IR 195-21

SUMMARY REPORT OF MINING INVESTIGATIONS IN THE SITKA AND JUNEAU MINING DISTRICTS, VICINITIES OF YAKOBI, CHICHAGOF, KRUZOF, KRESTOF, HALLECK AND ADMIRALTY ISLANDS
and
ITINERARY OF J. C. ROEHM, ASSOCIATE ENGINEER, TO COMMISSIONER OF MINES, TERRITORIAL DEPARTMENT OF MINES, JUNEAU, ALASKA
April 21 to 30, 1938.

April 21. Leave Auk Bay via MS. Treva C at 8 a.m. Arrive Lisianski Inlet 7.30 p.m.

April 22. Leave Lisianski Inlet 6 a.m. Arrive Lisianski Strait 7 a.m. Leave beach 7.15 a.m. Arrive tunnel Bohemia Basin 9 a.m., property of National Nickel Corporation, S. H. Vevelstad and Associates.

Considerable snow was encountered in this basin above 500 feet in elevation. A surface examination of cuts and outcrops could not be undertaken. Thus, this examination was confined to this Bohemia tunnel. It is located on the Bohemia group of claims at an elevation of 900 feet. It is reached via trail from a small cabin located on the beach in Lisianski Strait 2½ miles to upper camp at the head of Bohemia Basin. Thence a blazed trail leads up a steep slope, approximately 1500 feet to the tunnel site. This tunnel has a length of 165 feet, and is in norite. The first 65 feet from the portal shows a very lean mineralization which increases to nearly massive to a point 145 feet from the portal, and thence decreases the remaining 20 feet. However, judging from the mineralization the orebody appears to have a width of approximately 80 feet. The pegmatization that accompanies this mineralization shows very definitely that this deposit has been formed by magmatic segregation during the cooling of the apparent norite-gabbro intrusive. The tunnel walls, due to exposure, are oxidized and the greater amounts of mineralization can be determined by the amount of oxidization. Ten-foot channel samples were taken, beginning at the face for a distance of 90 feet. Small slip fractures occur at irregular intervals and two narrow veins of feldspar, biotite and possibly hyperthene were noted. A sketch showing location of samples with assay returns is to be made. Two hundred and forty-five pounds of ore was obtained for International Nickel Company for a metallurgical test.

April 23. Packed remainder of ore samples to beach. Leave Lisianski Strait 1 p.m. Arrive Waterfall Cove, Slocum Arm 7 p.m.

April 24. Leave Waterfall Cove 7.30 a.m. Arrive Island Cove 8 a.m. Visited the operations of the Cobol Mines, Inc.

KA 114-9

The property of the Cobol Mines, Inc. consists of 11 lode claims, located on the shore of Island Cove and extending inland. The latter is located on the east side of Slocum Arm, two-thirds of the distance from the mouth toward the head on the west coast of Chichagof Island. This property prior to 1937 was known as the Slocum Grunter, and it is owned by Geo. Bolyan and Frank Cox. Reports were heard to the effect that this company began operations with a cash surplus of $70,000. Last year operations began, consisting mainly of construction. The camp located on the beach has been enlarged from one to five buildings consisting of a living house, cook house, 20x20' bunk house, tool house and compressor house. Two thousand feet of 2-inch pipe line was laid from the beach to the lower tunnel. Eleven hundred and fifty feet of rail tramway was built from the beach to hoist station, two-thirds the distance to the lower tunnel. From this hoist station 750 feet of aerial cable transports supplies to the lower tunnel, elevation 550 feet. A double drum hoist, driven by a Model T Ford engine operates both trams. Trucks are used on the tramway and two gasoline drums are used as buckets on the aerial tram. A small blacksmith shop is located at the portal of the lower tunnel.

In the upper tunnel, elevation 960 feet* a total of 10 feet of drift and two stope rounds has been done since the visit by the writer in 1936. The greenstone dike still shows in the face with a small amount of quartz, both somewhat crushed.

The lower tunnel, elevation over 400 feet, 350 feet vertically below and 1,000 feet horizontally south, was started last season with intermittent work during the winter. This tunnel has a total length of 479 feet 6 inches. It has been driven alongside the vein in the north wall on a slight angle toward the vein. The vein was intersected at a point 386 feet from the portal. Here the vein shows as a portion of a shear zone, showing 12 inches of crushed dike material, crushed quartz and soft gouge material mainly of graphitic crushed wall rock. The total width of this shear zone is not exposed. Small veinlets of calcite occur throughout the shear. Thus the last 93 feet follows the main shear or vein. Gold colors were reported panned from the gouge material and crushed quartz. Three channel samples were taken across the vein. A sketch showing sample locations in the tunnel is to be made.

The machinery on the property consists of a three-stage Gardner-Denver compressor which develops 235 pounds of pressure. This is run by a Caterpillar Diesel, 80 H. P. V-belt drive. This unit uses 3 gallons of diesel oil per hour. This unit also runs a 4.5 KW. generator, 125 volts, for lights. A sawmill is operated by a Fordson tractor, and it is located alongside the tramway on the beach. There is a double drum hoist at the hoist station, formerly mentioned.

Leave Island Cove 1 p.m. Arrive Sitka 7.30 p.m.

*Report of Slocum Grunter by J. C. Roehm, 1936.

April 25. Leave Sitka 10 a.m. Arrive property of Baranof Mining Company, west coast of Halleck Island, 11.30 a.m.

The property held by the Baranof Mining Company consists of 27 lode claims, located on the south end of Halleck Island. This island is located 12 miles north of Sitka between Krestof and Baranof islands. The showing and site of operation is located on the west coast of Halleck Island on Olga Passage, one mile north of the southern end.

The discovery, which consisted according to reports, of a small quartz showing approximately six feet long and two to three feet wide, was found by Mr. Lawrence (native of Sitka) and associates several years ago. One claim was staked, but no work was done. During the season of 1936 this discovery was restaked by G. Wacker and (Squaw) Brown of Ketchikan. Interested with the above were H. McCain and F. Heckman. Prospecting followed last year and a cut on the beach was put in on the showing. During the process of blasting this cut all the quartz showing was removed, according to reports. This season machinery has been installed and a tunnel approach at drift wood level was in progress on date of visit. The showing consists of a rock cut located between mean and high tide levels and exposed 30 feet, part of which was covered by dump and partly filled with loose rock. This cut intersects a two-foot dike of greenstone. The latter is broken, folded and displaced at intervals. This trench follows a shear zone that strikes approximately S. 80° E. The dike strikes N. 63° W. and has a dip that varies 50 to 60° E., and is exposed a distance of 40 feet. On the northwest end this dike curves to the north, narrows and apparently ends. To the southeast it joins with an apparent large irregular mass of the same composition. The shear zone and dike are inclosed in graphitic clay slates. The slates contain a schistose structure and are sparsely mineralized. The formation strikes N. 40° W. and due to highly developed schistosity and folding, the dip was not determined. The tunnel portal is located 40 feet east and slightly south of the cut at the base of a bluff. Work was in progress on the tunnel approach which appears to be following the shear and on the contact of the dike and slates.

A sample was taken in the face of the tunnel across two feet of fractured greenstone and slate with quartz and calcite veinlets. The largest fracture was less than one inch in width. A channel sample across 54 inches of mineralized slate in the cut at a point 25 feet from the northwest end was taken. This is reported as the location of the quartz discovery. A sketch was made of the showing, tunnel and buildings surrounding. The buildings surrounding consist of a compressor house, 12x20', oil house, blacksmith shop, dock, house on scow, powder house (600' away), and bunk house (900' away).

Five men were employed on date of visit. Machinery consists of a new Gardner Rex 8x6, two cylinder compressor, direct connected to old 40 H. P. Standard gas engine, and a 16.94 H. P. Union gas engine (old) geared to a 20" single drum hoist. A jackhammer is used for drilling with detachable bits. The original plan of operation was to sink a shaft on the discovery. This has been changed to a tunnel destined to follow the shear. This showing was reported the only one on the property on which work had been done. Another showing was reported on the east side of of the island as the continuation of the shear. Due to the absence of the owners this showing was not examined.

Leave Halleck Island 3 p.m. Arrive Dry Pass, Kruzof Island, 4 p.m.

April 26. Visited Little Blonde and High Grade groups of claims.

The Little Blonde group of two claims is located 2½ miles inland west of the south end of Dry Pass on Kruzof Island. The showing is located within 150 feet of the top of the ridge north of Eagle River. The elevation is approximately 1500'. This group is owned by Joe Hill and associates. The showing was discovered during the summer season of 1935. Since discovery only assessment work has been done. This has consisted of opening up the vein along its strike in a steep ravine in which a small stream of water flows. The showing consists of a quartz vein on a contact of fractured greenstone lava and schisted argillites. The vein is exposed by opencuts for a distance of 150 feet, and it can be traced down the ravine for nearly a thousand feet. The vein strikes N. 24° W. and has a flat dip of 38° W. The quartz varies in width from 3 to 10 inches, and has a hanging wall gouge and clay seam that varies from 6 to 12 inches. The quartz has free walls and considerable horizontal movement shows on the hanging wall. The gouge material consists of clay, altered greenstone and altered graphitic argillite. The mineralization is arsenopyrite in individual crystals and small massive bunches with minor amounts of galena and pyrite. The arsenopyrite crystals show shearing, showing that at least a part of the movement has been post mineralization. Three cuts comprise the showings on this vein. The upper cut exposes the vein for 30 feet. The middle cut in the bed of the creek exposes the vein for 12 feet. This cut is located 80 feet down the creek from the upper. The lower cut exposes the vein for 10 feet and is located 40 feet below the middle cut. Six channel samples were taken in these three cuts.

The High Grade group of two claims is located across the valley of Eagle River from the Little Blonde group. This group is also 2½ miles from the southwest end of Dry Pass and approximately a mile south of the Little Blonde group. The showings are near the crest of a low ridge (top nearly 500 feet) on the north slope. This group is also owned by Joe Hill and associates.

The showing consists of a 100' cut through overburden to bedrock exposing a 5-foot shear in argillite. This shear zone cuts the strike of the formation at a 16° angle. The formation strikes N. 45° W. and the shear zone strikes 29° W. with a 54° dip to the east. The hanging wall of the shear consists of a stiff blue graphitic clay containing quartz and calcite blebs. The center consists of a greenish to gray gouge. The footwall is schisted argillites. Several banded quartz boulders were found in the creek and cut. These contain a good mineralization of pyrite, arsenopyrite, sphalerite, galena and free gold. Assays from boulders were reported up to 3 ounces of gold. Considerable fine gold can be panned from the disentegrated bedrock. Gravel, boulders of greenstone and graywacke cover bedrock. The gravels are covered with 6 to 10 feet of recent volcanic ash. Other small cuts have been put down along the creek over a distance of 300 feet. No quartz veins have been found to date. One channel sample was taken across the shear.

The Complex group, located one mile inland from the center of Dry Pass, was not visited. The showings are located two miles north of the Little Blonde group. The group consists of two claims and is owned by Joe Hill and associates. The showings were reported as consisting of a banded quartz vein exposed 80 feet in argillites. The quartz varies in width from 2 to 8 inches. The strike of the vein was reported approximately N. 15° to 20° W. and a nearly vertical dip. The vein contains a gouge on the hanging wall and the vein shows movement. The mineralization consists of pyrite, galena, sphalerite and free gold. Gangue minerals are milky white ribboned quartz with a little calcite. This vein was reported as averaging $20 in gold per ton over its entire exposed length. Two samples taken by Wilcox across 6 and 8 inches of quartz gave $9.45 and $3.15 gold and silver, respectively.

The Krestof group of claims was staked last June, (1937) on the discovery of gold bearing quartz stringers and considerable float, located on the beach in a small bay on the west side of Krestof Island. This bay is located one-half mile southeast of the westerly end of Sound Island. The property is located 14 miles northwest of Sitka. The first group of claims staked following discovery have been restaked by the Hirst-Chichagof Mining Company, which optioned the property. The claims are called Krestof No. 1, etc. The total number is unknown. The discovery was made by Cedric Davis, Leo E. Young and John Thunes, sole owners of the property.

The showings total three in number, two of which are on Discovery claim (Krestof No. 1) on two rock points outcropping on the beach 350 feet apart, and one showing of five trenches on a small quartz vein on claims Krestof Nos. 4 and 5. The latter is located 1500 feet south of the above. The discovery showing, located on Discovery Point, consists of two parallel cross stringer quartz veins with a third vein intersecting No. 2 vein at a point 12 feet west of Discovery post. No. 1 vein is located 60 feet north of Discovery post and cuts across the barren point, exposed for 80 feet, and continuing into the water on both ends. The highest point is 6 feet above high tide level. This vein strikes N. 60° E. and dips 60° SW. It consists of banded quartz with free walls and is well mineralized with arsenopyrite and free gold and varies from 4 to 6 inches in width. This vein is in graywacke over its exposed length, cutting into slates in both ends. No. 2 vein, located 60 feet south of No. 1 and directly under Discovery post is exposed in a trench 50 feet. This vein is nearly parallel to No. 1 vein, striking N. 55° E. and dipping approximately 70° E. This vein was not opened up sufficiently to determine accurate dip. The formation is graywacke with schist developed for a few feet on each wall of the vein. The quartz varies from 6 to 8 inches in width. The mineralization of arsenopyrite appears to be less than in No. 1 vein. However, free gold shows in several places. No. 3 vein, which intersects No. 2 vein at a point 12 feet west of Discovery post on the footwall, is exposed a distance of 35 feet. Its strike is N. 83° E. and it appears to have nearly a vertical dip. The formation is graywacke schist, which contains sparse mineralization. Evidence of float shows that there are other small veins higher up on the point which are covered. Between Discovery point and the second showing on the next protruding point, 350 feet northeast, the formation is schisted soft slate. Numerous quartz boulders occur on the beach between the two points. These boulders are the result of erosion by wave action on the slates from the cross stringer veins. Thus, the veins on Discovery point strike toward this second point and possibly are continuous. This second point is another band of graywacke. Here seven small quartz stringers and irregular small bunches of quartz are irregularly distributed over a distance of 20 feet in width. This band of graywacke is 40 feet wide. Here again the veins cut across the formation and point. Some appear to pinch out in the slates. The veins vary from 4 to 6 inches in width. Some small bunches of quartz have widths up to 12 inches. No work has been done on these veins. Due to the oxidized nature of the outcrops no samples were taken on this showing. The graywacke between the veins is fractured and slightly schisted and contains a sparse mineralization. The quartz itself contains a sparse mineralization and some is rather barren. No. 3 showing, located 1500 feet directly south of No. 2 showing inland and 300 feet east of the west beach, elevation 125 feet, consists of a small banded quartz vein exposed in five trenches over a distance of 300 feet. This vein cuts the schistosity at a low angle, and the strike, which is slightly west of north, conforms nearer to the ore producing veins in this formation.

Trench No. 1 has a length of 60 feet and has filled by caving. It is the furthest south trench. No quartz shows on the dump. Trench No. 2 is located 70 feet north of No. 1. A banded quartz vein 5 inches in width is enclosed in graywacke. The vein has hard free walls and contains a sparse arsenopyrite mineralization. This trench is 20 feet in length. Trench No. 3 is located 40 feet north of No. 2 and has a length of 12 feet. Here the vein shows 7 inches of white banded quartz, sparsely mineralized with pyrite and arsenopyrite. No gouge shows on the walls, however, the quartz is free from them. Trench No. 4 is located 80 feet north and across a small gulch from No. 3. This trench is filled, however, quartz pieces up to 4 inches in width show on the dump.

The formation consists of Mesozoic interbanded graywacke and slate. The formation is thinly bedded, with the slate bands of greatest width. The graywacke bands have widths from a few feet to 40 feet. Sections of the slates are highly schistose and slightly mineralized. The formation has a strike of N. 45° W. and a dip of approximately 60 to 70° E. Several diorite aplite boulders occur scattered along the beach, but none was seen in place. Along the beach east of the showings small inclusions of black limestone were interstratified in the slates. The small veins on the beach are definitely cross-stringer and are most pronounced in the wide graywacke bands. Whether or not these cross fractures are related to a definite structure is not known. They apparently cross the wide shear zones in the slates without displacement, showing they are of later origin.

All the veins contain the same type of mineralization and the same character of white milky quartz. The mineralization consists of arsenopyrite crystals ranging in size from fine to 1/4 inch in diameter. Pyrite is in fine cubes in both the veins and schist, and free gold is mainly confined to the walls of the quartz vein. The veins are slightly banded, showing a few minor periods of reopening. Crystals and vugs are common in the veins. In the quartz are gangue minerals of calcite or dolomite, sericite and numerous pieces of wall rock.

Samples were taken in Nos. 1 and 2 veins and the inland vein. A sketch was made of the beach showings. Rain prevented mapping the entire area containing the showings.

Leave Krestof Island 7 p.m. Arrive St. Johns Bay 9 p.m.

April 27. Leave St. Johns Bay and arrive Hood Bay 4.30 p.m.

April 28. Visited Miller-Hall prospect. This prospect is located 1½ miles due west of the Hood Bay cannery on the south shore in a small bay, 2 miles out from the junction of the north and south arms of Hood Bay, Admiralty Island.

This prospect was discovered last fall by J. D. Miller. To date it has not been staked. The showings consist of two large quartz outcroppings 400 feet apart. The No. 1 showing, located on the south shore of the small bay, consists of a continuous quartz outcrop over a distance of 80 feet along the shore a few feet above drift wood level. The outcrop extends in a northeast direction, nearly at right angle to the formation. It occurs in a contact of greenstone schist and a footwall of dark banded graphitic schist of phyllite nature. The contact and formation have a N. 45° W. strike and a steep dip to the west. There has not been sufficient work to determine the structure on which this apparent lense of quartz was formed. It may as does No. 2 showing occupy the crest of a fold. The quartz is glassy to milky white in appearance, and highly crystalline in nature. It is cross fractured and the fractures are iron stained. Generally, it is nearly barren of mineralization.

No. 2 showing is another quartz lense located 400 feet northwest of No. 1. This is located between high and low tide levels on the south shore of Hood Bay. This lense has a length of 80 feet, varies from 6 to 8 feet in thickness and is folded. The structure of the formations here show a very decided complex of folded, greenstone lava schists, agglomerates, andesitic lavas and other volcanic rocks, some high in silica. This complex is near the contact of volcanic and sediments of phyllites and limestones. This lense strikes northeast and has a flat dip to the north. It is nearly barren of mineralization with only a very small amount of fine pyrite along the walls. No work has been done on this showing and due to lack of mineralization, no samples were taken.

On showing No. 1 three short cuts have been made into the quartz, one on each end showing contacts, and another along the side. Six channel samples were taken and a sketch of this outcrop was made. The discoverer was advised not to do further work unless the results of assays show values.

April 29. Leave Hood Bay 8 a.m. Arrive Hawk Inlet 2 p.m. Arrive operations of Alaska Empire Gold Mining Company 3 p.m.

XX 112-32

The property of the Alaska Empire Gold Mining Company consists of 108 lode claims on the northwest shore of Hawk Inlet, 7 miles in from the mouth and 2 miles north of the cannery. The site of operations is located 7,200 feet via new caterpillar road northwest at an elevation of 1,000 feet from the beach. This property prior to 1931 was known as the Chas. Williams property, thence optioned to W. S. Peckovich, who formed the present operating company. Two diamond drill holes were drilled this same year by Lynch Bros. One hole was drilled to a depth of 583 feet. Milling was begun in 1932 and a production of $160,000 was reported to date. A total of $80,000 was reported spent in improvements and equipment. The option price of the property was reported at $250,000. Eight men have been employed during the winter. Work has been confined to mining ore in the glory hole and tramming it to the mill.

There has been intermittent milling, however, operations have been maintained at a low stage due to lack of water for power. Within a few days a full force of 15 to 20 men are to be maintained during the season. The present operations have been confined to further sinking in a shaft alongside the portal of the mill tunnel. Miners have been taken out of the glory hole due to the dangerous condition of sloughing wall rocks loosened by thawing conditions. The present shaft has a depth of 30 feet on the vein and at which depth a short sub-level extends to the south. This shaft is to be sunk 10 feet and thence underhand stoping is to be done on a high grade portion of the vein. The first round was being mucked from the shaft below the sub-level. An oil drum, a spliced 5/8" cable, and a tugger hoist comprise the hoisting equipment. The head frame used is a structure made from four 3x6" timbers bolted together at the top, and a block is used on the bail of the bucket.

The underground workings at this site consist of an old tunnel 550 feet in length at an elevation of 1,052 feet, a glory hole extending from the tunnel near the portal to the surface approximately 80 feet, a 50-foot crosscut off this tunnel and a raise that connects up with the surface at the south end of the glory hole, a shaft down 30 feet at the tunnel approach, a short sub-level at the bottom a few feet south, and a tunnel 35 feet in length, located 486 feet north of the upper mill tunnel and 85 feet vertically below.

Snow conditions prevented an examination of the surface workings and geology. The workings are confined in and alongside an apparent large quartz lense. It is enclosed in highly schistose graphitic phyllites with interbedded and folded greenstone schists. Considerable upthrust movement shows in the walls and on faults in the lense itself. Considerable of the hanging wall, which consists of mineralized schists, was reported as carrying sufficient values for ore, while the footwall, which appears identical and mineralized, was reported as containing very low values. This lense shows continual reopening caused by movement and three apparent generations of quartz were noted.

The average values recovered from the ore mined since 1932 were reported at $8.98 per ton in gold. (The first two years the gold price was $20 per ounce).

The ore that is mined in the glory hole and from the shaft is trammed to the mill and dumped on slanted grizzly bars with openings of 1 inch. The fine material drops to a 50-ton ore bin below. The coarse material falls to the bottom of the bars and is fed to a crusher. Ton and a half cars are used on a 24-inch gage track. The two crushers, an Acme, 11x19" jaws, capacity 35 tons per hour, and a Blake 6x9" jaws, are located on each side of the grizzly. Crushed material falls into the 50-ton bin. From the ore bin the ore is fed by gravity with the aid of water to a rotating feeder on the hopper of the mill. Mercury is fed into the mill with a Gibson mercury feeder. Pulp is ground to 80 mesh and feeds to a Straub screen classifier. Oversize is returned to the

mill with the aid of a Krock centrifugal pump, a Kimbal-Krock centrifugal pump, Model 100, equipped with electric motor being used for auxiliary pumping power. The flow from the classifier runs by gravity through two Clark-Todd amalgamators of 100 ton capacity each. Thus the mercury fed in the mill is caught as amalgam in these amalgamators. From the amalgamators the flow feeds to two rows of 4 Kraut cells in each row. An average $100 concentrate is maintained. The tailings from the cells are run over a Wilfley concentrating table. The latter table is run by electric motor and the flotation cells are operated off the main power shaft, the latter run either by water, diesel or gasoline power. Considerable amalgam was noted on the concentrating table. Mill power is developed with 42 inch Pelton wheel with a 200-foot head. Auxiliary power consists of two 25 H. P. semi-diesel engines and a Ford V8 motor. Contained in the mill building is a single-stage Rand compressor, 14x16", directly connected to a 6-foot Pelton wheel. 220 volts for lights is developed by Pelton wheel. Mining machinery consists of four Ingersoll-Rand lyners, one rotating stoper, and two jackhammers. Detachable bits are used with long steel up to 20' in length. Regular steel is also used and a steel sharpener is used for sharpening with oil furnace. A 30 H. P. gas Allis Chalmers caterpillar is used with a sled for transportation. A portable Sullivan compressor operated with Budda gasoline engine has been used for road construction. Several other tractors and miscellaneous machinery in obsolete condition is scattered in the vicinity. Buildings consist of a dock with approach and cabin on the beach, combined bunk house, change room, shower room and cook house, apartment building, combined power and mill house, blacksmith shop, assay office and caterpillar shed. Assay office is equipped with hand crusher, oil burner, furnace, balance room and smaller equipment.

The company's record as to serious injuries has been good, however, conditions in both mine and mill in regards to safety are extremely bad.

First. The glory hole, which was formed from stoping from the drift level to the surface, is an opening 250 feet in length, 30 to 40 feet in width, and 50 to 80 feet in height. A timbered section of the tunnel 40 feet in length near the center offers the only protection within the area. This timbered section consists of only a drift set with a few long timbers across covered with loose rock; and it does not have sufficient strength to withstand large pieces varying from 15 to 20 tons that are loosely hanging on both walls. Along the sides in the open spaces, sloughing has filled the bottom until any rock that drops or sloughs off the sides rolls into the drift. Thus for a distance of approximately 200 feet along the drift, a person is exposed to falling rock. The extension of the tunnel is approximately 200 feet on the vein past the glory hole. Underhand stoping

is to be done this season in this drift as also in the glory hole itself. Thus men working in the glory hole will be exposed to falling rocks. Trammers tramming from the extended tunnel section will also be exposed to falling rocks while passing through the glory hole.

Second. Men working in the shaft or at the station on the 30-foot sub-level are endangered from falling rocks as only part of the shaft is lagged, and from the loaded bucket itself, due to spliced cable, inadequate headframe, no guides and lack of dumping facilities.

Third. Machinery is left unguarded in the mill, darkness and poor stairways with unprotected electrical contacts carrying 220 volts make conditions unsafe in the mill.

Safety training with considerable advice as to mining and milling practices only will better conditions.

April 30. Visited the Alaska Rand group. The Alaska Rand group is located on the north end of Hawk Inlet, three-fourths of a mile from its head on the north shore. The group consists of seven lode claims extending from the beach in a northwesterly direction. These claims are held by J. J. Thomas.

The showings of quartz on the property were discovered in 1922 by J. J. Thomas and Dr. M. Damourette. The property became known as the Brown Bear. During 1923 a road was constructed from the beach to the lower showings approximately 300 feet. A 25-foot tunnel was driven on the upper showings. In March, 1935 this property was restaked by J. J. Thomas and named the Alaska Rand. Only assessment work has been done since.

The lower showing, located 300 feet from the beach at an elevation of 125 feet, consists of a trench along the slope of the hill for a distance of 100 feet. At the east end a tunnel approach has been started which is in 30 feet in slide rock. Ninety feet northwest and forty feet above a quartz outcrop 4 feet wide outcrops. The quartz has a barren glassy nature and is enclosed in phyllite schist. No work has been done on this outcrop. Fifty feet northwest and twenty feet above another similar outcrop occurs. A sample taken by Thomas of fine material from the tunnel approach floor was sent for assay. No samples were taken.

The upper showing consists of a 25-foot tunnel and two rock cuts on two apparent lenses or blocks of quartz. The tunnel is located at an elevation of 360 feet and crosscuts the lower block of quartz a few feet under the surface. It has a twenty-foot approach through interbedded phyllite and greenstone schist and the tunnel is through solid quartz to the greenstone schist hanging wall. Trench No. 1, located 40 feet north of the tunnel portal, is filled and shows only the silicified hanging wall of greenstone. Trench No. 2, located 80 feet north of trench No. 1 shows 20 feet of quartz on the same contact.

Both upper and lower showings have apparently the same strike and whether or not they are on the same structure could not be determined. Both showings are enclosed in the mineralized phyllite schists with enclosed greenstone schists. The quartz blocks or lenses strike with the formation N. 25° W. The dip of formation and the quartz bodies varies from 60 to 70° W.

The mineralization consists of a few scattered crystals of arsenopyrite with a little fine pyrite. No free gold was noted. The quartz varies from a milky white nature to glassy crystalline with large vugs lined with crystal faces. Pieces of wall rock with some calcite or ankerite is irregularly distributed in the quartz. The hanging wall section of the vein consists of a hard banded gray quartz. These showings are considered as not of importance, however, this is a favorable area for prospecting.

Leave Hawk Inlet 1.30 p.m. Arrive Auk Bay 6 p.m.