MR FORT YUKON 41 MR 41-2

TERRITORY OF ALASKA

DEPARTMENT OF MINES

ASSAY OFFICE
COLLEGE, ALASKA

INVESTIGATION OF THE REPORTED GOLD DISCOVERY AT "FISHWHEEL", ALASKA

(Circle Recording District)

by A. E. Glover.

1949

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SUMMARY

To elicit the facts surrounding the questionable "gold-rush" at Fishwheel, on the Yukon River flats, near Fort Yukon, Alaska, the Territorial Department of Mines conducted a four-day field investigation.

Many important phases of the affair have been so obscured and complicated by practical jokes and other equally unfortunate factors, that they will remain forever the subject of speculation.

So far as could be determined, the total value of placer gold, claimed to have been discovered, and which must be considered legitimate discoveries until proven otherwise, amounts to but six or seven dollars. The only gold found, excluding flour gold, has been obtained from the surface of the stream bed,- brass has been found with it. Deeper holes have, to date, yielded no encouragement.

Geologically, there appears to be no justification for any expectancy that commercially valuable gold placer deposits exist. Well-travelled placer nuggets recovered from the stream-bed would seem to have been accidentally "transplanted", either by human or natural processes, or both. Transportation by ice, particularly anchor-ice, may have contributed to its ~~transportation~~ distribution; an average river gradient of about six inches per mile and current speed of four miles per hour is insufficient to accomplish it alone.

To determine conclusively whether or not gold exists anywhere except upon the surface must await the outcome of test drilling. Should the drilling produce discouraging results, as is expected, then the true explanation for the presence of the discovery nuggets will probably remain a mystery.

INTRODUCTION

On October 21, 1949 the Fairbanks newspapers appeared containing a brief article concerning the reported finding, on October 12th, of placer gold on the gravel bar and in the box of a fishwheel belonging to the James Carroll family of Fort Yukon, Alaska, and situated in the Yukon River about twenty-two miles upstream from that village. The article had for its source of information a letter from Mr. Gilbert Lord, road-house operator in Fort Yukon, dated October 14, 1949 and addressed to Maurice Smith, reporter for Jessen's Weekly, of Fairbanks, Alaska. Mr. Lord and associates staked what were probably the first claims, on October 14th and 15th. These were recorded at the Circle Recording Office on October 16th.

Within the next few days the local and stateside radio and press gave the event much publicity; radio recording instruments, movie cameras, and newspaper reporters were flown to the scene of the discovery, together with the vanguard of Fairbanks prospectors.

At noon on October 24th, after carefully weighing the stories emanating from the scene, against a cursory knowledge of the geology and physiography of the area, the Fairbanks representative of the Territorial Department of Mines, Art Glover, issued a short item to the regular local news channels, implying that the reported "strike" might be "artificial" rather than real. Shortly thereafter, on October 26th, the nuggets, purported to be the original discovery, were sent to Fairbanks where they were examined by Mr. Richard Ragle, Professor of Geology at the University of Alaska, and Art Glover, Assayer for the Territorial Department of Mines. Some were found to be brass, the rest were gold. Additional stories of the finding of other nuggets continued to crop up but these generally proved elusive trails to follow.

Simultaneously with the October 27th newspaper accounts of the finding that some of the nuggets were brass, appeared the Commissioner of Mines' statement expressing grave concern over the unjustified excitement and growing proportions of the stampede. A further statement by Glover appeared at the same time, expressing the opinion that "the supposed gold placer defies all the necessary fundamental re-

quirements of a natural gold placer".

On October 28th the Commissioner of Mines instructed the Department of Mines representative in Fairbanks to visit the scene of the "discovery", determine the facts, so far as possible, and prepare a report thereon. Acting upon these instructions, the writer left Fairbanks on October 29th, with Wien Alaska Airline, flying to Fort Yukon where he remained an additional day gathering and evaluating information. On October 31st he was flown from Fort Yukon to Fishwheel, where the investigation was continued. He returned to Fairbanks on the evening of November 1st.

The discovery site and resultant camp has received the un-official name of "Fishwheel", Alaska, which name will be used herein, for sake of convenience. Other names, newly coined by the camp occupants and used in this report, are "Discovery Island" and "Clifton Slough" (See Map A).

LOCATION AND ACCESSIBILITY

Although the original discovery occurred at the Carroll family's fishwheel, and two other nuggets were reportedly found about two miles from that location, the overall area subject to staking during the resultant stampede includes a strip of land and water about ten or twelve miles long by about three miles wide. Discovery Island is roughly in the center of this strip.

Discovery Island is situated near the southwest bank of the Yukon River at a point twenty-two miles up-river (S.E.) from Fort Yukon, and forty-one miles down-river (N.W.) from Circle (not Circle Hot Springs). The island is one mile long, heart-shaped, and slightly more than half a mile wide at its widest point. It is distinguishable from others in the vicinity by an east-west slough which, at some stages of the water, actually divides the island in two. The fishwheel, upon which the gold was said to have been discovered, was situated about midway along the north shore of the island.

Claim staking centers about Discovery Island but also extends about six miles upstream and four or five miles downstream. The majority of claims are located on the mainland, islands, and sloughs along the southwest bank, or left-limit. An increasing number of claims were being staked on the opposite bank, or right-limit, of the Yukon River, however, and it is probable that there now may be almost an equal number on either side.

The main camp area and principal landing strip is on Clifton Slough, or rather, on the downstream end of that water course. Clifton Slough is over two miles in length and its mouth lies opposite the southernmost tip of Discovery Island (See Map A). Other stampeders, both White and Native, occupy temporary tent shelter wherever fancy dictates, and are dispersed at intervals up and down the river.

During the summer, the region is most readily accessible by boat travelling the Yukon River. Fort Yukon, twenty-two miles distant, is the closest village and supply point.

During the winter months, Fishwheel is accessible by dog-team or on foot from Fort Yukon or Circle; the old established Circle-Fort Yukon trail follows a rather direct line south of the river, across frozen swampland, sloughs, and river, between those two points. Small, single-engine aircraft from Fort Yukon or Fairbanks can land cautiously on the frozen surfaces of many of the river sloughs, channels, and exposed bars. The camp is about one hour flying time from Fairbanks, or ten minutes from Fort Yukon.

PHYSICAL FEATURES

The Fishwheel area lies well toward the center of the great, flat, and featureless, alluvium-filled basin bearing the name, Yukon Flats. The Yukon Flats comprise a vast lowland region, extending some 180 to 200 miles in an east-west direction, and

from 40 to 100 miles in width, astraddle the Arctic Circle, between longitude 144 degrees and 149 degrees. The Yukon River enters this basin from the low hills southeast of Circle, flows in a braided, meandering, ever-changing network of channels, sloughs, and islands, in a northwesterly direction to the vicinity of Fort Yukon and the mouth of the Porcupine River, which enters from the northeast. At this point, the Yukon changes its course to a southwesterly direction and travels about 120 miles, over the same kind of terrain, to enter and cut through the hilly country east of the Rampart area. In places, the river, including its sloughs and channels, attains a width of ten to fifteen miles or more.

Throughout this part of its course, the banks along the river are composed almost entirely of muck and silt deposits, with admixed vegetal matter and occasional thin layers of gravel and sand. The height of the banks varies in accordance with the stage of the water-level, of course, but during the present investigation, the Yukon was at the lowest stage ever known, according to the recollection of old-timers, and at Fishwheel, the average bank height then was about ten feet. Few places attained a height of more than fourteen or fifteen feet above the river level, and these are usually easily identifiable by the good growth of spruce, cotton-wood, and willow, that thrive there, beyond the reach of flood-waters and drifting ice masses. The largest trees seen measured about sixteen to twenty inches in diameter.

More than half of the area in the vicinity of Fishwheel lies below the ten to fifteen foot mark, and is subject to flood-waters and the damaging effects of drifting ice. Many of the islands are almost entirely devoid of vegetation while others are "scalped" only in places, usually on the upstream end, or on points projecting into the stream.

The monotonous, flat, terrain extends unbroken in all directions from Fishwheel. Only on exceptionally clear days are the hills to the south and southeast visible.

In all other directions the encircling hills are far beyond the vision. The closest upland surfaces occur about twenty miles away, in a southeasterly and a southwesterly direction, where there are slightly elevated terraces, perhaps fifty to one hundred feet above the rest of the valley, and sloping gradually to merge into the higher hills beyond. From the air, the fronts of these upland surfaces appear to consist largely of silts, sands and gravels, and to resemble modified conglomerate, delta, and slopewash deposits.

Precise data concerning elevations above sea level at points in and surrounding the Yukon Flats are lacking, but we may assume the elevation of the Yukon River to be 500 feet at Circle, where it first enters the Flats, and 400 feet at Rampart, after leaving the Flats. This is a fall of only 100 feet in over 200 miles, or six inches per mile as the approximate average gradient of the Yukon River across this great basin.

The stream current is estimated to average about three to five miles per hour in the main channels; many of the side sloughs are, of course, stagnant or nearly so.

The depth of water in the main stream, at the time of this investigation, is estimated to range from one or two feet over midstream bars, to perhaps ten or twenty feet in the deepest stretches. Between Circle and Fort Yukon, there appeared to be considerable deep water in the main channel, and comparatively few shallows. One of the latter was noted a few hundred yards upstream from Carroll's fishwheel site.

GEOLOGY AND MINERALOGY

Neither geologic studies or topographic mapping has ever been attempted in the Yukon Flats proper, consequently reliable, detailed data concerning the region, or any substantial part of it, are lacking. What knowledge there is must largely be inferred from what is known of the uplands that form its perimeter, plus that which may

be obtained from surface observations at selected points, or by comparison with knowledge of similar features elsewhere.

BEDROCK

The only known published reference to bedrock in the Yukon Flats is that of Mertie (U. S. G. S. Bulletin 872, page 16), who records that, at Fort Yukon, a well was sunk to 237 feet before striking bedrock. Some present residents of the village doubt the accuracy of that figure, and several claim that the hole was not deeper than 150 feet. Regardless of the accuracy or inaccuracy of that depth to bedrock figure, it is insufficient evidence upon which to base conclusions as to depth of bedrock at other more distant points. Fishwheel is twenty-two miles from Fort Yukon.

About 120 to 150 miles southwest from the Yukon Flats is a very similar physiographic feature, known as the Tanana Flats. In the vicinity of Fairbanks, which is located at the northern margin of the Tanana Flats, a number of drill holes have established that, at some places, bedrock is at least 400 feet below the surface of the alluvial fill. It would be very surprising if, at various places within the Yukon Flats, the depth to bedrock did not equal, or even exceed, this figure. Since nothing is known concerning the configuration of the bedrock floor, the location of bedrock highs can likewise only be the subject of conjecture until actual outcroppings are found, or until more holes are drilled.

There appears to be reason to suspect the existence of bedrock at a point in the main channel of the Yukon River, about 200 to 300 yards upstream, and opposite, from the site of Carroll's fishwheel. The evidence is not conclusive, however.

Immediately prior to his visit to Fishwheel, the writer examined a specimen of rock, said to have been obtained from the right-limit of the river at the locality referred to. The rock was rough and angular, exhibiting no evidence of wear or abrasion. It was a light green, calcareous, sericitic schist, containing a minute

amount of dis-eminated pyrite and pyrrhotite. A slight nickel content was noted in qualitative tests.

Later, from an airplane 300 feet above the river, the feature referred to locally (and without proof) as a "bedrock reef" was seen. More accurately, its effect upon the water and drift ice passing over it was seen; the cause could be either a bedrock exposure or a shallow, gravel or clay bar. Since its position, in open water, and extending diagonally upstream, precluded the possibility of thus examining any part of it in place, the question as to its identity remains open. Further suggestions that it may be an actual rock formation, however, were determined during the course of the investigation, as follows.

A number of Native Indians who have long travelled this stretch of the river by boat, when queried separately, all agreed that the so-called "reef" has certainly existed for as long as they can remember. Generally, a gravel or sand bar, in a similar position with reference to the strong current of the Yukon River, is frequently gouged out, deepened, or entirely removed, by the effects of ice during Spring break-up periods.

Seven-eighths of a mile away, off the south shore of Discovery Island, a prospect hole in the small side-slough there, supposedly disclosed a twelve or fifteen pound piece of angular float rock, the only such piece among the normal, rounded, medium-sized gravels. This piece of float also exhibited no worn surfaces. It was essentially a piece from a seven or eight inch vein of "bull-quartz", together with enclosing wall-rock. The wall-rock attached to this specimen was green, calcareous, sericitic schist, containing a few cubes of pyrite. The quartz was not mineralized.

While the evidence referred to would tend to support the possibility of a bedrock outcrop in the vicinity, none of it suggests any auriferous mineralization. It

anything, the opposite is indicated.

It should also be pointed out that the opportunity did exist for both of the large pieces of float-rock to have been "planted", although it is difficult to imagine any reason for anyone doing so. Working alone, and at points distant from the prospectors, however, the only similar, substantiating evidence disclosed to the writer, was an occasional small, angular, piece of schist found among the gravels being panned.

UNCONSOLIDATED SEDIMENTS

Silt, both with and without included vegetal matter, forms most of the cut banks along the river and its many sloughs. Sections exhibit plainly the depositional effects of flood waters, ice transportation of pebbles and sand, reworking, etc.. Some has been deposited in quiet water.

These banks reach a maximum height above extreme low water level, of perhaps fourteen feet, the average being about ten feet. The silt is primarily derived from disintegration of the country rocks, predominately schist, which comprise the highlands to the south and southeast. It is almost entirely water transported, although wind has, at times, undoubtedly contributed to its redistribution. The silts of the Tanana basin are seemingly identical in outward appearance and in the manner of distribution and deposition. The building of the deposits has involved both constructional and destructional processes.

Within the silt banks exposed along the river, there are occasional thin layers of fine sand, accumulated during flood stages. That many of these flood stages were accompanied by drift ice is shown by the frequent presence in the sand layers, of pieces of vegetal matter as well as pebbles as large as one or two inches in diameter.

Wherever the stream current is appreciable, the bottom seems to be composed of

gravel and sand. Near the shores, about six inches of gravel, ranging in size from one-half to three inches in diameter, was found to rest upon a finer material composed of clay and pebbly sand, containing a little fine gravel and a small but noticeable amount of white, volcanic ash.

At the time of the visit, no available prospect holes had penetrated below this shallow depth, but it seems likely that the fine material should not extend more than five or six feet in depth, if that far, where it may be expected to give way to alternating sands and gravels.

For the greater part, both the fine pebbles and the coarser gravels are highly polished, which is no doubt due to the polishing effect of the normally silt-charged waters of the river.

Conversely, the majority of the sands exhibit distinct angularity and sharpness of grain, signifying that, for the most part, they are ice-transported, probably affixed to masses of anchor ice from farther upstream.

The rock types represented in the gravels include, slate, hornfels, andesite or rhyolite (?) porphyry, quartzite, conglomerate, granite, jasper, agate, schist, limestone, and others, all of which are known to occur in place in the hills south and southeast of Fishwheel.

Heavy minerals, obtained by panning at many different points, are about identical from each place. Approximately thirty percent of such concentrate consists of magnetite. The balance includes various of the rock-forming silicate minerals, such as would normally be expected from the rock types referred to above, plus an occasional, minute, pin-point flake of gold.

GOLD

Newspaper stories and rumors would seem to credit a total production of some twenty to fifty dollars worth of placer gold to the efforts of prospectors. A

diligent search for the facts reveals very clearly that a great deal of practical joking has been engaged in among participants in the stampede and among others, largely in Fairbanks, who had never actually been to Fishwheel. The extent of this practical joking, together with other proven and probable distortions of the truth, has unfortunately so clouded the true picture as to make it almost certain that many important phases of the affair must remain speculative forever.

So far as could be determined, the total amount of placer gold, claimed to have been found in the vicinity of Fishwheel, and which must be considered legitimate discovery until proven otherwise, amounts to but six or seven dollars. Of this amount, three or four nuggets were of the size of small peas, perhaps worth forty to seventy-five cents each. Others, smaller in size yet perhaps large enough to be termed small nuggets, make up the total. All but two of these were found at or near the site of Carroll's fishwheel, and constitute the original "discovery". The remaining two were supposedly recovered by another party a mile or so downstream. No other seemingly authentic find could be brought to light during the investigations.

The gold nuggets examined were worn, well-travelled, placer gold. With the exception of those pieces found on the fishwheel, all were said to have been panned from river-bottom material less than one foot deep. Since it has been shown that the gravel of the river bottom extends only a few inches before encountering the finer clay and pebbly sand, and since the latter also contains such light material as volcanic ash, it seems likely that the gold actually rested among the top gravels.

Fine, flour gold can be panned at nearly any point along the Yukon River, or indeed, from most of the streams of Interior Alaska. From one to ten of these fine specks were noted in each of the many pans taken over the area. To most of the uninitiated stampeders, these meager showings constituted encouraging results. New stories were thus born to encourage both themselves and others. By actual weight,

these flat, flour gold particles average one one-hundredths of a milligram each, thus requiring 900 of them to equal one cent in value.

On geologic evidence alone, it is impossible to account for the presence of comparatively coarse gold on the surface of gravels comprising the Yukon River bottom at the points of discovery, except by ice-transportation. Where the ice picked up the gold in the first place is purely speculative, but stories have been circulated concerning (1) wreckage of boats and consequent loss of pokes of gold, (2) cabins, containing small caches of gold, being undercut and washed into the river, (3) ice-rafting of placer gold gouged from known deposits that extend from Woodchopper Creek to the Klondike. Concerning the latter, the writer's opinion is that it is the least likely of the three, for it would involve transportation, affixed to a melting piece of ice, for not less than 150 miles, or an estimated duration of time amounting to not less than two or three days, if we consider the slowing effect of ice jams, stranding, etc..

None of the placer-producing creeks of the Circle Hot Springs region have access to the Yukon River above Fishwheel, and could not, therefore, have contributed the gold by such action in recent geological time.

The first two possibilities are entirely within the realm of reason, however, and it seems certain that some such explanation, involving the "transplanting" of placer gold by a combination of human and natural agencies is the true one. Only drilling of test holes, and properly evaluating the results thereof, will satisfactorily prove whether gold actually exists in the vicinity in anything approaching commercial amount. So far, no gold, other than minute flakes of flour gold, has been found below a depth of a few inches.

Among the gold particles, said to have been dug up by the fishwheel, were three or four pieces of brass. One or two other such pieces made their appearance among

later "finds" of prospectors and all were considered to be legitimate nuggets until their character was finally proved a number of days later. If these were not purposeful additions,- a possibility which cannot be absolutely eliminated in either the case of the gold or the brass,- then the occurrence, under almost identical circumstances, tends to further strengthen the theory that whatever gold there is to be found at Fishwheel, lies on the surface.

The shallow bar, or "reef", noted several hundred yards above Carroll's fishwheel, in the main current, could hardly be passed over, at low water stages, by motor powered boats without a good chance of losing elements of propellers. This fact suggests one possible explanation for the recovery of brass from the gravels lying immediately below that place.

INCIDENTAL OBSERVATIONS

CLAIM STAKING

There probably is no finer example of improper and illegal claim staking than that at Fishwheel. While a few of the claims have been properly located by old-timers familiar with the requirements, or by novices who sought and received their good advice, the majority, it seems, are illegal, at least in part.

With the river at perhaps its lowest stage in history, much of the exposed land surface at Fishwheel normally lies below the mean high water level. It is probably safe to say that most all land above mean high water level is well characterized by a dense growth of brush and good-sized trees. To stake a legal claim, therefore, requires, in most instances, considerable hard work in establishing and brushing-out boundary lines. Persons not so disposed,- and there have been many of them,- staked their claims on sand and gravel bars as well as on the barren, or comparatively barren, islands, below high water mark. Many corner posts were

visible in the river ice itself, even in midchannel of some side sloughs. Aside from the fact that these claims are null and void, some legitimate, adjoining claims are identifiable only by a tie-in with some given corner post on the illegal claim. Ice floes in the Spring will automatically eliminate a good many claims and create confusion as to the locality of others. The absence of suitable permanent monuments or natural objects adds further to the difficulties of accurately fixing locations.

Conversations held with the claim stakers indicated, too, that a great many claims are invalid because of failure to record powers of attorney prior to the staking of claims. Many groups of claims are invalid because staking under powers of attorney was improperly performed.

Four instances of over-staking, over-lapping, or claim-jumping, were noted, and no doubt there are many others. The haste and ignorance of the many "overnight" stampeders makes this almost inevitable.

PROSPECTING

A high proportion of the stampeders have staked their claims without any attempt to sink holes, or even to take pans at the surface. Two prospect holes, one five feet and one seven feet deep, were thawed down with open fires but failed to yield more than the occasional speck of flour gold.

A small Hillman "airplane" drill was being assembled on the landing strip during the last day of this investigation trip. Subsequent reports state that the drill hole reached a depth of over forty feet without yielding colors and without striking bedrock. Another party of four was awaiting the arrival of a prospect boiler, but it is not known whether they have received it.

Perhaps four or five individuals were shovelling holes as deep as possible in the unfrozen stream bed, in shallow water, and panning the material removed. None

of these exceeded a foot or so in depth, and so far as could be determined, no encouraging finds were being made. Apparently the nugget finds ceased on or about October 25th, which date just happens to be almost coincidental with the dispatching (October 26th) of the original discovery gold to Fairbanks for examination.

GENERAL

In following the course of this stampede, one cannot escape the fact that it bloomed to its full proportions only because of the intense and dramatic coverage it received from some quarters of the press and radio. The more a story was repeated, and the further it went from its source, the more embellished and inaccurate it became.

Most of the stampeders were from Fairbanks and its environs; next in number were the whites and Indians from the Fort Yukon area and outlying regions; next were a few from the Anchorage area. Probably no more than three or four persons actually came directly from the States for that express purpose. Newspaper accounts showing names and stateside addresses, almost without exception, referred to temporary Alaskan workers who left various construction jobs near Fairbanks and Anchorage to fly to Fishwheel and stake their claims. Altogether, perhaps 150 to 250 individuals have gone to the camp, and at the time of the writer's visit, while excitement was still rather tense, there were an estimated sixty or seventy persons, Indian and white, within the vicinity of Fishwheel. It is believed that the number of travellers and the number remaining in the camp is rapidly decreasing.

Very few cases of antagonistic discontent were noted. Many were disgusted with themselves for making the trip but admitted, nevertheless, that they enjoyed the experience and the atmosphere and would probably do it again, wherever the next "strike" might be. Others, about ten or so in number, are somewhat skeptical but nevertheless willing and anxious to stay until holes can be put down and

a definite answer obtained. These few men are to be commended for doing the job,- as at every "gold-rush",- of proving or disproving the ground for everyone concerned.

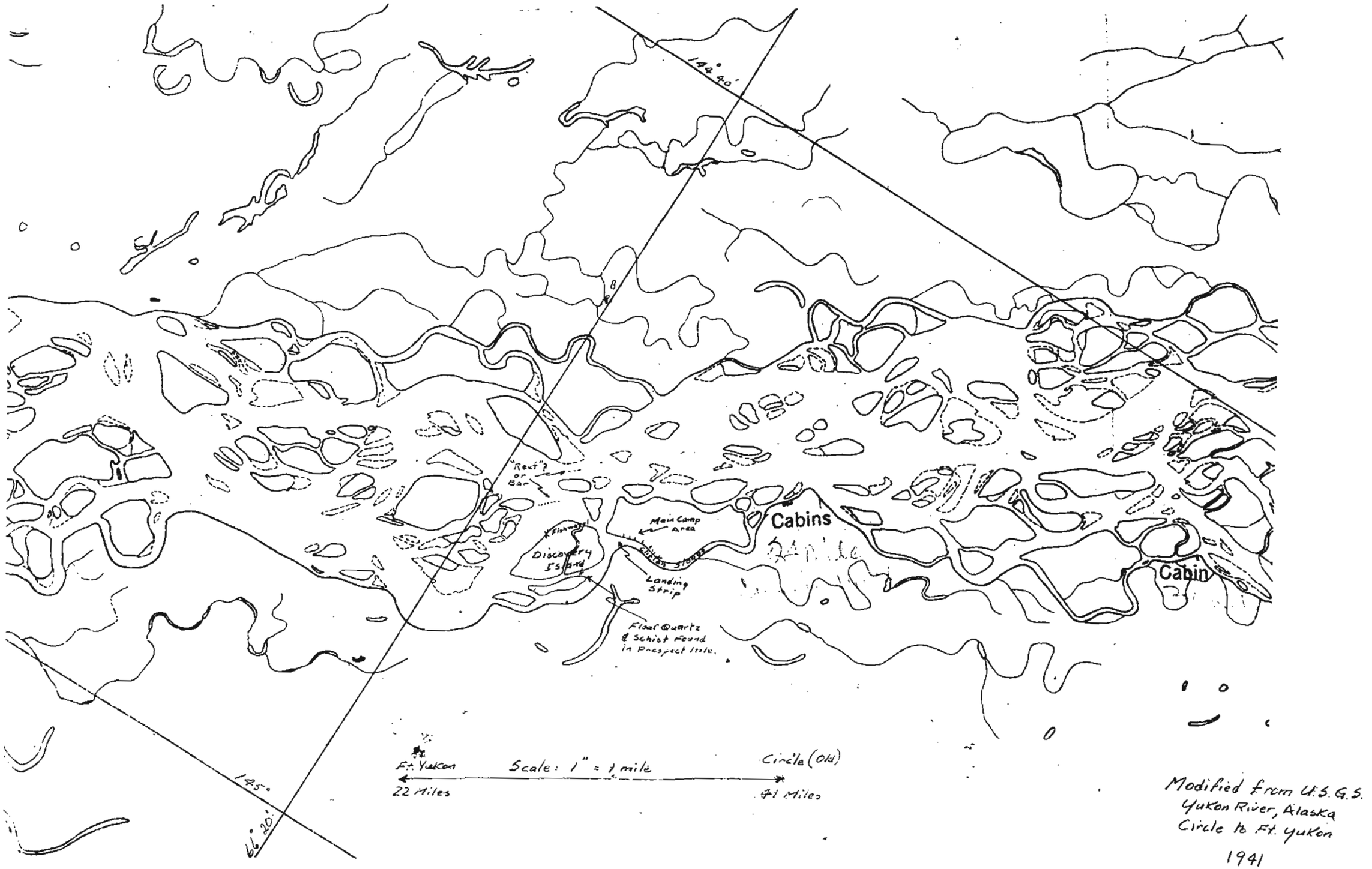
Respectfully submitted,

A. E. Clover

Art Clover

Main channel of the Yukon River, looking north from site of Carroll's fishwheel, on Discovery Island.

Claim stakes in mid-channel and on bar of Clifton Slough. Shows undercutting of high banks, "scalping" of points, and general characteristics of the area.



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