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TERRITORY OF ALASKA
DEPARTMENT OF MINES

PE 60-4

REPORT ON THE FLUME CREEK LODE-GOLD PROSPECT, EAGLE, QUADRANGLE

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by

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INTRODUCTION

A large, low-grade, lode-gold prospect on Flume Creek tributary to the Seventymile River, has been known to prospectors in interior Alaska for many years, but it has not been described in any reports on the region. The prospect was discovered by the Hudson brothers in the early 1900's; after being abandoned by them, the claims reverted to the public domain, and shortly after World War II the prospect was staked by Mr. Fred Jenkins of Eagle. During the past few years he has been doing exploration and development work on it. The claims now belong to the Alaska Nickel Company, of which Mr. Jenkins is a major stockholder.

In 1955, field investigations for the Department of Mines necessitated a trip through the Seventymile River country, and provided an opportunity to obtain information about the Flume Creek gold prospect for the Department of Mines. Accordingly, an examination of the prospect was made in July 1955 by Robert H. Saunders, Associate Mining Engineer. This report is written from notes taken during that examination.

GENERAL INFORMATION

The Flume Creek gold prospect is in the north-central part of the Eagle Quadrangle at 64° 56' N latitude and 142° 30' W longitude. Throughout a major part of its course, Flume Creek flows through a narrow, steep-walled canyon; about one-half mile from its mouth the creek emerges from the canyon and flows through a narrow, rounded valley to the Seventymile River. The main

outcrops of the prospect are at the lower end of the canyon on both sides of the creek.

The Seventymile River is not navigable for many miles downstream from the mouth of Flume Creek. Freight must be brought to the prospect either by tractor up the Seventymile River on the ice in the winter or by air. Freight hauled in by tractor would come through Eagle, and the distance by trail from Eagle to the prospect would be about 60 miles. There is a small airstrip on the ridge on the east side of Alder Creek, and there is a foot trail about five miles long from the airstrip to Flume Creek.

The first mining on Flume Creek was the mining of gold placer deposits. The area that was mined is on the left limit side about one-quarter mile above the mouth of the creek; it is about 200 feet long and 50 feet wide. The tailings and the outline of the old workings are still discernible. To obtain water for mining, the early miners built a flume 3000 feet long through the Flume Creek canyon; rotted parts of the flume are now scattered along the lower part of the canyon.

On Arctic Creek, a tributary to Flume Creek that heads on Arctic Dome, there was a small placer operation, which Mr. Jenkins says produced only about $600. Aside from that there has been no placer mining on Flume Creek upstream from the outcrops of the lode at the lower end of the canyon.

A few tributaries of the Seventymile River downstream from Flume Creek have produced placer gold; the most important of these

are Alder, Barney, and Crooked creeks. Barney Hansen of Eagle is mining on Crooked Creek, and his is the only active placer mine in the Seventymile River watershed at the present time. Probably there has been some prospecting on all the tributaries of the Seventymile River. After the end of World War II, the United States Smelting Refining and Mining Company did some prospect drilling in the main Seventymile River valley. Cinnabar has been reported on Canyon Creek, a tributary that flows into the Seventymile River about 20 miles downstream from Flume Creek.

GEOLOGY AND MINERAL DEPOSITS

The geology of this part of Alaska has been described in U. S. Geological Survey Bulletin 872, THE YUKON-TANANA REGION, ALASKA, by J. B. Mertie, Jr. From the mouth of Flume Creek for several miles downstream the bedrock in the valley of the Seventymile River is pre-Cambrian Birch Creek Schist. The main headwater tributaries of Flume Creek head in hills of granite and quartz diorite, a part of the Charley River batholith. Throughout most of its length, Flume Creek flows over a group of metamorphosed sediments of Devonian age. Near the mouth of Flume Creek, there is a small area in which the bedrock is a basic intrusive rock, also of Devonian age. The general strike of contacts between the different rock units is about N 70° W.

The lode is a shear zone in the Devonian metamorphic rocks, and, within the zone, pyrite, arsenopyrite, and free gold are disseminated. There is a large outcrop of the zone on each

side of Flume Creek and on each side of Bonanza Creek, the next tributary to the Seventymile River downstream from Flume Creek. All of the outcrops have weathered to a conspicuous reddish color. The distance between the outcrops on Flume Creek and the outcrops on Bonanza Creek is about one mile. On the north side of the Seventymile River about three miles upstream from the mouth of Flume Creek there is another outcrop of a similar color, which may mark the northwestward extension of the mineralized zone. This outcrop is conspicuous when the sunlight strikes it at the proper angle, but otherwise it is difficult to see from a distance.

The strike of the mineralized zone from Bonanza Creek to Flume Creek is between N 30° W and N 60° W, and the zone dips about 40° southwest.

On the left limit side of Flume Creek there is a large talus slope consisting of rock that has broken from the outcrop of the mineralized zone. This talus pile may prove to be the first part of the deposit to be mined.

Fred Jenkins has had assays run on many samples during the time that he has been working on Flume Creek. From samples from the talus slope on the west side of the creek, he estimates that the talus pile contains 10,000 tons of ore that will average $9 per ton. A small amount of the talus has been put through the mill but not enough to verify this estimate. From the outcrop of the mineralized zone on Bonanza Creek he has obtained samples that ran as high as $54 per ton. Several pans of weathered

material were taken from the outcrop on Bonanza Creek during this examination; an appreciable amount of gold was recovered in each pan, however, one sample of this material was assayed at the College Assay Office, and it contained only a trace.

WORKINGS AND EQUIPMENT

On the east side of Flume Creek there is an adit that was driven by the Hudson brothers in the early 1900's. From the portal the adit goes about 50 feet due east; there it turns to the north and goes another 10 feet to the face. Fifteen feet in from the portal there is a turnoff about 15 feet long to the south. The adit starts near the hanging wall of the mineralized zone and partly crossouts the zone. At the exposures on Bonanza Creek there are some small surface trenches that have been dug by Fred Jenkins.

On Flume Creek about 100 yards downstream from the outcrops of the mineralized zone there is a cabin. Fred Jenkins has repaired the cabin and is using it for living quarters; it is now in excellent condition.

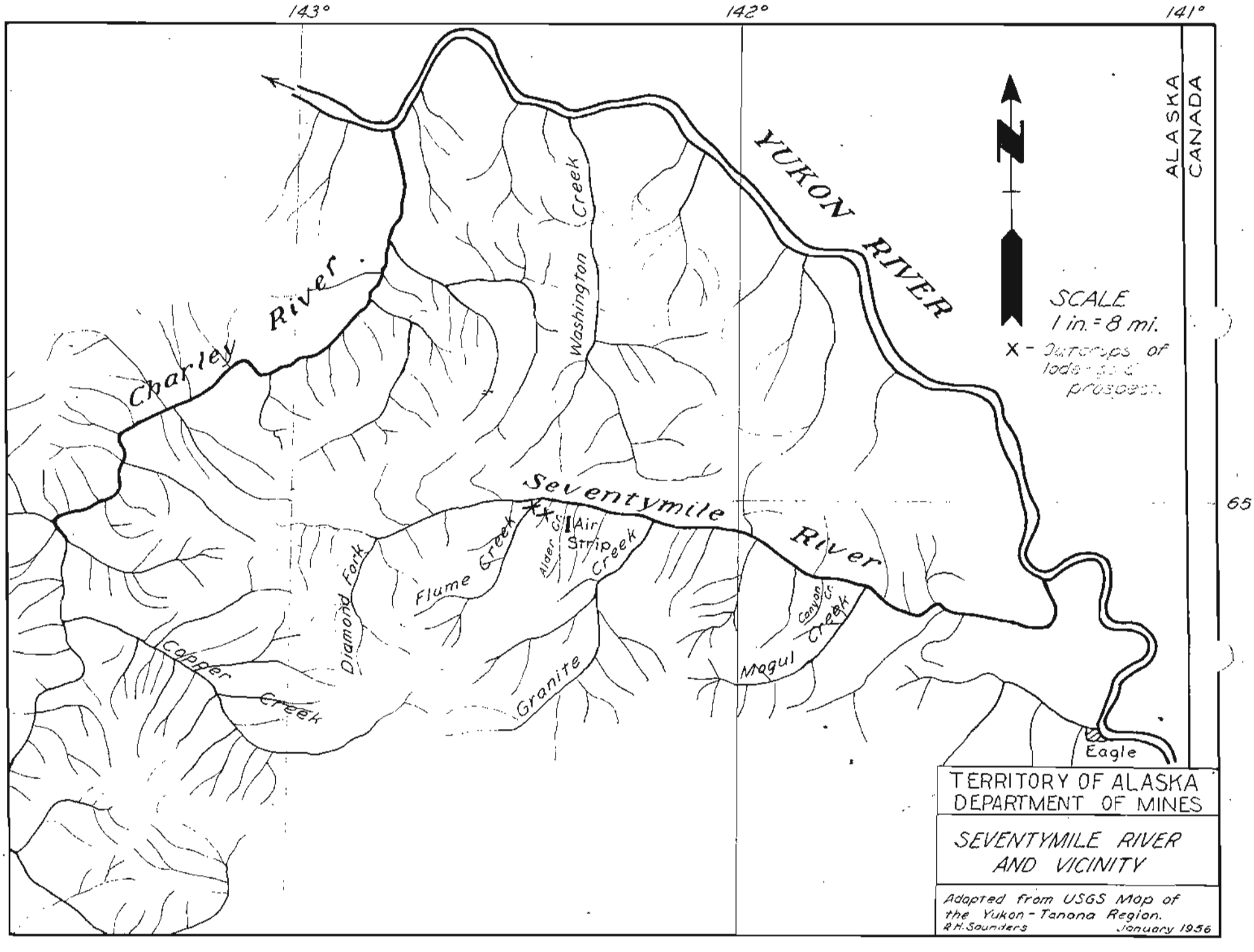
On the ridge on the west side of Flume Creek, Fred Jenkins has started building an airstrip. In July 1955 the moss had been removed from the new airstrip exposing fine-grained, frozen silt. Water from the thawing ice in the silt made the airstrip much too wet for aircraft landings, and although he hoped to be able to drain the water off, there was some doubt that the airstrip ever would be serviceable.

The usual hand tools required for prospecting are on the property, and it addition there are a small ball-mill and a "Terratrac", a small gasoline-powered, crawler-type tractor. The tractor is equipped with a front end loader. The ball-mill has been erected at the foot of the large talus slope on the west side of Flume Creek. During the winter of 1954-55 a large boulder came down the slope and broke the feeder on the mill; in July 1955 the mill had not been repaired. There is no classifier to permit the mill to run in closed circuit; a sluice box, or launder, is the only gold-saving device.

PLANNED OPERATIONS

Fred Jenkins plans to start mining in the talus pile on the west side of Flume Creek. In doing so he will use the "Terratrac" to dig the talus and dump it into the ball-mill feeder. Presumably, before he mines much of the talus pile he will add equipment that will improve the milling procedure. The mining of the talus will give some indication of the grade of the mineralized zone, at least in the vicinity of Flume Creek. On Bonanza Creek there is much weathered material over the outcrop that perhaps could be placer mined profitably, however, the outcrop is 100 feet or more above the creek and pumping would be necessary.

Even if Fred Jenkins is unsuccessful in his mining, some time in the future this deposit may support a large-scale mining operation.


143°
142°
141°
65°
ALASKA
CANADA
YUKON RIVER
Charley River
Washington Creek
Seventymile River
Flume Creek
Alder Cr.
Air Strip Creek
Diamond Fork
Calder Creek
Granite
Mogul Creek
Canyon Cr.
Eagle
SCALE
1 in. = 8 mi.
X - Outcrops of lode-gold prospects.
TERRITORY OF ALASKA
DEPARTMENT OF MINES
SEVENTYMILE RIVER
AND VICINITY
Adapted from USGS Map of the Yukon-Tanana Region.
R.H. Saunders
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Portal on east side of Flume Creek.

Mill at toe of talus slope on west side of Flume Creek.

Abandoned workings and camp on Alder Creek.