UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

Area VIII - Alaska

EXAMINATION REPORT

SILVER DOLLAR PROSPECT

by

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Area VIII Mineral Resource Office
Juneau, Alaska

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SILVER DOLLAR PROSPECT[1]

by

A. L. Kimball[2]

ABSTRACT

The Silver Dollar, referred to in published literature as Prospect Mining Co., Danzinger, and California Creek lode, lies at the base of a canyon talus-bluff on the right limit of California Creek, tributary to the Totatlanika River 12 miles east of Ferry on the Alaska Railroad.

Small quantities of concentrates containing silver and copper were reportedly shipped approximately 30 years ago. Recently interest has been renewed in silver, prompting examination by a Bureau of Mines engineer.

Quartz, sulfide, tourmaline veins, usually following faults, strike approximately parallel to foliation in Mississippian (?) Totatlanika schist and are poorly exposed in a short, recently exhumed drift and in partially sloughed dozer cuts and elsewhere on the surface. Sparse sulfide mineralization was seen intermittently to the southward as thin veins following probable faults and as occasional talus float.

Assays of 20 channel and grab samples from the general area gave the following values: 142.5 ounces silver per ton from a short vein section 0.6 foot in width poorly exposed below water level in the creek bank and only briefly accessible. Three other sample values lay between 15.22 and 20.84 ounces silver per ton while the remaining 16, including the nine from the drift, lay between 5.2 ounces per ton and nil.

The present owner had a D-3 dozer on the property during the examination and was considering further work.

INTRODUCTION

The Silver Dollar prospect, examined by a Bureau of Mines engineer in June 1964, is located on the east bank of California Creek, tributary to the Totatlanika River, approximately 60 miles south-southwest of Fairbanks. Some high values in silver have been reported from quartz, sulfide, tourmaline veins in altered sericite schists.

1/ Work on manuscript completed May 1966.

2/ Mine examination and exploration engineer, Area VIII Mineral Resource Office, Bureau of Mines, Juneau, Alaska.

The examination was made in connection with Rampart investigations and because of the present emphasis on silver.

HISTORY AND OWNERSHIP

The Silver Dollar is the same property referred to in the past as California Creek lode, Danzinger property, and the Prospect Mining Co.

The only references to these properties in published literature are brief mentions of the 1934 or 1935 seasons in U.S. Geological Survey Bulletins 868,[3] 880,[4] and 907.[5] At that time, a good wagon road connected the property of the Prospect Mining Co. with the Alaska Railroad at Ferry. During the 1934 season a small crew with a compressor and truck actively prospected with reportedly encouraging results. The ore was said to contain gold, lead, and copper, though its principal values were in silver. Activity continued during the following year, but ceased before the end of the season. The Prospect Mining Co. furnished concentrates from which copper was obtained in 1934 and though silver is credited with being the ore's most valuable component, no specific reference to silver production from this property is found in published literature.

According to U.S. Geological Survey Bulletin 907, a few carloads of lead-silver ore were produced from a property on California Creek. No dates of production or specific reference to property name are given, however, in view of the history of the California Creek area, it is reasonable that this mention refers to the former Prospect Mining Co. property, the location of the present Silver Dollar.

Two lode claims relocating this property were recorded at Nenana by Boyd Blair in October 1961, the Silver Dollar and Silver Dollar No. 2. Two other lode claims located approximately one-half mile upstream in the vicinity of an ice-filled adit, the Brown Bear and Brown Bear No. 1, were recorded a year earlier.

Former interest, in addition to the work done during the 1934-35 seasons, includes a later drift driven by Olsen and Monroe of Fairbanks. A caved portion of this working was exposed at the time of the examination (fig. 3).

The present owner reported having seen a portion of a caved working while dozing a short distance northwest of the accessible drift shown in figure 3.

3/ Smith, Philip S. Mineral Industry of Alaska in 1934. U.S. Geol. Survey Bull. 868-A, 1936, pp. 24, 63, 66-67.

4/ Smith, Philip S. Mineral Industry of Alaska in 1935. U.S. Geol. Survey Bull. 880-A, 1937, pp. 28, 65, 70.

5/ Capps, Stephen R. Geology of the Alaska Railroad Region. U.S. Geol. Survey Bull. 907, 1940, p. 186.

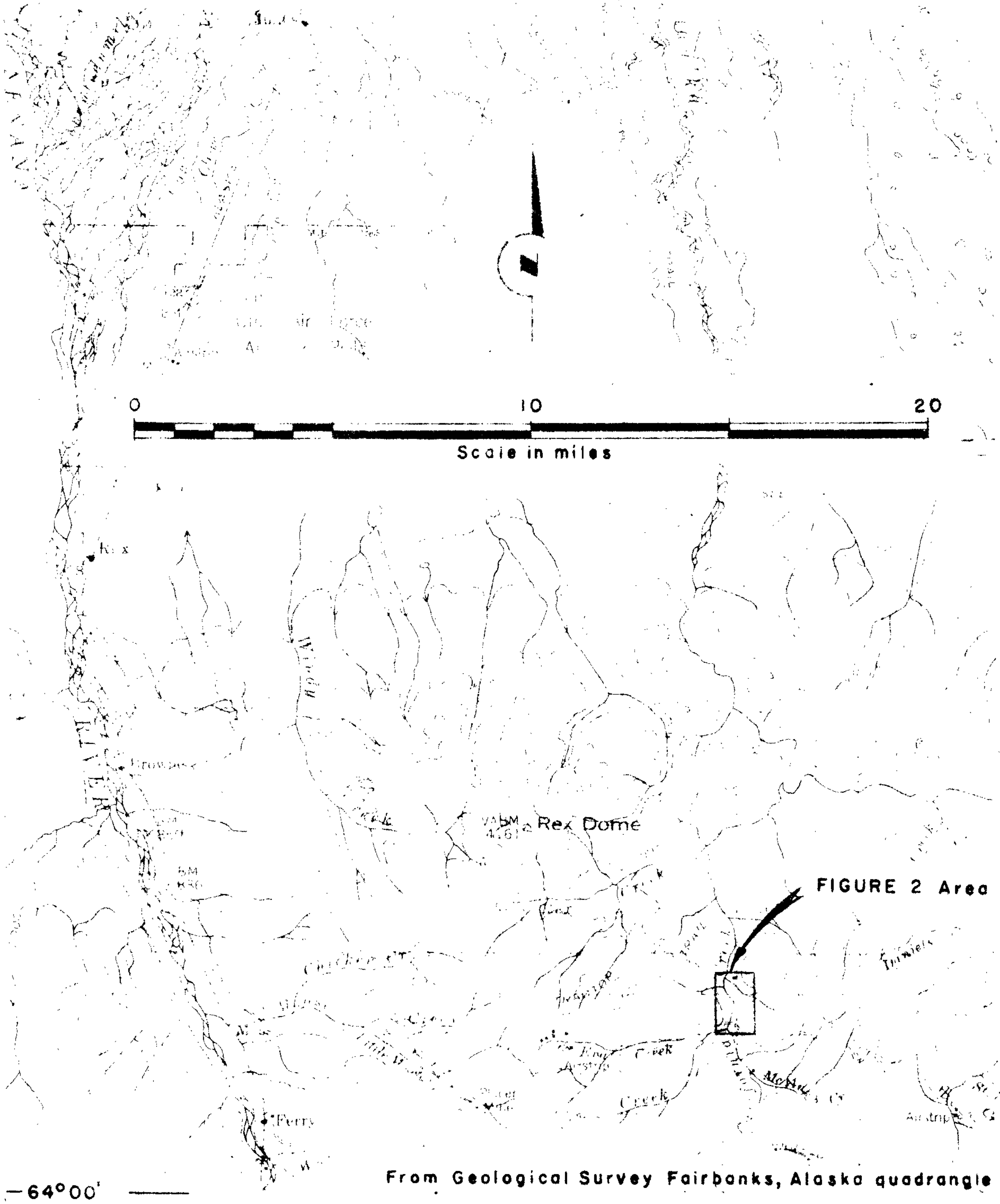

FIGURE I.- Index Map, Silver Dollar Prospect

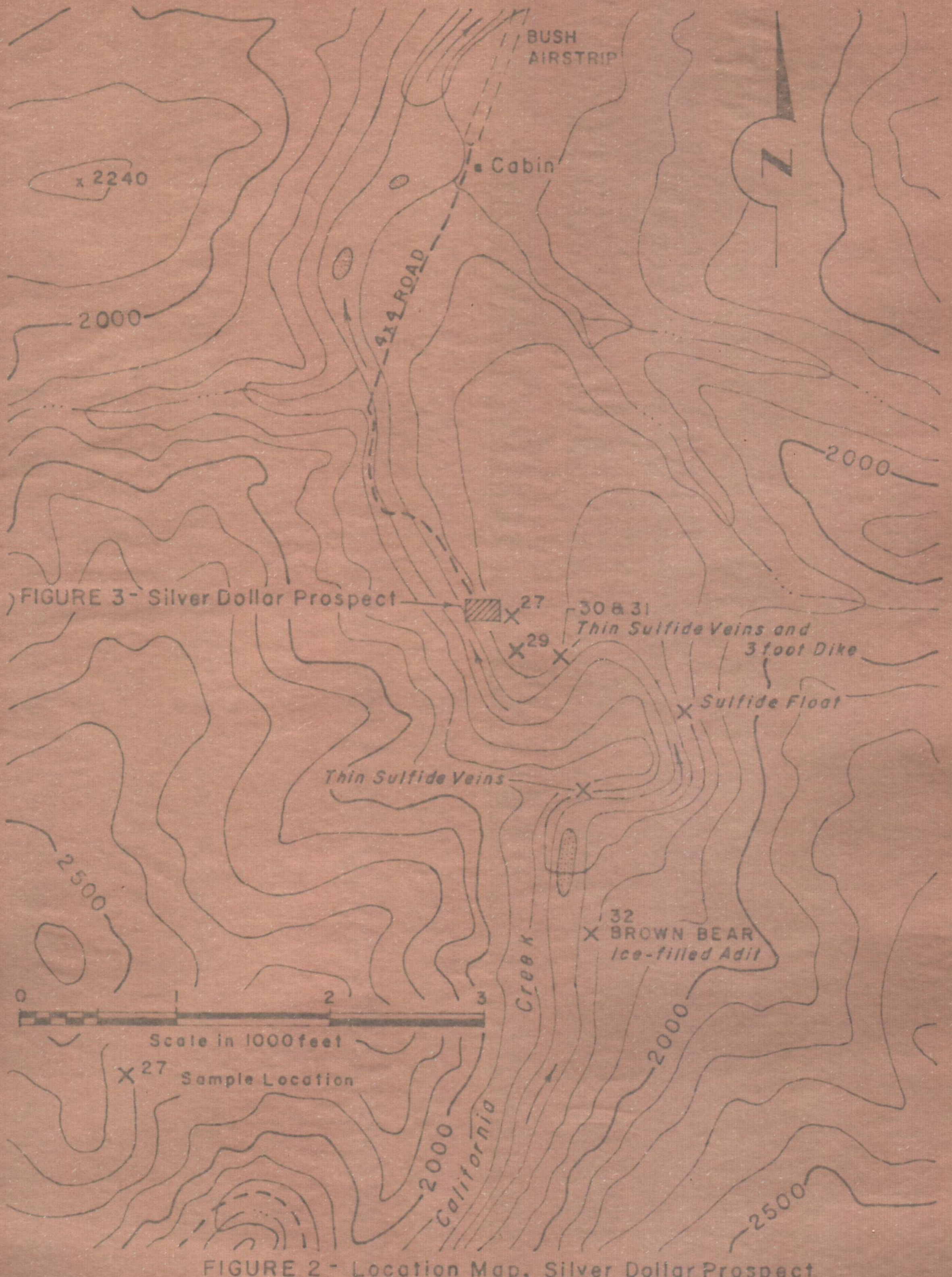

FIGURE 2 - Location Map, Silver Dollar Prospect

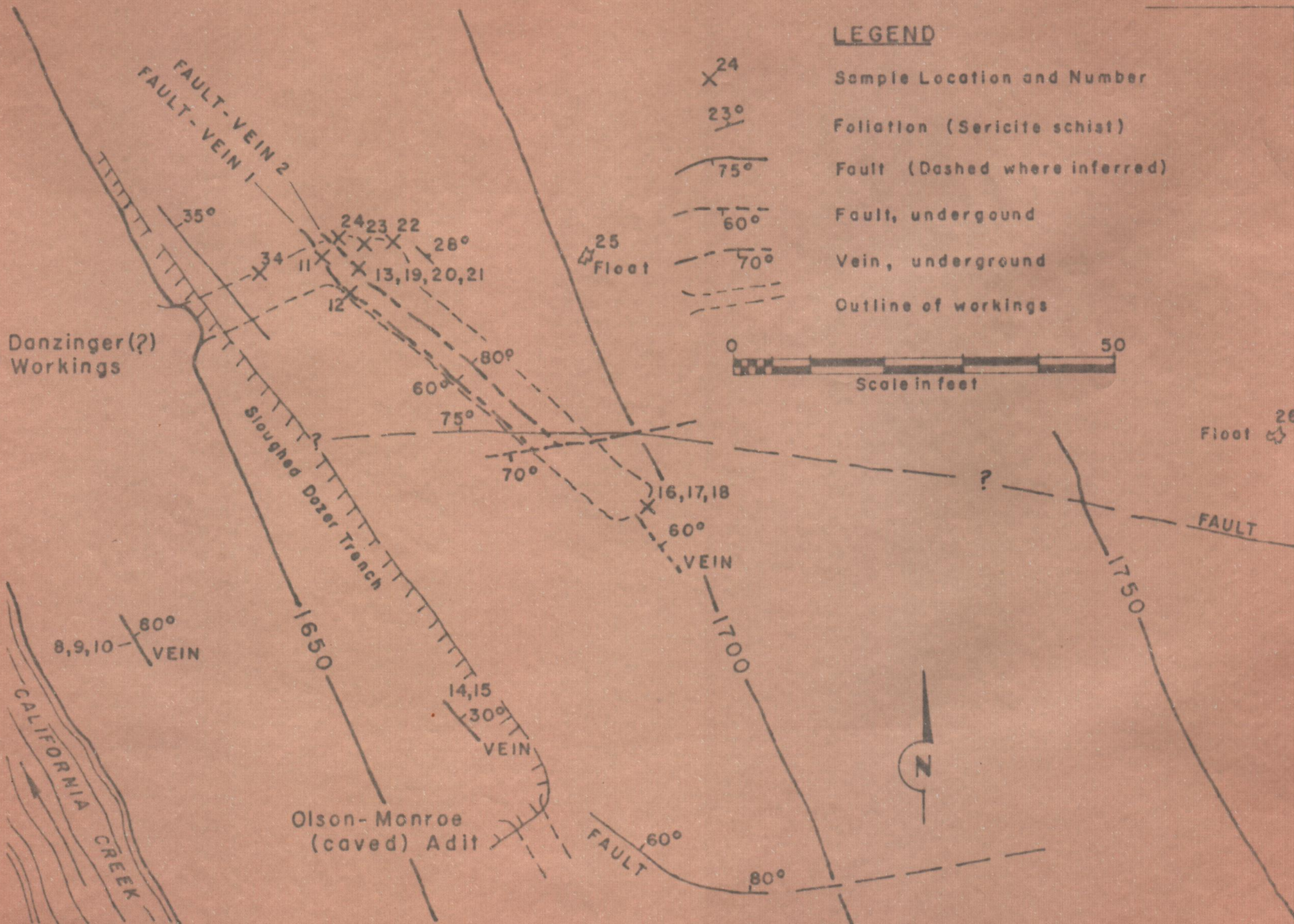

FIGURE 3.- Sample Map, Silver Dollar Prospect

Robert Saunders of the State Division of Mines and Minerals, Department of Natural Resources, examined the property in 1961.

LOCATION AND ACCESSIBILITY

The Silver Dollar lies on the east bank of California Creek, tributary to the Totatlanika River, 12 miles east of Ferry, Mile 371 on the Alaska Railroad, and is approximately 60 miles S 30° W of Fairbanks. It lies in the northeast quarter of section 9, T 10 S, R 6 W, Fairbanks meridian, at approximately 64°14' N latitude and 148°44' W longitude. The area is covered by the U.S. Geological Survey 1:63,360 topographic quadrangle Fairbanks (A-4).

During July 1964 access was gained by the Bureau of Mines from Ferry over 24 miles of secondary summer road in a four-wheel-drive vehicle. The road fords California Creek seven times and is not always passible during high water or wet muddy weather.

A small airstrip near the Liberty Bell mine, about 6 walking miles from the Silver Dollar property is not maintained, but has reportedly been used within the last 5 or 6 years by small bush aircraft.

A second airstrip lies approximately 0.5 mile downstream from the prospect on the right limit of California Creek and is followed by the access road at that point. It is doubtful that it would be usable without some work.

PHYSICAL FEATURES AND CLIMATE

The Totatlanika River and its tributary California Creek rise in the northern foothills of the Alaska Range and flow northward parallel to and east of the Nenana River, eventually entering the Tanana River southwest of Fairbanks.

California Creek has cut canyons through resistant Totatlanika schist, but exhibits more gentle topography where passing through areas of younger and softer sedimentary rocks. Higher hill summits are usually bare or grass covered with the maximum local relief of approximately 2,500 feet. The prospect altitude is approximately 1,700 feet while Rex Dome, 6 miles north, rises to 4,158 feet above sea level.

The prospect lies just above creek level at the base of a 200-foot bluff of decomposing Totatlanika schist partially covered by talus. Though this section of California Creek is straight, high water has some tendency to undercut the slope, keeping it in an unstable condition.

The climate is characterized by long cold winters and moderately warm summers. Weather records at McKinley Park, 25 miles to the south, kept since 1922, give the average annual temperature as 27.5° F, average January temperature as 1.5° F, and the average July temperature as 54.7° F. Maximum and minimum temperatures recorded are above 80° F and below -40° F, respectively. The climate appears to be tempered by semimountainous location as summers are not as warm nor winters as cold as those at Nenana or Fairbanks in the Tanana flats.

Average annual precipitation at McKinley Park is more than 14 inches, whereas Fairbanks and Nenana receive approximately 12 inches each.

GENERAL GEOLOGY

The prospect area is included in a much larger area geologically mapped by Wahrhaftig and Black,6/ and earlier by Capps,7/ both at a scale of 4 miles to the inch.

The prospect and associated mineralized area lie within a broad band of Totatlanika schist of Mississippian (?) age in which California Creek has cut canyons contrasting with more subdued topography where the creek passes through soft coal-bearing Tertiary sediments.

The nearest mapped igneous intrusive rocks on Jumbo Dome, 6 miles to the south, are of Late Cretaceous age. Acidic and intermediate igneous dikes were seen in the prospect area suggesting association with possible buried intrusive masses not exposed by erosion. This is also suggested as a possible source of the tourmaline-quartz-sulfide mineralization.

The top of the bluff above the prospect is capped with coarse boulder gravel, possibly Tertiary Nenana gravel, or local more recent alluvium.

WORK BY THE BUREAU OF MINES

Quartz-tourmaline-arsenopyrite veins with varying amounts of other sulfides are exposed in a short recently reopened drift, at the surface in a 200-foot high talus-bluff, and in partially sloughed dozer cuts at the bluff base, all on the right limit of California Creek. Exposures at the surface were relatively poor being largely sloughed over while those underground were exposed through loosely spaced lagging. Float with

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6/ Wahrhaftig, Clyde and Robert F. Black. Quaternary and Engineering Geology in the Central Part of the Alaska Range. U.S. Geol. Survey Prof. Paper 293, 1958, plate 1.

7/ Capps, Stephen R. Geology of the Alaska Railroad Region. U.S. Geol. Survey Bull. 907, 1940, plate 3.

similar mineralization was found on the slope approximately 125 feet above the highest vein material seen in place. Occasional narrow veins and float with similar mineralogy were noted for approximately half a mile up the valley to the south, approximately on the line of projected strike of veins seen in the drift area.

Twenty-five channel and grab samples were submitted for laboratory analyses. See tables 1-3 at the end of the report for samples analyses and figures 2-3 for their locations.

A 0.6-foot-thick vein with somewhat variable dip and strike exposed briefly by dozing in the creek bank below water surface gave the highest assay (sample 9: 142.5 ounces silver per ton, 0.34 ounce gold per ton, and 6.41 percent copper). This vein differed from all others sampled in containing abundant tennantite and only traces of tourmaline. Others were richer in tourmaline and had virtually no tennantite. Samples 25 and 26, float from the talus-bluff above the workings, assayed 15.22 and 20.84 ounces silver per ton, respectively. The latter also contained 5.41 percent copper and though all other sulfide samples analyzed contained considerable arsenopyrite, sample 26 contained none.

Samples 14 and 15 of a surface vein exposed in a dozer cut assayed 5.2 and 15.8 ounces silver per ton across widths of 0.5 and 0.45 foot, respectively. This vein appears to be a surface exposure of vein 1 in the drift. Analyses of nine channel samples taken underground showed considerably less silver and ranged from nil to 2.42 and 2.66 ounces per ton across 0.5 and 0.2 foot, respectively.

A steeply dipping east striking fault traceable on the surface cuts the workings underground (fig. 3). It could not be definitely determined, but it is probable that the vein in the southeast heading of the drift is the extension of vein 1 offset by this east striking cross fault.

Structural relations seen in the northwest drift heading indicated that fault 1 was truncated by fault 2 with later quartz-tourmaline-sulfide veins following footwalls of both faults. In addition to samples of the veins (tables 1-3, fig. 2), sample 24 was taken of the fault 2 gouge zone 0.35 foot in width containing thin sulfide stringers.

No sulfide mineralization was noted much beyond the workings to the northwest nor did geochemical field tests give anomalous values in that direction. Also, the sericite schist in that end of the bluff in the vicinity of the workings is softer and more altered than elsewhere suggesting that a fault terminated mineralization.

Thin sulfide veins and sulfide float in talus were found at several points upstream as shown in figure 2.

Approximately 1/2 mile upstream an ice-filled adit, known as the Brown Bear, appears to follow a fault zone containing pods and stringers of sulfides with an east strike and a 40° northerly dip at the portal. Sample 32 of a 0.3-foot-thick vein exposed in an adjacent hand pit assayed 3.42 ounces silver per ton and 0.39 percent copper.

Several igneous pegmatite-like dikes 300 feet southeast of the mapped workings are composed of quartz, potassium feldspar, and tourmaline segregations (sample 29). Also, a 3-foot dike of intermediate composition lies 600 feet southeast.

CONCLUSION

A small amount of production has been reported from this area, and though there is evidence of considerable local faulting, it is not certain that much movement has taken place. Some faulting is premineral and some post. Veins, usually following faults, strike parallel to, but dip more steeply than, the foliation of the Totatlanika schist and are offset by at least one apparently unmineralized cross fault. If segments of one vein have been properly matched, this cross fault has an apparent left lateral horizontal component of movement of only a few feet.

Similar sulfide mineralization was seen intermittently toward the southeast or roughly along projected vein strike for more than 2,000 feet, suggesting some semblance of continuity, and the improbability of major postmineral cross faulting in that distance. One assay (sample 9) was high in silver and copper and showed moderate value in gold. Any further work should include systematic geochemical soil sampling of the area and some packsack diamond drilling to determine the nature and extent of the vein from which the one high assay was obtained. Some ground geophysical work may be appropriate.

TABLE 1. - Sample descriptions

Sample No.	Type	Width, feet	Description
8	Channel	1.3	Iron-stained schist, footwall of 9.
9	...do..	.6	Black sulfide vein.
10	...do..	1.6	Iron-stained schist, hanging wall of 9.
11	...do..	.35	Tourmaline-sulfide vein No. 1.
12	...do..	.5	Do.
13	...do..	.5	Tourmaline-sulfide vein No. 2.
14	...do..	.5	Weathered sulfide vein, hanging wall half.
15	...do..	.45	Weathered sulfide vein, footwall half.
16	...do..	.2	Tourmaline-sulfide vein.
17	...do..	.65	Hanging wall of 16.
18	...do..	.55	Footwall of 16.
19	...do..	.95	Tourmaline-sulfide vein No. 2.
20	...do..	.95	Footwall of 19, schist with sulfides.
21	...do..	.4	Hanging wall of 19, schist with sulfides.
22	Grab...	-	Sericite in drift wall.
23	...do..	-	Orange mud from drift.
24	Channel	.35	Fault gouge with sulfide veinlets, hanging wall, vein No. 2.
25	Grab...	-	Float, sulfides with copper stains.
26	...do..	-	Do.
27	...do..	-	Silicified fault gouge.
29	...do..	-	Pegmatite-like vein.
30	Channel	.1	Sulfides and tourmaline from fault W at 35° N.
31	Grab...	-	3-foot dike in footwall of 30.
32	Channel	.3	Green-gray sulfides, pod or vein.
34	Grab...	-	Altered sericite schist.

TABLE 2. - Assay results

Sample No.	Ounce per ton Gold	Ounce per ton Silver	Copper, percent	Lead, percent	Bismuth, percent	Thickness, feet
8	Nil	0.76	<0.01	-	-	1.3
9	0.34	142.50	6.41	0.20	0.34	.6
10	Trace	1.98	.15	-	-	1.6
11	Trace	.48	<.01	<.05	<.003	.35
12	Trace	.34	<.01	-	-	.5
13	.02	2.42	.13	-	-	.5
14	.10	5.20	.08	-	-	.5
15	.08	15.80	.05	-	-	.45
16	.02	2.66	.11	-	-	.2
17	Nil	Nil	<.01	-	-	.65
18	Nil	.14	.04	-	-	.55
19	Trace	.44	.09	<.05	.003	.95
20	Nil	.86	<.01	-	-	.95
21	Nil	Nil	<.01	-	-	.4
24	Nil	.08	.06	-	-	.35
25	.28	15.22	.71	-	-	-
26	.06	20.84	5.41	-	-	-
29	Nil	Nil	.03	-	-	-
30	Nil	.06	.10	-	-	.1
32	.08	3.42	.39	.73	<.003	.3

TABLE 3. - Petrographic results

	Sample															
	9	11	16	19	20	21	22	23	24	26	27	29	30	31	32	34
Spectroscopic:																
Ag........................	X	N	T	N	N	N	N	N	N	T	N	N	N	N	T	N
Bi........................	X	N	T	N	N	N	N	N	N	X	N	N	N	N	T?	N
V.........................	N	-	-	-	-	-	-	T	-	-	T	-	-	-	-	-
Cu........................	X	T	T	T	T	T	T	T	T	X	T	T	X	T	X	T
Mo Sn Y Zr................	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Pb........................	T	N	T	N	N	N	N	N	N	T	N	N	N	N	X	N
Zn........................	X	T	T	T	N	T	N	N	N	T	N	N	N	N	T	T
Minerals:																
Actinolite................	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-
Albite-oligoclase.........	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-
Apatite...................	-	-	-	-	-	T	-	-	-	-	-	-	-	-	-	-
Arsenopyrite..............	A	A	S	A	M	-	-	-	M	-	-	-	S	-	A	-
Biotite...................	-	-	-	-	-	-	-	-	-	-	-	-	-	S	-	-
Chalcocite................	-	-	-	-	-	-	-	-	1/ T	S	-	-	-	-	-	-
Chalcopyrite..............	-	N	T	-	-	-	-	-	T	N	-	-	F	-	F	-
Chlorite..................	S	-	-	S	S	S	S	-	F	S	-	S	-	A	-	-
Covellite.................	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-
Cryptocrystalline quartz..	-	A	A	S	-	-	-	-	-	-	-	-	-	-	-	-
Diginite..................	F	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-
Epidote...................	-	-	-	-	-	-	T	-	-	-	-	-	-	-	-	-
Goethite-limonite.........	-	-	T	T	-	-	-	P	-	A	-	S	-	F	-	-
K-feldspar................	-	-	-	-	-	M	A	-	S	-	A	P	-	-	-	A
Pyrite....................	T	N	N	N	F	T	N	-	T	M	-	T	-	-	F	-
Quartz....................	A	A	A	A	A	A	A	-	A	P	A	A	A	A	A	A
Scorodite.................	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	-
Sericite-hydromuscovite...	-	M	-	S	A	P	P	-	A	-	A	-	-	-	F	A
Sphalerite................	-	-	-	F	-	-	-	-	-	-	-	-	-	-	-	-
Sphene....................	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-	-
Tennantite................	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tourmaline................	T	A	A	A	M	-	-	-	M	-	-	S	P	-	-	-
Unknown mineral 2/........	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	-

P--Predominant Over 50 percent.
A--Abundant 10 - 50 percent.
S--Subordinate 2-- 10 percent.
M--Minor 0.5 - 2 percent.
F--Few 0.1 - 0.5 percent.
T--Trace Less than 0.1 percent.
X--Detected.
N--Sought but not detected.
1/ Tentatively associated with chalcopyrite.
2/ Perhaps a lead arsenic sulfide.