MR 67-1

REPORT ON
READY CASH GROUP, OHIO RIVER, BROAD PASS REGION, ALASKA.

Introduction

The following report is from notes made by the writer while on two expenditions to the property under discussion, one in the spring of 1918, at which time little could be learned owing to the lateness of the season and the perseverance of snow, and the second trip in August and September, at which time five days were spent in examining and surveying the properties.

The survey was necessarily hastily made, using a Brunton Pocket Mine Transit on a tripod, but I believe all details will be found essentially correct, and the data carefully collected and conscientiously presented furnish all necessary information from which to draw a clear conception of the facts and advisability of prospecting the property in question.

GEOGRAPHY

The Ready Cash Group of mining claims is situated on Ohio River, a Tributary of the Chulitna River, which in turn flows into the Susitna River near Talkeetna, Alaska. They are situated in 150 degrees 30 minutes west longitude, and 62 degrees 30 minutes north latitude, near the northern most bend of the inner curve of the great arc of the Alaska Range, about thirty miles in an easterly direction from Mt. McKinley.

The distance from Anchorage to the property is about 185 miles, 170 miles on the government railroad, and 17 miles from the nearest point on the railroad survey. The railroad is completed from Seward, the all year tidewater terminal, to Montana Creek, a distance of 209 miles, and 95 miles from Anchorage; from Montana Creek to Talkeetna, a distance of 18 miles, the grade is completed and only waits the laying of steel, which work is under way at writing, and will be completed this year. From Talkeetna to Indian River, a distance of 35 miles to the grade is 75 per cent completed and will be 90 to 95 per cent completed in the spring of 1919, according to direct information from engineer in charge of work. From Indian River to Broad Pass only surveys have been made. The distance from Indian River to the nearest point on the survey to the property is about 17 miles. Transportation to the property at present is by train to Montana Creek, thence river boat to Indian River, thence by trail either across the Chulitna River near the mouth of Ohio Creek or around by the east, middle and west forks of Chulitna River, and thence in a southwesterly direction by the head of Long Creek to ne-r the head of Ohio River. In the winter the trip is made by dog team and can be made readily in five or six days, with roadhouses to stop at every night but one. It is expected the railroad will reach Indian River in the fall of 1919, and Broad Pass in the fall of 1920. This will make the property readily accessible by rail, leaving only 17 miles to be traveled by trail or wagon road.

GENERAL DESCRIPTION

The Ready Cash group comprises six claims, located near the head of Ohio River, which flows in a southeasterly direction. They were located in 1915 by Otto Logal, William Murray, Ed. Miller and Jack Frisby, all of Anchorage. Otto Logal subsequently conveyed his interest to Dr. J. H. McCallie of Anchorage. Some small fractions were by the latter conveyed to William Rae of Anchorage and J. Diamond of Philadelphia. Subsequently J. H. McCallie and Ed. Miller located six claims adjoining, which have all been put into the origional group making twelve Claims.

Title by virtue of discovery and assessment work performed each year, except during 1918, when the mergency measure passed by Congress relieving mine owners of the necessity of performing assessment work was taken advantage of and declaration of intention to hold duly recorded.

There are two tunnels on the property, on 159 feet, and the other 60 feet. A cache to store food and supplies is also on the property.

The claims are about 18 miles in a wouthwesterly direction from the holdings of the Wells Brothers and John Coffee on the west fork of the Chulitna River, and known as the Broad Pass Mining District. These properties embrace three groups of claims in a belt of sedementary rocks that have been invaded by various igneous intrusions and strongly mineralized. This district was the scene of considerable excitement and activity in 1914 and 1915, and enough work was done to indicate merit in the properties, but owing to exorbitant prices asked by prospectors for raw prospects capital was deterred from entering the field, and the uncertainty as to time of construction of government reilroad also acted as a factor to retard development.

TOPOGRAPHY

The region is one of typical mountain structure. From Chulitna River at an elevation of 600 feet the surface rises in a series of glacial benches, through which the Ohio River has eroded its canyon for 8 miles. Beneath the glacial debris the river has cut into steeply tilted and much folded sedementaries, and interbedded lava flows. Beyond the glacial terraces, are rounded and glacerial planed mountains of alpine topography near the head of Ohio River. From here toward Mt. McKinley the country is one of the boldest and rugged and impassable areas on the continent.

The elevation of the river at the property is 2350 feet (aneroid) which falls to 600 feet at Chulitna River, a distance of 14 miles or about 125 feet per mile, which is equivalent to a 2.3 per cent grade. The claims are located on a mountain which rises from 2350 feet at the river to 3780 feet, at slopes varying from 30 to 60 degrees, but which average 42 degrees. Beyond this summit is a depression or saddle from which the elevation continues to altitudes between 5000 to 6000 feet.

CLIMATIC CONDITIONS

A lack of records of rainfall, temperature, or other meteorological data makes it impossible to discuss the climate of the Broad Pass region in other than genreal terms. The climate is that of a high mountainous country of aboundant rainfall with moderate summer heat and with winter temperature that occasionally go lower than 40 degrees below zero. The precipitation is much less than that of the southern coast of Alaska, but probably more than that of the Copper River Basin or the Nenana Valley. Old Choppings in several places along the Nenana River showed that the snow was two or three feet deep when they were made. This does not indicate the total winter snowfall, but it probably gives a fairly correct idea of the average depth of snow in the main valleys in middle or late winter. Snow persists in deep gulches on the high mountains during the most of the summer, occasionally throughout the year, but it probably is not correct to say that any of the peaks within the area mapped rise above the summer snow line. New snow is seen on the high mountains top after almost every summer rain, and sometimes comes well down on the mountain side. (Extract from Bulletin 608 Broad Pass, Alaska F. H. Moffit, U.S.G.S., Washington, 1915)

GEOLOGY

The rocks of the district consist for the most part of sedimentary beds, tilted to nearly vertical angles, and in places much folded and locally metamorphosed. The greatest part of the area, covered by the claims, consists of what appears to be an andestic tuff, water laid and probable containing considerable amounts of material from land erosion. Bedding plains are absent or only faintly traceable and near a granitic intrusion the rock exhibits a somewhat crystalline texture which has caused the prospectors to regard it is an intrusive, which they term diorite.

The rock grades without unconformity into a slate, phases of which are highly calcarious and thence into true bedded limestone, which have a thickness of several thousand feet. The slates interbedded between the limestone and andesitic tuff have been invaded by several dykes of light colored quartzose rock, which appears to be an altered alaskite. This rock presents several phases, one near the limestone beds, showing calcite, quartz, and kaolin, probable an alteration product of feldspar. Another phase shows very little feldspathic material and consists almost entirely of zilicia. An intrustion of a coarse grained granitic rock occurs within the andestic tuff and probably is genetically connected with the alaskite.

A number of veins cut the tuff, slate and limestone. That they are fissures is evidenced by the fact of great extension on their strike, smooth slicken-sided walls, abrupt transition of material vein walls, and cross-cutting of the bedding planes of the sedimentaties, and the very general intensive and extensive mineralization, which consists of the following minerals, ganenite, chalcopyrite, phyrotite, arsenopyrite, sphalerite, pyrite, gold, silver, quartz, and calcite.

The order of geological events appears to have been as follows,

the limestone beds are the lowest members of the series and are overlain by calcareous tuffs, succeeded by thinly bedded slates, in turn overlaid by andesitie tuff. The age of the limestone is probable Devonian and from the apparent relationship is to be correlated with similar rocks described by Moffit (U.S.G.S. Bulletin 608, page 25, Broad Pass, Alaska) and by Brooks in his report of the Mt. McKinley Region (The Mt. McKinley Region, Alaska, A. H. Brooks, G.S.G.S. Professional Paper 70, page 78, Washington, 1911.)

The elevation of the beds followed and subsequent intrustion of granite and alaskite. The geneses of veins is probably connected with these intrusions, subsequent to the period of vein formation, compression strains occured, resulting in a fault where a wedge shaped pression strains occured, resulting in a fault where a wedge shaped block of ground has been displaced, faulting vein no. #, 180 feet. The fault plain on the north side of the wedge constituted a line of wakness along which erosion has taken place and formed a deep canyon-walled gulch.

DETAILED DESCRIPTION OF VEINS.

Vein No. 1 (see map) outcrops in north gulch at an altitude of 2580 feet, and 50 feet above tunnel No. 1, which intersects it at a distance of 59 feet from the portal. This vein where outcroppings is very much distorted, and a true direction of strike difficult to obtain, but the direction of outcropping disregarding minor irregularities is north be 23 degrees east, and stands vertical in gulch. It varies in width from 6 to 10 feet, and is composed mostly of quartz, and standing above the topography (see photoes No.1). In addition to quartz the outcrop shows galenite, chalcopyrite, pyrite, calcite, and decomposition products of the sulphides and arsenides.

In t-e tunnel the vein has a strike of south 6 degrees east, and dips 47 degrees northeast. It is 6 feet wide and is very much distrubed, being crushed and slicken-sided. It contains the same mineral as on the outcrop. From a study of conditions in the field, and as indicated on the map, it appears that the tunnel intersects the vein very close to the plane of the fault, which would account for the distortion in vein and the crushed and sheared condition of the vein matter.

91 feet from vein No. 1 in tunnel No. 1 occurs another vein designated vein No. 2. It has a width of two feet, strikes north 17 degrees west and dips 75 degrees southwest. This vein was not observed outcropping. The vein matter is composed of quartz, pyrite, arsenopyrite, with some galenite and chalcoprite. This vein is the one exception to the rule in regard to dip, all other veins having a dip to the east.

Vein No. 3 outcrops 340 feet on the slope of the hill (44 degrees) from the tunnel No. 1. It has an average width of 8 feet over its entire outcrop where exposes by stripping for 180 feet. The northwest end of vein appear to be faulted and the continuation found at the southwest end of vein No. 1; at the southeast end the vein disappears under talus and rock debris. This vein has a strike of north 36 degrees west, and dips 50 to 65 degrees northeast. At the northwest end the vein is composed mostly of quartz between very definite walls of andesitic tuff which close to vein show some silicification. Toward the southeast end of outcrop, sulphise minerals increase until where the vein disappears under taluc it is composed of a spongy gassan for about 2 feet in depth which gives way to massive sulphide minerals. Galenite, chalcopyrite,

pyhroitite, pyrite, arsenopyrite, and spalerite make up the sulphide mass, which shows some sort of a banded structure evidenced by clean specimens of all the minerals maned. A sample cut across the vein 8 feet 6.8 per cent lead, 22 per cent iron, 30 per cent silica, and 12.9 per cent sulphur, (see phota No. 2).

Two selected speciments assayed 88 and 89 ozs. of silver and a specimen of galenite assayed 120 ozs. silver. Another specimen of galenite assayed 183 ozs. silver, .02 oz. gold and 80 per cent lead. Another sample cut across vein here by the owners of the property assayed 27 ozs. silver, .08 oz. gold, 1.95 per cent copper, and 5 per cent lead. A specimen of pyhrotite selected from the vein here assayed 10 oz. silver and .04 oz. gold. Other samples taken across vein in less mineralized portions assayed as follows: No. 1, gold, trace; silver, 5 ozs.; copper, .50 per cent; and No. 2, gold, .02 oz.; silver, 20 ozs,; copper 1.50 per cent. For locations of samples and further values see sample map and list of assays accompanying report.

This vein is intersected by a short cross-cut tunnel (No. 2) 60 feet in length. The vein where cut is six feet wide and composed of quartz, pyrite, chalcopyrite, arsenopyrite, galenite and oxide of iron from decomposition of the pyrite and arsenopyrite; A sample taken across the vein here assayed gold .01 oz.; silver 2 oz.; and copper .5 per cent. This cross cut is of little value in developing the property, conditions being similar to those existing at the surface.

The projection of tunnel No. 1 for a distance of 177 feet, as figured from the dip of the vein, would intersect the vein when a drift 240 feet on the vein. Development of this block by upraises and stopes would yield valuable information upon which to proceed.

As an estimate of a reasonable possibility and taking the value of the ore from the average of two samples across 8 feet, which is $30.50 or barring meticulous precision $30.00, assuming a continuation of such values and allowing the ore shoot 50 feet in length to a depth 10 cubic feet of ore to ton (calculation made from specific gravity determination - specific gravity equals 3.23) would give a total tonnage of 9600, which at the indicated value of $30.00 equals $ 288,000.00 $\frac{(50x8x240 \times 30}{10}$ - $288,000).

This work allowing $20.00 per foot for tunneling, and $10.00 per foot for raising and stope drifting, world cost about $9000.00, and in consideration of the fact that the ore minerals appear to increase in quantity on the southeast extension of the vein where it passes under the talus, such an expenditure of money would seem to be amply justified. This tunnel could be continued to its intersection with veins No. 4,5,6,7, which latter would be intersected at something like a thousand feet in depth (see section), No. 6 vein which is the most promising, would be cut at 1520 feet horizontal and 900 feet vertical, or 1200 feet on the vein; This work should cost in the neighborhood of $35,000.00 to $40,000.00

This vein (No. 3), as well as the others of the same system in their strike southeast would intersect the area which has been invaded with alaskite dykes, and as these in turn are succeded by calcareous tuffs and limestones, an apparent condition exists under which large bodies might reasonably be expected to occur.

Veins No. 4,5,6 and 7 and all of the very similar nature, having almost identical strikes and dips and occuring in the same formation as No. 3 vein, and with the same minerals occuring in all, with the exception that pyhrotite was found only in vein No. 3. Of these veins No. 6 is the most important, varying from 12 to 3 feet in width, averaging 8 feet, and showing on its outcrop for about 700 feet. Toward the wouthern limit of outcrop a split occurs in the vein, and the two separate veins from 2 to 4 feet wide are seen to continue for several hundred feet, diverging 25 degrees in strike. A sample cut across the vein (sample No. 4) shows the following values; gold 20 ozs.; silver 15 ozs; copper, 3 percent. A selected specimen of chalcoprite from this vein assayed gold .80 oz.; silver, 19 ozs.; copper, 6.75 per cent. Other assays from this vein are as follows: 4-A, silver 42.40 ozs., gold .60 oz.; copper 15 per cent; 4-B, silver 21 ozs., gold .48 ozs., copper 4.60 per cent.

These veins belong to the same system as No. 3 and as shown on the cross section would all be intersected by the projection of tunnel No. 1. The advisability of prospecting the upper veins is dependent upon results obtained from exploration of vein No. 3.

GENERAL PROSPECTIVE OUTLOOK.

The first question generally asked about a property of this sort in in regard to transportation. As stated previously, the projected government railroad will go to within 17 miles of the property, where wagon, auto truck road or railroad spur may be built the remaining distance, as the development of property warrants. If a wagon road, then a ferry will have to be constructed across Chulitna River, or in the event of a railroad spur a bridge.

A movement is under way to have the Alaska Engineering Commission granted appropriation and authority to construct spurs, wagon roads, bridges, and trails for the purpose of developing tonnage and facilitating the exploitation of the resources adjacent to railroad. The Anchorage Chamber of Commerce, the Federal Commission appointed by President Wilson to survey resources of Alaska, the Delegate to Congress from Alaska are all severally working to this end. It was my privelege to address the Federal Commission, the Anchorage Chamber of commerce and members of the Alaska Engineering Commission on this subject, and the prospects are very strong that the question of transportation will be solved at such an early date as will assist in the immediate development of mines in this district. In that event properties of merit will be eagerly sought.

POWER

The Ohio River is a glacial stream of erratic flow and changing channel, but a mile and a half below the property it flows through a narrow canyon, which might be dammed to impound water for hydro-electric power. No measurement of flow was made, but an estimate made at extreme low water in late winter shows 400 cubic feet per minute. By constructing a dam at a canyon a head of fifty feet could be obtained, which would generate 37 horse power. The storage capacity of dam is estimated at 78,750,000 cubic feet, which discharging the daily influx plus an equal amount of

impounded water would generate 75 horse power, and constitute a reserve for 137 days, or through the period of low water, namely, November 1st to the latter part of March. About 8 miles below the property occurs a canyon on the Ohio River where a dam could be constructed to generate sufficient power for any scale operations that might be determined upon.

COSTS

Any estimate of costs would be of little value these time of changing standards and fluctuating prices. An estimate to be of value would have to be based on a definite plan and conditions at times of beginning operations, which an elastic limit to provide for contingencies.

CONCLUSION

From a consideration of the evidence as presented in this paper I am convinced of the merit of the property under discussion, and can conscientiously advise that it be prospected to determine the extent and value of its ore bodies. I am advised by the owners that the property can be acquired on a development basis, with option to purchase at a price compatible with reason and the indicated merit of the property.

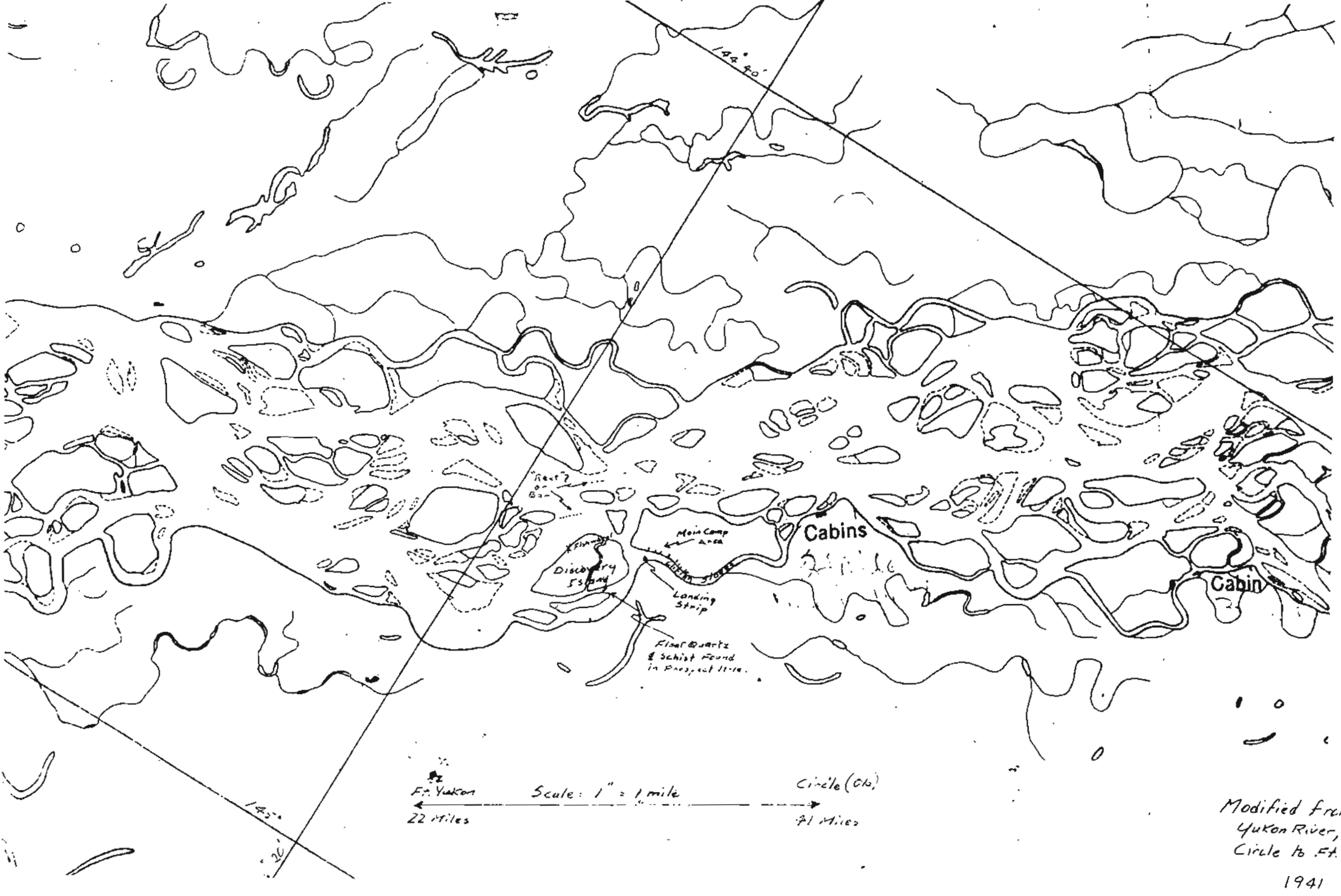
Signed:
F. Le Roi Thrumond.

Anchorage, Alaska. Oct. 25, 1918.

List of Assays.

Sample No.	Per ton Ag ozs.	Au ozs. per ton	Cu. %	Fe%	Pb. %	SiO2 %	S %
1	5.00	trace	0.50				
2	20.00	0.20	1.50				
3	25.00	0.04	1.50	22.00	6.80	30.00	12.90
3-A	27.00	0.08	1.95		5.00		
3-B	183.00	0.02			80.00		
3-C	120.00	0.01			16.00		
3-D	89.00	0.01			15.00		
3-E	120.00	0.01			30.00		
3-F	88.00	0.01			15.00		
4	15.00	0.20	3.00	12.50	xxxxx	55.00	6.80
4-A	42.40	0.60	15.00				
4-B	21.00	0.48	4.00				
4-C	34.00	0.04					
4-D	19.00	0.80	6.75				
5	11.00	0.80	5.00				

Sample No. 1 is from outcrop of vein No. 3,4 feet wide, (see sample map). No. 2 is from same vein, 30 feet from where it disapperars under talus, at southeast end, 8 feet wide. No. 3-A is from same locality as No. 3, but cut by the owners of the property. No. 3-B, 3-C, 3-D 3-E and 3-F are selected specimens of galenite and pyrite, and cerusite, cerrusite and limonite, galenite and pyrite, and cerrusite and limonite respectively, all from the same locality. Sample No. 4 is from vein No. 6 at point indicated on map and 8 feet wide. No. 4-A, 4-B 4-C and 4-D are selected specimens of chalcoprite and arsenopyrite, all from the same locality as No. 4. No. 5 is a piece of float picked up in north gulch and is probably from vein No. 6.



Modified from U.S.G.S.
Yukon River, Alaska
Circle to Ft. Yukon
1941