MR 194-6

DEPARTMENT OF MINES
Territory of Alaska

R E P O R T

O N

LODE MINING AND DEVELOPMENT

in the year 1938

in

The Fairbanks District, Alaska

by

Irving Reed
Associate Mining Engineer
(temporary assignment)

to

B. D. STEWART

COMMISSIONER OF MINES

for the

Territory of Alaska

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F O R E W O R D

Field work on this report was started on Monday, January 30th, 1939 and continued over a period of two weeks. All of the operating mines were visited and most of the small prospecting outfits. Great difficulties were experienced in reaching many of the mines because of the extremes of cold weather experienced in the middle of the Alaskan winter.

No attempt is made in this report to give any geologic data, but only such facts as are related directly to the mining development during the year 1938. However whenever possible, comparison is made with development during the preceding years. Many of the owners are very reluctant to give values per ton and cost data. However wherever obtainable, such data is given.

Reports of the U. S. G. S. have been freely drawn on and consulted in this report, especially the report by James M. Hill entitled "Lode Deposits of the Fairbanks District", U.S.G.S. Bulletin 849-B, which because of its thorough presentation of facts, will for sometime to come, be taken as the basis of amy reports of the lodes in the vicinity of Fairbanks.

Although lode mining for both antimony (stibnite) and tungsten (scheelite) in past years during periods of extreme high prices, has been carried on in the Fairbanks District, present lode mining is entirely restricted to gold. It is understood in this report that when the word ore or lode is used, gold ore or gold lode is meant, all

other ores except those of gold and silver being discarded in mining in this district.

C O N C L U S I O N S

Lode mining in the Fairbanks District is in a healthy condition. A steady growth is indicated, and, although some mines have been shut down since Hill's report in 1931, there has been a steady increase in lode mining activities since that time. This increase is largely due to the greater participation of geologists and mining engineers in lode development and mining work. The day of the old hit and miss practical miner is drawing to a close. With a better understanding of geological and structural features along with more economical mining and treatment of ores, it is hoped that lode mining in the future will be on a permanent basis and ultimately will supplant the more ephemeral placer mining. If some means could be found to compell owners of mining locations, who are holding known lodes, either patented or by the minimum amount of assessment work, for speculative purposes, to either develop such lodes or allow others to develop them at a reasonable royalty, there would be a still more marked advance in lode mining.

O R E D E P O S I T S

The lodes of the Fairbanks District fall naturally into two divisions or areas: first, those related to the intrusion and mineralization of Ester Dome and, second, those related to the intrustion or intrusions of Pedro Dome.

In the Ester Dome area, the great majority of the lodes lie along the east and south flanks of Ester Dome, thinning out towards the west and north. In the Pedro Dome area, the majority of the lodes lie on the north flanks of Pedro Dome, extending in a zone east to Fairbanks Creek. South of Pedro Dome the lodes are more scattered. Although most of these are related to the same mineralization as those north of the dome, there may be some that are due to another period of mineralization.

M I N I N G D E V E L O P M E N T

A. ESTER DOME AREA

ROGACH PROSPECT

K-58-80

John Rogach has been prospecting in the fall of 1938 on Nugget Creek, a tributary of Goldstream. His workings, consisting of pits and shallow shafts, lie between the two forks of Nugget Creek about 1 mile north of the divide at the head of the creek. No lode has so far been definitely developed.

READY BULLION MINE PROSPECT

This prospect lies near the head and on the right limit of Ready Bullion Creek and is not to be confused with the Ready Bullion Mine on Ester Creek. It is owned by Roy Caldart, Fred Ciaccia and John Vukmir. The country rock is schist. No definite vein is known at this mine but several hundred tons of highgrade ore have been mined from broken sections of veins and bunches of quartz in the schist. The

ore was milled at the Hudson mill or at the Hawkins mill formerly on the Silver Dollar Mine. At present Roy Caldart and Fred Ciaccia are driving a tunnel on a seam which they hope will make an oreshoot. From the portal the tunnel starts at S.70°W. and follows the seam in a wandering course slightly to the north for about 300 feet. Several bunches of highgrade ore were encountered and one raise put to the surface to tap a highgrade outcrop. However so far no amount of ore has been encountered large enough to justify mining. No ore was milled in 1938. Such ore as was taken out is stacked for future treatment.

Besides the 300 feet of tunnel run in 1938, about 2415 feet of tunnels and raises have been excavated in previous years on this mine in order to gopher out bunches and pockets of highgrade in the schist. No data on previous production could be secured. The waste is run from the tunnel by a small mine car and all drilling is done by hand.

KA 56-16

SILVER DOLLAR MINE

This group of claims is owned by Andy Mrkaich, who is in Jugoslavia. He is represented by his nephew, Mike Mrkaich, who in the fall of 1938 prospected with the help of a partner on the claims. About 30 shafts ranging from 5 to 22 feet deep have been sunk, so far without locating any workable orebody.

C. M. Hawkins had previously finished the tunnel already on the claim (see page 127, U.S.G.S.Bulletin 849-B), to a distance of 605 feet, where the vein was cut off by faulting. He had then stoped out what ore there was to the

surface, removed his machinery from the mill building and thrown up his lease. In the last three years no further production has been made from the mine.

K+58-19t

FARMER MINE

This property is owned by Wm. Borden and John Loberg. In 1937, the old tunnel was cleaned out and extended. In 1938 no new development work was done but the ore which had been previously extracted but which at that time was too low grade to mine, was taken from the dump and milled at the St. Paul mill.

K+58-37

READY BULLION MINE

This mine is owned by G. B. Stevens and Nick Borovich. It is situated on the left limit of Ester Creek about 1¼ miles above the mouth of Ready Bullion Creek. The mine has been for the last 3 years under lease to the Bartholomae Oil interests. In 1937 a tunnel was driven about 1400 feet to intersect the vein about 200 feet below the Stevens and Borovich tunnel and 50 feet of winze sunk. In 1938 only a small amount of surface work was done by the lessees.

K+58-11?

SOCIAL SECURITY MINE

This property is situated on the right limit of Ester Creek about 1 mile ~~xxWx~~ southwest of the Ready Bullion Mine and is owned by James Norris. In 1938 the Bartholomae Oil interests had the mine under lease. They sank about 85 feet of shaft and 14 feet of winze and ran 39 feet of drift south and 38 feet north from the bottom of the shaft. No ore was produced. Work was stopped about June 1, 1938 and

the machinery moved to the Ryan Lode.

K-58-117 LOOKOUT MINE

This property is owned by D. E. Turnbarge and A. A. Turnbarge. It is situated on the left limit and about 2/3 of the length of the valley from the mouth of Emma Creek, a tributary of Upper Cripple Creek and about 200 feet above the creek bed. The property was discovered and located in the spring of 1936. So far two veins have been partially developed. The owners have driven a tunnel for 123 feet into the side of the valley following the first vein which was the original discovery. The vein in the tunnel averages about 10 inches wide. The strike is about N.10°E. and the dip vertical. At 95 feet from the portal the vein is cut off by a dike of decomposed light colored rock about 6 feet wide, assaying as high as $6 a ton. A drift was run westerly along this dike for 27 feet where the second vein was found. A drift 104 feet long was driven along this second vein. Besides the above tunnel, a shaft 18 feet deep was sunk from the surface and the vein outlined by several pits and trenches. The second vein is 15-18 inches wide. The strike is about N.20°W. In the tunnel the dip is vertical but in the shaft the dip is about 85° east. In 1938 about 30 tons of ore were produced which ran $17 to $18 a ton. Milling was done at the St. Paul. No men are employed. All mine work is done by hand.

K-58-118 CLIPPER MINE

This property is owned by Jos. A. McDonald, "Shorty" (D. L.) Thomas, John Michaely, Jas. McCann, Albert Bernard, Chris Foss and Peter Delasto. It is under lease to Lloyd P.

Lounsbury. He is driving a tunnel north along the vein which has a north-south strike. The tunnel is at present about 200 feet long. The vein averages about 10 inches wide and dips about 85° west. In 1937 about 19 tons of ore were produced and in 1938 about 25 tons. The average value of the ore was $28 to $30 per ton.

Lounsbury has a Blake type jaw-crusher and a 10-ton Straub ball mill on the property. Power is furnished by a Fairbanks Morse engine. The ore is crushed in the jaw-crusher to 1/2 inch size, then run through the ball mill and the value caught on amalgamation plates. No men are employed. All mine work is done by hand.

K+58-6 LITTLE EVA MINE

This property is owned by Sam Stay. At present it is leased to Nick Borovich, Sam Stay and John McEachern. In October, 1938, these three men sank a vertical shaft 35 feet deep about 50 feet north of the Ester road, on what is thought to be an extension of the Blue Bird vein. From the shaft about 30 feet of drift has been run north on the vein. The strike of the vein is here about N.15°W., the dip being 65-70° east and the width averaging from 1½ to 2 feet. There has been no production of ore for milling as yet. Waste and ore from the drift are hoisted by a windlass and all drilling is by hand.

K+58-26 BLUE BIRD MINE

This property is owned by the McDonald and Newton estates and is under lease to Louis Farvin, George Bolin and F. J. Metzger. In 1938 these leasers produced 450 tons of ore with an average value of $ a ton. Milling was

done at the Mohawk Mine. The incline shaft on the Blue Bird Mine is down 245 feet including 5 feet of sump. The incline follows the vein down which at this place has a dip of about 60° East. 50 feet of this incline was sunk in 1938 and 300 feet of drift run. At present stoping is being done on the 200-foot level which has been stoped out in places up to the 150-foot level. The strike of the vein is N.W.-S.E. but swinging towards the east in the south drift. The average width of the vein is about 2 feet. Hoisting is done by a one-drum hoist coupled to a Dodge automobile engine. One jackhamer and 2 stopers are owned by the leasers. Air is furnished by a 160-cubic foot portable compressor connected to the same engine as the hoist.

SEATTLE FRACTION PROSPECT

This property adjoins the Eclipse Claim and the Clipper Mine on upper Eva Creek. It is owned by Hans Jepesen and John Michaely who are attempting to locate a vein on it by sinking pits, so far without success. All work is being done by hand.

CAMP BIRD PROSPECT

This property is owned by Patrick McLaughlin and G. B. Stark and is under lease to Bill (B.G.) Stark and Mike Yakopatz. It is situated on the right limit of Eva Creek directly opposite the Clipper Mine and about 100 feet in elevation above the creek bed. The lessees have driven a tunnel in on the vein about 90 feet and sunk a winze about 30 feet from from the portal about 20 feet deep. In the summer of 1938, they also sank 2 shafts on the vein, one 25 and the other 60 feet deep.

At the tunnel the vein strikes about N.N.E. and dips about 85° West. The width averages about 3 feet. There has been no production of ore as yet. All mine work is done by hand.

R 58-155

ST. PAUL MINE

This property is owned by Jas. McCann, "Shorty" Thomas, John Michaely and the Hegel estate and is under lease to Herbert C. Smith and "Jim" Norris. In 1938, the lessees sank a 15-foot shaft on the old St. Paul vein but did not continue farther with their development work. At present they are developing a new vein on the St. Paul property about 140 feet east of the one formerly worked. This new tunnel is at approximately the same elevation as the old St. Paul tunnel and has been driven in on the vein for 130 feet. The strike of the vein is approximately N-S and the dip is about 65°E. The width of the vein averages about 14 inches.

In 1938, 130 feet of tunnel and 30 feet of cross-cut were driven and about 30 tons of ore produced. The average value of the ore was about $20. Milling was done in the St. Paul mill. Two men are employed. All mine work is done by hand.

R 58-155

LITTLE FLOWER MINE

This property is owned by Jas. McCann and Mrs. Bertha Olson and is under lease to "Herb" Smith and "Jim" Norris. The tunnel is situated about 1000 feet east of the St. Paul mill and at about the same elevation. Work was started on this mine in January, 1938. The tunnel has been driven in on the vein for 450 feet and a winze 40 feet from the portal sunk 50 feet deep.

The vein has a general N-S strike and dips about 70°E.

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The width of the vein averages about 24 inches. In 1938 about 680 tons of ore were produced (100 tons since October) with an average value of $25 per ton. Milling was done at the St. Paul mill.

The original lessees on this property were Cornelius Schmidt and George Swanson. The property was taken over in September by Smith and Norris. Two jackhamers and one stoper are used in the mine. Air is supplied by an 80-cubic-foot Gardner-Denver compressor powered by a Chandler automobile engine. Four men are employed.

K+58-154 RYAN LODE MINE

In 1938 the Bartholomae interests (B.A.Vallatt, engineer in charge and George Hellerich, assistant engineer) secured the lease on this property. Machinery was moved from the Social Security Mine and a head-frame and compressor-house built. The old Fizzard shaft was cleaned out to 165 feet in depth. At this point a drift was run for about 200 feet to the south. Development work was also done on the 50 and 100 feet levels. About 1200 tons of ore were produced and milled in the Hudson mill on Ester Creek. The value of the ore averaged from $12 to $15 a ton. An average of about 20 men were employed.

K+58-202 WANDERING JEW MINE

This property is owned by Jos. A. McDonald, John Michaely, "Shorty" Thomas, Jas. McCann, Albert Bernard, Chris Foss and Peter Delasto and is under lease to Peter Delasto. The lessee is driving a tunnel in an endeavor to locate and cross-cut the old Wandering Jew vein, so far without success. The

tunnel is at present between 600 and 700 feet long. One man is employed. All work is done by hand.

K+58-69 MOHAWK MINE

This property is owned by John McGinn and the Henderson estate. In 1938 John McGinn sank a winze 800 feet in from the portal of the lower tunnel or No. 2 Adit (Plate 10, U.S.G.S. Bulletin 849-B). This winze is about 100 feet deep. From the bottom of the winze about 150 feet of drift was run northerly along the vein and about 50 feet southerly. Because of excessive water, development work was discontinued until the summer of 1939 whem more efficient pumping machinery will be installed. In 1938 about 20 tons of ore were produced. 3 and 4 men were employed.

K+58-35 GRANT MINE

No work except assessment work was done on the Grant Mine in 1938.

K+58-52 NICKALOFF MINE

This property which was formerly worked by the Elmes Gold Mining Co. is owned by Peter Nickoloff. The old Elmes tunnel and drifts were being opened up in the summer and fall of 1938 for future mining. The vein varies from 6 inches to 6 feet thick with a persistent streak of highgrade about 4 inches thick. The strike is about N.15°E. The dip is from 78° to 82° West but in places reverses to 60°East. In 1938 about 200 tons of ore were produced. The ore was milled in the 5-stamp Joshua Hendy mill on the property. The tenor of the ore is said to have been lowgrade. One man is employed. All mine work is done by hand.

ROYAL FLUSH MINE

KX58-211 This property is owned by J. J. Cravey and Don Adler. The shaft on the property is 55 feet deep. The width of the vein averages 3 feet. The strike is about N.42°E. The dip from the surface to a depth of 35 feet is 70°West. From the 35-foot point down the dip gradually flattens to about 20° where the vein is cut off by a fault. In 1938 about 300 feet of drifts and crosscuts were run in an endeavor to pick up the vein. About 208 tons of ore were produced having an average value of $47.50 a ton. The ore was milled in the Nickoloff mill. The mine is equipped with a Gardner-Denver 80 cubic feet compressor and one stoper and one jackhamer. The ore is hoisted by a single drum hoist powered by a Federal truck engine which also supplies power to the compressor. One man is employed.

KX58-145 LONE TREE MINE

This property is owned by J. H. Sanford (page 149, U.S.G.S.Bulletin 849-B) and is at the head of Little Dome Creek between Happy and Sheep Creeks. From 1933 to 1938 the mine was idle. In August 1938 a new vein was located on the property and a tunnel driven in about 135 feet on the vein about 500 feet below the top of the divide. The vein is about 300 feet south of the vein previously worked on the property. The width of the vein varies from 4 to 12 inches. The strike at the portal is about E-W but changes to N.45°E. farther up the hill. No ore was produced in 1938. All mine work is by hand. No men are employed.

LINCOLN MINE

This property is owned by Patrick McLaughlin and is under a ten-year lease to John Loberg and Gordon Picotte. It is situate at the head and on the right limit of Happy Creek. In 1938 the lessees sank a 37-foot shaft and exposed the vein in an open cut. The vein averages about 8 inches in width. The strike is N.30°E. and the dip 75°West. About 8 tons of ore have been mined but not milled. Grab samples from the extracted ore give values of $160 a ton. All mine work is by hand. There are no men employed.

P R O S P E C T I N G

John Rasberg is prospecting on Ester Dome at the head of Happy Creek.

Edward Hess is sinking a shaft prospecting for quartz on the right limit of Ester about 500 feet above the creekbed opposite No. 1 Above Claim.

B - PEDRO DOME AREA

RR 49-96

HI-YU MINE

This property is owned by the Hi-Yu Mining Company, Don Gustafson, manager, and Donald A. Fowler, consulting engineer.

In 1938 the company drove about 300 feet of drifts in No. 1 or mill tunnel and in the sublevel between No. 1 Tunnel and No. 2 tunnel, and put in about 250 feet of raises. The mine produced about 2500 tons of ore with an average value of about $24 a ton. The ore was milled on the property. The

mine is equipped with 3 stopers and one drifter (jackhamer). The mill is equipped with a 10-stamp Joshua Hendry mill, crushing about 1½ tons of ore an hour. Power is supplied to the mill and compressor by a diesel-electric plant. An average of 15 men are employed.

EAGAN PROSPECT

This property is owned by Dan Eagan and Jack J. Eagan and is situated at the fork of Jack and Martin Creeks, headwaters of Kokomo Creek. In 1938, 2 shafts both 15 feet deep, were sunk on this property.

KK49-103

McCARTY MINE

This property is owned by Eugene Schreiber and is under lease and option to the United States Smelting Refining and Mining Company. The company is working on two veins, namely the McCarty and the American Eagle vein. In 1938 the company sank on the American Eagle vein 120 feet of shaft, put in 625 feet of raises and ran 1816 feet of tunnels, drifts and cross-cuts. On the McCarty vein the company put in 193 feet of raise and ran 760 feet of tunnel. 600 tons of ore were milled on the property in 1938, the present rate of milling being 240 tons a month.

The mine is equipped with 2 stopers and 4 jackhamers (2 in use). An electric drive is used for the pump, compressor and mill, electric power being obtained from the company's power plant at Fairbanks. The compressor is a Gardner-Denver with 320 cubic feet of air capacity. Hoisting is done by steam which is also used to heat the mill. A 30 H.P. marine type boiler is used with a one-drum 5x7 hoist.

Coal is used for fuel.

Mining is done by a cut and fill system with waste taken from the upper levels. The electric driven multistage centrifugal pump handles 40 gallons of water a minute. This water is used both for camp purposes and for milling.

A two-stamp Nissen mill is in use, each stamp weighing 1350 pounds and dropping 106 to 110 times a minute on a 5½ inch drop with a high discharge. The recovery on the plates is about 90% of the values, the rest of the values being left in the tailings which are stacked for future treatment.

The mill is run three shifts a day. In the summer at the peak of the work, the mine is run three shifts but is only run one shift a day in the fall and winter. At present 12 men are employed, but in the summer of 1938 as high as 23 men were at work.

The tunnel to the McCarty vein intersected the lead but the raise from the end of the tunnel has not yet reached the old McCarty workings nor has it intersected any ore body. Towards the east the values in the American-Eagle vein decrease. Towards the west and after crossing the Henry Ford vein, the American Eagle vein becomes much faulted and broken up. Further exploratory work in either direction will not be continued.

At present three lenticular shaped ore bodies have been found on the American Eagle vein, and enough ore blocked out to last at the present rate of milling to October, 1939. At present geological data indicate that there may be two more ore bodies in depth, the top edges of which are just appearing in the present workings. If this is so, it is intended

to continue the development of the mine. If not, the intention is to give up the lease at the end of 1939.

K-49-69 HOMESTAKE OR NORDALE MINE

The property is owned by the Nordale estate and is under lease to Adler Nordale. In 1938 the old tunnel was cleaned out and 200 feet of drift run west on the Nordale vein. A 50-foot shaft was also sunk on this vein and a 65-foot exploratory tunnel run on the Wolf Lode. 54 tons of ore were produced from the Nordale vein with an average value of $52 a ton. The width of the vein varies from 6 to 20 inches. The strike is E-W and the dip is from 30 to 45° south. The ore was milled in the McCarty mill. All mine work is done by hand. In the summer of 1938, 4 men were employed, at the present time, two men.

K-49-17 CHATHAM MINE

This property is owned by Mrs. Blanche Burns and is under lease to Frank Burns and four others. Work was started in October, 1938, by three of the partners---Burns, Lollard and Heitman. The tunnel was cleaned out and an attempt is being made on the second level to find the vein through the faulted zone at the east end of the old workings.

K-49-132 ANNA-MARY PROSPECT

This property was formerly owned by J. O. Warren but was purchased in the fall of 1938 by George Warmbold. It lies between the fork of Chatham and Tamarack Creeks. Only pits and trenches were dug by Warmbold in the fall of 1938 in order to trace the veins.

K49-228

REX PROSPECT

This prospect is on the left limit of Chatham Creek north and east of the property of the Cleary Hill Alaska Mines Company. W. S. Reese has been running a tunnel into the hill on this property. Not much work was accomplished in 1938.

K49-230

UNION MINE

This property is owned by Fred C. Robinson and adjoins the property of the Cleary Hill Alaska Mining Company on Chatham Creek east of the Rex Mine. No development work was done on the property in 1938 but 25 tons of ore were culled from waste on the dump from previous workings. This ore yielded $550 or an average value of $22 a ton.

K49-26

CLEARY HILL MINE

This property is owned by the Cleary Hill Alaska Mines Company, Robert Jones, superintendent and R. C. Gebhardt, consulting engineer. In 1938 the company ran 250 feet of drifts and crosscuts, sank 100 feet of winze and drilled 4200 feet of 1-7/8 inch (A-x) diamond drill holes. 2085 tons of ore weremilled, having an average value of about $80 a ton.

The mine is equipped with 4 stopers and 4 jack-hamers, and one electric driven Longyear diamond drill. The mill is a 5-stamp Joshua Hendy mill crushing to 40 mesh. In connection with the mill is a Blake-type jaw crusher, 2 flotation cells and one Denver jig. The capacity of the mill averages about 18 tons in 24 hours. There are 2 Gardner-Denver compressors supplying 470 cubic feet of air a minute. Power is supplied by two 100-H.P. diesel engines direct connected

to ~~a~~ 70 H.P. electric generators.

Two years or more ore reserves have been blocked out. From 21 to 23 men are continuously employed.

In the Cleary Hill Mine certain facts and structural observations have been worked out which may be of general interest to quartz miners in the Fairbanks District. For instance, when strata of hard competent schist, such as quartzite schist, are ruptured, the fault or break tends to be at right angles to schistosity. A break in incompetent schist such as graphitic and mica schist tends to follow the schistosity. The breaks in the more competent beds are wider and have afforded easier passage to the ore bearing solutions than the breaks in the less competent strata. From the above described tendencies, the cross-section of a vein in the schist would have a steplike or zigzag appearance. The oreshoots would tend to be lenses with their longer diameters in the plane of schistosity of the harder schist beds and their shorter diameters at right angles to that plane. Where a vein passes from an oreshoot in a competent bed to an incompetent bed the vein narrows to a seam lying roughly parallel to the schistosity. When the solutions attempted to pass from the wide transverse breaks of the competent beds to the longitudinal breaks of the incompetent, penetration was slowed and a marked enrichment occurred at what is now the top of the oreshoots.

Faults tend to have fluted or rifled surfaces due to the different hardnesses of the various strata. Due to this fluted or steplike surface of the faces of faults, any subsequent movement has a tendency to take place parallel to

the harder beds and the schistocity.

It has also been found that down-holes drilled into the schist by diamond drilling did not give good cores but that the cores from horizontal holes and raises were eminently satisfactory

K+49-26
49-269

WYOMING MINE

This property is owned by Fred Wachwitz, Ernest Wackwitz and the Cleary Hill Alaska Mining Company. There is a Hermann mill on the property run by a gasoline motor. The capacity of the mill, crushing to 40 mesh, is 13-14 tons in 24 hours. Work done in 1938 consisted of stoping ore which had previously been blocked out near the mouth of the tunnel. No data on production or values could be obtained. All mine work is by hand. One man is employed besides Fred and Ernest Wackwitz.

K+49-122

NEWSBOY MINE

This property is owned by the Newsboy Mining Company whose main stockholders are Thomas McKinnon and Fred Robinson and Mrs. Charles Creamer. The property is under lease to the Newsboy Development Company who subleased it in 1937 to H. M. Henton. In 1938 the present lessee dewatered the mine to below the 215-foot level. He also dug a 1200-foot trench on the surface to crosscut the northeast-southwest veining system and is now attempting to pick up a vein by drifting ahead in the southeast crosscut on the 165-foot level. This mine was quite fully reported on by Hill in U.S.G.S.Bulletin 849-B, page 85. No ore was produced in 1938. An average of 2 men were employed to December 1st and after that time one man.

CRAYTON MINE

This property is owned by Fred C. Robinson. In 1938 the owner cleaned out the old Crayton shaft and fixed the mill so mining could be started in the spring of 1939.

NEW DEAL PROSPECT

44-49-200

This property is owned by Fred C. Robinson and is situated on the southeast fork of Last Chance Creek north of the Crayton Mine and almost due west of the Newsboy Mine. It is thought that this mine is listed by Hill in U.S.G.S. Bulletin 849-B, page 82, as the Hidden Treasure. The property was leased in the fall of 1938 to Paul Bittner, Normal Crooks and Ed. Saponch. In November the lessees bulldozed out a road from the Newsboy Mine, picked out the ice in the old tunnel and opened up a raise in the old workings. Sampling of the ore in the raise gave average values of only about $6 a ton. After three weeks work the project was abandoned.

OHIO PROSPECT

44-49-77

This property is owned by Mike Markovich. In 1938 the owner drove a 500-foot crosscut tunnel to intersect the vein.

50-foot drifts were then driven each way along the vein from the end of the tunnel. There has been no production of ore from the property. All work is by hand. No men are employed. It was impossible to visit this mine at the time of this investigation so no further data could be obtained.

K49-145 LA ROSE PROSPECT

This property is owned by Luther C. Hess and is situated on the ridge to the east of the Soo Mine. The property is under lease to Raymond Crooks and Wm. Hering. The lessees are putting down a shaft to intersect the Spaulding vein but have not as yet reached their objective. The shaft is at present down 25 feet. All work is by hand. One man is employed.

K49-147 SOO MINE

This property is owned by Mrs. Cora Stevens and associates (Reliance Mining Co.) and is under lease to C. M. Hawkins. In 1934 a tunnel was started by the lessee about 200 feet in elevation above and 100 feet east of the Wood tunnel. The tunnel has been driven north 900 feet to the H and K vein. The tunnel then turns to the east along the vein for about 300 feet and is being continued in that direction. About 200 feet from the turn a cross-cut has been dirven about 75 feet to intersect the Spaulding vein and then about 60 feet more to intersect the Soo vein. A drift has also been driven to the east on the Spaulding vein. The Soo vein which averages about 6 inches wide and dips about 85° North, is at this place too low grade to work. The H and K vein is about 12 inches wide at this level and dips about 60° North. Stoping is being

actively done on both the H & K and Spaulding veins. In 1938 about 200 feet of tunnel ~~was~~ were driven and about 3000 tons of ore extracted, having an average value of $20 a ton. The mine is equipped with 10 jackhamers and 2 stopers. The mill contains one unit consisting of two Joshua Hendry stamps and one unit consisting of five Demarest stamps. There is an Ingersoll 310 cubic foot compressor. Power is supplied by a Caterpillar RD7 engine. In summer 18 men are employed and in winter (at present) 13 men.

K+49-59

RAINBOW MINE

This property is owned by Nerige and Hirschberger, represented by John Kelly. It is under lease to Chris Foss and Everett Nygren. The lessees are sinking a new shaft about 300 feet east of the old Rainbow shaft on the Rainbow vein. The shaft follows the dip of the vein, and is at present about 150 feet deep. The mine is equipped with one jackhamer and a Gardner-Denver 80 cubic foot compressor powered by a Hercules 50 H.P. 6-cylinder gasoline engine. Hoisting is done with a 1-drum 8x10 steam hoist and a 45-H.P. marine type boiler. The vein averages about 6 inches wide and dips about 85° North. There has been no production of ore yet. One man is employed.

K+49-314

TWIN LODE MINE

This property is owned by A. H. Anderson, Julien A. Burley, Pat O'Connor and Guy Birch. It is a restaking of the old Independence Mine described by Hill in U.S.G.S. Bulletin 849-B, page 114. The property is leased to Harry Wood. About 100 feet in elevation above the bed of Twin Creek the lessee has driven a tunnel following the strike of the vein for 540

feet. Active stoping is being carried on above the tunnel. The country rock is a rather coarse biotite granite (granitite). The vein averages from 6 to 7 inches wide, dips 90° and strikes S.85°E. The quartz is massive and iron stained and is tightly frozen to the walls. There is about 200 feet of ore overhead at the end of the tunnel. In 1938 150 feet of tunnel were run, 85 feet of raise put in and 870 tons milled. The value of the ore averages about $38 a ton but in milling it is diluted by about 50 per cent waste. The mine is equipped with one jackhamer and 2 stopers, one water leyner and a Gardner-Denver 285 cubic foot (100-pound) compressor connected to 65 H.P.(D8800) Caterpillar diesel engine.(Note-actual amount of air received from compressor is 230 cubic feet a minute.) The mill is run by a Ford V-8 engine.

The flow sheet is as follows:- The ore (diluted by 50 per cent waste) is trammed by hand to the mill ore bin. The oversize is put through a Blake-type jaw crusher and broken to 3/4 inch size. It is then fed to a Marcy 32 ball mill. The grindings from the ball mill are then run through a 12x12 Pan-American jig under a 20-foot head of water where 84 percent of the values are recovered. Tailings from the jig are then run to an Esperanza type of drag classifier, 22 per cent of the solids being run to the flotation plant, the rest being returned to the ball mill for regrinding. The flotation plant consists of three Denver Fahrenwald units (cells) in series. From the flotation plant the concentrates go to the concentrate bin for shipment and the tailings to waste. The oil used in the flotation plant is X-6(Pentasol Xanthate). A Berdan cleanup pan is used for the concentrates from the jig. On an average about $13.90 per ton of ore and waste milled is recovered as free gold,

$5.65 being recovered in the concentrates. The mill will handle about 14 tons in 24 hours but the average amount handled is 7½ tons in 24 hours. The average cost of mining and milling a ton of ore (undiluted) is $18.40. Three shifts are run in the mill and two in the mine. Ten men are continuously employed.

R E M A R K S

From the above amount of quartz development shown, it would appear, if the placer mining activities of the United States Smelting Refining and Mining Company were disregarded, that quartz mining in the Fairbanks District surpasses placer mining.

With the exception of the Hi-Yu Mine, McCarty Mine, Cleary Hill Mine, Twin Lode Mine and Ryan Lode Mine, all the mines in the Fairbanks District are drilling dry.

Sign _____

(Associate Mining Engineer)

(temporary assignment)

Fairbanks, Alaska
February 21, 1939

Mr. B. D. Stewart,
Commissioner of Mines,
Department of Mines,
Juneau, Alaska.

Dear Mr. Stewart:

The following data was sent me by Fred M. Wackwitz, after my report was made up and sent in to you.

WYOMING MINE

Amount of drift run - 30 feet. 49-26 49-269

Amount of cross-cut run - 20 feet.

Amount of tunnels run - 125 feet.

Number tons of ore milled - 66 tons.

Value of ore - $47 per ton.

One man employed continuously. Two men part time during the summer.

A Herman 20-ton ball mill is used.

Power supplied by a 10 H.P. gasoline engine.

All mine work is done by hand.

No tests have been made on the percentage of recovery.

I think this will about complete the data for the Fairbanks District.

With best of wishes, I am,

Very truly yours,

Irving Reed

NOTED
FEB 27 39
B. D. STEWART
Commissioner of Mines