over amalgam plates. Below the plates the flow runs over matting and thence over a Wilfley table. The actual capacity of this 25-ton mill was reported as one ton per hour. The mill is powered by an 85 H. P. Cummins diesel from a main shaft line with unguarded belts and including a Rex two-cylinder compressor, single stage. A 110-volt direct current Westinghouse generator, which runs off the main shaft, is used for lights. The mill started September 2, 1939 and operated intermittently until December 1, 1939. A total of six men were employed during this period.

The property of the Sleeping Beauty Mining Company, Inc., located north and adjoining the property of the Blue Jay Mine, was not visited. Since January, three men were reported building road from the beach to the tunnel site, and at the present time were reported engaged in the building of two small bridges. A diesel engine and a double 8"x12" steam compressor was moved from the beach to the tunnel site where an 18'x32' compressor house has been built. The amount of underground development was reported as consisting of two holes drilled in back of the old tunnel. The compressor broke and is awaiting repairs. There has been considerable controversy as to how the road money has been spent.

Thomas and Harris Burchell are prospecting along the shores of Helm Bay. These two brothers are new-comers from Dallas, Texas.

The Gold Standard mine in Helm Bay has been idle since March 31, 1940. The property is still under lease to John Folwarzny who is awaiting the delivery of a new Diester concentrating table. He expects to resume milling sometime in June. A total of three men will be employed. A short inspection of the glory hole revealed ore on three faces. A small block of ore, lying rather flat, is located between the large glory hole and the east glory hole. The following is the total amount mined and milled at the Gold Standard during the years 1938, 39 and 40 to date:

Year	Men Employed	Tons Mined	Tons Milled*	Gross Returns
1938	3	937	750	$2,502.43
1939	2	578	472	1,479.78
1940 to Mar. 31	3	103	83	660.00
		1,618	1,305	4,642.21

*Approximately one-fifth of tonnage mined was sorted out at mill.

May 30 - Visited Anne Mine prospect.

The Anne Mine prospect consists of a group of six claims; namely, Anne, Jenny, Anne Nos. 1, 2 & 3, and Anne Extension, covering the old workings of the Anne prospect, located south of the Gold Standard and one and one-half miles inland from Helm Bay. This claim group is owned by E. W. Egtvet, Olaf Olson and R. Knuckolls of Ketchikan.

Development has been intermittent during the winter and spring with two men employed, and is confined to driving a crosscut tunnel at an elevation of 700 feet to cut the Anne vein at a point 212 feet below the surface outcrop in the vicinity of the Anne shaft. This crosscut tunnel measures to date 129 feet. A total distance of 168 feet is required to cut the Anne vein.

A mineralized zone, which outcrops a few feet above the tunnel in a small draw, was cut in the tunnel between points 45 to 60 feet from the portal. This zone consists of mineralized greenstone schist with narrow irregular quartz fillings. The zone strikes N. 27° W. and has a 50 to 55° dip to the northeast. Due to folding, the schistosity varies in the tunnel considerably.

Three channel samples taken in the tunnel across this zone, a total distance of 15 feet, and five-foot channel samples, gave the following results:

Sample 809, hangwall section taken at right angles to dip gave 0.26 oz. Au., 0.50 oz. Ag.

Sample 810, middle section next to 809 gave 0.06 oz. Au., 0.70 oz. Ag.

Sample 811, footwall section next to 811 gave 0.12 oz. Au., 0.10 oz. Ag.

A converted auto motor is used as a compressor and a jackhammer is mounted and used for drifting. A newly constructed cabin and necessary sheds are situated below the tunnel.

Since a high grade pocket has been reported to have been mined from the Anne shaft, it will be interesting to follow this development after encountering the Anne vein.

The Lone Jack prospect, located above the Anne prospect, is held by Ernest Steers and associates. Assessment work consisting of several cuts and 17 feet of underground development was done in the tunnel this last year. In the tunnel, which is a crosscut below the Lone Jack vein, there has not been sufficient development to cut the vein. Before much could be determined as to values on this vein, it will be necessary to blast fresh faces in the old cuts, as in their present condition, considerable of the mineralization has leached out, leaving almost barren quartz and schist. Also, cutting the vein in the crosscut tunnel will help considerably in determining the contents.

Located half a mile above the Anne prospect and two miles from the beach, west coast of Helm Bay, a discovery of gold quartz was made by Jack Miller while hunting in 1930. This property is now known as Miller Ledge and lode claims, and consists of three lode claims on the divide between Helm Bay and Smuggler Cove drainages and one claim on the beach at Helm Bay. The property is now owned by R. Novatney and Mrs. Oscar Holland of Ketchikan, Alaska. The showings consist of two narrow flat-lying veins 500 feet apart via trail, on the top of the divide at elevations of 1380' and 1500', respectively. The only vein of any importance is the lower vein. This vein is exposed a distance of 50 feet along its strike. Its strike is N. 42° E. and is folded on dip with the rake direction west, varying from 28 to 30° SW. Two cuts, one 12'x15' and the other 10'x15', expose the vein at each end and the cuts are 20' apart. In cut No. 1 on the northeast end the vein was followed down on the rake which shows a flat S fold. The width varies from 12" to 15" and consists of banded and slightly mineralized quartz.

Ref. #. 120

Three channel samples were taken across the vein in the bottom of the cut which gave the following results:

Sample 812, NW. end of cut No. 1, bottom across banded quartz, 15", 0.02 oz. Au., 0.70 oz. Ag.

Sample 813, Center of cut No. 1, bottom 12", 0.08 oz. Au., 0.70 oz. Ag.

Sample 814, SE. end of cut No. 1, bottom 12", 0.01 oz. Au., 0.80 oz. Ag.

Cut No. 2 exposes the vein over its length to the southwest end where the vein dips under a mantle of glacial gravel. The footwall is considerably schisted and slightly mineralized. Both walls of the vein consist of the greenstone schist formation which makes up the country rock in this section.

Sample No. 815 taken from cut No. 2, center, across 10" of banded quartz, gave 0.16 oz. Au. and 0.50 oz. Ag.

Sample 816, cut No. 2, was taken across 6'2" of mineralized schist on the footwall of the vein, and gave only a trace in gold and silver.

A hand-made two-stamp mill was erected on the claims below cut No. 1 in 1936 by T. Plunket and McDonald. This was operated by a small water wheel. A total production of $16 in gold was reported. Last year Novatney packed one ton of ore to the Gold Standard mill. Thirty dollars in gold was obtained and 100 pounds of concentrates that assayed $52 in gold per ton.

May 31 - Visited Alta claims and property of Alaska Gold Mountain Mines, Smuggler Cove.

Two lode claims known as Alta No. 1 and Alta No. 2 are located on the south slope of Gold Mountain and along the Helm Bay-Smuggler Cove trail at a point one and one-fourth miles from the head of Smuggler Cove. These two claims are held by J. Locken and W. A. Arnold of Ketchikan. This property was formerly known as the Meadows and was discovered by R. Knuckolls of Ketchikan.

At an elevation of 620 feet a tunnel 35 feet 6 inches was driven at an early date to cut a silicified and mineralized zone in greenstone schist. Two feet of quartz and calcite stringers in a folded zone show in the face of the tunnel. A channel assay was reported to have given returns of 70 cents per ton in gold at this point. In the cut above, which is 12'x20' and 40 feet above the tunnel, a two to four inch quartz vein cuts down through the face of the cut and the silicified zone. This small vein contains visible free gold and high assays have been reported. Assays of the silicified zone in the greenstone schist were reported as low. The schistosity of the greenstone schist strikes N. 20° W. and the dip is variable to the west. The zone appears to have a rake to the SW. Thus the tunnel below, driven in a northerly direction, cuts only the footwall of this zone.

Ketchikan 120

This years assessment work was confined to a quartz cropping, located 200 feet northeast of the Alta or above tunnel. This showing consists of a cut 60 feet in length between elevations of 760 to 820 feet. This is a parallel zone to the tunnel zone, striking N. 15° W. and has a vertical dip. Small white lenses of quartz are inserted as independent bodies in the hanging wall of the zone. Narrow seams of purplish to bluish quartz, some measuring up to one inch in width, were noted throughout the zone. This type of quartz appears to be of a later generation, and is an unusual and uncommon occurrence for this region.

Sample 817, in the upper cut, taken 20 feet up from the bottom, across a 12-inch quartz lense, gave returns of $10.50 in gold and 77 cents in silver.

Sample 818, taken in top of upper cut across 21 inches of quartz gave returns of $1.75 in gold and 49 cents in silver.

Sample 819, taken in upper cut, 20 feet down from the top across 3 feet of mineralized schist and bluish quartz stringers gave $2.10 in gold and 49 cents in silver.

The property of the Alaska Gold Mountain Mines, Ltd. was under development last year until November 18, 1939 with a crew of six men. Since then one and two men have been maintained on the property doing trail work. During development last year a total of 448 feet of crosscut, 25 feet of drift and 12 feet of raise was driven. The greater portion of the crosscut was off the main tunnel level to the west vein. Here a schisted and silicified zone was cut from which across the center 4 feet an assay of over $5 in gold per ton was reported. This was the extent of the ore found. A mill building 32'x38' was partly constructed. Mr. H. Bradford reports the company has purchased a 4'x6' Marcy ball mill, jaw crusher, table and flotation cells. This machinery has not, however, been shipped to Alaska. The company is under investigation at the present time by the SEC. and reports were to the effect that the mine is to undergo an examination by the Commission.

This year the Thorne Arm properties are idle with the exception of assessment work by E. Hamlet and associates.

In the Hyder district the only active development reported was on the Riverside. This property has been optioned by a man by the name of Scott from San Francisco. He was reported to have five men on the property and expects to develop and operate the mill.

June 3 - At the request of Mr. B. Libe of Ketchikan for advice as to whether or not to lease from the Department of the Interior on a royalty basis three square miles inland from Nadzahee Cove on the east side of Annette Island, several outcrops of a promising quartz vein were examined. Apparently Mr. Libe has been offered the first chance for a lease of this ground by an official of the Interior Department. Terms, conditions, and stipulations are as yet unknown by him. The outcrops, which show scattered specks of gold, were discovered by Mr. Libe in 1920. During the above year two claims were staked; namely, Lone Wolf Nos. 1 and 2. He later attempted to expose the showings, but was notified to cease operations.

The outcrops are located between elevations of 250 to 500 feet and one and one-fourth miles inland from Nadzahee Cove. They consist of several quartz outcrops or lenses in a highly schisted and fractured band of greenstone between two phyllite bands. The numerous scattered quartz lenses and bunches appear to be directly off the end of a small granite or diorite tongue which joins the main mass to the south. In tracing the zone to the north the quartz bodies gradually become less and a vein forms on the hanging wall of the greenstone band in contact with the phyllites.

This vein was traced by float and outcrop north for a distance of 2200 feet. The strike is N. 30 - 40° W., and the dip varied from 26 to 28° NE. The quartz croppings show visible gold in several localities. The mineralization generally is weak, however, by blasting into the surface quartz, a greater ratio of mineralization could possibly be obtained. With the small amount of visible outcrops and stripping done, and only one outcrop exposed to show the nature of the ore, it is only a guess as to the possibilities of the vein making a mine. In fact only in two places could a fair channel sample be obtained. Sample 820 was taken across the vein width of 9 feet in the cut 2200 feet north of discovery, on the shore of a lake at the foot of Bush Mountain, El. 250 feet. This sample gave returns of 98 cents in gold and silver. The vein here contains a greater amount of pyrite than at discovery where sample 821 was taken. The presence of considerable barite was noted in this cut, and this mineral appeared to be lacking in the outcrops near discovery. Sample 821, taken across discovery cut 7'8" gave returns of $46.06 in gold and silver. The quartz is fresh, white to dark blue in color, and contains small granitic and schist inclusions with a considerable amount of light silvery mica contained mainly in the fractures. A large sample is on display in the Juneau office. It may be stated that, with the indications as observed from the number of outcrops, this prospect warrants development to the extent of determining the amount and value of the ore. This information could be most economically obtained by diamond drilling due to flat dip. Then, with the knowledge gained, and compared with all terms and conditions of lease, could a decision be made in regard to leasing from the Interior Department. This was the advice given to Mr. Libe.

June 4 - In company with Mr. U. S. Rush, the writer proceeded to the Flagstaff mine. It appears that Mr. Rush has been studying this property and the surrounding country, for some New York interests, who are apparently at present heavily interested in the Flagstaff mine.

The Flagstaff Mining Company has an expenditure to date of $160,000. The returns from ore milled and concentrate smelter returns have only been a few thousand dollars,* on which a ten per cent royalty has been paid the owners, and nothing has been paid on the original purchase price of $150,000. The royalties do not apply on the purchase price, however, the company may continue to mine as long as royalties of ten per cent of the gross returns are paid, and the mine operated nine months per year.

Apparently, since the mine was not producing a profit and the expenditure of more capital was needed this spring, the New York interests sent Mr. E. M. McCurdy, engineer from San Francisco, to make an examination and investigation. This examination, which was wholly for the

*For exact figures on production and expenditures, costs, etc. refer to copies of cost sheet, etc. by McCurdy on file.

purpose of determining returns on already invested capital, and strengthened by the numerous mistakes in mining, milling and the expenditure of development capital, gave the above-mentioned recommendation, which has resulted in closing operations since that time. There was considerable comment in the report as to the inaccuracy of the mine assays, the mill operation and the unaccounted-for $43,000 of the total sum spent. The cost of this examination was reported amounting to over two thousand dollars.

No doubt the New York interests have more knowledge and a better sense of judgment as to the property and have decided on the present examination by Mr. U. S. Rush. With these conditions known and a fair knowledge of the property, the writer discussed the whole situation with Mr. Rush. Besides giving him verbally all the information regarding the property that was known, the writer went over the greater portion of the workings with him. It was pointed out to him the inaccuracy of charging all development costs on a few months of poor milling, and the small amount of development, against the possibilities. Further, I actually showed him where in the last 50 feet of tunnel work the drift turned 15° to the south and followed a vein which leaves the diabase dike and goes into the footwall, and contains no values, while ore shows in the dike on the surface further in the mountain. This fact was not mentioned in McCurdy's report.

While there are many angles and considerable could be written concerning the causes of the present conditions, at least the greater portion of these conditions would not have come about, had they taken this department's advice and obtained a capable mining man in the beginning instead of trying to operate among themselves. Who these New York interests are, the writer did not learn. However, the interests are all held by a small group of individuals and no stock has been sold to the public.

In the mine the tunnel has been advanced to a total length of 1120 feet. The tunnel length was 485 feet when the company took option July 28, 1937. During the last year's work, three additional raises have been driven to heights averaging 55 feet. This makes a total of six raises. A 50-foot Winze was sunk on the vein last winter at a point 880 feet from the portal. Quartz shows down its entire depth ranging from 18 inches to nearly 3 feet and was reported as good ore. At a point 900 feet from the portal a cross-vein was encountered which contains only small values, and beyond which no values were encountered in the tunnel on the main vein. (Note McCurdy's map of workings).

Safety conditions in the mine are good. The raises are timbered and lagged, ladders good, and the drift timbered occasionally. The winze is not timbered, but has good walls and stulls on the footwall contain ladder and bucket guides.

The additions in the mill consist of another 100-ton ore bin, 3x4' Morse Bros. ball mill, Dorr classifier, and amalgam plates. The Caterpillar motor has been replaced with a 90 H. P. General Motors diesel. An Ingersoll-Rand type 10 - 440 cu. ft. double-cylinder compressor has been installed. As a result of both mills, the compressor and all other movable milling equipment being powered by the diesel, it has been overloaded and has given considerable trouble. The road was completed last summer from the lake to the mine, and trucks now run from the mine to the beach, with barging across Karta Lake on a powered raft. A total of four men are at present maintained on the property.

KF-119-S

June 5 - Visited Kasaan Gold Mine on Harris Creek. The faulted block of ore, formerly referred to as the Free Gold or cross-vein on the Kasaan Gold property, has been definitely proven to be a faulted segment of the hanging wall or upper vein of this property. The vein in place was discovered underground by following the faulted segment to the northeast, as was suggested two years ago. The fault was of a hinge type of recent origin and due to gravity. In following the faulted segment northeast the vein narrowed, turned a 60° angle and the bottom extension was on a normal strike of N. 10° W. and has a dip of 30° to 40° NE. Thus with the known position underground, this was projected outside on the surface and by projecting the strike down the slope to the mill level, a new tunnel was started and the vein was encountered in 20 feet from the portal. This tunnel portal is 260 feet from the mill and 35 feet vertically below the working tunnel. The mill tunnel is in only 20 feet. An additional 125 feet of drifting has been done in the above working tunnel since last year. Last year during a four-month milling period a total of 1,000 tons of average $12 per ton ore was milled. This year Dawson expects to mill 1200 tons of about the same grade of ore.

Since last year a new 15 H. P. General Motors diesel motor has been installed in the mill, which is direct-connected to a 10 K. W. generator, which furnishes power to the mill. A new Denver Equipment 8x12" jig has been installed and handles the table tailings and a much better saving was reported. Due to the increased efficiency in the mill, it is run with the labor of one man. Thus the labor required to operate one shift in mine and mill, is three men.

The present status of the mine is an approximate 5,000 tons of ore blocked out in the faulted block ready for stoping. This next winter development will continue on the mill level tunnel on the ore in place and will increase the reserve. However, by adding the costs of new equipment and development costs onto the mining and milling costs, it has amounted to the total recovery from the ore.

A new aerial tram 2,650 feet in length of 3/4" cable and 5/16" running cable, powered by a 3 H. P. gas engine, extends from the mill to the valley flat of Harris Creek.

KX-119-72

June 6 - A few hours were spent on the Cracker Jack and Hope prospects on the return on foot to Karta Bay.

Last season several surface cuts were put down on the two parallel veins on the Cracker Jack property. In these cuts both the hanging wall quartz and footwall quartz with the greenstone dike in the center is exposed. In following the assays of samples taken by the McMickens in these cuts, it was noted that the footwall quartz contained the highest values. The footwall quartz is very narrow, averaging possibly 12 inches and assay reports showed up to 14 ounces of gold. The surprising feature is that at the point where the 14 ounce sample was taken, and in fact all the other high assay points, there was no free gold showing. Picked samples were taken and tests for tellurium were made with negative results. A silvery bright metallic mineralization was noted. Another factor noted on the assay returns was that, by weight, almost an equal amount of silver and gold was obtained. The 14-ounce gold assay also gave a 16-ounce silver assay. The values in the hanging wall quartz were low. The owners were advised by letter to continue the surface trenching and stripping.

KX-119-20

The Hope mine operated last year by Ericson and Locke is now being operated by the owner, B. LeBrant. It was reported that a total production in four months last year netted the lessees a total of $5600 in gold. The ore averaged over $50 per ton and was mined near the surface in the top of the old stopes. Very little production is expected this year.

KX-119-1

June 7 - Visited the Salt Chuck or Goodro mine. The Alaska Gold Metals Company has been operating continuously since last year in the mine with mill operation intermittently. A total of 900 to 1,000 tons is milled monthly which ranges in value from $3 to $5 per ton in gold and palladium. The development work in the mine has been mainly stoping with raises. A total of 1300 feet of raises have been driven since 1935. This stoping has been along the edges of the glory hole which has been enlarged considerably. The costs of mining and milling were reported as averaging $1.60 per ton. A total of four men are employed, working only one shift with a total of 60 man shifts in the mine and 12 to 15 shifts in the mill per month. The amount of known ore in the vicinity of the glory hole consists of 30,000 square feet. The depth of the ore is unknown. In all the outcrops on the Goodro property, it has been estimated that a total of 200,000 square feet contains ore. It was noted that all mining is being carried on with dry machines. Two days after the writer's visit, the property was examined by Mr. Richelsen, formerly of the Kennecott Copper Corporation.

George Jarvis is doing assessment work on the Flora and Nellie claims with the aid of one man this season.

Jim Matuska spent most of last summer packing and installing a small two-ton mill on the Cascade property northwest of the Hope. This season he expects to operate.

June 9 - Examined the Shoenbar property. The Shoenbar property, located back of the town of Ketchikan was examined in company with Dr. Peterson. Four of the patented claims; namely, the Utica, Tonowanda, Nevada and Tuscarora, were bonded to Thomas Drayton of Fairbanks this spring. The bonded price was $50,000 to be paid by a ten per cent royalty on the gross production. The present lessee has a two year bond and his intent is to sell. In fact the property has not even been examined by the above party, and as yet there are no signs of activity. There is considerable doubt on the part of the owners as to the lessee's intent.

Two shaft dumps and one opencut were examined on the property. No. 1 cut is located along the trail leading from the city park at an elevation of 160 feet. This cut is 30 feet long and 4 feet deep. It exposes a portion of a mineralized, silicified schist zone which is impregnated and contains massive seams of iron pyrite. The schistosity of the schist strikes N. 36° W. and has a dip of 60° NE. Sample 826 consisted of a 5-pound sample taken across the wall of the cut of unoxidized schist.

No. 1 shaft and cut, located 300 feet northwest of the No. 1 cut, is in the same mineralized zone. The elevation of the shaft is 220 feet. The shaft is filled and the depth unknown. From the size of the dump, it was judged to be possibly a hundred feet or more. A zone across the shaft on the surface, is more highly schistose up to a width of 8 feet and contains some chalcopyrite with considerable pyrite. This zone appears to be located near the center of the mineralized zone which extends across a width of 200 feet. Sample 825 was a 6-pound sample taken from the dump and represents the value of the mineralized schists.

No. 2 shaft is located 500 feet north of No. 1 shaft at an elevation of 210 feet. This has a reported depth of 30 feet. The formation is less schistose here and ranges from greenish to bluish in color. The amount of iron pyrite is greater than contained in the schists at No. 1 shaft. The amount of associated chalcopyrite is less at No. 2 shaft. Sample No. 824 was taken from gathered pieces on the shaft dump which contained nearly massive sulphides. This sample will represent the approximate value of a sulphide concentrate made from this ore.

Sample 823 was a 6-pound sample gathered off the dump, representing the grade of ore. Thus, if sample No. 823 with a greater amount of sulphides from No. 2 shaft gives less values than sample 824 from No. 1 shaft with less mineralization, it will show that the amount of gold is not in proportion to the iron sulphide content. It will also show that the gold content increases with the pressure. A few years ago an attempt was made to cyanide the No. 1 shaft dump. This process consisted of throwing the dump run muck into cyanide tanks. One shipment of precipitate was shipped through the bank. This precipitate was reported as only containing a trace of gold.

Mr. U. S. Rush made a geological map of the Shoenbar property, along with a report several years ago. This was said to be unfavorable.

June 11 - Ketchikan to Wrangell.

Jack Anderson and Carl Thygenson are prospecting in Bradfield Canal, southeast of Wrangell. They report having found several occurrences of a silver-lead ore in greenstone and limestone, the latter occurring as roof pendents in the batholith. The discoveries, as they reported them, are not of sufficient size to warrant an examination. They further report the occurrence of stannite in the vicinity of a granite stock on the north side of the canal near the head. They expect to prospect this stock further for cassiterite and if found will send samples.

June 12 - Visited E. Brown and Dr. A. B. Kearsley properties, Pats Creek, Wrangell Island.

Erwin Brown has a gold prospect which he discovered in 1935 on the Obsidian claim located 1,000 feet north of the mouth of Pats Creek on the west side of Wrangell Island 12 miles south of Wrangell. The showing consists of a rock cut at the face of a low bluff on the contact of granite and shale or slate sediments. The contact is broken and irregular with numerous large inclusions of slate within the granite. The contact phase of the granite is pegmatitic in nature consisting of segregations of white to pink feldspar and white to clear quartz. A pyrite mineralization was noted in the contact phase of the granite and in the hardened slates. A few small seams were noted in the granite. Brown reports assays up to $150 in gold per ton from material taken from the seams. Assays of slate and granite were reported as containing very low values in gold. Several reference samples were taken for inspection.

In 1934 Brown found another similar showing on a similar contact on the north bank of Pats Creek, one-half mile up from the mouth and 40 feet below the Government trail. In this showing he interested Dr. A. B. Kearsley of Wrangell. Several claims were staked and the discovery claim is known as the Sarah Anna claim. This discovery showing

constitutes the entire discoveries and showings on the group according to Brown. A cut into the bank 20 feet wide was done by Brown. This cut reveals a contact of granite and black slate on an irregular contact with inclusions of slate in the granite, and small irregular quartz feldspar veins into the slate. An east-west post-shear has schisted and altered 5 feet of granite along the contact. This sheared and soft granite is slightly mineralized. Brown claims that from samples of this sheared granite Dr. A. B. Kearsley obtained the reported niobium, radium, platinum, gold and silver. Brown further claims his assays showed a gold and silver value of only $2 per ton. Dr. Kearsley was reported to have conceived her idea of niobium in an attempt by herself to extract gold from the rock by boiling in acid. During the process surgical instruments were used to handle the rock pieces in the acid, and a disintegration of portions of the instruments and the clothes she was wearing took place. As a result, samples were reported to have been sent outside for analysis where the above elements were discovered.

A display of the granite with all phases of contact including the black slate was brought to the Juneau office.

Brown has no faith in his findings and reports no work done on the property since 1937.

KX-119-150

June 15 & 16 - Upon the report by Ernest Steers of Helm Bay that numerous small galena stringers with high silver values occur on the top of Pin Mountain on Coronation Island, a delayed trip was made to the island. Pin Mountain is located on the west side of Egg Harbor on the northwest end of Coronation Island. Mr. Steers was engaged by the Coronation Mining Company in 1903 to transport several tons of galena ore from Egg Harbor to shipping points. The examination was made to examine these occurrences and the old workings of the Coronation Mining Company. Pin Mountain consists of limestone varying in color from gray to bluish gray, and several buff to yellowish hues. The mountain is bluffy on the Egg Harbor side, steep with timber line at 1,000 feet. The limestone beds have a northwest-southeast strike and are tilted to the west. Several cross fissures cut the limestone at a strike varying from N. 50 to 70° E. and with nearly vertical dips. Several of these fissures contain narrow dikes of greenstone. Both the greenstone dikes and the walls of limestone have been altered both by solutions and some movement. A slight mineralization of pyrite was noted, and considerable iron oxides with a little associated secondary lead in spots along the fissures. Occasionally bunches of nearly pure calcite containing a very slight mineralization were noted. The dikes appear to be fissure fillings of lava and while the major lead showing mined was alongside a greenstone dike, they are not believed to be genetically related.

Three tunnels and one small glory hole comprise the old workings of the Coronation Mining Company. The lower, or No. 1 tunnel, located at an elevation of 780 feet, was started on the footwall side of a fissure in a steep ravine. This fissure is in limestone striking N. 70° E. and contains calcite with a little quartz in bunches and a weak mineralization of iron pyrite and galena. The tunnel was driven on a bearing of S. 73° W. for 40 feet, thence S. 45° W. for an additional distance of 31 feet. This put the face of the tunnel further into the footwall than the portal. The calcite bunches are apparently large for at a point 40 feet from the portal some calcite on the north wall is showing. It contains a little iron pyrite, but no lead is showing.

The upper tunnel, elevation 1020 feet, on a level with the upper terminal tram tower, which is still standing, has been covered with slide material and is inaccessible. The outcroppings in the fissure above the tunnel show a 4-foot greenstone dike. This dike is soft and highly decomposed on the surface and contains considerable iron oxides. Small amounts of pyrite, secondary lead and small amounts of galena were observed along the walls with calcite bunches. While the lead and iron minerals are partly a replacement of the limestone, the small ore lenses which were apparently mined in the tunnel below were apparently more of a filling in an open fissure along with calcite.

Below the upper tunnel at an elevation of 820 feet, and located 400 feet below, a middle tunnel was driven along a dike for 400 feet, thence a 60-foot crosscut to the north, which cuts three small dikes, thence the drift continues, but is caved. No stoping or ore shows in the uncaved portion.

A small glory hole is located 300 feet southeast of the middle tunnel at an elevation of 800 feet, and along the trail. This glory hole is 12 feet long, 10 feet deep and 5 feet wide. A few tons of high grade were mined and the ore occurred as a kidney in blue limestone and is not associated with any nearby dike.

Directly below the upper tunnels, and at the base of a 300-foot bluff on the beach, several limestone caves extend 200 to 300 feet into the bluff. In one cave, 250 feet from the mouth, a greenstone dike was found on which a 60-foot tunnel has recently been driven. Large bunches of calcite occur on the tunnel walls, but no evidence of lead was found.

Thus these small lead deposits mined by the Coronation Mining Company were formed in openings in fissures, some of which had been pre-filled with lavas and some openings formed by movement. The deposits are of supergene origin and occur in part with secondary minerals. The galena stringers on the top, after considerable investigation, were not found.