

TERRITORY OF ALASKA
DEPARTMENT OF MINES
JUNEAU, ALASKA

IR 195-52

November 20, 1952

ITINERARY REPORT

TO: Phil R. Holdsworth, Commissioner of Mines

FROM: James A. Williams, Associate Mining Engineer

SUBJECT: Field trip made by Robert H. Saunders and James A. Williams through the Fairbanks, Circle, Cape Nome and Valdez Precincts, July 21 to September 2, 1952

Robert H. Saunders and James A. Williams, Associate Mining Engineers, made the above trip for the chief purpose of engaging in geophysical exploration for the U. S. Tin Corporation at Lost River on the Seward Peninsula in an effort to locate granite intrusives in the limestone which are part of the mineralization control in that area. Magnetic and earth resistivity methods were used. Side trips were made to the Circle District placer operations, the Brooks Mountain zeunerite property, and two active mining operations in the vicinity of Nome. An earth resistivity survey was made at the Creighton mine, vicinity of Fairbanks, and a trip was made to Prince William Sound to examine two copper prospects of Dan Fitzpatrick in Unakwik Inlet and the Four-in-One copper prospect near the head of Miners River. This last property was not reached. Dan Jones, Engineer-Assayer at Nome, accompanied Saunders and Williams while on the Seward Peninsula.

July 21: Juneau to Fairbanks via Pan American Airlines. Joined Saunders at Fairbanks.

July 22: Immediately upon arrival at Fairbanks, it was learned that the Commissioner of Mines' recent telegram to the Department personnel at College had not been received and that the death of Eugene Swendsen, nozzleman for the U. S. Smelting, Refining, and Mining Company, had not been investigated as requested in the telegram. Investigation was made, therefore, on this date and the report written and sent to Juneau shortly afterwards.

July 23-29: Spent in becoming familiar with the earth resistivity equipment and field-checking it with the help of Drs. Elvey and Keller of the Geophysical Institute at College. These two men spent considerable time and effort in finding the solution to the

proper manner of operating the geoscope, (the operating instructions and wiring diagram were missing) and then in instructing and working with Saunders and the writer in the theory and actual operation of the instrument. They were extremely helpful, and by their help much time was saved and knowledge acquired. Acknowledgment and appreciation are due them for their willing assistance.

Attended a promotional meeting one evening and listened to Chuck Abbot and Larry Giddens trying to sell stock in a scheelite mining venture of Erikson Placers, Inc. Their main selling point was a novel placer mining machine that they intend to build, and the money that they were trying to raise was intended for a matching fund for a DMEA loan for exploration purposes out of which would come the cost of constructing the machine. Thus, the money from the stock they were selling was merely an investment in the prospecting of the creeks they claim to own or control on the Seward Peninsula. It was learned later that most of their ground was held merely on verbal agreements with the owners. They were using USGS reports on past production of the general area concerned as proof that the scheelite is there, but they actually know practically nothing of the amount per yard or total yardage.

July 30-31: Fairbanks to Circle Mining District and return.

In company with Earl Beistline, Dean of the School of Mines, the placer operations of the Circle District were inspected and mining conditions noted. School of Mines transportation was furnished. Saunders collected the information on this trip and will write the report on the Circle District. Operations visited were those of John Frasca on Eagle Creek, Heine Carstens on Portage Creek, Jens Landlow on Switch Creek, Bob Wilkinson on Miller Creek, the Wrede brothers on Independence Creek, and the Berry Dredging Company on Mammoth Creek. An attempt to reach the Tury Anderson operation on Porcupine Creek failed because of bad road conditions. Fairbanks District operations visited on the way to and from the Circle District were those of Bob Watkins on Faith Creek, Manie Olson on Wolf Creek, Strom Mining Company on Chatham Creek, and the Creighton gold lode mine on Pedro Dome.

While in the Circle District, met Paul Bittner, an active prospector who had just come from the Rampart District where he reported he had found what appeared to be a large deposit of ilmenite and wanted the Department to help him find a buyer for it. He had staked six claims there. The samples he had taken resembled psilomelane more than ilmenite, however, and this opinion was confirmed upon submitting it to the College Assayer for analysis.



Figure 1. U. S. Tin Corporation, Lost River.



Figure 2. Another view of U. S. Tin Corporation. Cassiterite Creek in foreground.



Figure 3. Homemade dredge of Kougarok Freight and Mining Company. For size, note man on stern deck.

Bittner reported the deposit to be on a plateau of about three thousand feet elevation at the heads of Granite, Allen and Rock Creeks and just south of Baldry Mountain. It is reportedly in a zone of brecciated limestone and becoming massive in open spots. A zone of float is six to seven hundred feet wide and he believes there are at least three shear zones with which the deposit is associated. In view of the increasing demand for manganese, this could possibly be a project for future investigation by the Department.

August 1: Final preparations for the trip to Lost River on the Seward Peninsula.

George Hellerich, Manager of the Johnson Dredging Company, Caribou Creek dredging operations, contacted Saunders and the writer with a request for an examination and report with recommendations on his zeunerite property on Brooks Mountain, which is just a few miles from Lost River. The USGS Trace Elements men have examined and sampled the prospect, but Mr. Hellerich expressed dissatisfaction with their work. The other half-owner of this property is Dr. Kennedy of Nome, but the partnership wishes Dr. Kennedy's name kept confidential. Actually, Dr. Kennedy was the original discoverer. The examination was agreed upon. 43-10

August 2: Fairbanks to Kotzebue via Wien Alaska Airlines. Held at Kotzebue because of mechanical trouble.

August 3: At Kotzebue. Mechanical trouble and weather.

While at Kotzebue, met George Reeves, a boy of about nineteen, who had been up in the Kobuk-Noatak country with a partner hunting for an old mine known as the Lucky Six which is on or near a creek of the same name. This mine had been worked by his grandfather (also named George Reeves) and was reported to be very rich. Because of an accident in which the partner was badly hurt, the pair did not reach the area, but Reeves intends to try again next year. Lucky Six Creek is a tributary to the Noatak River, and can be found on the USGS Bulletin 815 map. It is just south of 12-Mile Creek which parallels the Noatak River, and its headwaters are in Gull Pass. The mine is reported to be at an elevation of 5000 feet. The geographical coordinates are 155°00' W longitude and 67°35' N latitude. Reeves' address is 303 Valley Street, Kalamazoo, Michigan. K4 29-3

August 4: Kotzebue to Nome. Were joined by Dan Jones, Assayer-Engineer stationed there.

Talked to Dr. Kennedy in the evening about the zeunerite property on Brooks Mountain. He agreed to meet us at a flight strip (he flies his own plane) at the bottom of the mountain on the following Saturday, the ninth of August, and show us to and around the property. Dr. Kennedy told us that the U. S. Smelting, Refining, and Mining Company had signed an option contract with them to investigate the property and had then broken practically every clause in the contract and had finally refused to leave the ground after the expiration date until Kennedy and Hellerich had the U. S. Marshal's office serve the company with "papers." The two partners are both very bitter about their treatment at the hands of the company. They claim that one of the chief violations was that the company mined the one lens of zeunerite that was known and removed it completely. Our later failure to find a significant amount of zeunerite would help to bear this out. 13-57

Also talked to Gene Margraf, who is associated with his father, Oscar Margraf in Native Bismuth, Inc., at Charley Creek. He was interested in having the Department do some geophysical work ~~done~~ on their bismuth deposit in an attempt to locate an extension of the bismuth mineralization. We told him that it didn't appear to be a good prospect for geophysical work, but that we would give the problem consideration while at Lost River.

August 5: Nome to the U. S. Tin Corporation mine at Lost River via Wien Alaska Airlines. Two trips were necessary with a Cessna 170 to transport the three of us and all the field gear. 13-87

Pemberton Killeen and Charles Hummel of USGS were at Lost River on tin investigation work. A conference was held with these men and Paul Sorenson, manager of the tin mining operation, as to the best method of procedure on our geophysical exploration. The problem was to locate subsurface granite domes or cupolas in the limestone country rock, near the contact of which is likely to be the tin mineralization. One of these structures with the attending zone of cassiterite has been proven by core drilling by the Bureau of Mines. It was decided that the most logical procedure or attack would be to run traverses with both the magnetometer and resistivity equipment over the known granite structure and use the anomalies obtained there as a basis for interpretation of anomalies obtained when traversing unknown areas in search of other granite intrusive bodies.

August 6-14: Magnetic and earth resistivity geophysical exploration work on the U. S. Tin Corporation property at Lost River.

Largely because of mine camp buildings, equipment, power lines, etc. being located over the known granite structure, and

partly because of a deficiency of magnetite in the granite, and the existence of permafrost, the attempt to establish a pattern of anomalies with which to judge later work was a failure. The scene of operations was then shifted to a locality toward which the granite dome appeared to trend. No results were obtained there, either, that could be interpreted to indicate the presence of a granite dome beneath the limestone. Accordingly, the project was abandoned. The areas under investigation were mapped by plane table. A full report of the geophysical work done complete with maps and profiles of the traverses will be prepared by Saunders and Williams at a later date. Mr. Sorenson specifically requested a copy of the report as evidence to show that ground magnetic and earth resistivity methods had been attempted and proved to be valueless in the search for structures likely to carry tin mineralization in that area.

Further conferences were held concerning possibilities of other types of geophysical exploration that might possibly be applicable to the problem at Lost River, including one discussion with S. H. Lorrain and Al Ransome of the Bureau of Mines. Mr. Killeen was of the opinion that seismic work would be useless because of the fact that the soft kaolin-like material at the contact would not properly reflect the shock waves. Some of the persons involved favored the idea of airborne magnetometer work. The writer hesitates to accept this view because of the nature of the granite and the extremely difficult and hazardous flying conditions in that locality. It is possible, though, that aerial magnetic work might outline general areas of granite intrusions. It is recommended that an authority on airborne magnetometer work be consulted on this problem.

Concerning the operation of the mine and mill at the time of the writer's visit, the following facts were observed and noted. A crew of sixty men were employed, but it was reported that this would taper off to about forty-five during the winter. By far the largest number of men were employed on the surface. The chief mining problem was in stoping the twelve-foot mineralized dike which dips at seventy degrees. This dike carries the tin and tungsten, and the gangue resembles a soft kaolin. The walls stand well. The ore at first started to fall and stope itself when undercut, and it was thought that it would continue to do so without much further drilling and blasting. This assumption turned out to be erroneous. The material is too hard to break by its own weight, yet too soft to be safe to work underneath because of the likelihood of frequent falls. Further, since there are no trees on the Seward Peninsula, the cost of timbering the stopes would be prohibitive to the operation. The nature of the ore is such that it packs and freezes if left broken very long in the stope, so shrinkage stoping cannot be employed. The idea was conceived of cutting a diamond drill station within the dike and drilling long diamond drill holes up to 150 feet

lengthwise in the dike, loading them and blasting down large tonnages at one stroke. This plan failed because of the fact that when the kaolin was ground by the bit and wet, it formed a gummy substance that blocked the hole around the bit, preventing the water from carrying out the sludge, or cuttings, although water pressures up to 135 pounds per square inch were used. Thus, the diamond drill bits could not penetrate more than a few inches. Both core and plug bits were tried.

Pneumatic hammer-type drill bits also plugged quickly if the water hole was in the center of the bit, but it was found that the type with the hole in the side of the steel just back of the bit worked with fair success. The plan adopted just before the writer's departure was that of cutting drilling stations in the footwall, fanning out long holes with Leynors, using the latter type bit and sectional steel. When the writer left the property, the blacksmith was making the sectional steel, as there was none on the property at that time. Production to that date was four to five hundred tons of ore out of the mine and through the mill.

A new haulage way was being driven in from the surface which will locate the portal nearer the mill. Future development plans call for two drifts to be driven to the granite cupola which is known to carry the flat zone of tin (one to each side) and a third drift to be driven under Cassiterite Creek to the intersection of the main dike with another tin-bearing dike on the far side of the creek. The drifts to the granite will be 370 feet below the present haulage level, and the drift to the dike intersection at 200 feet with a second one tentatively planned at 400 feet below the main level if the first one discloses satisfactory ore. Hoisting is at present by air, but an electric hoist has been purchased and will be installed.

The milling problems were also being gradually overcome. It was found that the original plan of operating without a classifier was not practical, so a Fahrenwald hydraulic classifier had been purchased and arrived at the property just before the writer left. The jigs did not work satisfactorily and were removed from the circuit, and six or eight more concentration tables were to be added to the four already installed. Two Deisel generator sets were being added.

Mr. Sorenson stated that the only problems he felt that they could not work out themselves were those of shipping, transportation and communications.

Safety conditions were noted throughout the mine and mill and were found to be satisfactory.

Figures 1 and 2 are photos of the main part of the camp. The area underlain by the known granite structure starts in the right hand portion of these views.

August 9: Investigated the Brooks Mountain zeunerite property. Travel from Lost River to Brooks Mountain and return was by foot.

Dr. Kennedy did not meet us at the flight strip as planned, and after an hour's wait we walked on up Brooks Mountain to the property. A sudden rather violent wind and rain storm struck the mountain as we arrived and kept us from making a thorough investigation. Very little zeunerite is in evidence now, but other radioactive materials are abundant. The property appears promising, but must be prospected further--preferably drilled--to properly value it. It is very likely that more lenses of zeunerite are beneath the surface. Jones agreed to return to the property with Kennedy before the end of the season when a better examination would be possible, and then prepare a report on the property.

The owners of the property are trying to interest the United Geophysical Company in it through Ted Mathews of Fairbanks, who is an agent for United Geophysical.

August 15: Lost River to Nome via Munz Airways.

August 16: At Nome waiting for the rest of the geophysical equipment to be brought in from Lost River.

August 17: Visited the Big Hurrah Mine, vicinity of Solomon. Travel was by borrowed USGS Jeep, courtesy of Mr. Killeen.

The Big Hurrah is a gold quartz mine which was a large producer but is not now in production with the exception of the tailings-cyaniding operation which is in progress. Travis P. Lane is the president of the Lane Investment Company that owns the property, and the company is largely a family affair which has held the mine for many years. There is much ore left in the mine that runs about \$30 per ton, according to Mr. Lane, and he has recently discovered some scheelite there also. A sample of concentrate he tested was 0.7% WO_3 . The underground workings are getting quite run down and the shaft is difficult and dangerous to descend. Jones accompanied Mr. Lane underground on a short inspection with a mineralight. The interesting feature of the ore is that the gold is in very barren-appearing bull quartz which often runs through the slate in very small stringers or ribbons. The slate contains considerable graphite.

When the Big Hurrah was in production, the milling was simply by stamps and amalgamation, leaving good values in the mill

tailings. Mr. Lane fairly recently started a cyanidation operation on the tailings. The crew consists of four men, including Mr. Lane. They bulldoze the tailings into a dump truck, and then dump them into the tanks of which there are four. They are wooden, sixteen feet in diameter, six feet deep, and hold about forty tons each. One tank is emptied of treated tailings and refilled each day so that the time of treatment is a period of four days, and the production rate is forty tons per day. The cyanide solution is percolated through the tailings in the cyaniding tanks, then goes through the zinc tanks where the gold is precipitated, then goes on down into the solution tanks where the solution is maintained at proper strength, and from there is pumped back up to the cyaniding tanks. Originally, there were about 50,000 tons of tailings, but they were dumped into and beside a creek which has washed most of them away, leaving about 20,000 tons to be cyanided. Mr. Lane reported the value of the tailings, but he requested that the figure be kept confidential within the Department.

August 18: Visited the Kougarok Freight and Mining Company dredge on Buster Creek. Transportation was again by USGS Jeep, courtesy of Mr. Killeen. Nome to Fairbanks that night. Jones remained at Nome.

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The Kougarok Freight and Mining Company is composed of two partners, Elmer Straub and Earl Towner, both of Nome. They are operating a small homemade flume-type dredge on Buster Creek (tributary to Nome River about eight miles north of Nome) that they personally constructed out of two war surplus TD-14 International tractors, drill casings, Quonset hut materials, etc. The dredge is well fabricated and apparently mechanically sound with the exception of the fact that the one tractor motor of 63 HP being used at present is not quite enough power when the digging becomes difficult. It is one of the finest pieces of homemade mining equipment the writer has seen. The bucket chain is made from the tractor tracks with the pads removed and the upper tumbler is simply one of the tractors' drive sprockets. The buckets are small (about one cubic foot) and taken from an earth excavator. Their weakness is that they break at the back of the bucket where they are bolted to the chain. The bucket ladder and gantry are fabricated out of six-inch drill casing. A depth of eleven feet can be dug and the rate of excavation is about one yard per minute. There is one spud which is practically in the center of the dredge, rather than at the stern. The buckets dump directly into the sluice, there being no trommel screen, and boulders must be knocked off the buckets before reaching there. Flotation is accomplished by oil drums on end below the dredge, and the size of the hull is about fifteen by twenty feet. It can be seen that a dredge like this will have to have shallow ground, easily washable material, and few boulders

for successful mining, but these conditions exist at Buster Creek, and the dredge is doing well. The partners claim to be working ground worth only twenty cents per yard at present, but have ground worth up to \$1.00 upstream that they are moving toward.

Figures 3, 4 and 5 are photos of the dredge.

August 19: At College.

Talked to Earl Pilgrim about the location of a copper prospect known as the Four-in-One above Miners Lake in the Prince William Sound area which we hoped to examine. He reported this prospect to be at an elevation of about 1800 feet near the head of Miners River and below Munson Glacier. Miners Lake is on the east side of Unakwik Inlet. Pilgrim stated that he made a report and map of this prospect which should be in the Juneau files. They have since been located. Harry Townsend has also visited this prospect.

The writer was contacted by Jack Mabes who owns the Mukluk Shop in Fairbanks. He would like to be put in touch with any prospector or miner who will sell him interesting Alaskan specimens such as pieces of jade, copper, gold quartz, quartz crystals, cassiterite, cinnabar, etc. He claims to have a very good market for this type of item in his tourist business. His mailing address is Box 667, Fairbanks.

August 20: Inspected the Alaska Metals Mining Company's scheelite exploration project at Gilmore Dome. Rk. 56-2E.3

It had been reported to us that the operation had struck a new formation and were in need of advice on what step to take next. Upon arrival at Gilmore Dome, we found this information to be erroneous. The program was going ahead as planned and nothing new or different had been found. Also, we found that men from the local USGS office, Robert Chapman and Gordon Herreid, were doing the necessary engineering on the project.

An existing adit was being driven further in order to connect with old workings from which the ore was hoisted in a shaft which was collared on the top of the dome. Also, it was expected that this adit would cut through a block of ore. The ore had not been reached at the time of the visit. Two sites had been picked where showings are good for portals of lower adits to be driven when the present one is finished. A diamond drill is on the property but was not being used. It is only for the purpose of maintaining contact with the ore when the drifts left the vein or formation so that the drifts could be driven straight. Drifting was to be the

chief means of exploration, although dozer trenching was also being done. Also planned is the deepening of a drift down on Yellow Pup. It is hoped this will create a source of water which is at present being hauled up the hill from a distant source in barrels by truck and pumped to the drill by means of a pump and pressure tank. Placer scheelite prospecting is also planned for the Yellow Pup placer ground.

This operation is financed by DMA funds. The original plan called for the construction of two 25-ton mills which was at first approved and then disapproved and is now pending upon developments. One of the mills was to be for custom milling for other scheelite producers in the district. The Alaska Metals Mining Company is composed of four partners; William Birkliid, Morris Rafn, Elmer Stohl and Melvin Anderson, all of Fairbanks.

A Universal Dredge Company compressed-air locomotive is being used for tramping and the cars are of the two-ton side dump variety. The loader is Joy rocker loader, and the compressor is a Gardner-Denver 500-foot capacity with a Caterpillar Diesel engine. The underground equipment was rather poorly chosen as the locomotive will run only 400 feet without recharging, and the cars are too long for the sharp turns in the old drift and too high for efficient loading with the loader which was designed for one-ton cars. This equipment can be seen in Figures 6 and 7. Four men comprised the working crew--two on each of two shifts. They were driving the drift on contract. It is planned to continue the operation through the winter if possible.

A road problem exists there which will be worse with the approaching winter. The Gilmore Creek road was being used, but after the freeze-up, this road will gradually become impassable because of the glaciering of the many small streams which it crosses. The ridge road which connects the camp with the Steese Highway at Cleary Summit had been torn up and made impassable by tanks and other equipment of the Fourth Infantry during maneuvers in the area. This road should be repaired and kept free of snow so that it may be used as an access road during the winter. It is suggested that the proper road officials be contacted for assistance and that a request be also sent through proper channels to the Army and the Fourth Infantry to prevent further damage to the road. It was reported by Mr. Rafn that \$1200 was appropriated for road work on the Gilmore Creek road and given to the Road Commission. The ARC claims to have used the money up in repairing and maintaining the road, but the partners say that not that much work has been done and that there should be some money remaining.

August 22, 23, 25: Earth resistivity work at the Creighton Mine on Pedro Dome.

Charles Lazeration and Vern Jokela are mining at the old Creighton gold lode mine. The gold is in a small steeply-dipping quartz vein. The country rock is schist. A fault cuts the vein, and on one side of the fault the vein has never been found. It was thought that perhaps this portion of the vein could be traced and located by earth resistivity measurements, and accordingly, three days were spent in the attempt. The project failed, largely it is believed, because of alternating frozen and thawed ground. The electrical difference between frozen and thawed ground is undoubtedly greater than that between quartz and schist. However, it may be that the narrow quartz vein would not have given a sufficient anomaly in any case. Saunders intends to do a geological mapping project on the Creighton Mine this fall or winter and will include the resistivity work in his report. KK-49-135

The Creighton Mine is leased from the Duane Franklin estate, which is administered by his widow, living in Fairbanks.

Lazeration and Jokela are working partners, doing the mining themselves and hiring no help. They dump their ore until a certain tonnage is reached, then truck it down to the Cleary Hill Mines mill, where they mill it under an agreement with the Cleary Hill management. They pay \$7.00 per ton for this privilege. Their ore runs around \$70 per ton, it is believed. Jokela has only recently recovered from a broken leg, received from a fall down the shaft, which took about two years to mend. During this time, Lazeration carried on alone to the best of his ability. These two men are good hard-working hardrock miners of a type that has become all too scarce in the Territory. They deserve all the help and encouragement that can be given.

August 24: Moved the College Field Office equipment and furniture into the new office quarters which were generously allotted to the Department by the University School of Mines in the new Mines Building.

August 27: Fairbanks to Cordova via Cordova Air Service. Cordova to Goose Bay, Prince Williams Sound, aboard Dan Fitzpatrick's fishing boat.

August 28: Goose Island to Unakwik Inlet. Examined Dan Fitzpatrick's two copper prospects there.

The location of these two prospects as indicated in a sketch map included in an earlier itinerary report dated July 10,

1952, is erroneous. They are located as shown in the sketch map in Figure 8. The prospects were disappointing in that they were low grade, not nearly as extensive as had been reported, and little or no work had been done on them by Fitzpatrick. He had been retelling largely what an earlier locator had told him. It is not considered necessary to write a separate report on these two prospects. The two samples that were reportedly assayed at 6 and 8 percent were either small handpicked specimens, or came from another location.

On the east side of Unakwik on the way up to the main prospect, an adit was encountered at 250 feet in elevation that was driven in a shear zone striking S65° E and dipping 75° S. The only mineralization was occasional thin quartz stringers, and radioactivity checks gave negative results.

At 480 feet, a cut was blasted as if to start an adit in a shear zone which had the same strike as the lower one, but dipped 85° N. Small amounts of chalcopyrite were noted here. Radioactivity was again negative.

The main prospect was found at 900 feet in elevation where a stream had made a deep narrow cut through a shear zone and a small open cut had been blasted some time ago. The strike of the zone is S65° E here also, and the dip is nearly vertical but slightly to the south. There are branching fractures in the footwall dipping south. Channel sample JW-52-34 was taken here across forty inches of the north side of the zone. The assay returns on this sample show a trace of gold, 1.80 ounces of silver per ton, 1.91% copper, 0.70% lead and 1.68% zinc. The total width of the zone is about five feet, but the creek had cut out some of it. See Figure 9. The chief mineral is chalcopyrite. This is the only place in the shear zone where the mineralization showed up well, though it is possible that if the shear zone were to be well prospected, better mineralization might show up. The shear can be followed for a long distance. Fitzpatrick was advised to prospect it as far as he could trace it with the possibility in mind of exposing a more extensive area of mineralization. Radioactivity appeared very slightly above normal where the sample was cut.

On the west side of the Unakwik Inlet in a small cove just south of the mouth of Siwash Bay, the other prospect is on the beach and consists of very small mineralized stringers widely separated in the limestone. Some of these stringers are very rich (solid sulfides) but the overall value would be low. No tonnage could be developed from what is exposed. Sample JW-52-35 was taken

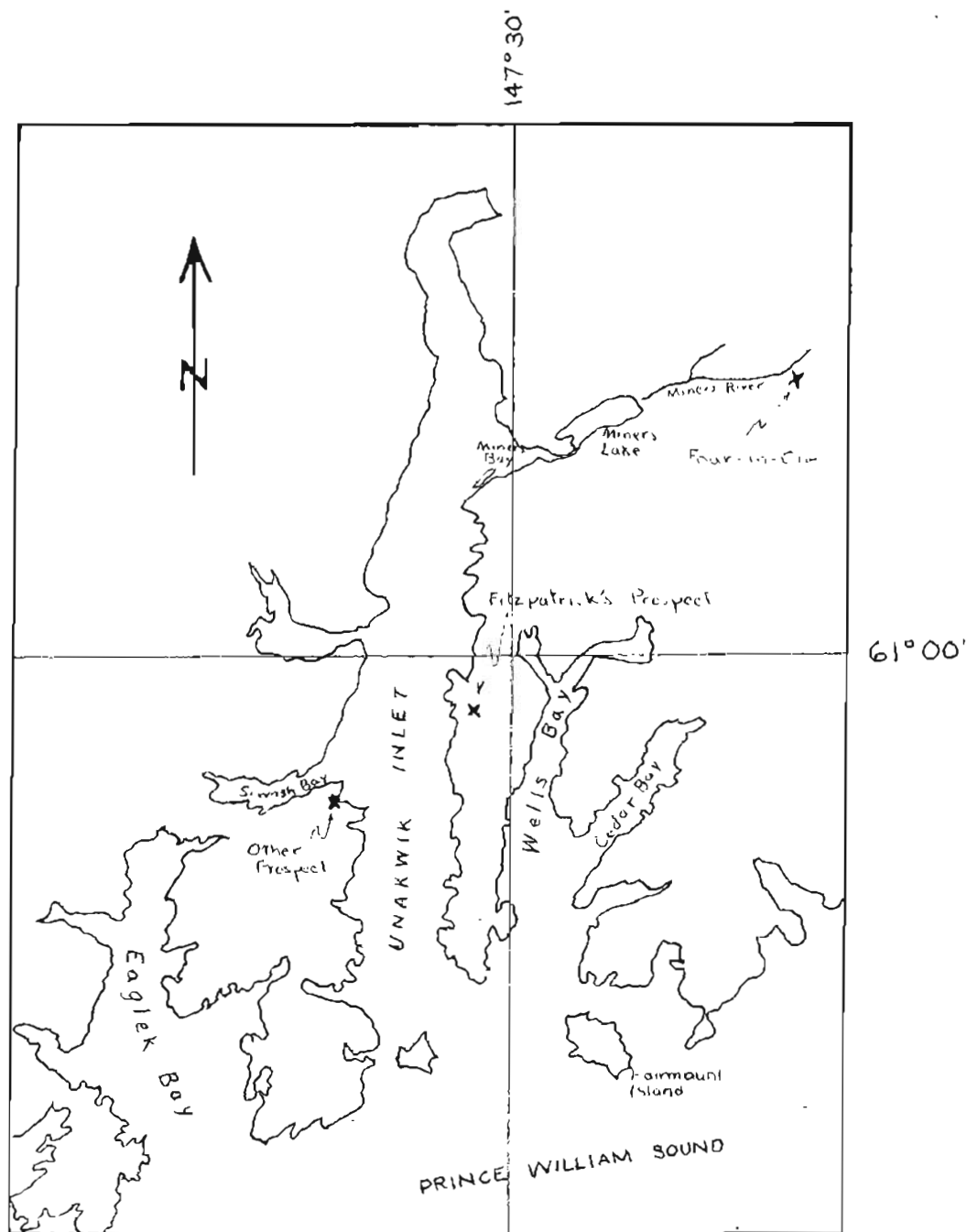


Figure 8. Locations of Fitzpatrick's two prospects and the Four-in-One prospect.

Map adapted from U.S.G.S. quadrangles.

Scale: 1 inch equals 20 miles.

for positive identification, and the College Assay Office reported chalcopryrite, sphalerite, and a trace of lead. It was suggested that a few slabs might be blasted off the faces of the exposed rock to see if the stringers might tend to widen. Radioactivity here is negative. The above radioactive checks were made with a Detektor DG-2 radiation detector.

August 29: Anchored in Miners Bay. Investigated a nickel prospect there and made two reconnaissance trips to Miners Lake in preparation for the trip to the Four-in-One copper prospect.

The nickel prospect is on the north side of the entrance to Miners Bay and consists of about 200 feet of drifts and cross cuts about twenty feet above high tide. The workings follow shear zones, but the shears show little mineralization.

It was found by the reconnaissance trips to Miners Lake that the skiff that had been reported to be at the lake was not in safe condition to be used and that we could not get around the lake on foot within a reasonable length of time. Therefore, we would have to "line" a skiff up the river to the lake (a short stretch of rough water) in order to travel up the lake. It was planned to start up the river early next morning if the weather was not too bad.

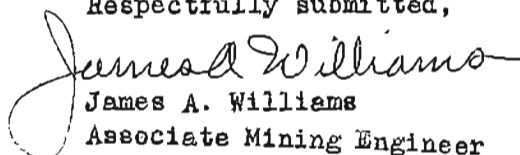
August 30: Fitzpatrick changed his mind and decided that he did not want to take his skiff up the river to the lake for fear it was too small and he might lose it, so there was nothing to do then but return to Cordova. It is probable that the trip up Miners River to the prospect would have ended in failure, anyhow, because of the continual bad weather. We looked for an old copper property in Cedar Bay on the return trip, but failed to find it. Arrived in Cordova late at night just ahead of a storm.

Since it is reported to be a promising prospect, which has apparently not been well sampled, it is recommended that another and better planned attempt be made to reach the Four-in-One next season. Dominic Vietta of Valdez was reported to have held the property for many years and may be still holding it.

August 31 - Sept. 1: At Cordova, awaiting transportation.

Sept. 2: Cordova to Juneau via Pacific Northern Airlines. Saunders returned to Fairbanks from Cordova on the first available transportation.

Respectfully submitted,


James A. Williams
Associate Mining Engineer

88-7-1887



Figure 4. Bucket ladder of Kougak
Freight and Mining Company
dredge.



Figure 5. View of bucket ladder of
homemade dredge from
above.



Figure 6. Alaska Metals Mining Company portal at Gilmore Dome. Compressed air locomotive in foreground.



Figure 7. Another view of portal at Gilmore Dome scheelite exploration project. Mine car in foreground.



Figure 9. Fitzpatrick's main prospect at Unakwik Inlet. Approximate width of mineralized zone shown by inked lines.