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MINING AND PROSPECTING IN THE MARSHALL DISTRICT DURING 1940

During the summer of 1940 a cross country trip was taken from the Yukon Mining Company's camp at Bobtail Creek, a tributary of Kako Creek, to the Wilson Creek mining operations on Elephant Creek in the Marshall District, a distance of about 15 miles. The first half of the route followed the ridge south of the East Fork of the Kuyukutuk River. The second half followed up the Kuyukutuk River, over the low divide into the head of Wilson Creek and thence to Elephant Creek. The time required to travel the distance was about 10 hours. One day was spent at the Wilson Creek camp gathering information of mining and prospecting in that District.

MINING AND PROSPECTING ON ELEPHANT CREEK

Elephant Creek, a tributary to Wilson Creek, is about a mile in length and is located nine miles by good cat road from Marshall. A condensed history of Elephant Creek from U.S.G.S. Bulletin 683 shows that gold was first discovered on the creek in 1913 and by 1915 a small area towards the head of the creek was mined by underground methods. Later a hydraulic plant was installed and some of the shallower gravels were worked by open-cut methods. No successful mining was done on lower Elephant Creek because of the depth and thawed conditions. From 1919 to 1940 practically no mining had been done on the creek.

In 1938 mining was resumed in the Wilson Creek area when the Wilson Creek Mining Company installed a complete dragline outfit on Disappointment Creek. By the spring of 1940 the paystreak had been mined out and operations were moved to Elephant Creek.

The Wilson Creek Mining Company is owned by A. V. Ericksen and associates, and is operated by Mr. Ericksen. The mining claims on Elephant Creek are leased by G. M. Pilcher. Mining of the property is done by open-cut methods

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using a Bucyrus-Erie 37B dragline with a 55 foot boom and a bucket capacity of 1½ cubic yards. The sluice boxes are in one unit 97 feet long, mounted on a trestle which is 22 feet high at the dump box. The boxes are 30 inches wide and 22 inches deep with a grade of one inch per foot. The dump box is 15 feet long by 8 feet wide. The gold saving equipment includes iron-shod pole riffles set in the dump box followed by 60 feet of railroad irons set lengthwise, 5 feet of Hungarian riffles, and 15 feet of perforated undercurrent plates. The water required is about 2,500 g.p.m. which is returned 700 feet through 16 inch pipes from a settling pond against a 20 foot head, a D 13,000 pump being used. A separate booster pump is located under the trestle for a No. 2 giant placed in front of the dump box. An RD 6 and an RD 7 are used to bulldoze the tailings from the end of the sluice boxes. A cut about 100 feet in length is worked before the set-up is moved ahead, the time required to move being about 3 hours. New additions to the operations since 1938 are a Bucyrus-Armstrong 23P 6-inch drill and a booster pump.

Mining was started in the early summer of 1940 about ½ mile from the head of the creek. A cut of approximately 64,000 b.r.f. (80 x 800 ft.) was first taken out after which a lean area of 200 feet was omitted. About 56,000 b.r.f. (80 x 700 ft.) had been removed from the present cut, which is towards the head of the creek, by August 3rd. The lower cut is 16 to 18 feet deep of which 6 to 8 feet is muck, and the upper cut is 14 to 16 feet deep of which 4 to 6 feet is muck. Mining conditions become more difficult towards the head of the creek because of the numerous slide rocks over 1 foot in diameter and the tight gravel overlying bedrock. The paystreak seems to become lean towards the head of the creek which also is reported to be the case towards the head of Disappointment Creek and Willow Creek. The water supply depends upon the precipitation run-off, but during a dry spell of one week only one out of three shifts was lost for sluicing,

during which time the dragline and bulldozers were kept busy stripping, cleaning out the settling ponds, and doing other necessary dead work.

Bedrock consists mainly of a white to tan colored soft gumbo of decomposed argillite with occasional areas of hard, blocky bedrock. The principal minerals found in the concentrates were hematite and a small amount of magnetite. In addition, a few grains of white metal having the appearance of platinum were found. The rocks and gravel vary in size from 1 foot in diameter to fine sand, the majority of the gravel being less than 6 inches in diameter. The rocks found consisted of greenstone, granite porphyry, small amounts of quartz, and the various alterations of silica such as chert, jasper, and hornfels.

Drilling on the lower half of Elephant Creek has revealed a paystreak about 150 feet wide. The average depth to bedrock is about 25 feet, of which 10 to 12 feet is muck. The gravel and bedrock are the same as in the upper part of the creek.

Mr. Ericksen plans to move the operations to the lower part of the creek this summer and estimated that $1,000.00 a day can be recovered. The water supply on lower Elephant Creek is larger and more constant than on the upper part of the creek since an additional small tributary is included in the drainage.

PROSPECTING ON WILSON CREEK

During the summer of 1940 a line of drill holes about 1000 feet in length was put down across the right limit of Wilson Creek opposite the mouth of Disappointment Creek (see colored map for location). The depths of the drill holes, as shown in the profile map, varied from 17 feet to over 53 feet, indicating that the Wilson Creek drainage at one time followed close to the foot of the right limit hills. The ground is all thawed and wet, necessitating casing for all the drill holes. Since only 50 feet of

casing was available, drilling was discontinued when the deeper ground was struck. Mr. Ericksen has ordered more casing and intends to resume drilling early this fall.

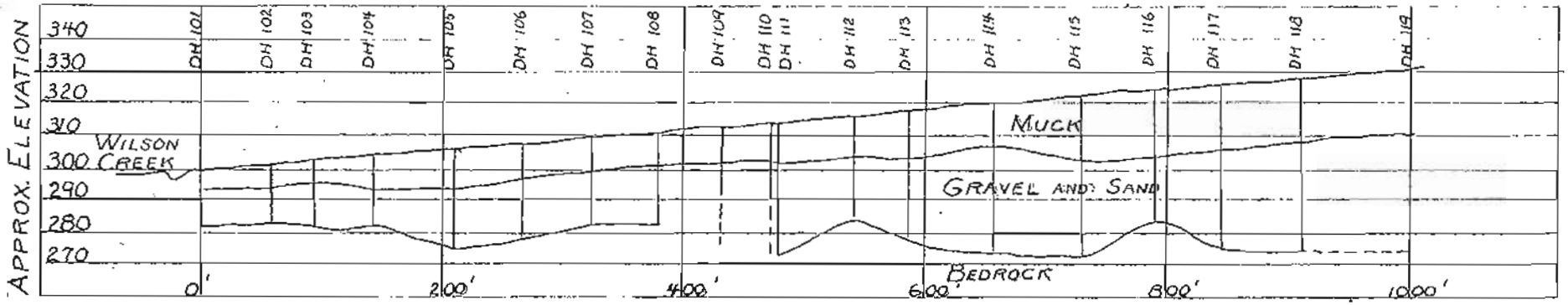
Bedrock is said to be a decomposed granite porphyry. The gravel found at the drill holes consisted of granite porphyry, greenstone, quartz, and cherty rocks of various colors.

The drill holes showed values increasing from 3 to 30 colors as the drilling progressed across the valley, but none of the values can be regarded as pay. Continued drilling may reveal a definite deep channel pay-streak. Depths and locations of the drill holes are shown on the accompanying profile and in the following table.

Drill Hole No.	Approx. Spacing (ft.)	Depth to Bedrock (ft.)	Muck (ft.)	Gravel (ft.)
101		17	6	11
	60			
102		18	7	11
	36			
103		20	7	13
	45			
104		21	9	12
	63			
105		30	12	18
	57			
106		28	10	18
	54			
107		26	9	17
	54			
108		28	10	18
	54			
109		No Bedrock	10	(25' coarse sand)
	45			
110		No Bedrock		
	4			
111		41	12	29
	63			
112		32	12	20
	45			
113		41	14	27
	72			
114		46	13	33
	69			
115		49	20	29
	60			
116		49	20	29
	54			
117		51	20	31
	66			
118		53	20	33
	93			
119		No Bedrock (53' drilled)		

Approximate Drill Profile on the Right Limit of Wilson Creek

Marshall District



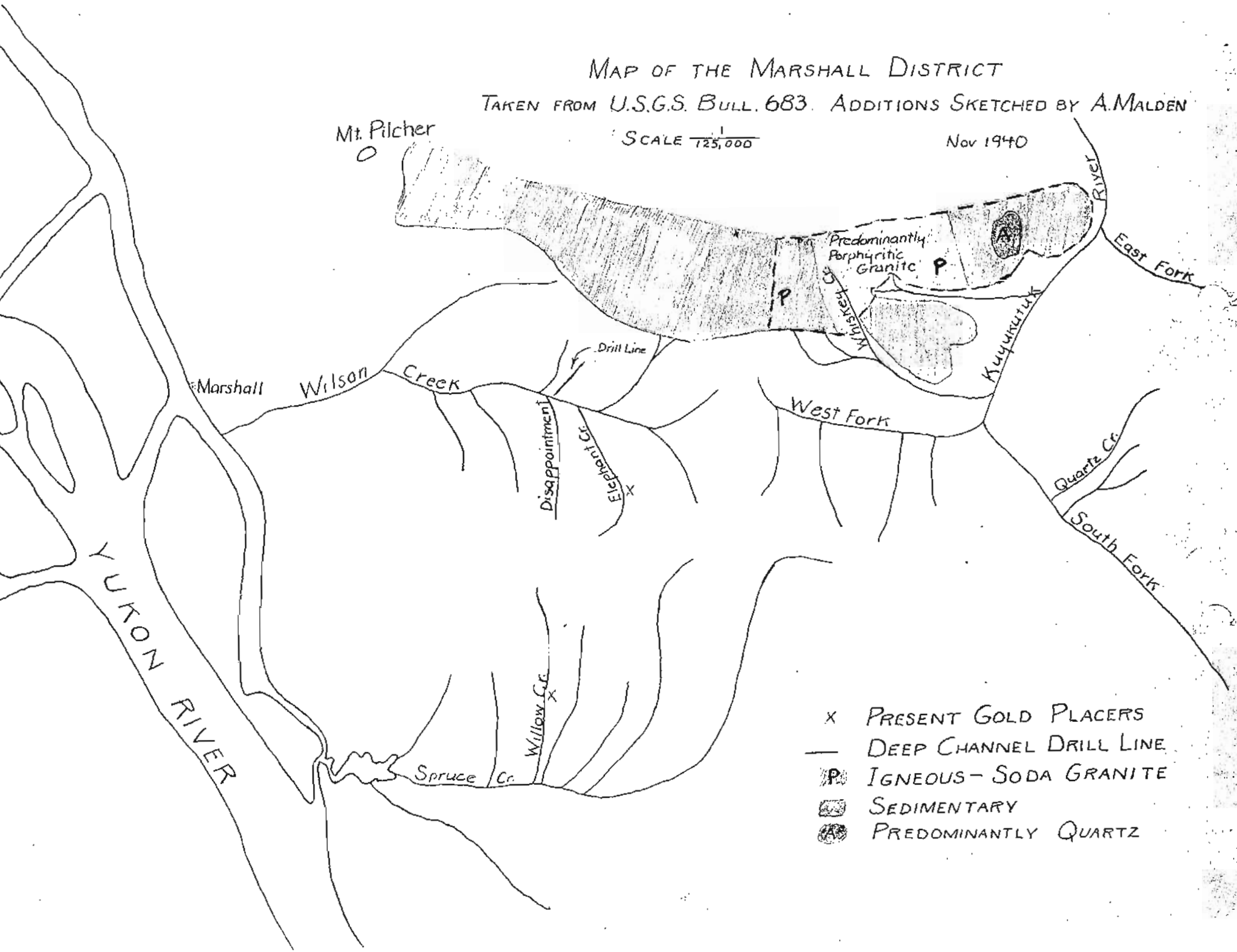
OTHER MINING AND PROSPECTING

The Willow Creek Mining Company had a new RD 8 delivered to them this spring. The operations were not visited personally, but Mr. Ericksen reports that they have located a good paystreak 300 feet to 500 feet in width on lower Willow Creek. Some of the ground mined this year is reported to run $3.00 per b.r.f.

Andrew Edgar, one of the discoverers of the Wilson Creek area, bedrocked a few of the many holes attempted on Quartz Creek, a tributary of the Kuyukutuk River. (See adjoining map for approximate location). Values varying from a few cents to 80¢ were panned from bedrock, but no b.r.f. values were determined due to excessive water seepage. A splash dam was built in an effort to open cut bedrock, but the low grade of the creek and lack of water caused this method to be unsuccessful. Edgar also bedrocked two holes on an adjoining creek, both holes showing colors but no pay. Quartz Creek contains some vein quartz as well as the other sedimentary and igneous rocks typical of that area. Edgar plans to return with a hand drill and prove up on his likely looking prospect.

Barney Olsen and Pat McDermott, employees of the Wilson Creek Mining Company, sank a shaft on Whiskey Creek, a tributary of the West Fork of the Kuyukutuk River, finding colors but no pay. They claim there is considerable quartz on the ridge east of Whiskey Creek. (Shown in red with letter "A" on the map.) A sample was sent to the Colorado School of Mines, and the return assay gave 35¢/ton in gold and a trace of silver.

On the return trip to Kako Creek the route over the ridge parallel to the left limit of the West Fork of the Kuyukutuk River was taken. In U.S.G.S. Bulletin 683 (The Anvik--Andreafski Region--Alaska), this area is mapped as argillites, sandstones, quartzites and conglomerates, but granite porphyry was also found in the area included in blue dashes on the accompanying map. A megascopic study of the area, indicated by "A" on the map, shows


MAP OF THE MARSHALL DISTRICT
TAKEN FROM U.S.G.S. BULL. 683. ADDITIONS SKETCHED BY A. MALDEN
SCALE 1/125,000
Nov 1940
Mt. Pilcher
Predominantly Porphyritic Granite
P
A
Kuyukutuk River
East Fork
Kuyukutuk Cr.
Drill Line
Marshall
Wilson Creek
Disappointment Cr.
Elephant Cr.
West Fork
Quartz Cr.
South Fork
YUKON RIVER
Willow Cr.
Spruce Cr.
X PRESENT GOLD PLACERS
— DEEP CHANNEL DRILL LINE
P IGNEOUS – SODA GRANITE
SEDIMENTARY
A PREDOMINANTLY QUARTZ

the predominant rock to be a weathered outcrop of vein quartz. A small sample of this quartz assayed 70¢ in gold per ton. A geologic study of the ridge to the base of Mt. Pilcher would likely show other granite porphyry outcrops.

Henry R. Joesting,
Albert Malden.

Department of Mines,
College, Alaska.
Oct. 30, 1940.

Note: The trip was taken by Malden we collaborated on this report.
H. R. J.