UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN THE MOUNT MCKINLEY QUADRANGLE, ALASKA

By

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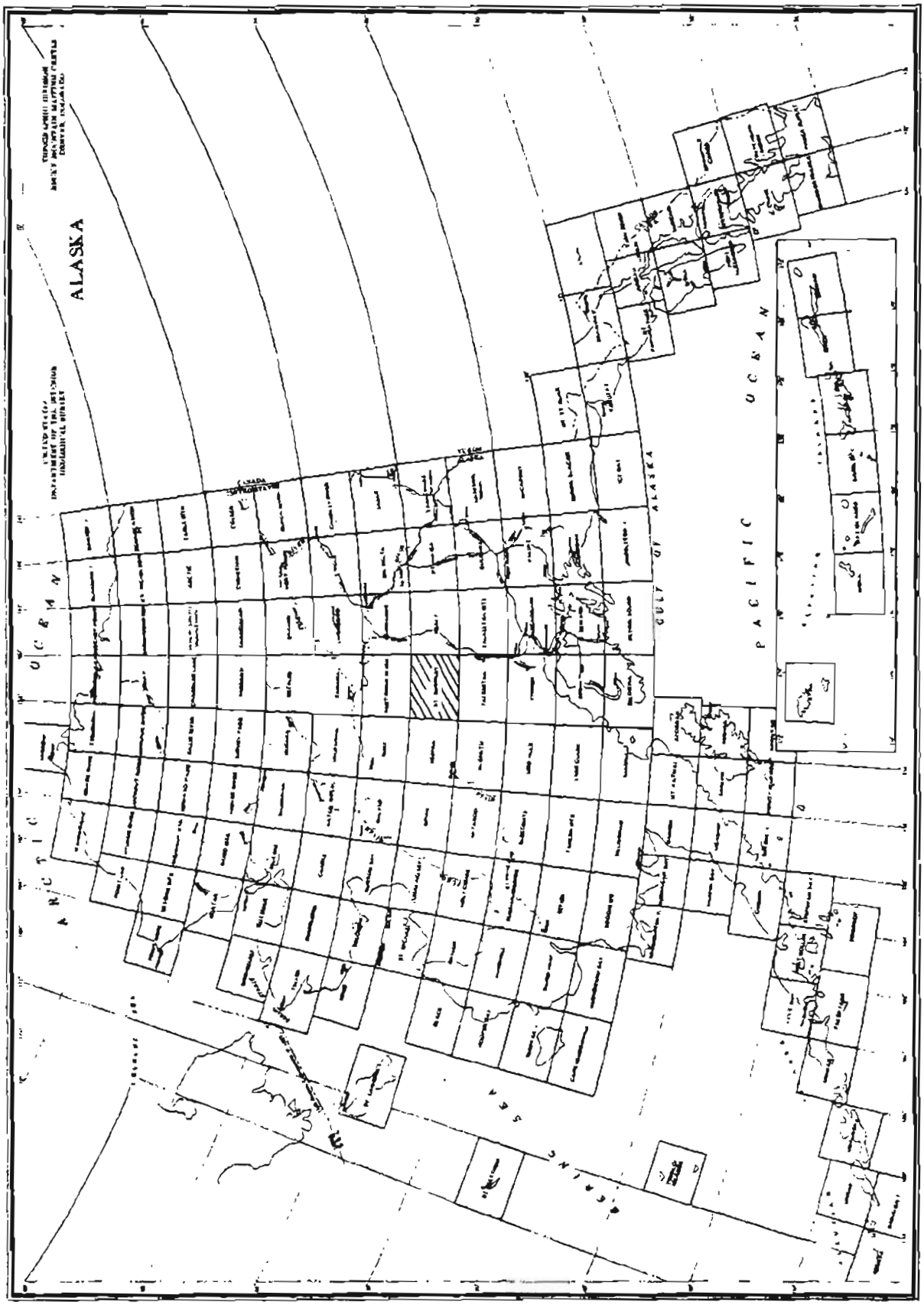
This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.

Introduction

These summaries of references are designed to aid in library research on metallic and nonmetallic (other than mineral fuels and construction materials) mineral occurrences in the Mount McKinley quadrangle, Alaska. All references to most reports of the Geological Survey, the U.S. Bureau of Mines, and the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before November 1, 1979, are summarized. Certain, mainly statistical, reports such as the annual Mineral Yearbook of the U.S. Bureau of Mines and the biennial and annual reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies are not included. Also not included are data on many claims about which little more than their locations is known (for example, MacKevett and Holloway, 1977 (OF 77-169A), p. 48). These omissions should not be interpreted as a judgment on my part that the claims are not valid mineral occurrences, but only that there are insufficient data to describe any mineral deposit that might be present.

This report is divided into three parts: a section made up of summaries of references arranged alphabetically by occurrence name; a section that lists synonyms for names in the first section, claim names, and the names of operators and owners of mines and prospects; and a section that lists, by author, all references summarized in the first section and in these introductory paragraphs.



Index Map

Summaries of References

For each mineral occurrence there is a page that gives the name of the occurrence; the mineral commodities present (listed alphabetically); the mining district (Kantishna) (Ransome and Kerns, 1954 (IC 7679)) in which the occurrence is located; the name of the 1:250,000-scale topographic quadrangle (Mt. McKinley) coordinates (as described by Cobb and Kachadoorian, 1961 (B 1139), p. 3-4); the metallic mineral resources map number (MF-366) [Cobb, 1972] and the occurrence number on the map if the occurrence is shown; and the latitude and longitude of the occurrence. Numerical coordinates become progressively less accurate as their numbers increase because of the lack of scale stability of the base maps on which I plotted localities; all, however, are probably accurate within about 0.1 inch (about 0.4 mile).

These data, presented at the top of the page, are followed by a short, general summary of the published information on the occurrence. This is followed (continued on additional pages, if necessary) by more detailed summaries, arranged chronologically, of references to the occurrence. Material in brackets is interpretive or explanatory and is not in the summarized reference.

Proper names of mines, prospects, and other mineral occurrences usually are given if such names appear in the reports summarized. If a part of a proper name is not always used, that part of the name is shown in parentheses. If a deposit does not have a proper name, but is near a named geographic feature, the name of that feature is shown in parentheses in lieu of a proper name. All references to placer mining on a stream appear under the stream name rather than under the names of individual

claims or operators. Several deposits cannot be unambiguously referred to named geographic features; such occurrences are called "Unnamed occurrence" or "Unnamed prospect" and appear at the end of this section.

Citations are given in standard bibliographic format with the exception that references to reports and maps in numbered publication series also show, in parentheses, an abbreviation for the report or map series and the report or map number. Abbreviations used are:

AOF	Alaska Division of Geological and Geophysical Surveys Open-File Report
B	U.S. Geological Survey Bulletin
C	U.S. Geological Survey Circular
GR	Alaska Division of Geological and Geophysical Surveys (and predecessor State agencies) Geologic Report
IC	U.S. Bureau of Mines Information Circular
OF	U.S. Geological Survey Open-File Report (numbers with a hyphen in them are formal; numbers without a hyphen are informal and used only within the Alaskan Geology Branch of the U.S. Geological Survey)
MF	U.S. Geological Survey Miscellaneous Field Studies Map
P	U.S. Geological Survey Professional Paper
RI	U.S. Bureau of Mines Report of Investigations
TDM	Alaska Territorial Department of Mines Pamphlet
USBM OF	U.S. Bureau of Mines Open-File Report

Summaries are as I made them while reading the cited reports. I made no attempt to use complete sentences and did not edit for grammatical consistency, although I have tried to avoid ambiguities.

Alpha — Antimony, Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (15.45, 9.4)
MF-366, loc. 3 — 63°31'N, 151°01'W

Summary: Quartz-siderite vein 1-10 ft. thick in "Birch Creek" schist carries galena, jamesonite, stibnite, sphalerite, pyrite, arsenopyrite, and minor tetrahedrite and boulangerite. Developed by 120-ft. tunnel and 20-ft. shaft (caved by 1931). In 1921 produced 10 tons of ore containing 2,000 oz. silver and 25 oz. gold.

Davis, 1923, p. 131 -- 120-ft. tunnel (100 ft. timbered) and 20-ft. shaft. Vein of iron-stained quartz with sulfides and oxides of lead and copper. At bottom of shaft a mineralized zone 8-9 ft. wide contains 3 one-foot bands of mineralized quartz. More than a ton of ore sorted and sacked; grab sample assayed 26.3 oz. silver per ton.

Brooks, 1925 (B 773), p. 29 -- Some ore mined and shipped, 1923. Venture not successful because of high shipping costs.

Moffit, 1927 (B 792), p. 30 -- Silver-lead ore attracting attention, 1925.

Wells, 1933 (B 849-F), p. 354 -- About 10 tons of lead-silver ore shipped in 1921; said to have assayed more than $200 per ton (silver at $1 per oz.); some of ore carried as much as 2.5 oz. gold per ton.

p. 358 -- A few feet of vein accessible in 1931.

p. 375-376 -- In 1931 all workings caved, but some of vein accessible. Vein consists of 1 ft. of hard iron-stained galena with cavities; galena assayed 0.01 oz. gold and 374.2 oz. silver per ton and 5.46% lead. Material on dump largely jamesonite with some sphalerite and crystalline quartz. Description by Davis (1923) quoted.

Bundtzen and others, 1976 (AOF-98), p. 9 -- Stibnite found with galena-sphalerite-tetrahedrite-chalcopyrite-siderite veins at several mines and prospects, including Alpha. [Chalcopyrite not specifically reported from Alpha.]

p. 25 -- Produced 10 tons of ore containing 2,000 oz. silver and 25 oz. gold in 1921.

p. 29 -- Vein strikes N 60° E; 1-10 ft. thick; in Birch Creek Schist; exposed for 300 ft. along strike. Minerals identified include galena, jamesonite, stibnite, sphalerite, siderite, pyrite, arsenopyrite, and minor tetrahedrite and boulangerite.

MacKevett and Holloway, 1977, (OF 77-169A), p. 44, loc. 3 -- References to Wells, 1933 (B 849-F), and Bundtzen and others, 1976 (AOF-98). Vein cuts "Birch Creek" schist.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-22 to 4-23) -- Data from older reports.

Apex	Lead(?), Silver(?)
Kantishna district	Mt. McKinley (15.95, 9.75) 63°32'N, 150°57'W

Summary: Open cut excavated in 1920. No other data on prospect.

Brooks, 1922 (B 722), p. 53 -- Open cut excavated in 1920. No other data.

Arkansas — Antimony, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (17.5, 10.2)
MF-366, loc. 19 — 63°34'N, 150°46'W

Summary: Mineralized zone in "Birch Creek" rocks made up of bands of quartz separated by bands of schist; contains lead, antimony, and zinc sulfides; assay of grab sample showed 90 oz. silver per ton. Prospect openings caved in 1931; has been a little work since then.

Davis, 1923, p. 132 -- Discovered, 1921. Open cut exposed mineralized zone about 14 ft. wide; 3 bands of quartz 1-1/2 to 5 ft. wide separated by bands of schist. Grab sample across 5-ft. quartz band contained 90 oz. silver per ton. Ore chiefly sulfides of lead and antimony with some sphalerite.

Wells, 1933 (B 849-F), p. 374 -- All openings caved in 1931. Description by Davis (1923) quoted.

Bundtzen and others, 1976 (AOF-98), p. 9 -- Good exposures in 1975.
p. 35 -- Poorly exposed vein [see above; not consistent] in porphyroblastic phyllite of Birch Creek Schist contains arsenopyrite, quartz, and scorodite. "Earlier assays showed strong [sic] silver values." Prospect caved; has been bulldozer trenching.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 15 -- Data lumped with those for several other prospects. In "Birch Creek" rocks.

Banjo

Copper, Gold, Lead, Silver, Tungsten, Zinc

Kantishna district
MF-366, loc. 13

Mt. McKinley (16.45, 9.95)
63°33'N, 150°54'W

Summary: Banjo mine of Red Top Mining Co. was principal lode producer of Kantishna district; from 1939 through 1941 mined and milled 13,653 tons of ore from which were recovered about 6,260 oz. gold and 7,114 oz. silver; no data on additional production in 1942 before World War II closure; several thousand feet of now-caved underground workings. Country rock "Birch Creek" phyllitic rocks. Deposit mined is quartz vein system several thousand feet in vertical extent containing, in addition to gold and silver, arsenopyrite, pyrite, scheelite (as much as 0.5%), galena, tetrahedrite, and sphalerite. Other veins on property (not much developed) also carry copper minerals. Several thousand tons of ore blocked out in workings on Banjo vein system at time mine closed. Includes references to: Damon & Pythias, Eureka, (Glacier Cr. divide), Julen, Merry Widow. See also: (Eureka Cr.), Little Annie.

Capps, 1918 (B 662), p. 319-320 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 101-102 -- Eureka prospect consists of 2 tunnels. Lower tunnel 40-50 ft. long (timbered or caved) driven on mineralized zone that apparently strikes N 25° E, dips 80° NW, and is about 8 ft. wide; contains abundant quartz and horses and lenses of schist; much crushed and partly recemented by iron oxide; schist country rock strikes N 15° E; quartz on dump contains disseminated pyrite, some galena, and copper stain. Upper tunnel (including branches) is about 144 ft. long; 2 quartz veins (one vertical, striking N 67° E and at least 7 ft. thick; other vein striking N 30° W, dipping 20° SW, and at least 3 ft. thick appears to cut off larger vein); country rock quartzose schist that strikes N 30° E and dips 24° NW; sulfide minerals include pyrite, sphalerite, and a little galena; no data on gold content.

Moffit, 1933 (B 836), p. 330-331 -- Country rock siliceous and graphitic schists with numerous quartz lenses and stringers. Open cuts on auriferous quartz veins in shear zone; largest exposure is a contorted mass of iron-stained quartz carrying free gold; as much as $11 in gold from a pan of crushed quartz. Tunnel to undercut exposed vein started in 1930.

Wells, 1933 (B 849-F), p. 370-371 -- Surface strewn with quartz carrying free gold. Open cuts dug to locate vein in place uncovered the vein in a block that apparently is not in place. Tunnel driven 60 ft. into hill was entirely in black graphitic schist. Nearby Damon & Pythias and Merry Widow claims are on a vein of fractured quartz with sparse sulfides; tunnel followed vein until it was cut off by a fault 90 ft. from portal; [no data on metal content of vein, if any].

Smith, 1939 (B 917-A), p. 30 -- Report in 1938 that property is on the verge of development.

Smith, 1941 (B 926-A), p. 24 -- Active work of Red Top Mining Co. in 1939.

Smith, 1942 (B 933-A), p. 24-25 -- Extensive developments begun late in 1939; dead work in early 1940; some production.

Banjo -- Continued

Bundtzen and others, 1976, (AOF-98), p. 8 -- During 1939-42 a large-scale gold-quartz mine similar to operations in the Fairbanks district developed the Banjo lode (Red Top Mining Co.).

p. 11 -- During mining it was thought that base-metal mineralization increased at depth in the vein system.

p. 16-18 -- Has been diamond drilling. Blocked ore remains; mill could be made operable. As much as 0.5% scheelite in ore was never recovered.

p. 26 -- From 1939 through 1941, 13,653 tons of ore yielded 6,259.9 oz. gold and 7,113.8 oz. silver; production in 1942 before mine closed not known. Concentrate, 1939-41, ran 19.6-35.6 oz. gold and 52.3-92.5 oz. silver per ton, 13.8%-19.7% Pb, 0.9%-1.6% Zn, 2.9%-4.75% As, and 0.13%-0.16% Cu.

p. 33 -- Production data from p. 26. NE-trending vein system several thousand feet in vertical extent cuts phyllitic unit of Birch Creek Schist. Vein contains arsenopyrite, pyrite, scheelite, gold, and minor galena, tetrahedrite, sphalerite, and scorodite. Several thousand tons of blocked ore left in workings (several thousand feet now caved) at time of World War II closure. Mill largely intact; could be made operational.

p. 34 -- Old Eureka claim reported to have on it galena, chalcopyrite, tetrahedrite, malachite, and azurite; not visited by Bundtzen and others.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 10 -- References to Wells, 1933 (B 849-F), Bundtzen and others, 1976 (AOF-98). In "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 through 4-30 -- Most of data from older reports. Jupiter-Mars lode opened by a short adit and trenches. Samples collected in 1929 assayed 0.09-0.21 oz. gold and 2.0-8.6 oz. silver per ton and 1.0%-1.6% Pb. Geochemical data suggest the Jupiter-Mars vein system continues at least 2,000 ft. to east. Banjo and Jupiter-Mars vein systems may intersect in upper Lucky Gulch.

(Bearpaw R.) (Cr.)

Gold

Kantishna district

Mt. McKinley
S 1/2 NE 1/4 quad.

Summary: Placer mining reported was probably on tributaries. See also: (Caribou Cr.), (Crevice Cr.),(Friday Cr.), (Eureka Cr.), (Glacier Cr.), (Last Chance Cr.), (Twenty-two Gulch), (Yellow Cr.).

Prindle, 1906 (B 284), p. 125 -- Gold has been found on small headwater tributaries [as of 1905].

Brooks, 1912 (B 520), p. 38 -- Mining reported, 1911.

Bundtzen and others, 1976 (AOF-98), p. 13 -- Has been placer mining.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-23, 4-45 -- Has been placer mining. Total production from all creeks in area was probably about 1,000 oz.

Bosart — Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.45, 10.25)
MF-366, loc. 14 — 63°34'N, 150°54'W

Summary: Quartz vein in "Birch Creek" rocks contains siderite, galena, tetrahedrite, sphalerite, and polybasite (silver sulfantimonide). 2 assays of hand-picked ore on dump averaged 230 oz. silver per ton. All openings caved or filled with water by 1931.

Wells, 1933 (B 849-F), p. 371-372 -- Prospect developed by 2 open cuts and a shaft, all of which were caved or filled with water in 1931. Small pile of sorted ore consisted of galena (some coarsely crystalline, but most finely crystalline), some sphalerite, and considerable tetrahedrite. [No data on probable silver content.]

Bundtzen and others, 1976 (AOF-98), p. 33 -- Vertical vein in Birch Creek Schist strikes N 50° E; 150 ft. exposed along strike; contains quartz, siderite, galena, tetrahedrite, sphalerite, and visible polybasite. One ton of hand-picked ore on dump; 2 assays averaged 230 oz. silver per ton.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 11 -- References to above. Vein cuts "Birch Creek" rocks.

Caribou (Caribou Cr.) — Antimony, Gold, Silver

Kantishna district — Mt. McKinley (17.1, 10.95)
MF-366, loc. 24 — 63°36'N, 150°49'W

Summary: Quartz-stibnite vein about 4 ft. thick. Samples assayed as much as 4 oz. silver and 0.12 oz. gold per ton. Developed in early 1900's by shafts 40 ft. and 30 ft. deep. 12 tons of ore shipped in 1905 was abandoned in route when price of antimony dropped. Other production in 1968-70 and 1973-74; total production through 1974 was 71.5 tons of ore containing 74,360 lb. antimony. Mining being done in 1975. Vein contains quartz, stibnite, pyrrhotite, jamesonite, pyrite, and some gold. Includes references to Last Chance. See also (Caribou Cr.).

Brooks, 1907 (B 314), p. 30 -- Reference to Prindle, 1907 (B 314) [below].

Prindle, 1907 (B 314), p. 219 -- Quartz vein about 4 ft. thick composed in part of massive quartz and in part of quartz crystals up to an inch long; crystalline stibnite between quartz crystals; some massive very fine-grained stibnite. Vein strikes northeastward and dips 75° N; conforms to structure of hornblende schist country rock. Assays of samples indicated 2.76 to 4 oz. silver and 0.12 oz. gold per ton; both not found in all samples. Name of prospect not used.

Brooks, 1911 (P 70), p. 178-179 -- Same as Prindle, 1907 (B 314).

Brooks, 1916 (B 649), p. 42 -- Quotation from Prindle, 1907 (B 314).

Capps, 1918 (B 662), p. 326-327 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 897), p. 108-109 -- Many of data from Prindle, 1907 (B 314). Vein is about 4 ft. wide; strikes N 40° E and dips 67° SE [not the same attitude as given by Prindle (above)]; mixture of stibnite and quartz, some of both of which are crystalline and intimately intergrown and some of both of which are massive. Has been no production. Developed by shafts 40 ft. and 30 ft. deep; flooded in 1916.

Capps, 1924 (B 755), p. 144 -- Same data as in Capps, 1919 (B 687).

Wells, 1933 (B 849-F), p. 353-354 -- Some stibnite mined and shipped in 1905 during high prices of Russo-Japanese War, but abandoned when war ended and price dropped.

p. 377-378 -- Quotation from Capps, 1919 (B 687).

Berg and Cobb, 1967 (B 1246), p. 229-231 -- Similar to lode on Slate Cr.

Bundtzen and others, 1976 (AOF-98), p. 8 -- 12 tons of stibnite ore shipped during Russo-Japanese War. Has been more recent production.

p. 17 -- Still has economic reserves of ore.

p. 27 -- Production (1905, 1968-70, 1973-74) was 71.5 tons of ore containing 74,360 lbs. antimony.

p. 36 -- Vein 2-6 ft. thick trends N 15°-20° E, dips 50° NW, and extends at least 550 ft. along strike. Carries stibnite, pyrrhotite, jamesonite, pyrite, quartz, and some gold. Active mining in 1975; small concentrator on site.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 21 -- References to Capps, 1919 (B 687), Wells, 1933 (B 849-F), Bundtzen and others, 1976 (AOF-98). In "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-30 -- Most of data from Bundtzen and others, 1976 (AOF-98).

Caribou (Quigley Hill) — Lead(?), Silver(?)

Kantishna district — Mt. McKinley (15.9, 9.6)
63°32'N, 150°58'W

Summary: Claim on which there was some open-cut work (as of 1920). No other data on prospect.

Brooks, 1922 (B 722), p. 53 -- Has been some open-cut work. No other data.

(Caribou Cr.) Antimony, Gold, Tungsten

Kantishna district Mt. McKinley (16.1-17.8, 10.05-11.8)
MF-366, locs. 47, 48 63°36'-63°39'N, 150°43'-150°56'W

Summary: In upper Caribou Cr. (MF-366, loc. 48) creek gravel is 2-1/2 to 7 ft. thick; contains gold (some coarse; nugget weighing about half an ounce recovered), stibnite, and scheelite. Bench gravel on lower Caribou Cr. (MF-366, loc. 47) leaner; gold finer. Mined intermittently from about 1906 to as recently as 1975. One of the major placer producers of district, especially 1939-41 when dragline operations recovered up to 300 oz. of gold per week. See also Caribou (Caribou Cr.).

Prindle, 1907 (B 314), p. 218-219 -- No well-developed paystreak yet found [as of 1906]. Stibnite in creek wash; outcrop found.

Brooks, 1911 (P 70), p. 178-179 -- Same as above.

Brooks, 1916 (B 649), p. 42 -- Quotation from Prindle, 1907 (B 314).

Capps, 1918 (B 662), p. 309-310 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 92-93 -- Mining, 1916 [at loc. 48, MF-366]. Gravel 2 to 3-1/2 ft. thick in stream bed; as much as 7 ft. in some bars. Gold throughout thickness of stream gravel, but especially concentrated on bedrock. Some of gold coarse (nugget worth $110 recovered). Concentrates contain magnetite, ilmenite, scheelite, and garnets as well as gold.

Brooks, 1923 (B 739), p. 37 -- Project for hydraulicking being developed, 1921.

Davis, 1923, 118-119 -- Depth to bedrock in creek gravels is 2 to 12 or 14 ft. Near mouth of Snowshoe Cr. gravel estimated to contain 75¢ per cu. yd. in center of deposit; 20¢ to 25¢ per cu. yd. on either side. Bulk of values on or near bedrock. In 1922 about 70,000 sq. ft. of bedrock uncovered; amount of gold recovered not known, but said to be "somewhat disappointing." Details of equipment and mining methods.

Brooks and Capps, 1924 (B 755), p. 41-42 -- Mining, 1922. Gold on false bedrock of muddy yellowish clay; results said to have been disappointing.

Capps, 1924 (B 755), p. 141-142 -- Mining in 1922. Bench gravels known to be auriferous, but have not been mined.

Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.

Smith, 1934 (B 864-A), p. 43 -- Mining or prospecting, 1933.

Smith, 1937 (B 880-A), p. 46 -- Mining, 1935.

Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 57 -- Mining, 1938; plans for using a dragline in 1939.

Smith, 1941 (B 926-A), p. 51-52 -- Dragline mining, 1939 [at MF-366, loc. 47].

Smith, 1942 (B 933-A), p. 49 -- 2 dragline operations, 1940; also smaller scale mining.

Reed, 1961 (B 1108-A), p. A27 -- Antimony deposits discovered on several creeks, including this one, 1904-05.

p. A29 -- Placers lie below levels of terraces attributed to later of two glaciations; placer concentration assumed to have been since last period of extensive glaciation.

(Caribou Cr.) -- Continued

Cobb, 1973 (B 1374), p. 154 -- Most of the nearly 4,000 fine oz. of gold produced in the Kantishna district in 1940 was from 2 dragline operations on Caribou Cr.

Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Dragline operation in late 1930's was successful. Was mining in 1975.

p. 13-14 -- Placer gold derived from nearby lodes has been successfully mined. Reference to Reed, 1961 (B 1108-A). Sluicing on Lee Bench [lower Caribou Cr.] in 1975 not very satisfactory; gold not as coarse as elsewhere in district.

p. 16 -- Dragline operation, 1939-41, produced up to 300 oz. of gold per week; plant closed for World War II and equipment removed; did not reopen. Private report in 1925 inferred (based on trench sampling) that Lee Bench contained 40,000,000 yds. of gravel averaging $1.80 per yd. (gold at $35)[about 0.05 oz. per cu. yd.].

Cobb, 1977 (OF 77-168B), p. 37 -- References to Capps, 1919 (B 687), Prindle, 1907 (B 314). Probably produced between 1,000 and 10,000 fine oz. gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, locs. 52, 53 -- References to several of above.

Carlson & Averil — Copper, Lead, Silver

Kantishna district — Mt. McKinley (20.1, 6.25) approx.
MF-366, loc. 36 — 63°20'N, 150°27'W approx.

Summary: Mineralized lodes (vein deposits?) in probably Paleozoic rocks near Tertiary plutons reported to contain lead, silver, and copper. Access difficult; only assessment work in 1920's.

Capps, 1927 (B 792), p. 108 — Mineralized lodes near northern margin of granitic mass [of Mt. McKinley part of Alaska Range]; probably similar in origin to lodes at Copper Mtn. Principal metals reported to be lead, silver, and copper. Only assessment work has been done. Region very difficult of access.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 45 -- Reference to above. Probably vein deposits inPaleozoic rocks near Tertiary plutons.

(Chitsia Cr.) Gold

Kantishna district Mt. McKinley (20.5, 17.4) approx.
63°58'N, 150°22'W approx.

Summary: Placer gold discovered in 1903 during Wickersham expedition to climb (unsuccessfully) Mt. McKinley.

Reed, 1961 (B 1108-A), p. A26 -- Placer gold found in 1903 by Wickersham during his unsuccessful attempt to climb Mt. McKinley.
Cobb, 1973 (B 1374), p. 154 -- Placer gold discovered, 1903.
Bundtzen and others, 1976 (AOF-98), p. 8 -- Reference to Reed, 1961 (B 1108-A). Inactive placer mine symbol on pl. 2.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Reed, 1961 (B 1108-A). Production probably less than 1,000 fine oz. of gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 61 -- Reference to Bundtzen and others, 1976 (AOF-98).

(Chitsia Mtn.) Lead, Silver, Zinc; Barite

Kantishna district Mt. McKinley (20.8, 17.4)
63°58'N, 150°18'W

Summary: Gossan along contact between phyllitic rocks and rhyolite porporphyry sill-like body in Totatlanika Schist. Barite-bearing body about 300 ft. long, 10 ft. thick with barite layers 1-6 in. thick. Example of a stratiform (probably volcanogenic) deposit. Samples (probably from gossan) contained barite, quartz, galena, pyrite, minor sphalerite, and 30 ppm silver. Barite-pyrite vein nearby.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 77 -- Silicified gossan zone between volcanogenic sediments and rhyolite porphyry of Totatlanika Schist is (based on distribution of float) 15 ft. wide and several hundred feet along strike. Contain barite, quartz, galena, pyrite, and minor sphalerite; 30 ppm silver. Barite-pyrite vein 100 yds. to west.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 35 -- Data from above.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-50, 4-54 -- Barite occurrence in gray phyllite sequence invaded by sill-like or cross-cutting porphyritic rhyolite; about 300 ft. long, 10 ft. thick; strikes NE and dips 30° NW; barite layers are 1-6 in. thick. Well-exposed example of a stratiform and probably volcanogenic deposit in Totatlanika Schist.

(Clearwater Cr.) Gold(?)

Kantishna district Mt. McKinley
NE 1/4 SE 1/4 quad.

Summary: Prospect drilling reported, 1940. No data on results. May refer to Crooked Cr. or to Little Moose Cr.

Smith, 1942 (B 933-A), p. 49 -- Claims in valley said to have been drilled to test for suitability for dragline mining, 1940. [No data on results].
Reed, 1961 (B 1108-A), p. A28 -- Lode claims have been staked, but none were developed and all have been abandoned.

Copper Lode

Copper

Kantishna district
MF-366, loc. 33

Mt. McKinley (16.85, 5.2)
63°17'N, 150°52'W

Summary: Mineralized zone along fault or fissure in metamorphosed sedimentary rocks is 25 ft. wide and 80 ft. long; contains masses of pyrrhotite and a little chalcopyrite; copper stain. Very little development.

Moffit, 1933 (B 836), p. 322 -- Fault or fissure in shattered and oxidized metasedimentary rock, limestone, and conglomerate; strikes N 35° E and dips steeply W; deposit is a mineralized zone about 80 ft. long and 25 ft. wide parallel to fault or fissure; contains irregular masses of pyrrhotite with a little chalcopyrite; copper carbonate stains on surface. Has been some open-cut work.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 42 -- Reference to above.

(Crevice Cr.) Gold

Kantishna district
MF-366, loc. 54

Mt. McKinley (17.4, 10.9) approx.
63°36'N, 150°46'W approx.

Summary: Coarse gold, probably less than 1,000 fine oz., mined in early 1906. Largest nugget about 4.35 fine oz.

Prindle, 1907 (B 314), p. 218 -- Small tributary of Caribou Cr. near head. Considerable mining in early part of 1906; gold rough and coarse; largest piece found valued at $90 [about 4.35 fine oz.].

Brooks, 1911 (P 70), p. 178 -- Same as above.

Cobb, 1977 (OF 77-168B), p. 37, loc. 10 -- Reference to above. Production probably less than 1,000 fine oz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 53 -- Reference to above.

(Crooked Cr.) Gold

Kantishna district
MF-366, loc. 55

Mt. McKinley (19.1-19.45, 14.15-14.45)
63°47'-63°48'N, 150°29'-150°32'W

Summary: Has been placer gold mining since about 1926; total produced is probably considerably less than 1,000 oz.

Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.
Smith, 1934 (B 864-A), p. 43 -- Mining or prospecting, 1933.
Smith, 1938 (B 897-A), p. 56 -- Small-scale mining, 1936.
Smith, 1939 (B 910-A), p. 58 -- Small-scale mining, 1937.
Smith, 1939 (B 917-A), p. 57 -- Prospecting, 1938.
Smith, 1942 (B 933-A), p. 49 -- Mining, 1940.
Cobb, 1973 (B 1374), p. 154 -- Has been small-scale mining since 1960.
Bundtzen and others, 1976 (AOF-98), p. 8, 13 -- Has been placer gold production.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Cobb, 1973 (B 1374). Production less than 1,000 fine oz. gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 58 -- Reference to Smith, 1942 (B 933-A).
Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-32, 4-45 -- Placer gold has been mined; total production from creeks in area probably about 1,000 oz.

Eagles Nest — Antimony

Kantishna district — Mt. McKinley (15.65, 9.15)
63°21'N, 151°00'W

Summary: 3 ft. of massive stibnite in quartz-stibnite vein 3-1/2 to 20 ft. thick; in "Birch Creek" schist. Prospect with apparent post-1950 activity.

Bundtzen and others, 1976 (AOF-98), p. 29, loc. 6 -- Massive quartz-stibnite vein 3-1/2 to 20 ft. thick trends N 30° W and dips 35° NE; exposed for 75 ft. along strike. Country rock quartz-mica schist of Birch Creek Schist. 3 ft. of massive stibnite on hanging wall of vein. May be most promising antimony prospect in Kantishna Hills.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 19 — Data from above. Prospect with apparent post-1950 activity.

(Eldorado Cr.) Antimony, Gold

Kantishna district Mt. McKinley (15.5, 9.05)
MF-366, loc. 43 63°30'N, 151°01'W

Summary: Has been placer mining as recently as 1975. In early days gold was considered to be too unevenly distributed for successful mining; recent mining has been from above silt false bedrock. Production probably less than 1,000 fine oz. Abundant stibnite float.

Capps, 1918 (B 662), p. 305-306 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 88 -- Has been placer mining; none in 1916. Gravels apparently 2-4 ft. thick. Gold reported to be too unevenly distributed for successful mining; said to be bright, well worn, and finer than that from Friday or Eureka Creeks; said to assay $16.25 per oz.
Brooks and Capps, 1924 (B 755), p. 42 -- New lode discoveries reported, 1922.
Wells, 1933 (B 849-F), p. 373 -- Stibnite float abundant. Careful search in 1931 failed to find stibnite lode reported to be on north slope of creek.
Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Mining as recently as 1975.
p. 13-14 -- Mining, 1975; rich paystreak on false bedrock of silt.
Cobb, 1977 (OF 77-168B), p. 37 -- Total production probably less than 1,000 fine oz. of gold. Reference to Capps, 1919 (B 687).
MacKevett and Holloway, 1977 (OF 169A), p. 47, loc. 49 -- Reference to Capps, 1919 (B 687).

Eldorado No. 3 — Antimony

Kantishna district — Mt. McKinley (15.6, 9.25)
63°31'N, 151°00'W

Summary: Quartz-stibnite vein with carbonate and stibiconite in "Birch Creek" schist is 2 to 6 ft. thick and is virtually unexplored. Traceable for 150 ft.

Bundtzen and others, 1976 (AOF-98), p. 29, loc. 8 -- Virtually unexplored vertical vein 2-6 ft. thick strikes N 75° E and is traceable for 150 ft.; in muscovite marble of Birch Creek Schist. Contains stibnite, carbonate, stibiconite and euhedral quartz crystal cavities.

(Eureka Cr.) Antimony, Gold, Lead

Kantishna district Mt. McKinley (16.0-16.65, 9.55-9.85)
MF-366, loc. 46 63°32'-63°33'N, 150°53'-150°57'W

Summary: Placer gold discovered in 1905; mining as recently as 1975; total production more than 1,000 and probably less than 10,000 fine oz. Concentrates contain considerable stibnite, some galena, and a little black sand. Sketchy report of about 50 tons of antimony ore being mined in about 1915 from stibnite-quartz vein. Some of placer gold very coarse; nuggets with as much as 32.8 fine oz. gold reported. Bench and stream gravels being mined in 1975. Most of previous production probably from creek gravels.

Brooks, 1907 (B 314), p. 30 -- Stibnite found in auriferous gravels.
Prindle, 1907 (B 314), p. 215-217, 220 -- As of 1906 best gold-placer stream in region. Bedrock quartzitic and carbonaceous schists and greenstone cut by basaltic dikes. Creek gravels of local derivation except near mouth, where they are mixed with terrace gravel of Moose Creek brought from as far as Alaska Range; terrace gravels apparently barren, so probably none of gold was derived from them. Most mining within 2 mi. of mouth; deposits 1-5 ft. thick and from less than 20 to rarely more than 100 ft. wide; gold mainly on or in top 1-3 ft. of bedrock. Some of gold very coarse; nuggets worth as much as $678 [about 32.8 fine oz.] were recovered; very little black sand; some stibnite. Richest deposits near mouth, where bedrock makes a riffle. Gold discovered in July, 1905; production through August 1906 estimated at $150,000-$160,000 [gold at $20.67].
Brooks, 1911 (P 70), p. 176-177, 179 -- Same as Prindle, 1907 (B 314).
Brooks, 1912 (B 520), p. 38 -- Mining, 1911.
Brooks, 1916 (B 649), p. 42 -- Stibnite float in placers.
Capps, 1918 (B 662), p. 302-304 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 85-87 -- Mining, 1916. Details of mining methods. Most of gold near or in top of bedrock. Concentrates contain considerable galena and some stibnite and black sand; gold generally coarse.
Brooks, 1922 (B 722), p. 52 -- Mining, 1920.
Davis, 1923, p. 116 -- Mining, 1922.
Brooks and Capps, 1924 (B 755), p. 41 -- Mining, 1922.
Capps, 1924 (B 755), p. 141-142 -- Gold mined from stream gravels; bench gravels also known to be auriferous.
Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.
Smith, 1930 (B 813), p. 35 -- Mining reported, 1928.
Smith, 1932 (B 824), p. 40 -- Mining reported, 1929.
Moffit, 1933 (B 836), p. 334-335 -- Most of data from Capps, 1919 (B 687). In 1930 most of the small placer gold production from the district was from Eureka Cr.
Smith, 1933 (B 836), p. 41 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 41 -- Mining, 1931.
Wells, 1933 (B 849-F), p. 353 -- First placer claims staked, 1905.
p. 376 -- Stibnite float abundant; 2 bedrock occurrences reported, but could not be found in 1931.
Smith, 1934 (B 857-A), p. 39 -- Mining or prospecting, 1932.

(Eureka Cr.) -- Continued

Smith, 1934 (B 864-A), p. 43 -- Mining or prospecting, 1933.
Smith, 1936 (B 868-A), p. 44 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 46 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 56 -- Small-scale mining, 1936.
Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.
Smith, 1941 (B 926-A), p. 52 -- Mining or prospecting, 1939.
Smith, 1942 (B 933-A), p. 49 -- Mining, 1940.
Cobb, 1973 (B 1374), p. 154 -- Has been small-scale mining since 1960.
Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Gold discovered, 1905; mining in 1975. Antimony ore produced from stibnite-quartz vein in early 1900's.

p. 13-14 -- Gold has been extracted economically. In 1975 2 outfits were mining stream and bench gravels.

p. 27 -- About 50 tons of antimony ore (amount of metallic antimony not known) reported to have been mined in about 1915.

Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Capps, 1919 (B 687). Production probably between 1,000 and 10,000 fine oz. of gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 51 -- References to Capps, 1919 (B 687); Bundtzen and others, 1976 (AOF-98).

(Flat Cr.) — Gold

Kantishna district — Mt. McKinley (15.9, 10.6) approx. 63°35'N, 150°58'W approx.

Summary: Has been placer mining.

Bundtzen and others, 1956 (AOF-98), p. 13 -- Has been placer mining.

Florence

Copper, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 12

Mt. McKinley (16.3, 10.1)
63°34'N, 150°55'W

Summary: Sulfide vein as much as 3 ft. thick in "Birch Creek" terrane contains galena, tetrahedrite, sphalerite, polybasite (silver sulfantimonide), malachite, azurite, and other secondary minerals. High-grade ore shoot; virtually unexplored.

Wells, 1933 (B 849-F), p. 371 -- Claim prospected by trench and shaft; both caved in 1931. Small pile of ore consisted of pieces of galena with many cavities coated with malachite; considerable tetrahedrite with the galena. [No data on probable silver content.]

Bundtzen and others, 1976 (AOF-98), p. 33 -- Vein 1.5-3 ft. thick is vertical, strikes N 10° E, and is exposed for 35 ft. along strike; contains galena, tetrahedrite, siderite, and minor sphalerite, polybasite, malachite, azurite, anglesite, geothite, and cerussite. High-grade ore shoot with visible polybasite; virtually unexplored.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 8 -- Data lumped with those for nearby unnamed occurrence. Vein cuts "Birch Creek" terrane.

Francis — Copper, Gold, Lead(?), Silver, Zinc(?)

Kantishna district — Mt. McKinley (15.9, 9.6)
MF-366, loc. 5 — 63°32'N, 150°08'W

Summary: Quartz vein thins from about 40 in. to stringers in "Birch Creek" schist country rock. Samples across vein carried as much as 0.06 oz. gold and 1.00 oz. silver per ton; other samples carried $35 a ton in gold and silver (gold at $20.67 and silver probably at about $1). Copper sulfide present; other sulfides and sulfosalts may also be present. Developed by tunnel 70-75 ft. long and open cuts. No known production. Includes references to Frances.

Davis, 1923, p. 124-125 -- Developed by 75-ft. tunnel and open cuts along strike of vein. Vein strikes N 55° E, dips 65° S in tunnel, where it is 12-40 in. wide. Vein chiefly white quartz carrying gold and silver; some assays of samples across vein showed trace to 0.06 oz. gold and 0.10 to 1.00 oz. silver per ton; other samples contained as much as $35 a ton in gold and silver. Some copper sulfide also present.

Moffit, 1933 (B 836), p. 332 -- One of several claims that have produced ore or have high-grade showings.

Wells, 1933 (B 849-F), p. 368 -- Claim developed by 70-ft. tunnel trending N 55° E along vein and open cuts (caved in 1931). Vein in untimbered part of tunnel is quartz that thins from about a foot thick to a network of stringers in schist country rock; carries scattered pyrite crystals and some gold. Assays showed 0.02-0.04 oz. gold and 0.6-0.8 oz. silver per ton.

Bundtzen and others, 1976 (AOF-98), p. 31 -- Data combined with those for Polly Wonder and Little Maud; all (with several other mines and prospects) possibly on same vein system; minerals present include galena, sphalerite, arsenopyrite, siderite, tetrahedrite, polybasite, chalcopyrite, and quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 4 -- Data combined with those for Lucky Strike.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- This vein, among others, has horizontal continuity measured in at least hundreds of feet and deserves further exploration.

Friday	Gold(?)
Kantishna district	Mt. McKinley (16.0, 9.75) 65°32'N, 150°57'W

Summary: Rich float; bedrock not found in attempt to find extension of Red Top vein.

Davis, 1923, p. 125 -- Rich float [of what not stated, probably gold]; solid bedrock not reached in cuts aimed at finding extension of Red Top vein.

(Friday Cr.) Antimony, Gold, Lead, Silver

Kantishna district Mt. McKinley (15.8-15.9, 9.75-9.8)
MF-366, loc. 45 63°32'N, 150°58'-150°59'W

Summary: Mining from early 1900's to as recently as 1975. Gold near and in top few feet of schist bedrock; gravels 3-6 ft. thick; in places partially buried by frozen slide material from valley walls. Gold both fine and in nuggets, some of which weigh more than an ounce; some of gold exhibits crystal faces. Stibnite, argentiferous galena, and black sand in concentrates. Total production probably less than 1,000 fine oz. of gold.

Brooks, 1907 (B 314), p. 30 -- Stibnite associated with auriferous gravels.

Prindle, 1907 (B 314), p. 217 -- Creek about 2-1/2 mi. long; lower part of valley very narrow with gradient of about 400 ft. per mile. Gold in lower 1-1/2 to 2 ft. of gravel (generally 3-6 ft. thick) and in top 1-1/2 to 2 ft. of bedrock. Country rock quartzitic and carbonaceous schists, crystalline limestone, greenstone, and granite porphyry dikes. Gold fine and also in nuggets worth as much as $28 [about 1.35 fine oz.], some with attached quartz and some rudely crystalline; scattered pieces of galena several inches in diameter in gravels; assay of one showed 184.4 oz. silver and 0.20 oz. gold per ton. 6 men working on creek in 1906.

Brooks, 1911 (P 70), p. 178 -- Same as Prindle, 1907 (B 314).

Brooks, 1916 (B 649), p. 42 -- Stibnite float in placers.

Capps, 1918 (B 662), p. 304-305 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 87-88 -- 3 claims being worked, 1916. Creek gravels narrow and generally about 3-4 ft. thick; in places buried beneath material that slid from valley walls (such material usually frozen). Best returns where bedrock is hard schist. Gold coarse, some with attached quartz and some showing crystal faces. Concentrates contain much galena and black sand. Gold said to assay $14.82 an ounce.

Davis, 1923, p. 116 -- Mining, 1922.

Capps, 1924 (B 755), p. 141-142 -- Placer gold has been mined; rough and unworn.

Cobb, 1973 (B 1374), p. 154 -- Has been small-scale placer mining since 1960.

Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Has been placer gold production. Mining in 1975.

p. 13-14 -- Placer gold has been mined. In 1975 several ounces of coarse gold recovered below an automatic dam.

Cobb, 1977 (OF 77-168B), p. 37 -- References to Capps, 1919 (B 687), Brooks, 1916 (B 649). Production probably less than 1,000 fine oz. gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 50 — Data lumped with those for Moose Cr.; references to several older reports.

Galena — Copper, Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (15.95, 9.75)
MF-366, loc. 8 — 63°32'N, 150°57'W

Summary: Quartz-siderite vein in "Birch Creek" phyllitic rocks as much as 9 ft. thick contains galena, sphalerite, arsenopyrite, pyrite, and tetrahedrite; developed by tunnel 60 ft. long and a shallow winze (caved in 1975). Smaller vein exposed in open cut contains tetrahedrite and chalcopyrite. Samples of galena from large vein contained 131 oz. silver per ton and some gold. In 1920-21 mine produced 100 tons of ore containing 17,000 oz. silver; data on gold and lead contents not available.

Capps, 1918 (B 662), p. 323-324 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 105-106 -- Gouge-filled fracture at end of 27-ft. tunnel strikes N 45° E, dips 63° SE. Quartz on footwall of fracture; dies out into country rock; contains pyrite, arsenopyrite, galena, and sphalerite; some galena in nearly pure stringers 2 in. or more thick; sample assayed 131 oz. silver per ton; ore reported to contain gold.

Brooks, 1922 (B 722), p. 53 — In October, 1920 about 50 tons of high-grade ore had been mined and sacked; estimated that another hundred tons would be sacked during winter.

Davis, 1923, p. 123 -- Tunnel 60 ft. long (30 ft. on vein) and shallow winze. Vein 8 or 9 ft. wide; iron-stained quartz with galena, sphalerite, arsenopyrite, and some tetrahedrite. Sulfides in band about a foot thick along hanging wall, which is well defined; footwall gradational into schist country rock. Vein strikes about N 45° E and dips 65°-70° SE. Open cut on another vein which is about a foot wide, strikes N 45° E, and is nearly vertical. 50-100 tons of ore from open cuts and tunnel shipped to Selby smelter.

Moffit, 1933 (B 836), p. 331 -- Has been prospected by open cuts and a tunnel. Shear zone mineralized with pyrite, arsenopyrite, galena, and sphalerite.

Wells, 1933 (B 849-F), p. 367-368 -- Claim developed by tunnel and open cut, both of which were partly caved in 1931. Most of data from Davis, 1923. Vein in tunnel strikes N 45° E, dips 58° SE, is about 2 ft. wide where exposed in 1931; reported to have been 8 or 9 ft. wide and to have consisted of broken quartz carrying galena, arsenopyrite, sphalerite, and tetrahedrite. Open cut near tunnel exposed quartz vein about a foot thick with tetrahedrite and chalcopyrite; vein strikes N 45° E and is about vertical. Between 50 and 100 tons of ore has been shipped to smelter.

Bundtzen and others, 1976 (AOF-98), p. 25 -- In 1920-21 produced 100 tons of ore containing 17,000 oz. silver; data on gold and lead content not available.

p. 30 -- Vein 5-9 ft. thick cutting phyllite unit of Birch Creek schist trends N 45° E and dips 65° SE; contains galena, arsenopyrite, pyrite, sphalerite, tetrahedrite, siderite, quartz, and minor chalcopyrite. Only high-grade ore was saved; lower grade material on dump. Underground workings caved. Very good chance of finding more high-grade ore underground.

Galena -- Continued

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Data combined with those for 6 other mines and prospects; veins of all of them cut "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-23 -- Was one of producing veins on Quigley Hill, 1919-23.

p. 4-26 -- This vein, among others, has horizontal continuity measured in at least hundreds of feet and deserves further exploration.

Galena Lode

Lead, Zinc

Kantishna district
MF-366, loc. 34

Mt. McKinley (17.0, 5.25)
63°17'N, 150°50'W

Summary: Small quartz veins in contorted Paleozoic schist near Tertiary granitic plutons contain galena, sphalerite, and pyrite; sulfides also in schist near veins.

Moffit, 1933 (B 836), p. 322-323 -- Contorted mass of black schist between masses of granite porphyry; both contacts faults; SE boundary fault strikes N 60° E and dips steeply W; NW boundary fault not well exposed, but appears to strike N 40° E and to be vertical. Schist much crumpled and seamed with quartz veins along schistosity; largest vein a foot thick, 4 ft. long, lenticular, and containing galena, sphalerite, and pyrite. Some of sulfides also in schist near veins.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 43 -- Reference to above. Schist Paleozoic; plutons Tertiary.

(Glacier Cr.) Gold, Lead

Kantishna district
MF-366, loc. 53

Mt. McKinley (16.15-16.4, 10.5-10.8)
63°35'-63°36'N, 150°54'-150°56'W

Summary: Creek gravels coarse, 2-5 ft. thick, and as wide as 250 ft. Some of gold coarse (nugget valued at $365 (gold at $20.67) reported). Bench gravels also auriferous. Both creek and bench gravels have been mined. Total production probably more than 1,000 and less than 10,000 fine oz. Considerable galena, some black sand, and garnet in concentrated. Gold discovered in 1904 or 1905; mining as recently as 1975.

Prindle, 1907 (B 314), p. 218, 220 -- Creek emerges from hills and flows between gravel-covered ridges to Bearpaw R. Most of mining where creek leaves hills. Bedrock various kinds of schist which contain numerous quartz veins and lenses. Gold in coarse gravels 2-5 ft. thick and as wide as 250 ft.; mainly on bedrock. Gold reported to be worth $16.40 per ounce; many nuggets, largest valued at $365. Gold also in gravel capping a bench about 75 ft. above creek; has been some prospecting of it, but no mining. In the district Glacier Cr. has been the source of most of the gold not from Eureka Cr.

Brooks, 1911 (P 70), p. 178-179 -- Same as Prindle, 1907 (B 314).

Capps, 1918 (B 662), p. 307-309 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 89-92 -- 4 claims being worked, 1916. Lower part of stream course in Nenana Gravel except where in short canyons in schist; benches along creek, as well as creek gravels, carry some gold practically everywhere, but only minable deposits are in upper 8 mi. of course. In 1916 both stream and bench gravels (including a buried old channel) were being mined; some of stream gravels partly buried by talus from valley walls. Most of gold fairly fine; few nuggets. Black sand and garnets in some of concentrates.

Brooks, 1923 (B 739), p. 37 -- Project for hydraulicking being developed, 1921.

Davis, 1923, p. 116 -- Mining of creek gravels, 1922.
p. 118-119 -- Depth to bedrock beneath benches not known.

Brooks and Capps, 1924 (B 755), p. 41 -- Small-scale mining, 1922.

Capps, 1924 (B 755), p. 141-142 -- Placer mining of creek gravels; bench gravels also known to be auriferous.

Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.

Smith, 1930 (B 813), p. 35 -- Mining reported, 1928.

Moffit, 1933 (B 836), p. 335 -- Placers yield a few hundred dollars' worth of gold each year.

Wells, 1933 (B 849-F), p. 353 -- First claims staked, June 1905.
p. 371 -- Creek has yielded considerable gold; considerable galena in concentrates.

Smith, 1936 (B 868-A), p. 44 -- Mining or prospecting, 1934.

Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.

Reed, 1961 (B 1108-A), p. A26 -- Placer gold discovered, 1905.
p. A29 -- Placers lie below levels of terraces attributed to later of two glaciations; placer concentration assumed to have been since last period of extensive glaciation.

(Glacier Cr.) -- Continued

Cobb, 1973 (B 1374), p. 154-155 -- Gold discovered, 1905. Bench gravels auriferous.

Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Gold discovered, 1904. Mining, 1975.

p. 13-14 -- Placer gold has been mined. Mining late in season, 1975.

p. 16 -- Dragline operation some time between 1939 and 1942.

Cobb, 1977 (OF 77-168B), p. 37 — References to Capps, 1919 (B 687), Wells, 1933 (B 849-F). Production probably between 1,000 and 10,000 fine oz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 54 -- Data combined with those for Twenty-two Gulch. References to several of above reports.

Glen(n)

Antimony, Gold, Lead, Zinc

Kantishna district
MF-366, loc. 17

Mt. McKinley (17.3, 10.2)
63°34'N, 150°47'W

Summary: Quartz vein as much as 10 ft. wide in phyllitic unit of "Birch Creek" rocks; minerals reported include arsenopyrite, pyrite, galena, sphalerite, jamesonite, and stibnite. About 340 ft. of underground workings driven in 1906-09; inaccessible by 1916. Sulfides present over vertical range of 200 ft. Includes reference to Swisher.

Capps, 1918 (B 662), p. 318 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 100 -- Schist country rock strikes N and dips 40° W. Vein about 10 ft. wide on surface made up of white to gray banded quartz; carries pyrite, sphalerite, possibly galena, and (reportedly) promising amounts of gold. Workings, said to total nearly 340 ft. in length, inaccessible in 1916.

Moffit, 1933 (B 836), p. 334 -- Specimens from dump outside one of the two caved tunnels driven on a quartz vein contain sphalerite, stibnite, and galena.

Wells, 1933 (B 849-F), p. 373 -- No work since 1909; workings caved and filled with ice in 1931. Reported that 2 tunnels (one about 300 ft. long) were driven on the same vein, which is a quartz ledge 4 ft. wide and a zone of shattered decomposed schist; bunches of galena scattered in the quartz. Material on dump from one tunnel is mainly quartz with small quantities of pyrite, galena, and sphalerite.

Bundtzen and others, 1976 (AOF-98), p. 35 -- Vertical vein as much as 10 ft. thick strikes N 80°-85° E and cuts phyllite unit of Birch Creek Schist; more than 700 ft. along strike is mineralized. Vein contains arsenopyrite, pyrite, galena, sphalerite, jamesonite, and potassium feldspar. Tunnels driven in 1906-09 (now caved) showed sulfide mineralization over vertical range of 200 ft.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 13 -- Data combined with those for McGonnogill.

(Glen(n) Cr.) — Antimony, Gold, Lead, Tin(?); Rhodonite

Kantishna district — Mt. McKinley (17.6-18.05, 9.85-10.1)
MF-366, loc. 51 — 63°33'N, 150°42'-150°45'W

Summary: Gravels as much as 3 ft. thick; gold concentrated at or in top of bedrock in some places; in others gold distributed through 2 ft. of gravel; pay gravels 30-150 ft. wide. Some of gold very coarse; many nuggets from 1-1/2 to 7 oz. Concentrates contain black sand, garnets, galena, stibnite, and pyrite; large boulders of rhodonite (some gem quality) present. Cassiterite crystals seen by F. G. Wells (USGS) said to have come from this creek. Mining from early 1900's to as recently as 1975. Total production probably between 1,000 and 10,000 fine oz. of gold.

Prindle, 1907 (B 314), p. 215 -- Gravel mainly quartzitic schist; as much as 3 ft. thick; pay gravel from 30 to 150 ft. wide. Gold in places distributed through 2 ft. of gravel; in other places all on or in top of bedrock; coarse (largest piece found weighed more than 3 oz.). Maximum value of ground is about 65¢ per bedrock foot. A few garnets with gold.
Brooks, 1911 (P 70), p. 176 -- Same as above.
Brooks, 1912 (B 520), p. 38 — Mining, 1911.
Capps, 1918 (B 662), p. 300-302 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 83-85 — Mining in 1916. Some of gold coarse; many nuggets from 1-1/2 to 3 oz. have been found. Concentrates contain black sand, garnets, galena, and pyrite; on one claim sluice-boxes contain small boulders of rhodonite.
Brooks, 1922 (B 722), p. 52 — Mining, 1920.
Davis, 1923, p. 116 -- Mining, 1922.
Brooks and Capps, 1924 (B 755), p. 41-42 -- Placer mining, 1922. New lode discoveries reported.
Capps, 1924 (B 755), p. 141-142 -- Placer mining, 1922. Gold coarse.
Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.
Smith, 1930 (B 813), p. 35 -- Mining reported, 1928.
Smith, 1932 (B 824), p. 40 -- Mining reported, 1929.
Moffit, 1933 (B 836), p. 335 -- A few hundred dollars worth of placer gold mined each year.
Smith, 1933 (B 836), p. 41 -- Mining reported, 1930.
Smith, 1933 (B 844-A), p. 41 — Mining reported, 1931.
Wells, 1933 (B 849-F), p. 353 -- Stibnite float abundant.
p. 355-356 -- Large boulders of rhodonite in creek.
p. 372 -- Has yielded considerable placer gold. Many nuggets from 1 to 7 oz. recovered. Abundant galena, stibnite, and pyrite in concentrates; crystals of cassiterite seen by Wells said to have come from this creek. Boulders of rhodonite in gravels.
Smith, 1934 (B 857-A), p. 39 -- Mining or prospecting, 1932.
Smith, 1934 (B 864-A), p. 43 -- Mining or prospecting, 1933.
Smith, 1936 (B 868-A), p. 44 -- Mining or prospecting, 1934.
Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.
Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Has been placer mining. Mining in 1975. Gem-quality rhodonite has been found.

(Glen(n) Cr.) -- Continued

Bundtzen and others, 1976 -- Continued
p. 13-14 -- Has been placer mining. Mining in 1975 was with bulldozer and sluice box; some very coarse gold recovered.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Capps, 1919 (B 687). Production probably between 1,000 and 10,000 fine oz. of gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 56 -- References to Capps, 1919 (B 687), Bundtzen and others, 1976 (AOF-98).

(Glen Cr., divide) Lead

Kantishna district
MF-366, loc. 18

Mt. McKinley (17.35, 10.0)
63°33'N, 150°47'W

Summary: Prospect pits and trenches (caved in 1931). Country rock schist. Surface material iron-stained quartz with pyrite and a little galena.

Wells, 1933 (B 849-F), p. 373 -- Caved prospect pits and trenches [as of 1931]: country rock schist which strikes N 50°-75° E and dips SE. Material on surface iron-stained quartz with crystals of pyrite and a little galena.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 14 -- Reference to above and to Bundtzen and others, 1976 (AOF-98), p. 35, which apparently is an error.

Glen Ridge No. 1 — Gold, Lead, Tungsten(?)

Kantishna district — Mt. McKinley (17.5, 10.2)
MF-366, loc. 19 — 63°34'N, 150°46'W

Summary: Massive quartz, part of a vein or vein system parallel to schistosity of "Birch Creek" rocks, caps ridge; contains arsenopyrite, pyrite, galena, scheelite(?), and some gold. Includes reference to Skookona.

Capps, 1918 (B 662), p. 317-318 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 100 -- Country rock schist that strikes N 20° E and dips 15°-30° E. Open cuts and a 12-ft. shaft on a large quartz vein that apparently is parallel to schistosity, is as much as 20 ft. thick, and caps the ridge. Little apparent mineralization.

Moffit, 1933 (B 836), p. 333-334 -- Massive vein of iron-stained white quartz strikes N 65° W and dips 30° SW, apparently parallel to schistosity of country rock; 20-30 ft. thick and exposed over an area of at least half an acre. 10-ft. shaft has been sunk. Quartz contains iron sulfides and free gold.

Wells, 1933 (B 849-F), p. 373 -- Much-deformed schist covered with quartz float; large masses of quartz apparently in place. Vein appears to be about 20 ft. thick, to strike N 65° W, and to dip steeply S; made up of rusty quartz carrying fine-grained galena and a little pyrite. Reference to Moffit, 1933 (B 836),. Only development is a pit 6 ft. deep.

Bundtzen and others, 1976 (AOF-98), p. 35 -- Vein system 4-30 ft. thick trends N 20°-40° W and dips 65° SW; 700-1,000 ft. exposed strike length. Contains arsenopyrite, pyrite, scheelite(?), scorodite, and quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 15 -- Data combined with those for several other prospects and a mine, at all of which veins cut "Birch Creek" rocks.

Gold Dollar

Antimony, Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 9

Mt. McKinley (16.1, 9.75)
63°32'N, 150°57'W

Summary: Quartz-siderite vein 4-15 ft. thick contains pyrite, arsenopyrite, galena, sphalerite, polybasite (silver sulfantimonide), tetrahedrite, stephanite, stromeyerite, bournonite, and oxidation products. Production in 1920-21 and 1973; the 638 tons of ore mined contained 76,120 oz. silver, 159.5 oz. gold, and 273,160 lb. lead. In 1975 a considerable tonnage of recoverable ore was exposed in a shaft.

Davis, 1923, p. 128 -- Quartz vein 3-4 ft. thick strikes N 65° E, dips 75° S; contains galena, sphalerite, tetrahedrite, and stromerite [probably lapsus for stromeyerite, a silver-copper sulfide]. Developed by a shaft 38 ft. deep and a short tunnel; inaccessible in 1922. In 1920, 500-600 tons of ore with a minimum value of $170 per ton was mined.

Moffit, 1933 (B 836), p. 329-330 -- Ore chiefly galena and tetrahedrite; more unusual minerals identified include stephanite (silver-antimony sulfide), stromeyerite (copper-silver sulfide), and bournonite (lead-copper-antimony sulfide). Zinc in assays, so sphalerite is also probably present. 600 tons of high-grade lead-silver ore (said to average more than $150 per ton) from Gold Dollar and Golden Eagle claims was shipped to smelter.

Wells, 1933 (B 849-F), p. 366-367 -- About 500 tons of high-grade lead-silver ore mined in 1921; smelter returns showed that ore averaged more than $70 per ton; silver as high as 152 oz. and gold as high as 0.18 oz. per ton. Workings caved and inaccessible in 1931. Most of data from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 9-10 -- About 120 tons of ore from Gold Dollar lode processed and shipped to smelter, 1973. Shaft being reopened, 1976.

p. 25 — Production in 1920-21, 1973; 638 tons of ore contained 76,120 oz. silver, 159.5 oz. gold, and 273,160 lb. lead.

p. 32 -- Vein 4-15 ft. thick trends N 65° E and dips 75° SE; 400 ft. of traceable strike length. Contains pyrite, arsenopyrite, galena, sphalerite, siderite, polybasite, tetrahedrite, quartz, and "oxidized products." Considerable tonnage of recoverable ore exposed in shaft.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 7 -- Data combined with those for several other mines, at all of which veins cut "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978, (USBM OF 24-78), p. 4-23 to 4-26 -- Most of data also in Bundtzen and others, 1976 (AOF-98).

Gold(en) Eagle — Copper, Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.1, 9.75)
MF-366, loc. 9 — 63°32'N, 150°57'W

Summary: Quartz-siderite vein is almost certainly an extension of that on Gold Dollar claim; 1-4 ft. thick; in "Birch Creek" schist; minerals include pyrite, arsenopyrite, galena, sphalerite, polybasite (silver sulfantimonide), tetrahedrite, copper carbonates, and gold. Developed by tunnel about 150 ft. long (caved by 1930) and an open cut. In 1920 produced 4 tons of ore which contained 680 oz. silver; data on gold and lead contents not available. See also Gold Dollar.

Capps, 1918 (B 662), p. 321-322 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 103-104 -- Vein from a few inches to 3 ft. thick contains galena, pyrite, sphalerite, copper carbonates, and considerable free gold. Tunnel driven 145 ft. in crushed zone in schist to intersect vein; both schist and bunches of quartz in crushed zone mineralized. Schist country rock strikes N 55° E and dips 51° SE.

Davis, 1923, p. 128-129 -- Argentiferous galena, pyrite, and sphalerite and their oxidation products in quartz vein about 3 ft. thick striking N 65° E and dipping 75° SE. Developed by tunnel about 150 ft. long (vein less rich for the 30-40 ft. that it is exposed in tunnel) and open cut from which 3-4 tons of ore valued at $170 per ton was mined in 1920.

Moffit, 1933 (B 836), p. 329-330 -- Workings caved in 1930. Tunnel had been driven on shear zone (parallel to schistosity of country rock) that strikes N 55° E and dips 50° SE. Most of data from Capps, 1919 (B 687). 600 tons of high-grade lead-silver ore (said to average more than $150 per ton) from Golden Eagle and Gold Dollar claims was shipped to smelter.

Wells, 1933 (B 849-F), p. 366-367 -- Data quoted from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 25 -- In 1920 4 tons of ore mined contained 680 oz. silver; data on gold and lead contents not available.

p. 32 -- Vein 1-4 ft. thick trends N 65° E and dips 75° SE; 300 ft. of traceable strike length. Mineralogy same as that of Gold Dollar, of which Gold Eagle is almost certainly an extension. Minerals include pyrite, arsenopyrite, galena, sphalerite, siderite, polybasite, and tetrahedrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 7 -- Data combined with those for several other mines, at all of which veins cut "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- This vein, among others, has horizontal continuity measured in at least hundreds of feet and deserves further exploration.

Gold King — Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.2, 9.8)
MF-366, loc. 11 — 63°33'N, 150°56'W

Summary: Quartz vein 4 to more than 6 ft. thick in "Birch Creek" schist contains arsenopyrite, sphalerite, and galena; free gold and a trace of silver in oxidized material at surface.

Capps, 1918 (B 662), p. 321 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 103 -- Quartz vein 4 to more than 6 ft. thick is vertical and strikes N 70° E; country rock is schist that strikes about N 80° E, dips 20° S. Vein contains arsenopyrite, sphalerite, and galena; oxidized surface material reported to assay several dollars per ton in gold and a trace of silver. Gold can be panned from residual material on surface. Explored by 2 short tunnels (one partly caved).

Davis, 1923, p. 129 -- Reference to Capps, 1919 (B 687).

Bundtzen and others, 1976 (AOF-98), p. 32 -- Poorly exposed vertical vein strikes N 80° E and is 4 ft. thick; in Birch Creek Schist; contains quartz, arsenopyrite, galena, and sphalerite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 9 -- Data combined with those for Keystone and Pennsylvania; in "Birch Creek" rocks.

Greenback — Copper, Lead, Zinc

Kantishna district — Mt. McKinley (14.85, 3.85)
MF-366, loc. 31 — 63°12'N, 151°07'W

Summary: Garnet-bearing Paleozoic schist cut by Tertiary dike is mineralized with pyrrhotite, chalcopyrite, sphalerite, galena, and their oxidation products.

Moffit, 1933 (B 836), p. 319-320 -- Country rock dark schist, probably of sedimentary origin; cut by vertical dike of light-colored, fine-grained granitic rock. Country rock mineralized near dike; pyrrhotite, chalcopyrite, manganese oxide(?), sphalerite, galena, garnet, and oxidation products.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 40 -- Data combined with those for Terminus. In garnet-bearing Paleozoic rocks near contact with mafic Tertiary dikes.

Rawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-57 -- Restaked in 1966. Few data added since work of Moffit (1933, B 836).

Greiss — Gold(?)

Kantishna district — Mt. McKinley (16.5, 10.0) approx. 63°33'N, 150°54'W approx.

Summary: Tunnel driven 13 ft. in black slaty schist with small quartz veinlets. Pyrite in both schist and quartz. No data on precious metal content, if any.

Capps, 1918 (B 662), p. 318-319 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 101 -- Country rock black slaty schist with small quartz veinlets parallel to foliation (strike N 45° E, dip 30° NW). Pyrite cubes locally abundant in quartz and schist. No data on possible gold content. Tunnel driven 13 ft.

Highway

Zinc

Kantishna district
MF-366, loc. 41

Mt. McKinley (21.65, 17.2)
63°23'N, 150°15'W

Summary: Sphalerite on claim developed by 2 small prospect pits. In terrane of limy Paleozoic rocks near Tertiary plutons.

Reed, 1933 (B 849-D), p. 284 -- Sphalerite only ore mineral recognized on claim developed by 2 small prospect pits.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 47 -- Reference to above. In limy Paleozoic rocks near Tertiary plutons.

Hillside

Copper, Lead

Kantishna district
MF-366, loc. 7

Mt. McKinley (15.85, 9.7)
63°32'N, 150°58'W

Summary: Extension of Red Top deposit; vein exposed at bottom of a 40-ft. shaft is 5-6 ft. wide and contains lead and copper sulfides in quartz gangue.

Davis, 1923, p. 123 -- Extension of Red Top deposit. At bottom of a 40-ft. shaft vein is 5-6 ft. wide; lead and copper sulfides in quartz gangue. Ownership in litigation [as of 1923].

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Reference to above.

Home Lode

Antimony

Kantishna district
MF-366, loc. 23

Mt. McKinley (17.5, 10.7)
63°36'N, 150°45'W

Summary: A little stibnite and secondary iron and antimony minerals in brecciated and recemented quartz vein in "Birch Creek" quartz-muscovite schist.

Wells, 1933 (B 849-F), p. 377 -- Country rock quartz-muscovite schist; small showings of quartz stained by secondary iron and antimony minerals and containing a little stibnite. Quartz brecciated and cemented by later quartz.

Bundtzen and others, 1976 (AOF-98), p. 36 -- Stibnite-quartz vein.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 20 -- Reference to Wells, 1933 (B 849-F).

Humboldt — Gold, Lead, Zinc

Kantishna district — Mt. McKinley (17.65, 10.4)
MF-366, loc. 20 — 63°34'N, 150°45'W

Summary: Quartz veins in "Birch Creek" schist in zone nearly 50 ft. wide contain a little galena, sphalerite, and free gold; several hundred pounds of quartz from outcrops said to have given good gold returns. Explored by open cuts and a short tunnel; caved by 1930.

Capps, 1918 (B 662), p. 317 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 99 -- Country rock (schist) strikes N 37° W, dips 27° SW. Vertical quartz vein 3-4 ft. thick strikes N 55° E; slightly mineralized with galena and sphalerite. 2 or 3 smaller parallel veins. Several hundred pounds of quartz from outcrops said to have given good returns when shipped out for treatment. Caved tunnel said to have been driven 48 ft., not all on main vein.

Moffit, 1933 (B 836), p. 333 -- Open cuts and short tunnel (caved in 1930) explored a zone nearly 50 ft. wide containing 5 or 6 slightly iron-stained quartz veins from a few inches to 2 ft. thick carrying free gold; zone strikes N 55° E and dips steeply N; veins have not been traced along strike.

Wells, 1933 (B 849-F), p. 374 -- Data abstracted from Capps, 1919 (B 687). As of 1931 had been no work for several years.

Bundtzen and others, 1976 (AOF-98), p. 37 -- Quartz vein 6 ft. thick is vertical and trends N 55° E; contains pyrite, pyrrhotite, and minor arsenopyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 15 -- Data combined with those for several other prospects. Humboldt produced a little gold.

Jumbo	Lead(?), Silver(?)
Kantishna district	Mt. McKinley (15.9, 9.7) approx. 63°32'N, 150°58'W approx.

Summary: Claim on which there has been some open-cut work (as of 1920); no other data on prospect.

Brooks, 1922 (B 722), p. 53 -- Has been some open-cut work. No other data.

Keystone — Gold, Lead, Silver, Tungsten, Zinc

Kantishna district — Mt. McKinley (16.2, 9.8)
MF-366, loc. 11 — 63°33'N, 150°56'W

Summary: Keystone and Pennsylvania veins and a third smaller vein prospected by open cuts, a shaft, and a tunnel; veins carry pyrite, arsenopyrite, sphalerite, galena, and free gold; no data on probable silver content. Scheelite present (may be only on Pennsylvania claim). See also Pennsylvania.

Capps, 1919 (B 662), p. 320-321 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 102-103 -- Main vein averages 3 ft. in thickness, strikes N 50° E, dips 56° S, and extends for several hundred feet along strike as exposed in open cuts; all surface material weathered; contains mainly quartz; free gold visible; sulfides include pyrite, arsenopyrite, sphalerite, and galena. Another vein 6 ft. wide is about vertical and strikes N 54° E; contains iron sulfides and free gold. Veinlet 3/4 in. to 6 in. wide contains spongy network of crystalline gold; any sulfides that might have been present have been leached out.

Davis, 1923, p. 130 -- Keystone and Pennsylvania veins [see Pennsylvania sheet] traced by open cuts for 300 or 400 ft. on Keystone claim. A third vein (strike N 30° E and steep dip) intersects both; developed by open cuts and a 50-ft. tunnel; vein 3 ft. wide at portal and 1 ft. wide at face of tunnel; some high values in gold in quartz in open cuts; deposit very "spotty."

Moffit, 1933 (B 836), p. 331-332 -- Keystone and adjoining Pennsylvania claims prospected by numerous open cuts, a shaft, and a tunnel. Main showing as seen in surface exposures is a crushed, iron-stained quartz vein 3 ft. thick that strikes N 50° E. Metallic minerals include arsenopyrite, sphalerite, galena, and free gold.

Wells, 1933 (B 849-F), p. 370 -- Quotation from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 32 -- Data combined with those for Pennsylvania. One vein strikes N 30° E and dips steeply; another strikes N 65° E and dips 85° SE; over 1,400 ft. of mineralized strike length. Minerals reported include quartz, arsenopyrite, pyrite, galena, free gold, and scheelite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 9 -- Data combined with those for Pennsylvania and Gold King. Veins cut "Birch Creek" rocks.

Lena	Copper, Gold, Lead, Silver
Kantishna district MF-366, loc. 22	Mt. McKinley (17.9, 10.55) 63°35'N, 150°42'W

Summary: Rusty quartz vein 2-5 ft. thick in "Birch Creek" schist carries much galena (in places as much as 1/3 of vein), secondary copper minerals, gold, and silver; sample (may have been from Silver Wire claim) reported to have assayed half an ounce of gold per ton and to have shown a total value of $90 a ton in gold, silver, and lead. Native silver present.

Davis, 1923, p. 132 -- Two-foot vein of rusty quartz carries galena, copper oxides or carbonates, and some native silver. In open cut 75 ft. from discovery outcrop, vein is 3 ft. wide.

Moffit, 1933 (B 836), p. 333 -- Quartz vein exposed in open cut is 5 ft. wide, strikes N 60°-70° E, and dips steeply S; schistosity of siliceous schist country rock has same strike, but dips N. About 1/3 of vein is high-grade galena ore; sample assayed 1/2 oz. gold per ton; total value in gold, silver, and lead was $90 per ton at a time of high silver price. Galena content of vein drops off as vein is traced uphill from open cut. Several smaller quartz veins on which little work has been done reported to carry gold.

Wells, 1933 (B 849-F), p. 375 -- Data mainly from Moffit, 1933 (B 836). Same vein on Silver Wire claim. According to owner (C. A. Trundy), a sample of the ore from the vein assayed half an ounce of gold per ton and had a total value in gold, silver, and lead of $90 a ton at a time of high silver prices.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Data lumped with those for several other prospects; veins cut "Birch Creek" terrane.

Little Annie — Copper, Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.1, 9.75)
MF-366, loc. 9 — 63°32'N, 150°57'W

Summary: Quartz-siderite veins in "Birch Creek" schist contain galena, sphalerite, tetrahedrite, polybasite (a silver sulfantimonide), arsenopyrite, a secondary iron-arsenic mineral, malachite and azurite, and free gold. 725 tons of ore mined 1919-21 contained 117,305 oz. silver, 74.5 oz. gold, and 74.2 tons of lead. Were several hundred feet of underground workings and surface excavations. Includes references to: Alice, Fransen & Hawkins, Quigley unless specifically to another mine or prospect. Many reports on this part of the Kantishna district lump data for several mines and prospects under "Quigley" or "Quigley Hill" without giving much of a clue as to which mine or prospect is being discussed; I have arbitrarily treated such references under "Little Annie," which makes some data, particularly those on production, inconsistent. See also: Banjo, Red Top.

Capps, 1918 (B 662), p. 322 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 104 -- Quartz vein 3-4 ft. thick developed by 147 ft. of underground workings and open cuts. Vein strikes about N 59° E and dips 65° SE; contains pyrite and a little free gold. Large pieces of galena float on surface; one piece assayed 124 oz. silver per ton. Zone of quartz veinlets in schist assays a few dollars a ton in gold. Schist country rock strikes N 18° W, dips 15° W.

Brooks and Martin, 1921 (B 714), p. 84-85 -- Galena-bearing vein discovered on Alice claim in 1918. Shaft sunk about 70 ft. and drift run (length not reported) in 1919. Vein 1-2 ft. (average 18 in.) thick; contains high percentage of silver and some gold and copper; calcite gangue; in schist. Several hundred tons of carefully picked ore sledded to Bearpaw R. during winter.

Brooks, 1922 (B 722), p. 52-53 -- Considerable high-grade ore was shipped to Selby smelter in 1919 and 1920; mining and transportation costs make shipment of ore running less than 200 oz. silver per ton unprofitable. Ore principally galena and tetrahedrite. 2 ore shoots about parallel a few hundred feet apart. Ore mined in 1919 came from a 100-ft. shaft with drifts on 2 levels; crosscut driven to bottom of shaft. Ore mined in 1920 was from drifts and stopes from a 40-ft. shaft and a 130-ft. crosscut. Another shaft being sunk from outcrop.

Brooks, 1923 (B 739), p. 35-36 -- [Data on ore shipments undoubtedly include those from this mine, even though not specifically identified.] 1,100 tons of hand-sorted ore has been shipped; grade averaged about 140 oz. silver and $3.25 in gold per ton, in addition to lead and some copper. When visited in August 1921 mine was wholly inaccessible because of caving.

Davis, 1923, p. 126-128 -- Developed by several open cuts and a tunnel and drifts with a total length of about 350 ft. Main vein at surface is 13 ft. wide, strikes N 58° E, dips steeply SE; in tunnel splits into 2 veins 3 ft. 2 in. and 4 ft. 6 in. thick that strike N 55°-59° E and dip 62°-66° SE; on adjacent claim what are probably extensions of the same veins are thicker, strike somewhat more easterly, and dip south-eastward. These veins contain free gold and galena and its oxidation products; assays showed as much as

Little Annie - Continued

Davis, 1923, p. 126-128 -- Continued
0.28 oz. gold and 7 oz. silver per ton. A third vein (about 1-2 ft. thick) contained practically solid galena (a little sphalerite and tetrahedrite); assays showed as much as 0.54 oz. gold and 286.2 oz. silver per ton; about 500 tons of ore was mined and shipped to smelter in 1919; worth an average of $200 per ton; all ore worth more than $150 a ton was mined; values rarely extend more than 60 ft. below surface; vein strikes about N 20° E and dips 65°-70° SE. A similar vein on the adjoining claim strikes N 50° E and dips 65° SE, is a foot thick, and contains 5-6 in. of practically solid galena; 10 tons of ore worth $200 per ton mined in 1920; assay across full width of vein showed 0.08 oz. gold and 136.5 oz. silver per ton.

Brooks and Capps, 1924 (B 755), p. 16 -- Galena deposit mined, 1922.
p. 42 -- Underground and surface prospecting, 1922; very promising ore found. No productive mining. [Does not agree with statement on p. 16.]

Capps, 1924 (B 755), p. 143 -- Same data as in Brooks, 1923 (B 739).

Moffit, 1933 (B 836), p. 328-329 -- Developed by open cuts and a tunnel 500 ft. long, plus crosscuts and a stope; source of most of ore shipped to smelter from district. Country rock is crushed and weathered schist with numerous quartz stringers and lenses. One vein is in a shear zone 5-25 ft. wide that strikes about N 55° E and dips steeply S; offset about 40 ft. to SE by a fault; shear zone crushed, banded quartz and shattered country rock; contains disseminated pyrite, gold, and a little silver. A second vein 50 ft. south of shear zone (workings on it inaccessible in 1930) was mined in 1921; produced 700 tons of silver ore averaging not less than $150 per ton; valuable minerals galena and tetrahedrite; ore also carried gold.

Wells, 1933 (B 849-F), p. 353-358 -- Lessee (T. P. Aitken) mined and shipped about 1,200 tons of silver-lead ore from Quigley claims in 1919. Quigley made a further shipment in 1923. Total ore shipments from lodes of Eureka and vicinity has been slightly over 1,300 tons; practically all from Quigley property. Ore ranged from $128 to $400 a ton (silver at $1 per oz.); three-quarters of ore exceeded $179 per ton. Vein has been followed for 500 ft. along strike; does not appear to be pinching out. Generalized data on veins of district, of which Little Annie vein is typical. Fracturing of vein preceded, was contemporaneous with, and was later than deposition of sulfides (order of deposition: (1) arsenopyrite; (2) pyrite, sphalerite, galena, and chalcopyrite; (3) jamesonite); carbonates accompanied latest (post-sulfides) quartz.
p. 364-366 -- Essentially the same data as in older reports; plan of accessible workings and assay map of underground workings. Not including one unusually high assay, average of all samples taken for a length of 468 ft. along strike and an average width of 17 ft. was 0.10 oz. gold and 2.10 oz. silver per ton.

Smith, 1934 (B 864-A), p. 25 -- Arrangement for new development of Quigley properties, 1933.

Smith, 1939 (B 910-A), p. 31 -- Quigley properties acquired by Fransen & Hawkins, 1937; plans for active development.

Smith, 1939 (B 917-A), p. 30 -- Mill shipped to [Quigley] property, 1938.

Reed, 1961 (B 1108-A), p. A27 -- By 1931 slightly more than 1,300 tons of ore had been shipped from district; mainly from Quigley claims.

Little Annie - Continued

Berg and Cobb, 1967 (B 1246), p. 229-230 -- Mine produced 700 tons of silver ore averaging more than $150 per ton.

Bundtzen and others, 1976 (AOF-98), p. 9-10 -- Arsenopyrite-pyrite-quartz mineralogy found with "massive sulfide" galena-sphalerite-tetrahedrite-siderite vein. At least 4 periods of mineralization.

p. 25 -- 725 tons of ore mined in 1919-21 contained 117,305 oz. silver, 74.5 oz. gold, and 148,400 lb. lead.

p. 31 -- Thick lens of massive sulfides at intersection of fractures was mined. Minerals in ore include galena, sphalerite, abundant siderite, tetrahedrite, polybasite, arsenopyrite, pharmocosiderite [secondary iron-arsenic mineral], quartz, azurite, and malachite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 7 -- Data lumped with those for Gold Dollar, Golden Eagle, and Polly Wonder; gold-rich quartz-siderite veins in "Birch Creek" rocks.

Hawley, C. C., and Associates, 1978 (USBM OF 24-78), p. 4-23 to 4-78 -- Most of data also in Bundtzen and others, 1976 (AOF-98).

"Little Caribou" — Antimony, Copper, Zinc(?)

Kantishna district — Mt. McKinley (19.45, 13.9)
63°46'N, 150°30'W

Summary: Deposit in skarn contains pyrite, chalcopyrite, magnetite, ilmenite(?), sphalerite(?), and massive hematite; zinc anomalies in stream-sediment samples from downhill. Tourmaline and stibnite in float.

Bundtzen and others, 1976 (AOF-98), p. 39, loc. 69 -- Contact-metamorphic deposit in carbonate skarn is 3-5 ft. wide on surface and 550 ft. long; no intrusive rock exposed. Erratic sulfide mineralization; pyrite, chalcopyrite, magnetite, ilmenite(?), epidote, sphalerite(?), and massive hematite. Stream-sediment samples from downhill show anomalous Zn.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 29 -- Reference to above.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-46 -- Data from Bundtzen and others, 1976 (AOF-98) -- Tourmaline also present and stibnite found in "limestone replacement masses" in float.

Little Maud(e)

Copper, Gold, Lead, Silver, Zinc(?)

Kantishna district
MF-366, loc. 8

Mt. McKinley (15.95, 9.75)
63°32'N, 150°57'W

Summary: Quartz-siderite vein cutting "Birch Creek" rocks is 13 ft. wide; carries tetrahedrite, galena in which are threads of chalcopyrite, gold (as much as 0.22 oz. per ton) and silver (as much as 75.40 oz. per ton). Data from 3 prospects lumped in one reference; minerals reported include, in addition to above, sphalerite, arsenopyrite, and polybasite (silver sulfantimonide); all may not be present at this prospect.

Davis, 1923, p. 125 -- Open cut exposes quartz vein 18 in. thick, striking about N 55° E and dipping 60°-70° S; carries some tetrahedrite.

Moffit, 1933 (B 836), p. 332 -- One of several claims that have produced ore or have high-grade showings.

Wells, 1933 (B 849-F), p. 368-369 -- Vein striking about N 55° E is 13 ft. wide and has been crosscut by 2 trenches; mainly quartz, some large areas of fine-grained galena in which are threads of chalcopyrite. Samples across vein showed as much as 0.22 oz. gold and 75.40 oz. silver per ton.

Bundtzen and others, 1976 (AOF-98), p. 31 -- Vein strikes N 42° E, dips 70° SE. [some of data lumped with data for Polly Wonder and Francis; all ore minerals listed may not occur at each prospect.] Ore minerals reported include galena, sphalerite, arsenopyrite, siderate, tetrahedrite, polybasite, minor chalcopyrite, and quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Data combined with those for 6 other mines and prospects; quartz-siderite veins cut "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- One of veins with horizontal continuity measured at least in hundreds of feet and deserving further exploration.

(Little Moose Cr.) Gold, Silver, Tungsten

Kantishna district Mt. McKinley (19.8, 13.45)
MF-366, loc. 56 63°45'N, 150°27'W

Summary: Short, steep, narrow valley with unstable walls; gravels 8-10 ft. thick. Mining as recently as 1941. Gold shot-like and low grade (old assays said to have been about $12 per oz. when gold was $20.67). Small nuggets of native silver recovered with the gold. Scheelite common in concentrates. Total production less than 1,000 oz.

Capps, 1918 (B 662), p. 310-311 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 93 -- Valley short, steep, and very narrow with unstable walls that slide and bury pay streak. Gravels 8-10 ft. thick, but too deep for open-cut working at most places. Gold shotlike (one-third of pieces worth 50 cents or more); nuggets of native silver in most cleanups. Gold low grade; said to assay about $12 per oz.
Brooks, 1922 (B 722), p. 52 -- Mining, 1920.
Brooks, 1923 (B 739), p. 37 -- Mining, 1921.
Davis, 1923, p. 138 -- Mining, 1922; about 30,000 sq. ft. of bedrock cleaned; average value of 22¢ per sq. ft. Small nuggets of native silver in practically every cleanup.
Brooks and Capps, 1924 (B 755), p. 41 -- Little accomplished in 1922.
Smith, 1929 (B 797), p. 23 -- Mining in 1926.
Smith, 1930 (B 813), p. 35 -- Mining in 1928.
Smith, 1932 (B 824), p. 40 -- Mining in 1929.
Moffit, 1933 (B 836), p. 335 -- A few hundred dollars worth of gold mined annually.
Smith, 1933 (B 836), p. 41 -- Mining reported, 1930.
Smith, 1933 (B 844-A), p. 41 -- Mining reported, 1931.
Smith, 1934 (B 857-A), p. 39 -- Mining or prospecting, 1932.
Smith, 1934 (B 864-A), p. 43 -- Mining or prospecting, 1933.
Joesting, 1942 (TDM 1), p. 39 -- Scheelite common in concentrates.
White, 1942 (B 936-N), p. 335 -- Mining, 1941.
Cobb, 1973 (B 1374), p. 155 -- Scheelite common in concentrates; small nuggets of native silver have been recovered.
Bundtzen and others, 1976 (AOF-98), p. 8, 13 -- Has been placer mining.
Cobb, 1977 (OF 77-168B), p. 37 -- References to Capps, 1919 (B 978); Joesting, 1942 (TDM 1). Production probably less than 1,000 fine oz. gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 59 -- References to Capps, 1919 (B 687), Joesting, 1942 (TDM 1).
Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-32, 4-45 -- Has been placer mining; total production from all creeks in area was probably about 1,000 oz.

Lloyd — Copper, Gold(?), Zinc

Kantishna district — Mt. McKinley (17.7, 10.1)
MF-366, loc. 21 — 63°33'N, 150°44'W

Summary: Quartzite band 3-10 ft. thick in "Birch Creek" schist carries chalcopyrite, sphalerite, and magnetite; gold also reported. Possibly submarine volcanogenic in origin; premetamorphic. Developed by adit 40 ft. long.

Capps, 1918 (B 662), p. 317 — Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 99 -- Schist with interbedded quartzite; vein quartz in quartzite contains pyrite, chalcopyrite, sphalerite, and (reportedly) gold. Tunnel 24 ft. long.

Bundtzen and others, 1976 (AOF-98), p. 36 -- Quartzite band 3-10 ft. thick in chloritic greenstone schist is traceable for 150 ft.; carries chalcopyrite, sphalerite, and magnetite. Apparently a premetamorphic sulfide occurrence with bands of sulfides folded with country rock. Developed by adit 40 ft. long.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 16 -- References to above. Country rock "Birch Creek" schist. Deposit possibly submarine volcanogenic in origin.

Lucky Jim — Copper, Gold, Lead

Kantishna district — Mt. McKinley (17.9, 10.55)
MF-366, loc. 22 — 63°35'N, 150°42'W

Summary: Silicified zone in "Birch Creek" rocks contains pyrite and minor galena and chalcopyrite; some of rusty quartz pans free gold.

Davis, 1923, p. 132 -- One-foot ledge of rusty quartz pans free gold and carries some galena and chalcopyrite.

Bundtzen and others, 1976 (AOF-98), p. 37 -- Poorly exposed silicified zone trends N 40° E; carries pyrite and minor galena and chalcopyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Data lumped with those for 5 other prospects. In "Birch Creek" terrane.

Lucky Strike — Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (15.9, 9.6)
MF-366, loc. 5 — 63°32'N, 150°58'W

Summary: 2 quartz veins in"Birch Creek" schist 6 to 8 ft. thick; carry galena, sphalerite, siderite, tetrahedrite, and free gold. Assays of samples ran as high as 0.05 oz. gold and 10.0 oz. silver per ton. Developed by open cuts and a short adit (caved by 1930). May have been a little production in 1920's.

Davis, 1923, p. 124 -- 2 veins on claim. One strikes N 59° E, dips 84° S; at least 6 ft. thick between schist walls; hanging wall highly silicified. Samples showed 0.04-0.05 oz. gold and 6.4-10.0 oz. silver per ton. Tunnel [length not given] driven on this vein. Other vein partly exposed in partially caved cuts; probably about 8 ft. wide; random sample assayed 0.04 oz. gold and 1.4 oz. silver per ton.

Moffit, 1933 (B 836), p. 331 -- Vertical quartz vein 6-8 ft. thick strikes N 45° E; fractured and heavily iron stained. Prospected by a short tunnel (caved in 1930); samples reported to have run more than $8 per ton in gold.

Wells, 1933 (B 849-F), p. 367 -- Data quoted from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 30 -- Vein about 6 ft. thick trends N 50° E and dips 84° SE; about 200 ft. of strike length exposed on surface; cuts phyllitic unit of Birch Creek Schist. Vein consists of quartz, galena, sphalerite, and minor siderite, tetrahedrite, and free gold. Open cuts and now-caved adit exposed vein for 125 ft. along strike. Assays of samples showed 0.04 oz. gold and 6.4 oz. silver per ton. May have been some production in 1920's.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 4 -- Data combined with those for Francis.

Magnet

Lead, Zinc

Kantishna district
MF-366, loc. 32

Mt. McKinley (15.0, 3.9)
63°13'N, 151°06'W

Summary: Small open cut exposed fractured and metamorphosed Paleozoic rocks near a Tertiary felsic pluton; pyrrhotite, sphalerite, and a little galena present.

Moffit, 1933 (B 836), p. 320 -- Small open cut exposes much-fractured, dark, fine-grained, silicified, iron-stained rock containing pyrrhotite, sphalerite, and a little galena.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 41 -- Reference to above. Data combined with those for Old Sourdough. In metamorphosed Paleozoic rocks near contacts with Tertiary felsic pluton.

(Marten Cr.) Gold

Kantishna district Mt. McKinley (19.75, 14.9) approx.
63°50'N, 150°27'W approx.

Summary: Small-scale placer mining in 1929 and 1937 reported. Includes reference to (Martin Cr.).

Smith, 1932 (B 824), p. 40 -- Small-scale mining, 1929.
Smith, 1939 (B 910-A), p. 58 -- Small-scale mining, 1937.

Martha Q — Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (15.95, 9.75)
MF-366, loc. 8 — 62°32'N, 150°57'W

Summary: Quartz-siderite vein 5-9 ft. thick in "Birch Creek" phyllitic rocks contains galena, arsenopyrite, tetrahedrite, and sphalerite. Sample across part of vein assayed 0.08 oz. gold and 284.2 oz. silver per ton. In 1920-21 1,136 oz. silver was recovered from 4 tons of ore; data on gold and lead recovery not available. Developed by shallow shaft (now caved).

Davis, 1923, p. 125 -- Shallow shaft exposes narrow vein (mainly galena) striking N 15° W and dipping 56° E. Sample across 6 in. of vein assayed 0.08 oz. gold and 284.2 oz. silver per ton. Several tons of ore shipped in 1920-21.

Bundtzen and others, 1976 (AOF-98), p. 25 -- In 1920-21 produced 4 tons of ore containing 1,136 oz. silver; gold and lead contents not available.

p. 31 -- Vein in phyllitic unit of Birch Creek Schist is 5-9 ft. thick, trends N 15° W, and dips 60° E; contains galena, arsenopyrite, tetrahedrite, sphalerite, siderite, and minor quartz. Probably an extension of Little Annie vein system. Workings caved.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Data lumped with those for 6 other mines and prospects. Quartz-siderite veins cut "Birch Creek" rocks.

McGonogill

Antimony, Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 16

Mt. McKinley (17.15, 10.2)
63°34'N, 150°48'W

Summary: Quartz vein in "Birch Creek" schist is 8 or more feet thick. Contains galena, stibnite, pyrite, chalcopyrite, sphalerite, and tetrahedrite. Two tons of ore milled yielded several tens of ounces of gold; assay of a sample across entire vein showed 0.6 oz. gold and 63 oz. silver per ton; other assays as high as 52 oz. silver per ton. Was developed by short tunnel (upper workings) and a crosscut (lower workings). Includes references to McGonagall. See also Galena.

Capps, 1918 (B 662), p. 318 -- Preliminary to Capps 1919 (B 687).

Capps, 1919 (B 687), p. 100 -- Gold quartz prospect on vein said to be more than 8 ft. thick in places; exposed in outcrops and open cut; apparently strikes N 78°-110° E and dips 50° S. 12-ft. tunnel lagged for entire length; only schist exposed at breast. Finely divided pyrite along cracks in quartz; vein includes lenses and bunches of mica schist. Ton of ore was shipped for mill test [no data on results].

Davis, 1923, p. 131-132 -- At upper claim vein exposed at surface and developed by 30-ft. tunnel, at face of which is 8 ft. of quartz with galena and some stibnite; sample across full width of vein reported to have assayed 0.6 oz. gold and 63 oz. silver per ton. At lower claim quartz vein at surface is 18 in. thick; one ton of ore sent out for mill test yielded $30 in gold. Crosscut driven to intersect vein hit a 3-ft. shear zone impregnated with tetrahedrite, stibnite, and chalcopyrite (assays as high as 52 oz. silver per ton) 30 ft. from portal; tunnel extended 15 ft. beyond shear zone and a crosscut 12 ft. to right found the quartz vein, which had been faulted and displaced to left.

Wells, 1933 (B 849-F), p. 372 -- At upper claim vein is exposed at surface and developed by a tunnel 40 ft. long; strikes N 58° E and dips 34° NW; in graphitic schist. At face 8 ft. of mineralized quartz in bands about a foot thick separated by altered schist seams 1-5 in. thick contains pyrite and arsenopyrite; galena and stibnite had been reported, but Wells did not see them. Data on lower claim quoted from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 9 -- Stibnite found with galena-sphalerite-tetrahedrite-chalcopyrite-siderite veins at 3 mines and prospects, including this one.

p. 35 -- Vein cutting marble and graphitic schists unit of Birch Creek Schist trends N 58° E, dips 34° NW, and is 8 ft. thick; more than 250 ft. of strike length. Vein is arsenopyrite, pyrite, quartz, galena, and sphalerite; galena and sphalerite contents increase with depth. Very high gold assays reported. 2 tons of ore milled yielded several tens of ounces of gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 13 -- References to several of above. Data combined with those for Glen.

(McKinley Fork) — Gold(?)

Kantishna district — Mt. McKinley
N 1/2 SE 1/4 quad.

Summary: Mining reported, 1911. May have been prospecting, or may have been an error in stream name, as no other report mentions any mining on McKinley Fork or McKinley R.

Brooks, 1912 (B 520), p. 38 -- Mining reported, 1911.

Merinser — Antimony, Copper, Mercury

Kantishna district — Mt. McKinley (14.25, 3.45)
MF-366, loc. 28 — 63°11'N, 151°12'W

Summary: Terrane of Paleozoic sedimentary and volcanic rocks cut by Tertiary felsic dikes. Stibnite in a thin bed so decomposed that its original nature cannot be determined beneath black shale and partly serpentinized dark igneous rock; blocks of stibnite on slope below decomposed bed. At same prospect a much-altered apparently sedimentary rock in fault contact with a felsic dike contains quartz-calcite seams with cinnabar, a little native mercury, and small amounts of iron and copper sulfides and their oxidation products. Explored by a few open cuts. See also (Slippery Cr.).

Moffit, 1933 (B 836), p. 313-314 -- Stibnite deposit in a thin bed so decomposed that its original character is obscure; now appears as highly colored sand. Country rock in area is black and gray banded shales and siliceous beds interstratified with lava flows; all cut by fine-grained, light-colored dikes. Stibnite-bearing bed overlain by black shale bed 1-2 ft. thick, which is, in turn, overlain by closely jointed and partly serpentinized dark igneous rock. Blocks of stibnite a foot or more in diameter scattered on slope below decomposed colored bed, from which smaller pieces of stibnite were dug. A few open cuts on claim.

p. 321-322 -- A much-altered, dark-colored, apparently sedimentary rock in fault contact with fine-grained granite or felsite is exposed in an open cut 36 ft. long; contains seams of calcite and quartz with cinnabar and a little native mercury; assay of a sample of the dark-colored rock showed 1.86% mercury. Small amounts of iron and copper sulfides present; their oxidation products coat fracture planes and surfaces of rock fragments.

Malone, 1962 (IC 8131), p. 51 -- Reference to Moffit, 1933 (B 836).

Malone, 1965 (IC 8252), p. 50, 55 -- References to Moffit, 1933 (B 836).

Berg and Cobb, 1967 (B 1246), p. 230 -- Deposit contains small quantities of cinnabar and native mercury.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 38 -- Reference to Moffit, 1933 (B 836). In Paleozoic sedimentary and volcanic rocks near Tertiary felsic dikes.

(Moose Cr.) Gold

Kantishna district
MF-366, locs. 42, 44

Mt. McKinley (15.25-15.95, 9.5-10.6)
63°32'-63°35'N, 150°58'-151°03'W

Summary: At site of most mining (MF-366, loc. 44) gold in creek and low-bench gravels on false bedrock; some concentrated on false bedrock; no gold below false bedrock, but true bedrock not reached; pay-streak 400-600 ft. wide; attempt at large-scale hydraulicking in 1920's not successful. In 1906 small-scale mining in canyon further downstream (MF-366, loc. 42). Placers at lower elevations than terraces of glacial material. Gold production reported intermittently from 1906 to as recently as 1939; total probably less than 1,000 fine oz.

Prindle, 1906 (B 284), p. 125 -- Gold has been found on headwater tributaries [as of 1905].

Prindle, 1907 (B 314), p. 217 -- A little work in canyon about 5 mi. below Eureka Cr. in 1906 [MF-366, loc. 42]. Some pay reported.

Brooks, 1911 (P 70), p. 178 -- Same as Prindle, 1907 (B 314).

Brooks, 1912 (B 520), p. 38 -- Mining, 1911.

Capps, 1918 (B 662), p. 306 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 88-89 -- [At loc. 44, MF-366] gold was derived from Eureka, Eldorado, and Friday Creeks; none upstream from them. In 1916 bench 10-12 ft. above creek level opposite mouth of Eureka Cr. was being mined; gold distributed in gravel above false bedrock and concentrated on false bedrock; practically no gold below false bedrock, but true bedrock had not been reached.

Brooks, 1922 (B 722), p. 52 -- Mining, 1920.

Brooks, 1923 (B 739), p. 37 -- In 1921 ditch and flume was built from Wonder Lake to mine at mouth of Eureka Cr.

Davis, 1923, p. 116-118 -- Ground from a little above Eureka Cr. to 1-1/2 mi. below Friday Cr. [loc. 44, MF-366] owned by Kantishna Hydraulic Mining Co.; claims located between 1905 and 1920; none patented. Gold in creek gravels, mainly on false bedrock 8 ft. below creek bottom; pay-streak 400-600 ft. wide; estimated value of 50¢ per square foot; leaner gravels on either side. Depth to true bedrock not known. 50,000 sq. ft. of false bedrock cleaned in 1922. Details of equiment and mining methods.

Brooks and Capps, 1924 (B 755), p. 41 -- Large-scale hydraulic mining, 1922; returns said to be less than expected from prospecting.

Capps, 1924 (B 755), p. 141-142 -- Mining, 1922. Data on deposit about the same as in Capps, 1919 (B 687).

Smith, 1929 (B 797), p. 23 -- Mining, 1926.

Moffit, 1933 (B 836), p. 335 — Hydraulic operation across from mouth of Eureka Cr. was not profitable.

Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.

Smith, 1941 (B 926-A), p. 52 -- Mining or prospecting, 1939.

Reed, 1961 (B 1108-A), p. A29 -- Placers lie below levels of terraces attributed to later of two glaciations; placer concentration assumed to have been since last period of extensive glaciation.

(Moose Cr.) -- Continued

Bundtzen and others, 1976 (AOF-98), p. 8, 13 -- Has been placer mining. Terraces of glacial material along valley; reference to Reed, 1961 (B 1108-A).

p. 16 -- Attempt at large-scale hydraulic mining in 1920's not successful; reference to Davis, 1923.

Cobb, 1977 (OF 77-168B), p. 37 -- References to Prindle, 1907 (B 314), Capps, 1919 (B 687). Production probably less than 1,000 fine oz. gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, locs. 48, 50 -- Data combined with those for Friday Cr. References to several of above reports.

(Mt. Eielson)

Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, locs. 37-40

Mt. McKinley (20.9-21.25, 7.3-7.35)
63°24'N, 150°18'-150°20'W

Summary: Paleozoic limy sedimentary rocks intruded by large Tertiary granodiorite pluton and many dikes emanating from it. Contact-metamorphic deposits are in a belt about 4 mi. long and 2,000 ft. wide along contact between sedimentary rocks and pluton; consist principally of sphalerite, argentiferous galena, and chalcopyrite; pyrite, tetrahedrite, and pyrargyrite(?) also present; assays show a little gold and (in some instances) a few ounces of silver per ton; some specimens of galena quite rich in silver. Also a few fissure-vein deposits, mainly in granitic rocks. Resource estimated to be about 200,000 tons of material averaging 5% zinc, 3%-5% lead, and 0.2%-0.3% copper, plus a little silver and gold. Deposits discovered in 1921; claims have been staked and restaked several times; explored by a few short adits and many prospect pits and small open cuts. Has been no production. Includes references to (Copper Mtn.).

Brooks, 1923 (B 739), p. 36-37 -- Sulfide-bearing lodes discovered in 1921. Country rock quartzite (with some interbedded limestone and slate) intruded by granodiorite dikes. Ore bodies in a zone at least 2 mi. long and from 1/4 to 1 mi. wide; some ore bodies have definite walls and some grade into country rock; mainly in quartzite, but some in granodiorite and some along contacts between the 2 rock types. Ore minerals mainly galena, chalcopyrite, sphalerite, pyrite, and bornite; typically galena and chalcopyrite are intergrown; some large masses of pure galena. Gangue quartz and country rock. Grab samples contained as much as 270 oz. silver and $8 in gold per ton; 3 samples contained 1%-8.8% copper. No work had been done on any of claims by August 1921.

Davis, 1923, p. 134-137 -- Deposits discovered in 1921. Country rock quartzite and limestone intruded by granite and diorite. More than 50 claims staked,but only 7 examined by Davis in 1921 and 1922 because of bad weather and snow cover. Ore deposits are quartz veins and impregnations of quartzite and limestone. Metallic minerals include much galena and sphalerite, some chalcopyrite, and pyrite; some copper staining. Assays of samples (most random, but a few picked) showed traces of gold, 0.40-2.2 (270 in one picked sample) oz. silver per ton, and 3.98%-6.35% lead. One sample contained 57.36% zinc and one 0.38% copper.

Brooks and Capps, 1924 (B 755), p. 42-43 -- Many claims staked in 1921-22, but development work restricted to a few shallow pits and open cuts. Starting underground prospect openings very difficult because in best mineralized areas surface rock is so badly broken that as soon as an excavation is made the material on the surface begins to slide. Ore occurs mainly as stringers in limestone near contacts with acidic or basic intrusives, in quartzite beds, or in the igneous rocks themselves. Seem to have been 2 types of mineralization; copper apparently related to basic intrusives and lead-zinc related to granitic rocks. Both pre- and post-mineralization faulting.

Capps, 1924 (B 755), p. 143 -- About the same as in Capps, 1919 (B 687).

(Mt. Eielson) -- Continued

Capps, 1927 (B 792), p. 107-108 -- Country rock series of calcareous and siliceous argillites and siliceous limestone intimately intruded by granitic dikes and sills; sedimentary rocks unfossiliferous; probably Paleozoic in age. Geology complex. More than one period of faulting. Metallic minerals include sulfides of zinc, lead, iron, and copper; varying content of gold and silver. Sulfides have replaced calcareous rocks and occur as vein fillings in both sedimentary and granitic rocks. Sphalerite most abundant sulfide; occurs both alone and mixed with galena or with both galena and chalcopyrite. Sphalerite alone contains little gold and silver; galena commonly carries much silver; some assays show more than 200 oz. silver and $6-$17 in gold per ton.

Moffit, 1933 (B 836), p. 314-318 -- Mountain made up of calcareous and siliceous argillite, thin-bedded limestone, and black schist and slate, all of which were intruded by many light-colored granitic dikes and sills, which caused much alteration of the older rocks. Debris from the granitic rocks masks the sedimentary rocks, giving a probably false impression of the amount of igneous rocks. Typically, impure banded limestone has been metamorphosed and silicified along contacts, and extending along bedding away from contacts, with granitic intrusives. Some of the limestone was replaced by sulfides; other parts of the limestone were impregnated with sulfides; what in some cases appear to be extended vein deposits are the result of metallic mineralization along calcareous beds. The most abundant sulfides are sphalerite and galena, which commonly occur together in varying proportions; other sulfides are chalcopyrite and tetrahedrite. Gold and silver are both present, with the silver content varying with the amount of galena. About 30 claims have been staked, but in 1930 there was assessment work on only 7 of them. 3 tunnels were started in the Jiles claim, but either did not get through the slide rock or did not encounter a valuable ore body; also a large open cut. A 20-ft. sample from this claim assayed 6% lead, 4% zinc, 30-40 oz. silver per ton, and some gold. Some assays of galena showed more than 200 oz. silver and $6-$17 in gold per ton.

Reed, 1933 (B 849-D) -- Regionally the oldest bedrock unit is a sequence of mainly limestone and limy beds of Paleozoic age; at least a mile thick. Next younger is one or more thousand feet of probably Triassic greenstone. Both units were intruded by bodies of rock ranging in composition from gabbro to granodiorite; probably late Mesozoic in age, but could be as young as Tertiary. Much younger volcanic rocks and feeder dikes also present. First claims staked in 1920; since then most have been restaked or have changed hands; work has been restricted to 2 short adits on the Virginia claim, 3 adits with a total length of 270 ft. on the Jiles claim, and 250-300 small prospect pits and open cuts; has been no production. Mineralized rock in an area about 4 mi. long and 2,000 ft. wide in metasedimentary rocks along contact with granodiorite pluton. Deposits mainly formed by selective replacement of limy beds by epidote-group minerals, quartz, calcite, and ore minerals, including (in probably paragenetic sequence) sphalerite, galena, and chalcopyrite; also present are pyrite and tetrahedrite. Minute specks of pyrargyrite(?) in galena; assays show silver, apparently largely in sphalerite, and a little gold (no more than 0.03 oz. per ton). Descriptions of individual claims.

(Mt. Eielson) -- Continued

Gates and Wahrhaftig, 1944 (OF 16) -- Zinc deposits are irregularly shaped bodies in which the original rocks (mainly impure limestones of Paleozoic age) were converted to hornfels by granodiorite porphyry dikes; hornfels later replaced in part by sphalerite, galena, and chalcopyrite. Little work on prospects since 1931. Crude resource calculations suggest about 200,500 tons of material in place and in talus with as much as 12.28% Zn, 8.89% Pb, 1.4% Cu, and 0.015 oz. Au and 9,8 oz. Ag per ton (most samples much lower).

Muir and others, 1947 (RI 4121) -- Historical data summarized; geologic data from Reed, 1933 (B 849-D) and Gates and Wahrhaftig, 1944 (OF 16). Details of USBM sampling program and beneficiation tests (ore did not respond well in flotation tests).

Wedow and others, 1952 (OF 51), p. 69-70 -- Data from Reed, 1933 (B 849-D).
p. 81 -- Mineral assemblage suggestive of the presence of uranium.

Twenhofel, 1953 (C 252), p. 6 -- Contact-metamorphic deposit containing sphalerite, galena, and chalcopyrite that replaced limestone. Deposit estimated to consist of about 200,000 tons of ore containing 5% Zn, 3%-5% Pb, and 0.2%-0.3% Cu.

Reed, 1961 (B 1108-A), p. A28, A30 -- Data summarized from several of above reports.

Berg and Cobb, 1967 (B 1246), p. 229-230 -- Area underlain by metasedimentary rocks, quartz diorite and related rocks, and felsic(?) dikes and sills. Largest known deposits in recrystallized limestone; deposits are mainly masses of argentiferous galena and other sulfides formed by replacement during contact metamorphism; less commonly deposits were formed by open-space filling in fissures. Chief values in silver; some of deposits rich in argentiferous galena contain as much as 200 oz. silver per ton, but typically they contain less than 40 oz. silver per ton, a small percentage each of lead and zinc, and a little gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 46 -- References to Reed, 1933 (B 849-D), Gates and Wahrhaftig, 1944 (OF 16). Mainly replacement deposits in Paleozoic limy rocks near Tertiary granitic pluton. Veins in area chiefly in granite.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-56, 4-57 -- Data from older reports.

Mystery

Antimony, Copper, Lead

Kantishna district
MF-366, loc. 22

Mt. McKinley (17.9, 10.55)
63°35'N, 150°42'W

Summary: Quartz vein 2-1/2 ft. thick carries galena, stibnite, and secondary copper minerals.

Davis, 1923, p. 132 -- Quartz vein 2-1/2 ft. wide carries galena, stibnite, and copper oxides; no free silver observed as it was at some nearby deposits.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Reference to above.

Neversweat

Antimony, Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 2

Mt. McKinley (15.55, 9.0)
63°30'N, 151°01'W

Summary: Quartz porphyry body intruded into "Birch Creek" quartz-muscovite schist. Ore deposit is a complexly faulted quartz-siderite vein (in quartz porphyry along contact) carrying massive sulfides and disseminated sulfides in all of the intrusive rock and in schist near contact. Metallic minerals identified are galena, sphalerite, pyrite, arsenopyrite, tetrahedrite, chalcopyrite, stibnite, boulangerite, and jamesonite. Assays show as much as 0.34 oz. gold and 13.5 oz. silver per ton; one float sample rich in chalcopyrite contained 44.96 oz. silver per ton. Explored by short adits; one still open in 1977. Has been no production, but deposit has possibilities as a source of concentrating ore. Includes references to Bonnell.

Wells, 1933 (B 849-F), p. 358 -- Chalcopyrite conspicuous.

p. 376 -- Talus of large blocks of quartz porphyry contains many large pieces consisting chiefly of coarsely crystalline galena with some pyrite and chalcopyrite. Tunnel driven 40 ft. in schist inclusion in porphyry and 2 open cuts failed to find a vein in place. Assay of sample [presumably of float] ran 55% lead and 74 oz. silver and $10 in gold per ton.

Morrison, 1964, p. 97-98 -- Porphyritic rhyolite intruded graphitic quartz-muscovite schist; contact heavily mineralized with galena, sphalerite, pyrite, arsenopyrite, chalcopyrite, and stibnite disseminated through a matrix of quartz, calcite, and silicified rhyolite and schist. 3 adits driven on prospect; oldest one 40 ft. long in schist did not find any ore; other two (combined length about 92 ft. in 1963) encountered sulfides; assays showed 0.04-0.34 oz. gold and a trace to 11.10 oz. silver per ton. Float sample with chalcopyrite contained 0.04 oz. gold and 44.96 oz. silver per ton.

Bundtzen and others, 1976 (AOF-98), p. 9-10 -- Good exposures of mineralization at prospect. Stibnite found with galena-sphalerite-tetrahedrite-chalcopyrite-quartz-siderite vein in quartz porphyry.

p. 28 -- Complexly faulted quartz-carbonate vein in quartz porphyry body intruded into quartz-muscovite schist trends N 70°-90° E and dips 50°-70° SE; contains galena, tetrahedrite, stibnite, sphalerite, minor chalcopyrite, boulangerite, jamesonite, and potassium feldspar. Three adits driven into 150 vertical feet of vein exposure. As much as 4-ft. thickness of massive sulfides in upper adit. Deposit has excellent possibilities for mill concentrate materials. Disseminated sulfides in all of quartz porphyry. Small jamesonite-pyrite vein in quartz porphyry exposed nearby.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 2 -- References to above.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-20 to 4-22 -- Prospect was explored by short adits, most of which are caved. Uppermost adit is open and was mapped; mainly in mica schist; at face are 2

Neversweat -- Continued

Hawley, C. C., and Associates, Inc. -- Continued
intersecting quartz porphyry dikes; veins of massive galena and sphalerite and of quartz with scattered galena and sphalerite are in both schist and quartz porphyry; veins pinch and swell along strike; some at least 3 ft. thick. 2-ft. sample from one vein contained 30% Pb + Zn and about 13.5 oz. silver per ton. Material on dumps is similar; massive galena and sphalerite; locally stibnite and sulfosalts are present. Prospect has not been productive, but could produce mill-type ore.

Bundtzen and Turner, 1979 (GR 61), p. 26, 29 -- Analysis of a sample of sericitized potassium feldspar-quartz porphyry gave a minimum K-Ar age of 48.3 $\pm$ 1.4 million years; this should be regarded as a minimum date for the sulfide mineralization.

North Star (Friday Cr.)

Lead, Silver, Zinc

Kantishna district
MF-366, loc. 8

Mt. McKinley (15.95, 9.75)
63°32'N, 150°57'W

Summary: 6-in. stringer contains galena and sphalerite; sample reported to have assayed 60 oz. silver per ton. Includes reference to Star.

Brooks, 1922 (B 722)- Has been come open-cut work.

Davis, 1923, p. 125 -- Open cut shows 6-in. stringer containing galena and sphalerite; sample reported to have assayed 60 oz. silver per ton.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 — Reference to Davis, 1923.

North Star (Spruce Cr.) — Lead, Zinc

Kantishna district — Mt. McKinley (17.9, 10.55)
MF-366, loc. 22 — 63°35'N, 150°42'W

Summary: Vein 2 ft. thick cutting "Birch Creek" schist is made up of quartz, galena, sphalerite, and pyrite. Much galena float; finding of 6-ft. vein of galena beneath talus was reported. Includes references to Mammoth.

Capps, 1918 (B 662), p. 316 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 99 -- Open cut on Mammoth claim said to have displayed a large mineralized quartz vein. Cut reported to have slumped, so Capps did not visit prospect in 1916.

Wells, 1933 (B 849-F), p. 375 -- Vein exposed in stream bank is 2 ft. thick and is made up of quartz, galena, sphalerite, and pyrite. Country rock chloritic schist; schistosity strikes N 25° E and dips 65° SE. Much galena float; owner reported finding 6-ft. vein of galena beneath talus, but cleared area had been covered again when visited by Wells.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Data combined with those for 5 other prospects; quartz veins that cut "Birch Creek" terrane.

Old Sourdough

Copper, Lead, Zinc

Kantishna district
MF-366, loc. 32

Mt. McKinley (15.0, 3.9)
63°13'N, 151°06'W

Summary: Paleozoic metamorphic rocks (schist, quartzite, and limestone) cut by granitic dike of Tertiary age. Metallic minerals include pyrrhotite, sphalerite, chalcopyrite, galena, pyrolusite, and secondary copper minerals. Little work has been done on claim.

Moffit, 1933 (B 836), p. 320-321 -- Country rock schist, quartzite, and limestone cut by a wide dike of porphyritic granite or diorite; rocks shattered and brilliantly colored by oxidation products. On one side of dike pyrrhotite occurs as nearly pure masses and as disseminated deposits. Nearby is a large exposure of shattered rock containing pyrrhotite, sphalerite, chalcopyrite, copper carbonates, and pyrolusite; open cut on best carbonate showing revealed brecciated country rock cemented with azurite and malachite. A short distance to east small open cuts show a little galena and sphalerite in veins in the country rock.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 41 -- Reference to above. Data combined with those for Magnet. In metamorphosed Paleozoic rocks near contacts with a Tertiary felsic pluton.

Pennsylvania

Gold, Lead, Silver, Tungsten, Zinc

Kantishna district
MF-366, loc. 11

Mt. McKinley (16.2, 9.8)
63°33'N, 150°56'W

Summary: Keystone and Pennsylvania veins are essentially gold-quartz veins in "Birch Creek" rocks; minerals reported include arsenopyrite, sphalerite, galena, and free gold. Scheelite reported may have been from Keystone claim. Deposit prospected by open cuts, a shaft, and a tunnel; samples from tunnel and shaft assayed 0.96 to 1.6 oz. gold and 0.2 to 1.6 oz. silver per ton. Beautiful specimens of crystalline gold found in pockets in a small oxidized quartz vein. See also Keystone.

Capps, 1918 (B 662), p. 320-321 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 102-103 -- See description on Keystone sheet; data on prospects not separated.

Davis, 1923, p. 129-130 -- Pennsylvania vein strikes N 65° E; dips 85° S, and has been traced more than 500 ft. by open cuts; vein is quartz, calcite, pyrite, and free gold; may be the same vein as that on Pittsburgh claim. Keystone vein strikes N 50° E, dips 60° S, and intersects Pennsylvania vein; has been traced for more than 1,200 ft. by open cuts; 4-6 ft. wide; made up of quartz, considerable pyrite and arsenopyrite, and some galena and sphalerite; explored by 50-ft. tunnel and 30-ft. shaft; assays of samples from tunnel and shaft showed 0.96-1.6 oz. gold and 0.2-1.6 oz. silver per ton; finely crystalline gold panned from quartz from an open cut.

Moffit, 1933 (B 836), p. 331-332 -- Pennsylvania and Keystone claims prospected by open cuts; a shaft, and a tunnel. Main showing is a crushed and iron-stained quartz vein 3 ft. thick and striking N 50° E. Metallic minerals include arsenopyrite, sphalerite, galena, and free gold. Assays of samples from shaft reported to have shown $30 per ton in gold. Beautiful specimens of crystalline gold were found in pockets in an oxidized quartz vein 1-6 in. thick from which the sulfides had been dissolved away.

Wells, 1933 (B 849-F), p. 357 -- Crystalline gold present; some of largest dentritic pieces pounded out of quartz weighed as much as 1/10 oz. each.
p. 370 -- Quotation from Davis, 1923.

Bundtzen and others, 1976 (AOF-98), p. 32 -- Data combined with those for Keystone. One vein strikes N 30° E and dips steeply; another strikes N 65° E and dips 85° SE; over 1,400 ft. of mineralized strike length. Minerals reported include quartz, arsenopyrite, pyrite, galena, free gold, and scheelite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 9 -- Date combined with those for Keystone and Gold King. Veins cut "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- Gold quartz vein apparently similar to those at Banjo.

Pension

Lead, Silver

Kantishna district
MF-366, loc. 19

Mt. McKinley (17.5, 10.2)
63°34'N, 150°46'W

Summary: Descriptions in references differ, particularly as to amount of galena in vein. According to Davis (1923), vein 5 ft. thick exposed in open cut is half galena, of which a grab sample assayed 150 oz. silver per ton. According to Bundtzen and others (1976; AOF-98), galena is a minor constituent of vein, which is mainly arsenopyrite, boulangerite, pyrite, and quartz. Country rock is "Birch Creek" phyllitic rocks.

Davis, 1923, p. 132 — Open cut exposed vein 5 ft. thick (2-1/2 ft. nearly solid galena; the rest quartz). Grab sample of the galena assayed 150 oz. silver per ton. Tunnel being started; to undercut vein.

Wells, 1933 (B 849-F), p. 374 — All openings caved in 1931.

Bundtzen and others, 1976 (AOF-98), p. 35 -- Vertical vein 1-4 ft. thick trends N 70° E; 150 ft. of strike length exposed; cuts phyllitic unit of Birch Creek Schist; made up of arsenopyrite, boulangerite, pyrite, quartz, and minor galena. Excellent exposures; vein offset left laterally for a few feet in 3 zones.

MacKevett and Holloway, 1977 (OF 77-169A), p. 65, loc. 15 -- Data lumped with those for Arkansas, Glen Ridge No. 1, and Humboldt; quartz veins cut "Birch Creek" rocks.

Pittsburgh — Gold(?), Lead(?), Silver(?), Zinc(?)

Kantishna district — Mt. McKinley (16.2, 9.8)
63°33'N, 150°56'W

Summary: Open cut exposed quartz vein 6-7 ft. thick with sulfides (which ones not stated); may be same as Pennsylvania vein of Pennsylvania claim. See also Pennsylvania.

Davis, 1923, p. 129 -- Open cut disclosed quartz vein 6-7 ft. thick with sulfides [which ones not stated]. May be the same as Pennsylvania vein of Pennsylvania claim.

Wells, 1933 (B 849-F), p. 370 -- Quotation from Davis, 1923.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- Gold-quartz vein apparently similar to those at Banjo.

Polly Wonder

Copper(?), Gold, Lead, Silver, Zinc(?)

Kantishna district
MF-366, loc. 9

Mt. McKinley (16.1, 9.75)
63°32'N, 150°57'W

Summary: Iron-stained quartz-siderite vein 7 or 8 ft. thick contains galena, free gold, and as much as 2.20 oz. silver per ton. Chalcopyrite, sphalerite, arsenopyrite, and sulfosalts may also be present. Explored by an open cut.

Davis, 1923, p. 125 -- Open cut exposed 8 ft. of iron-stained quartz from which free gold can be panned; small amount of galena. Vein strikes about E and dips 65°-70° S.

Wells, 1933 (B 849-F), p. 364 -- On general trend of Red Top vein. Open cut exposed mineralized quartz vein 7 ft. wide. Sample across vein assayed 0.12 oz. gold and 2.20 oz. silver per ton.

Bundtzen and others, 1976 (AOF-98), p. 31 -- [Many of data combined with those for Little Maud and Francis; all ore minerals listed may not occur at each prospect.] Minerals reported include galena, sphalerite, arsenopyrite, siderite, tetrahedrite, polybasite, minor chalcopyrite, and quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 7 -- data lumped with those for Gold Dollar, Golden Eagle, and Little Annie; silver-rich quartz-siderite veins that cut "Birch Creek" rocks.

Question Mark

Copper

Kantishna district
MF-366, loc. 29

Mt. McKinley (14.55, 3.75)
63°12'N, 151°09'W

Summary: Mafic dike cutting Paleozoic black shale carried native copper and cuprite.

Moffit, 1933 (B 836), p. 321 -- Country rock black shale cut by dark-colored fine-grained dike that is porphyritic (feldspar phenocrysts) in places and is much decomposed. Tissue-like seams and disseminated grains of native copper and a little cuprite in dike. Very little development work.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 39 -- Reference to above. Small mafic dike cuts Paleozoic strata; carries native copper and cuprite.

(Rainy Cr.) Gold

Kantishna district Mt. McKinley (17.25, 9.5) approx.
63°32'N, 150°48'W approx.

Summary: Was placer mining in 1922 and possibly other years. No data on deposit or amount of production.

Davis, 1923, p. 116 -- Placer mining, 1922.
Bundtzen and others, 1976 (AOF-98), p. 8, 13 — Has been placer mining.

Red Top — Gold, Lead, Silver, Tungsten, Zinc

Kantishna district — Mt. McKinley (15.85, 9.7)
MF-366, loc. 7 — 63°32'N, 150°58'W

Summary: Quartz-siderite vein (or series of veins) in shear zone in iron-stained "Birch Creek" schist contains rich ore shoots separated by lean material. Minerals identified in deposit include galena, sphalerite, arsenopyrite, pyrite, jamesonite, pyrargyrite, polybasite (a silver sulfantimonide), tetrahedrite, scheelite, probably marcasite, melanterite, scorodite, free sulfur, and free gold; some of sulfides and sulfosalts argentiferous. Precious metal content increases with amount of arsenic and decreases as amount of galena increases. Mine developed by several hundred feet of underground workings (now caved) and surface excavations. 180-185 tons of ore mined in 1922-23; contained 43,664 oz. silver (average 237 oz. per ton), 187.3 oz. gold (average 1.1 oz. per ton), and 93,300 lb. lead. See also Little Annie.

Brooks, 1922 (B 722), p. 53 -- Open cuts expose ore shoot for strike length of about 300 ft.; average width of ore body about 9 ft. Ore is galena and tetrahedrite.

Brooks, 1923 (B 739), p. 36 -- Work continued in 1921. Lode 3-10 ft. wide; valuable ore in shoots 6 in. to 3 ft. wide; shoots irregularly distributed along lode. Argentiferous galena, some copper and zinc; considerable gold. Lode may be traced for 1,000 ft. or more. Drift follows ore for more than 200 ft.; face 60 ft. below outcrop.

Davis, 1923, p. 121-123 -- Fissure vein in Birch Creek schist 4-10 ft. wide; mainly quartz with shoots of galena, sphalerite, arsenopyrite, occasional tetrahedrite, and oxidation products; high silver content and some gold; sulfides in a band from 4-6 in. to as much as 3 ft. thick which in some places is near hanging wall (marked by slickensides and gouge) and in others near footwall (more gradational than hanging wall). Weathered quartz is iron stained and pans free gold. Mine developed by 300-ft. tunnel and open cuts; free sulfur in one open cut. Assays of samples showed as much as 1.94 oz. gold and 1717.1 oz. silver per ton; most samples much less than half as rich. Grab sample from 5 tons of sacked ore assayed 1.24 oz. gold and 243.1 oz. silver per ton. 50 tons of ore mined in late 1922 believed to average over $200 per ton. As of Jan. 1, 1923, none of ore had been shipped.

Brooks, 1925 (B 773), p. 29 — Some ore mined and shipped, 1923. Venture unsuccessful because of high shipping costs.

Moffit, 1933 (B 836), p. 326-328 -- Mineralized area is a vein or series of veins in a shear zone trending about N 60° E and traced for more than 500 ft. by a tunnel, several shafts, and open cuts. Schist country rock decomposed and iron stained. Original ore minerals probably were mainly auriferous galena and sphalerite; many minerals formed by oxidation now present and contain a large part of the valuable metals. Minerals identified in ore include galena, pyrargyrite, sphalerite, arsenopyrite, pyrite, probably marcasite, melanterite, free sulfur, scheelite, and scorodite. Main tunnel 300 ft. long following shear zone; short crosscuts and shafts [sic; probably means winzes]. Also shaft and drift from surface above

Red Top -- Continued

Moffit, 1933 (B 836) -- continued
tunnel. Ore mined from open cuts, surface shaft, and a stope below main tunnel. Claim has produced about 100 tons of ore valued at more than $250 per ton; ore from tunnel averaged 0.88 oz. gold and 209.3 oz. silver per ton and 37.5% lead; ore from open cut and shaft from surface averaged 2.53 oz. gold per ton. Mining was between 1921 and 1925.

Wells, 1933 (B 849-F), p. 358 -- One of 2 accessible galena-sphalerite veins in area, 1931.

p. 361-364 -- Very few data not in Moffit, 1933 (B 836). Jamesonite, as well as minerals listed by Moffit, present. Previous metal content increases with amount of arsenic and decreases as amount of galena increases. Smelter returns indicate that 80% of the about 130 tons of ore mined ran equal to or better than 0.90 oz. gold and 214.40 oz. silver per ton. Assay data from samples from underground workings and open cut show that much of the vein carries less than $5 in gold and 1 or 2 oz. silver per ton, but that in places there are shoots of high-grade ore. Reference has mine and assay maps.

Smith, 1939 (B 917-A), p. 30 -- Reported in 1938 that major development is imminent.

Joesting, 1943 (TDM 2), p. 20 -- Sample of jig concentrates mainly scheelite.

Berg and Cobb, 1967 (B 1246), p. 229 -- Veins carry minor amounts of scheelite, scorodite, and native sulfur as well as the more common sulfides of the district. Mine produced about 100 tons of ore valued at more than $250 a ton, chiefly in silver.

Bundtzen and others, 1976 (AOF-98), p. 9-10 -- Arsenopyrite-pyrite-quartz mineralogy found with "massive sulfide" galena-sphalerite-tetrahedrite-siderite vein. At least 4 periods of mineralization.

p. 25 -- 184 tons of ore mined in 1922-23 contained 43,664 oz. silver, 187.3 oz. gold, and 92,300 lb. lead.

p. 31 -- 182 [given as 184 on p. 25] tons of ore averaged 237 oz. silver and 1.1 oz. gold per ton. Crosscutting fracture system localized ore in vertical vein 8-9 ft. thick that strikes N 70° E. Minerals identified include galena, sphalerite, arsenopyrite, siderite, tetrahedrite, polybasite, pyrargyrite, and pyrite. Workings caved.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Data lumped with those for 6 other mines and prospects. Polymetallic quartz-siderite veins in "Birch Creek" rocks.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-23 to 4-26 -- Most of data also in Bundtzen and others, 1976 (AOF-98).

Ridgetop

Copper, Lead

Kantishna district
MF-366, loc. 22

Mt. McKinley (17.9, 10.55)
63°55'N, 150°42'W

Summary: Iron-stained quartz vein in"Birch Creek" terrane carries a little galena and some secondary copper minerals.

Davis, 1923, p. 132 -- Vein 12 ft. wide is chiefly iron-stained quartz; a very little galena and some copper oxides.

Bundtzen and others, 1976 (AOF-98), p. 37 -- Listed with Humboldt; data given here fit those given for Humboldt in other references.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Data lumped with those for 5 other prospects; quartz veins that cut "Birch Creek" terrane carry pyrite, galena, and sulfosalts.

Silver Pick — Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (15.95, 9.75)
MF-366, loc. 8 — 63°32'N, 150°57'W

Summary: Quartz-carbonate veins as much as 7 ft. thick and a sheeted zone 13 ft. thick in "Birch Creek" schist contain galena, pyrite, arsenopyrite, sphalerite, and gold. Some samples of galena carried nearly 300 oz. silver per ton. Gold assays all less than one oz. per ton; free gold was panned from some of the rusty quartz exposed at the surface. Explored by a tunnel nearly 200 ft. long and open cuts. No known production.

Capps, 1918 (B 662), p. 322-323 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 105 -- Schist country rock strikes N 50° E, dips 50° W. Tunnel 188 ft. long encountered 3 veins, 2 of which strike N 35° E and dip 67°-68° SE; one vein 5 ft. thick composed of rusty quartz and bunches of galena (one sample of galena reported to have assayed 100 oz. silver and less than an oz. gold per ton). Sheeted zone of calcite, quartz, and schist 13 ft. thick is brecciated and leached; contains pyrite, arsenopyrite, galena, and sphalerite. Quartz at mouth of tunnel pans free gold.

Davis, 1923, p. 124-126 -- Tunnel (portal on adjoining Little Maud claim) 190 ft. long intersects 3 quartz veins. Many of data from Capps, 1919 (B 687). Attitudes of veins given as: strike N 50° E, dip 70° S; strike N 30° E, dip 67° SE. Samples taken by Gross (USBM) assayed 0.03-0.06 oz. gold and 0.10-10 oz. silver per ton. Veins contain free gold, galena, pyrite, sphalerite, and arsenopyrite. On adjoining Silver Pick No. 2 claim is a caved shaft 12 ft. deep on a vein of iron-stained quartz and calcite 6-7 ft. thick. Open cut exposes iron-stained quartz vein 3 ft. thick that strikes N 88° E and dips 63° N; sample assayed 0.14 oz. gold and 0.1 oz. silver per ton.

Moffit, 1933 (B 836), p. 330 -- Shear zone of crushed quartz and schist that strikes N 35° E and dips steeply NW is exposed at surface; a smaller vein is exposed in open cut. Tunnel driven nearly 200 ft. to intersect lodes; shear zone cut 55 ft. from portal; mineralized part is 5 ft. of rusty quartz and galena. A second crushed zone at end of tunnel is parallel to first, but dips SE; may not be vein exposed in open cut; carries pyrite, arsenopyrite, galena, and sphalerite; some gold; silver content increases with galena content; some samples of galena carry nearly 300 oz. silver per ton.

Wells, 1933 (B 849-F), p. 368-369 -- Quotation from Capps, 1919 (B 687). Other data essentially as in older reports.

Bundtzen and others, 1976 (AOF-98), p. 31 -- 2 veins; one strikes N 85° E and dips 63° NW; other strikes N 65° SE [sic; probably means N 65° E] and dips 67° SE. Traceable strike length 1,200-1,400 ft. Veins contain galena, sphalerite, arsenopyrite, tetrahedrite, siderite, quartz, and scorodite. Much work done in 1961, but investigator, although impressed with potential tonnage, was discouraged by general lack of high-grade ore pockets.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 6 -- Data lumped with those for 6 other mines and prospects; veins, typically quartz-siderite less than 3 m thick, cut "Birch Creek" rocks.

Silver Pick — Continued

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- This vein, among others, has horizontal continuity measured in at least hundreds of feet and deserves further exploration. [Called Silver Peak, but is undoubtedly Silver Pick.]

Silver Wire

Copper, Gold, Lead, Silver

Kantishna district
MF-366, loc. 22

Mt. McKinley (17.9, 10.55)
63°35'N, 150°42'W

Summary: Quartz vein 2-5 ft. thick in "Birch Creek" schist carries galena, tetrahedrite, pyrite, and some secondary copper minerals. Sample from vein (may have been from Lena claim) reported to have assayed half an ounce of gold per ton and to have had a total value of $90 a ton in gold, silver, and lead. See also Lena.

Davis, 1923, p. 132 — Quartz vein 2 ft. thick carries galena and some copper oxides.

Wells, 1933 (B 849-F), p. 375 -- See entry for Lena; claims described as a unit.

Bundtzen and others, 1976 (AOF-98), p. 37 -- Galena-tetrahedrite-pyrite-quartz vein about 5 ft. thick trends N 60°-70° E and dips 80° SE. Mineralization apparently discontinuous along strike.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 17 -- Data lumped with those for 5 other prospects; quartz veins generally less than 2 m thick cut "Birch Creek" terrane; veins [of group of 6 prospects as a whole] contain pyrite, galena, and sulfosalts.

(Slate Cr.) Antimony

Kantishna district
MF-366, loc. I

Mt. McKinley (15.15, 8.7)
63°29'N, 151°04'W

Summary: Stockwork of quartz and stibnite veins and lenses as much as 2 ft. thick in decomposed clayey schist in shear zone in "Birch Creek" quartzite schist. Stockwork as much as 15 ft. wide. Minor pyrite, boulangerite, cervantite, and arsenopyrite with the stibnite. Mine was developed by about 150 ft. of underground workings, now caved. Production, 1916, 1942-49, 1970-71, was 625 tons of hand-sorted ore containing 45% or more antimony. 125 tons of this ore was mined in 1916 and not shipped then; some was shipped in 1941-42 and the rest may have been later. Deposit not mined out. Includes references to Taylor antimony mine.

Brooks, 1916 (B 649), p. 42 -- A. W. Newberry informed Brooks that a stibnite lode cuts schistose rocks near a granite intrusion; had been considerable work on claim, but cuts had caved. Considerable [more] work reported to have been done, winter of 1915-16.

Capps, 1918 (B 662), p. 325-326 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 107-108 — Fissure in quartzite schist (strike N, dip 29° E) strikes N 50° E and dips 82° SE; forms one wall of main ore body, which is a stockwork of quartz and stibnite with maximum width of 15 ft., including broken horses and bunches of decomposed clayey schist. Stibnite in veinlets, veins (largest 2 ft. thick), and irregular masses; secondary antimony minerals present. Stibnite in acicular crystals and masses of fine-grained material. About 125 tons of hand-sorted ore was mined (but not shipped) in 1916; mainly from an open cut; material in 119 feet of underground workings lower grade.

Capps, 1924 (B 755), p. 144 -- Summary of data in Capps, 1919 (B 687).

Moffit, 1933 (B 836), p. 313 -- Data quoted from Capps, 1919 (B 687).

Wells, 1933 (B 849-F), p. 353 — Some work done on deposit in 1912.

p. 376-377 -- Workings caved in 1931. Quotation from Capps, 1919 (B 687).

Joesting, 1942 (TDM 1), p. 3 -- Carload of high-grade ore shipped in spring of 1942.

Bain, 1946 (IC 7379), p. 67 -- Recorded production of 125 tons. Trenching and churn drilling established reserve of 10,000 tons of 9.4% Sb plus 6,700 tons of partly developed ore assaying 10%.

Ebbley and Wright, 1948 (RI 4173), p. 4 -- In 1942-43 USBM and mine owner did exploratory work and high-grade mining.

p. 20-28 -- Deposit first located in about 1905-06; has been restaked several times. 97-ft. tunnel and 22 ft. of crosscuts driven in 1915-16; about 125 tons of ore mined but not shipped. In 1941-42 37 tons of previously mined hand-sorted ore containing 58% Sb was shipped. Deposit in shear zone 40 ft. wide in Birch Creek schist; ore is in a stockwork of quartz and stibnite; secondary antimony minerals present. Details of USBM trenching and churn drilling program. Average of samples from trench that exposed the most ore was 18.66% Sb. Owner deepened this trench, drifted from it for 63 ft. along best stibnite showing, and stoped out some ore between this and the old (1915-16) tunnel. 1943-44 production reported to have been 163 tons of ore containing 47%-48% Sb.

(Slate Cr.) -- Continued

Reed, 1961 (B 1108-A), p. A27-A28 — Exploratory work, 1915-16. In 1942 USBM did some development work; a few tons of hand-picked high-grade ore produced in 1942-44.

Berg and Cobb, 1967 (B 1246), p. 229-231 -- In shear zone in schistose quartzite intruded by diorite. Deposit (maximum thickness 15 ft.) is a reticulated stockwork of quartz and stibnite stringers and lenses as much as 2 ft. thick in decomposed clayey schist. About 125 tons of hand-sorted ore was mined.

Cobb, 1973 (B 1374), p. 154 -- Stibnite ore has been mined.

Bundtzen and others, 1976 (AOF-98), p. 8-9 -- Large antimony deposit has undergone development during the last 25 years. Good exposures of mineralization.

p. 17 -- Property still has economic ore reserves.

p. 27-28 -- Operations in 1916, 1942-49, and 1970-71 resulted in the production of 625 tons of ore containing 800,000 lb. of antimony (p. 27) or 45% Sb (p. 28) [which would be 562,500 lb. Sb]. Massive stibnite-quartz fissure vein (minor pyrite, boulangerite, cervantite, and arsenopyrite) trends N 50° E, dips 82° SE, is 1-20 ft. thick, and has a mineralized strike length of at least 450 ft. Country rock heavily sericitized schist. Were about 150 ft. of underground workings, now caved. Gossan on hillside parallel to strike of vein.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 1 -- Reference to several other reports.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-16 to 4-19 -- most of data from older reports.

(Slippery Cr.)

Antimony, Copper, Gold, Mercury

Kantishna district

Mt. McKinley (14.25, 3.5) approx.
63°11'N, 151°12'W approx.

Summary: Work on copper, mercury and antimony claim(s) in 1930. Prospecting for low-grade, high-volume gold-quartz deposits, 1937; reported that some were found.

Smith, 1933 (B 836), p. 80-81 — Some work done on antimony and mercury claim(s) of Shannon near Slippery Cr., 1930. [Probably Merinser, and possibly some others.]

Smith, 1938 (B 897-A), p. 35 -- Prospecting, 1936. Reported that large, moderately low-grade, gold-bearing quartz veins were found.

Smith, 1939 (B 910-A), p. 31 -- No recent (1937) information on prospecting venture reported in 1936 [Smith, 1938 (B 897-A)].

Reed, 1961 (B 1108-A), p. A28 -- Gold, copper, and mercury deposits on Slippery Cr. discovered in 1921. Some exploratory work during 1930's; prospects later abandoned.

Berg and Cobb, 1967 (B 1246), p. 229-231 -- Stibnite lode similar to that on Slate Cr.

(Spruce Cr.)

Gold

Kantishna district
MF-366, loc. 52

Mt. McKinley (18.1, 10.2)
63°34'N, 150°41'W

Summary: Bedrock several kinds of "Birch Creek" schists and some limestone; gold coarse, some pieces with quartz attached. Placer mining as recently as 1975, when a considerable amount of gravel was moved.

Prindle, 1907 (B 314), p. 214-215 -- Bedrock several kinds of schist; gravels schist, some limestone, and some vein quartz; where mined about 3 ft. thick; paystreak 12 ft. wide. Gold on or in top 2 ft. of bedrock; coarse, some pieces with quartz attached.

Brooks, 1911 (P 70), p. 176 -- Same as above.

Davis, 1923, p. 116 -- Mining in 1922.

Brooks and Capps, 1924 (B 755), p. 41 -- Small-scale mining, 1922.

Bundtzen and others, 1976 (AOF-98), p. 9 -- Placer mining, 1975.
p. 14 -- Considerable gold production, 1975; several thousands of cubic yards of material moved.

Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Prindle, 1907 (B 314); production probably less than 1,000 fine oz. of gold. [In view of Bundtzen and others, 1976 (AOF-98) this production estimate is probably too low].

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 57 -- References to Prindle, 1907 (B 314); Bundtzen and others, 1976 (AOF-98).

Spruce Creek No. 1 — Gold(?)

Kantishna district — Mt. McKinley (17.9, 10.55)
63°35'N, 150°42'W

Summary: Quartz vein carries pyrite. No data on possible precious metal content. Explored by 2 shallow pits that were caved in 1931.

Wells, 1933 (B 849-F), p. 374-375 -- Vein about 12 ft. wide strikes about N 21° E, is iron-stained, and shows a little pyrite mineralization. 2 shallow pits; caved in 1931. [No data on possible precious metal content.]

Stampede — Antimony, Gold, Silver, Zinc

Kantishna district — Mt. McKinley (20.4, 13.35)
MF-366, loc. 25 — 63°44'N, 150°22'W

Summary: Stibnite ore as high-grade veins and lenses (more than 50% Sb) and concentrating ore in quartz veins (10%-20% Sb) in vein system apparently localized along Stampede fault at intersection of individual veins with it and where cross faults meet Stampede fault. Country rock "Birch Creek" quartzose schist. Ore mainly stibnite; several secondary antimony minerals present; minor amounts of pyrite, arsenopyrite, sphalerite, and marcasite. Sample of table concentrates from mill carried 1.71 oz. gold per ton (gold apparently in quartz rather than associated with sulfides); a composite sample contained 0.41 oz. silver per ton. Mine developed by fairly extensive underground workings; mill on property; has been major Alaska source of antimony. From 1937 through 1970 production was about 1,850 tons of antimony recovered from about 3,595 tons of ore and concentrates. Identified resources are more than 7,000 tons of material containing 10%-15% antimony. Includes references to antimony on Stampede Cr.

Capps, 1918 (B 662), p. 327 -- Preliminary to Capps, 1919 (B 687).

Capps, 1919 (B 687), p. 109 -- Large open cut excavated in 1916. Country rock reddish quartzite schist that strikes NW and dips 30° NE. Stibnite nearly pure; 40-50 tons mined and sacked; much in lumps 6-12 in. in diameter; sample assayed 69.8% Sb, 1% As, and no gold or silver. Ore exposed in open cut faulted and slickensided; apparently in large lens that strikes northwestward and dips 65° SW.

Capps, 1924 (B 755), p. 144 — Data about the same as in Capps, 1919 (B 687).

Smith, 1930 (B 813), p. 70-71 -- Revival of interest; discussion of possibility of major development (as of 1928).

Smith, 1932 (B 824), p. 79 -- Major development would first require very complete prospect examination.

Moffit, 1933 (B 836), p. 311-313 -- Country rock Birch Creek schist. Principal exposure of stibnite is mass of high-grade ore along fault that strikes N 70° E and dips steeply S; body of stibnite is about 30 ft. X 20 ft. X 30 ft. as shown by outcrops and 2 open cuts; some of central part of deposit is stibnite-quartz veins in schist. Has been a little underground drifting and other exploratory excavations; now caved. Many tons of high-grade ore taken out, but not shipped. Has been no work for some time [as of 1930].

Smith, 1933 (B 836), p. 80 -- No more than assessment work, 1930.

Smith, 1938 (B 897-A), p. 35, 97-98 -- Preliminary work and a little antimony ore mined, 1936; work to be continued during winter and ore hauled out over snow. Reference to Moffit, 1933 (B 836).

Smith, 1939 (B 910-A), p. 102-103 -- Taken over by Morris P Kirk & Son, Inc.; work under direction of Earl R. Pilgrim. Considerable ore mined, hand sorted, and shipped during winter (sledded to railroad). Mine developed by crosscuts from a 100-ft. shaft.

Smith, 1939 (B 917-A), p. 102 -- More than 300 ft. of winzes sunk in 1938 and several hundred feet of bulldozer cuts made. Mill to be installed in 1939. Considerable hand-sorted ore shipped.

Stampede - Continued

Smith, 1941 (B 926-A), p. 93 -- Reported that in 1939 a long crosscut was run to undercut rich ore bodies in upper levels (off shaft and adit); milling equipment was installed; considerable ore has been shipped.

Joesting, 1942 (TDM 1), p. 3 -- Production started in 1937; continuous operation since [as of early 1942] except for part of 1941.

Smith, 1942 (B 933-A), p. 89 -- Only significant antimony producer in Alaska in 1940. Mine developed by openings into ore body from vertical shaft and adit. Mill on property. Both high-grade crude ore and concentrates running 55% or better in metallic antimony shipped.

White, 1942 (B 936-N) -- From 1936 to time of closing in 1941 mine produced 2,400 tons of shipping-grade antimony ore and concentrates containing about 1,300 tons of metallic antimony. Country rock is schistose quartzite member of Birch Creek schist cut by small basalt and andesite dikes. Ore is mainly stibnite, which occurs in high-grade (more than 50% Sb) ore in veins and lenses and concentrating (10%-20% Sb) ore in quartz veins and stringer veinlets in brecciated shear zones. Ore apparently localized near bend in Stampede fault (strike changes from N 50° E to N 80° E); best ore at intersections of veins with cross faults and at junction of a vein with Stampede fault. Blocked out reserves small; proved and probably ore estimated at 70 tons of 50% or better ore, 6,000 tons of 10%-15% ore underground, 1,000 tons of 20% ore in broken material below an outcropping ore body, and 5,000 tons of mill tailings carrying about 6% Sb. Two generations of stibnite; older is finely granular and largely brecciated; younger is needlelike crystals cementing brecciated early stibnite. Other minerals identified include pyrite, arsenopyrite, and the secondary antimony minerals kermesite, cervantite, and stibiconite; principal gangue mineral is quartz; very minor calcite and possibly dolomite. Sample of pyrite-rich table concentrate assayed 1.71 oz. gold per ton; composite sample of concentrates contained 59.8% Sb, 0.62% As, 0.03 oz. Au and 0.41 oz. Ag per ton, and traces of Cu, Pb, and Zn. Prospect hole near mine exposed quartz carrying stibnite and a little sphalerite. Report contains mine map.

Bain, 1946 (IC 7379), p. 67 -- Had shipped 2,400 tons of ore before World War II. USBM investigation developed 7,600 tons of measured and indicated ore averaging 10.5% Sb.

Ebbley and Wright, 1948 (RI 4173), p. 3-20 -- Production, 1937-42, was 2,638.64 tons of ore and concentrates containing 1,410 tons of antimony. Detailed descriptions of individual ore bodies, all of which are considered to be parts of Stampede vein displaced by faulting. Antimony content of vein decreases downward. Secondary antimony minerals include kermesite, valentinite, and probably stibiconite and cervantite. Gangue minerals are (in order of abundance) quartz, muscovite, pyrite, and chlorite; other minerals in ore (all in insignificant quantities) are arsenopyrite, marcasite, sphalerite, and calcite. Sample of material from concentrating table contained about 50% pyrite and $60 a ton in gold; gold probably with quartz rather than pyrite in ore. Details of USBM exploration, sampling, and beneficiation programs. Flotation yielded a product with 53% Sb, but recovery was only 65%; antimony oxides were all lost.

Wedow and others, 1952 (OF 51), p. 71 -- 68 tons of concentrates shipped to smelter in 1948.

Stampede -- Continued

Reed, 1961 (B 1108-A), p. A27-A29 -- Data through 1942 from older reports. Some ore shipped between 1942 and 1952. Exploration with Defense Minerals Exploration Administration loan and private funds began in 1953 and was in progress in 1955; no ore shipped 1952-54. References to Capps, 1919 (B 687), Moffit, 1933 (B 836), White, 1942 (B 936-N).

Barker, 1963 (B 1155), p. 10-17 -- In period 1937-51 mine produced 1,729 tons of antimony from 3,278.13 tons of ore and concentrates. Most of geologic data from White, 1942 (B 936-N). Details of work done under a DMEA contract; 613.5 ft. of drifting and crosscutting, 1,397.5 ft. of diamond drilling, and 16,252 cu. yd. of surface trenching. Movement on Stampede fault probably began before mineralization; some movement was postmineralization, as thick gouge zone contains crushed sulfide grains.

Berg and Cobb, 1967 (B 1246), p. 229-231 -- Stibnite in veins, lenses, and stringers in schistose quartzite unit of Birch Creek Schist; shear zones probably related to Stampede fault. Low-grade lodes consist of stibnite disseminated in quartz veins as much as 7 ft. thick and of stibnite stringers in schist. Stringer lodes form zones as much as 30 ft. thick; ore has assay boundaries. High-grade lodes are lenses and veins of stibnite generally about 5 ft. thick (one body 26 ft. thick). Low-grade mill ore assayed 10%-20% Sb; high-grade shipping ore more than 50% Sb. From 1936 to 1951 about 3,300 tons of ore containing about 1,700 tons of metallic antimony was produced; since 1950 only occasional shipments probably aggregating less than 100 tons. Resource data from White, 1942 (B 936-N).

Cobb, 1973 (B 1374), p. 154 -- Stibnite has been mined.

Miller, 1973 (P 820), p. 48 -- From 1960 to 1971 about 100 tons of antimony was produced from Alaska deposits; mainly from Stampede.

Bundtzen and others, 1976 (AOF-98), p. 8-10 --Alaska's largest antimony producer; began development in 1937 and produced high-grade ore and concentrates on a fairly continuous basis through 1970. Currently there are good exposures of mineralization. Ore deposit localized by intersection of NW-dipping and SW-dipping veins. 3 distinct periods of mineralization.

p. 16-17 -- Has been diamond drilling. Economic reserves of ore remain.

p. 27 -- Production through 1970 was 3,594.5 tons of ore and concentrate containing 3,695,429 lb. antimony.

p. 38-39 -- Stampede vein system is made up of large, crosscutting, NE-trending quartz-stibnite veins controlled by Stampede fault; several thousand feet of mineralized strike length; minor pyrite, pyrrhotite, sphalerite, and gold. Diamond drill holes intersected 2 high-grade ore shoots, which have not been developed. Potential for mining extensive tonnage of ore running 8%-15% Sb.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 26 -- References to White, 1942 (B 936-N), Barker, 1963 (B 1155), Bundtzen and others, 1976 (AOF-98).

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-32 -- Second largest antimony mine in US.

p. 4-36 to 4-45 -- Practically all basic data from older reports.

Stampede — Continued

MacKevett and others, 1978 (OF 78-1-E), p. 35 -- More than 1,800 tonnes (2,000 short tons) of antimony has been mined from area, mainly from Stampede mine. Identified resources at Stampede more than 6,300 tonnes (7,000 short tons) mainly containing 10%-15% Sb.

(Stampede Cr.)

Gold, Tungsten

Kantishna district
MF-366, loc. 57

Mt. McKinley (20.3, 13.4)
63°45'N, 150°23'W

Summary: Placer mining in 1940's and possibly at other times. Production less than 1,000 oz. of gold. Scheelite common in concentrates. See also Stampede.

Joesting, 1942 (TDM 1), p. 39 -- Scheelite common in concentrates.
White, 1942 (B 936-N), p. 335 -- Placer mining, 1941.
Cobb, 1973 (B 1374), p. 155 -- Scheelite common in concentrates.
Bundtzen and others, 1976 (AOF-98), p. 8, 13 -- Has been placer mining.
Cobb, 1967 (OF 77-168B), p. 37 -- References to White, 1942 (B 936-N), Joesting, 1942 (TDM 1). Production probably less than 1,000 oz. gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 60 -- Reference to Joesting, 1942 (TDM 1).
Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-32, 4-45 -- Has been placer mining. Total production from all creeks in area probably about 1,000 oz. gold.

Stibner

Antimony

Kantishna district
MF-366, loc. 27

Mt. McKinley (14.0, 2.85)
63°09'N, 151°14'W

Summary: Small stibnite veins in fault zone that cuts altered mafic rocks.

Moffit, 1933 (B 836), p. 314 -- Fault zone that strikes N 20° E cuts altered basic igneous rocks similar to those at Merinser. Small veins of stibnite and tennantite or tetrahedrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 37 -- Reference to above.

(Straightaway Glacier)

Kantishna district
MF-366, loc. 22

Antimony

Mt. McKinley (13.45, 2.2)
63°07'N, 151°18'W

Summary: Stibnite deposit reported to be similar to Merinser.

Moffit, 1933 (B 836), p. 314 -- Stibnite deposit; reported that geology is similar to that at Merinser and that this deposit is large. Not visited by Moffit.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 36 -- Reference to above. In Paleozoic sedimentary and volcanic rocks.

Sulphide

Gold

Kantishna district
MF-366, loc. 6

Mt. McKinley (16.05, 9.6)
63°32'N, 150°57'W

Summary: 8-ft. quartz vein in "Birch Creek" rocks contains pyrite, arsenopyrite, scorodite, and free gold. Poorly exposed and unexplored.

Davis, 1923, p. 130 -- 8-ft. quartz vein carries pyrite and free gold.

Bundtzen and others, 1976 (AOF-98), p. 32 -- Vein with 150 ft. of strike length is unexplored and poorly exposed. Contains quartz, pyrite, arsenopyrite, scorodite, and free gold.

MacKevett and Holloway, 1977 (OF 77-169A), p. 55, loc. 5 -- Data combined with those for Water Level; veins cut "Birch Creek" rocks. Reference to Davis, 1923.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- Vein probably has horizontal continuity measured in hundreds of feet and deserves further exploration.

Terminus

Copper, Zinc

Kantishna district
MF-366, loc. 30

Mt. McKinley (14.8, 3.85)
63°12'N, 151°08'W

Summary: Some of beds in sequence of Paleozoic metasedimentary rocks that was intruded by granitic dikes and sills have been partially replaced by sphalerite and chalcopyrite.

Moffit, 1933 (B 836), p. 320 -- Metasedimentary rocks, including impure schistose limestone, intruded by dikes and thin lenticular sills of fine-grained granitic rock. Bedding and sills are vertical and strike north. All much fractured and iron stained; cut by poorly defined faults. Some of beds have been partially replaced by sphalerite and chalcopyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 40 -- Reference to above. Data combined with those for Greenback. In garnet-bearing Paleozoic rocks near contact with mafic Tertiary dikes.

(Thorofare Cr.) (R.)

Lead(?), Zinc

Kantishna district
MF-366, loc. 41

Mt. McKinley (21.65, 17.2)
63°23'N, 150°15'W

Summary: Sphalerite replaced impure Paleozoic limestone in a fault or shear zone; galena reported in one reference, but in another stated not to have been seen; latter reference based on USGS examination. Tertiary plutons nearby.

Capps, 1927 (B 792), p. 108 -- Claims staked on what is reported to be a large body of sphalerite with some galena. Assays show only minor quantities of precious metals.

Moffit, 1933 (B 836), p. 318-319 -- Geologically similar to Mt. Eielson. Sphalerite replaced impure limestone along a fault or shear zone in vertical beds that strike N 70° E. Ore body fractured and appears to cut across bedding, but has greatest extent along strike; maximum width 7 ft. Blocks of sphalerite-bearing partly silicified limestone in talus probably came from a similar body not exposed at surface. No galena seen. Has been some exploratory work on prospect. [Name Thorofare Cr. not used, but description is unmistakable.]

MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 47 -- Reference to Capps, 1927 (B 792). In limy Paleozoic rocks near Tertiary plutons.

(Twenty-two Gulch) (Pup)

Gold, Lead

Kantishna district
MF-366, loc. 49

Mt. McKinley (16.5, 10.25) approx.
63°34'N, 150°53'W

Summary: Placer mining reported in a few years between 1920 and 1940. Production undoubtedly less than 1,000 oz. gold. Concentrates contain considerable galena. Includes reference to (Wickersham Cr.).

Brooks, 1922 (B 722), p. 52 — Mining on Wickersham Cr. in 1920.
Davis, 1923, p. 116 — Mining in 1922.
Wells, 1933 (B 849-F), p. 371 -- Has been placer gold production; concentrates contain considerable galena.
Smith, 1939 (B 910-A), p. 58 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.
Smith, 1942 (B 933-A), p. 49 -- Mining, 1940.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Wells, 1933 (B 849-F). production probably less than 1,000 oz. gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 54 -- Data combined with those for Glacier Cr.)

Twin Hills

Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 35

Mt. McKinley (19.8, 6.51) approx
63°20'N, 150°29'W approx.

Summary: Much-fractured Paleozoic sedimentary and possibly volcanic rocks intruded by Tertiary granitic body or bodies. Metallic minerals found either in place or in float include pyrrhotite, chalcopyrite, magnetite, sphalerite, and galena; assay of sample from granite porphyry along fault or fissure showed some gold and silver.

Moffit, 1933 (B 836), p. 323 -- Country rock fine-grained porphyritic granite, banded limestone, and an indeterminate dark fine-grained rock that may have been argillite or possibly diabase (contains aggregates of hornblende). All fractured or so shattered as to be a poorly defined breccia. Mineralization of shattered rock widespread. Sulfide vein exposed by small stream appears to be not less than 10 ft. wide; contains pyrrhotite, chalcopyrite, magnetite, sphalerite(?), and hornblende crystals. Assay of sample from nearby porphyry along a fault or fissure showed $4 in gold per ton and the presence of silver, lead, and zinc. Float contains sphalerite, magnetite, and some galena.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 44 -- Reference to above. Data combined with those for nearby unnamed occurrence (Moffit, 1933 (B 836), p. 329. In Paleozoic metamorphic rocks intruded by Tertiary plutons.

Upper Ridge

Kantishna district

Antimony

Mt. McKinley (20.2, 13.55)
63°45'N, 150°24'W

Summary: Swarm of quartz veins contains pyrite and minor stibnite; production of several hundred tons of high-grade ore reported.

Bundtzen and others, 1976 (AOF-98), p. 39, loc. 67 -- Swarm of quartz veins 30-50 ft. wide on ridge; extends for several hundred feet. Veins mainly quartz and pyrite with minor stibnite. Production given as "several hundred tons high grade." Potential low-grade antimony deposit.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 28 -- Data from above. Country rock "Birch Creek" schist.

Water Level

Lead, Silver

Kantishna district
MF-366, loc. 6

Mt. McKinley (16.05, 9.6)
63°32'N, 150°57'W

Summary: Sheared quartz-siderite vein 4-6 ft. thick in "Birch Creek" rocks contains galena, tetrahedrite, and secondary minerals. Samples reported to have assayed 30-40 oz. silver per ton. 40 ft. of vein trenched.

Davis, 1923, p. 130 -- Open cut exposes 3-ft. vein carrying galena; samples reported to have assayed 30-40 oz. silver per ton.

Bundtzen and others, 1976 (AOF-98), p. 32 -- Much oxidized and sheared quartz-siderite vein 4-6 ft. thick trends N 70° E and dips 65° NW. 40 ft. of vein trenched. Vein carries galena, tetrahedrite, oxidation products, and silver.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 5 -- Data combined with those for Sulphide; in "Birch Creek" rocks. Reference to Davis, 1923.

Hawley, C. C., and Associates, Inc., 1978 (USBM OF 24-78), p. 4-26 -- Vein probably has horizontal continuity measured in hundreds of feet and deserves further exploration.

Weiler — Gold, Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.75, 10.0)
63°33'N, 150°51'W

Summary: Quartz vein in "Birch Creek" schist contains galena, tetrahedrite, polybasite (a silver mineral), and minor sphalerite. Assays show 3 oz. gold per ton. Very high-grade ore shoot appears to be limited in extent.

Bundtzen and others, 1976 (AOF-98), p. 9, 34, loc. 40 -- Good exposures available. Vein 1-3 ft. thick trends N 40° E, dips 60°-70° [direction given as SW, which is obviously a misprint], can be traced for 50 ft. along strike, and cuts Birch Creek Schist. Contains galena, tetrahedrite, polybasite, quartz, and minor sphalerite. Assays show 3 oz. gold per ton. Very high-grade ore shoot appears to be limited in extent.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 12 -- Data from above. [Prospect name misspelled as Weller.]

White Hawk — Gold(?), Silver(?)

Kantishna district — Mt. McKinley (16.0, 9.7)
63°32'N, 150°57'W

Summary: Quartz-siderite vein 3 ft. thick in "Birch Creek" schist carries tetrahedrite; no data on possible precious metal content. Was explored by shallow shaft and short drift, which had caved by 1975.

Davis, 1923, p. 130 -- 3-ft. vein carries tetrahedrite, but no galena. Traced for 500 ft. on surface; explored by a 12-ft. shaft and 15-ft. drift. No assay data.

Moffit, 1933 (B 836), p. 332 -- One of several claims that have produced ore or have high-grade showings.

Bundtzen and others, 1976 (AOF-98), p. 30 -- Quartz-siderate vein in Birch Creek Schist is 3 ft. thick; traced strike length of 500 ft. Contains tetrahedrite. Poorly exposed in 1975; old workings caved. [No data on possible precious metal content.]

(Willow Cr.) Gold

Kantishna district Mt. McKinley (18.4, 10.0) approx.
63°33'N, 150°39'W approx.

Summary: Mining or prospecting reported, 1934. Production, if any, must have been considerably less than 1,000 oz. gold.

Smith, 1936 (B 868-A), p. 44 -- Mining or prospecting reported, 1934.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to above. Production probably less than 1,000 oz. gold.

(Yellow Cr.)

Gold, Lead

Kantishna district
MF-366, loc. 50

Mt. McKinley (16.9-17.0, 10.1-10.25)
63°35'N, 150°50'W

Summary: Headwater tributary of Glacier Cr. Mining or prospecting from about 1906 to as recently as 1975; total production probably less then 1,000 oz. of gold. Concentrates contain considerable galena.

Prindle, 1907 (B 314), p. 218 -- Tributary of Glacier Cr. near head. Pay reported, 1906.
Brooks, 1911 (P 70), p. 178 -- Same as above.
Capps, 1918 (B 662), p. 309 -- Preliminary to Capps, 1919 (B 687).
Capps, 1919 (B 687), p. 91 -- Claims, said to have been rich, have been mined out.
Smith, 1929 (B 797), p. 23 -- Mining reported, 1926.
Smith, 1933 (B 836), p. 41 -- Mining reported 1930.
Smith, 1933 (B 844-A), p. 41 -- Mining reported, 1931.
Wells, 1933 (B 849-F), p. 371 -- Has been placer gold production; concentrates contain considerable galena.
Smith, 1934 (B 857-A), p. 39 -- Mining or prospecting, 1932.
Smith, 1934 (B 864-A), p. 43 — Mining or prospecting, 1933.
Smith, 1937 (B 880-A), p. 46 — Mining, 1935.
Smith, 1938 (B 897-A), p. 56 -- Small scale mining, 1936.
Smith, 1939 (B 917-A), p. 57 -- Mining or prospecting, 1938.
Bundtzen and others, 1976 (AOF-98), p. 8-9, 13-14 -- Has been placer mining; very small-scale hand mining, 1975.
Cobb, 1977 (OF 77-168B), p. 37 -- Reference to Wells, 1933 (B 849-F). Total production probably less than 1,000 oz: gold.
MacKevett and Holloway, 1977 (OF 77-169A), p. 47, loc. 55 -- References to Wells, 1933 (B 849-F), Bundtzen and others, 1976 (AOF-98).

Unnamed prospect — Antimony

Kantishna district — Mt. McKinley (15.25, 9.05)
63°30'N, 151°03'W

Summary: Quartz-stibnite fissure vein in "Birch Creek" schist. Explored by small pit.

Bundtzen and others, 1976 (AOF-98), p. 28, loc. 2 -- Weathered quartz-stibnite fissure vein with extensive limonite staining is vertical and strikes N 75° E; exposed for 50 ft. on surface; in Birch Creek Schist. Explored by 15 ft. X 4 ft. X 3 ft. pit.

Unnamed prospect

Antimony

Kantishna district

Mt. McKinley (15.9, 9.2)
63°30'N, 150°58'W

Summary: Stibnite-quartz vein 1-3 ft. thick in "Birch Creek" schist. Explored by shallow pit.

Bundtzen and others, 1976 (AOF-98), p. 29, loc. 7 -- Stibnite-quartz vein 1-3 ft. thick trends east and dips 30°-60° SE; in quartzose phase of Birch Creek Schist. Largely caved prospect pit 3 ft. X 10 ft. X 4 ft.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 18 -- Data from above [page reference tiven is not correct].

Unnamed prospect — Antimony

Kantishna district — Mt. McKinley (16.1, 9.55)
63°32'N, 150°57'W

Summary: Quartz vein with dendritic intergrowths of stibnite. 50 tons of ore reported to have been mined in 1915. Caved adit and dump of oxidized ore.

Bundtzen and others, 1976 (AOF-98), p. 30, loc. 14 -- Vein apparently 3-6 ft. thick consists of quartz with dendritic intergrowths of stibnite. Caved adit and considerable dump of oxidized ore. 50 tons of ore mined in 1915.

Unnamed occurrence — Antimony

Kantishna district — Mt. McKinley (19.7, 12.3)
63°41'N, 150°28'W

Summary: Thin gash vein across foliation of schist is mainly stibnite; minor quartz. Exposed along strike for only 6 ft.

Bundtzen and others, 1976 (AOF-98), p. 38, loc. 64 -- Gash vein less than one foot thick subparallel to foliation [of schist] trends N 30° E, dips 20° NW, and is exposed for 6 ft.; massive stibnite with minor quartz.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 25 — Data from above.

Unnamed occurrence — Antimony, Lead

Kantishna district — Mt. McKinley (17.85, 10.3)
63°34'N, 150°43'W

Summary: Pyrite, quartz, stibnite, and very minor galena in silicified zone traced discontinuously for 2,500 ft.

Bundtzen and others, 1976 (AOF-98), p. 36, loc. 54 -- Silicified zone 4-15 ft. thick trends N 75°-85° E; traced discontinuously for 2,500 ft. Contains pyrite, quartz, stibnite, and very minor galena.

Unnamed occurrence

Antimony, Lead, Zinc

Kantishna district

Mt. McKinley (18.35, 11.05)
63°37'N, 150°39'W

Summary: Small exposure of vein 2 ft. wide in "Birch Creek" schist consists of stibnite, galena, sphalerite, and quartz.

Bundtzen and others, 1967 (AOF-98), p. 37, loc. 60 -- 2-ft. vein in marble and graphitic schist unit of Birch Creek Schist made up of stibnite, galena, sphalerite, and quartz. Surface showings small.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 22 -- Data from above.

Unnamed occurrence — Copper

Kantishna district — Mt. McKinley (18.5, 11.25)
63°38'N, 150°36'W

Summary: Bands of disseminated pyrite and chalcopyrite in zone parallel to foliation of "Birch Creek" schist in zone 4-6 ft. thick; secondary copper minerals present.

Bundtzen and others, 1976 (AOF-98), p. 37, loc. 61 -- Sulfide zone parallel to foliation of greenstone schist (of Birch Creek Schist) is 4-6 ft. thick and consists of bands of disseminated pyrite and chalcopyrite with malachite and azurite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 23 -- Data from above.

Unnamed occurrence — Copper

Kantishna district — Mt. McKinley 19.3, 12.0)
63°40'N, 150°31'W

Summary: Minor disseminated chalcopyrite (some malachite) in gabbro dike swarm.

Bundtzen and others, 1976 (AOF-98), p. 38, loc. 63 -- Minor disseminated chalcopyrite in gabbro dike swarm that has been traced for 2,000 ft.; some malachite present.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 24 -- Data from above.

Unnamed occurrence — Copper

Kantishna district — Mt. McKinley (20.3, 13.25)
63°44'N, 150°23'W

Summary: One-foot quartz vein in graphitic schist contains disseminated chalcopyrite and pyrite; some malachite staining.

Bundtzen and others, 1976 (AOF-98), p. 38, loc. 65a -- Disseminated chalcopyrite and pyrite (minor malachite staining) in 1-ft. quartz vein subparallel to foliation of graphitic schist.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 27 -- Data from above.

Unnamed occurrence

Copper

Kantishna district

Mt. McKinley (19.3, 13.7)
64°46'N, 150°31'W

Summary: A little disseminated chalcopyrite and malachite in schist.

Bundtzen and others, 1976 (AOF-98), p. 39, loc. 68 -- A little disseminated chalcopyrite and some malachite in schist.

Unnamed occurrence — Copper

Kantishna district — Mt. McKinley (20.9, 19.2)
63°57'N, 150°17'W

Summary: Pyrite, limonite, and minor chalcopyrite in gossan in Totatlanika Schist.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 75 -- Gossan in metavolcanic and chert unit of Totatlanika Schist could be related to a low-angle fault zone; contains pyrite, limonite, and minor chalcopyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 34 -- Data from above.

Unnamed occurrence — Copper

Kantishna district — Mt. McKinley (20.9, 19.35)
63°58'N, 150°17'W

Summary: Quartz-calcite vein in Totatlaniks Schist contains pyrite and minor chalcopyrite.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 76 -- Vertical vein strikes N 20°-30° W; in volcanogenic sediments unit of Totatlanika Schist; made up of quartz, calcite, pyrite, and minor chalcopyrite.

Unnamed occurrence

Copper, Gold, Lead, Silver, Zinc

Kantishna district
MF-366, loc. 15

Mt. McKinley (16.75, 10.0)
63°33'N, 150°51'W

Summary: Small quartz vein(s) contain galena, sphalerite, pyrite, tetrahedrite(?), secondary copper minerals, and as much as 0.12 oz. gold and 228.18 oz. silver per ton.

Morrison, 1964, p. 99-100 — Small quartz vein(s) contain galena, sphalerite, pyrite, possibly tetrahedrite, malachite, and azurite. 2 grab samples assayed 0.12 oz. gold and 228.18 oz. silver per ton for one and 0.02 oz. gold and 64.72 oz. silver per ton for the other.

Unnamed occurrence

Kantishna district
MF-366, loc. 35

Copper, Iron, Zinc

Mt. McKinley (19.8, 6.15) approx.
63°20'N, 150°29'W approx.

Summary: Fractured and brecciated Paleozoic metasedimentary rocks near Tertiary plutons contain magnetite, chalcopyrite, and sphalerite.

Moffit, 1933 (B 836), p. 324 -- Magnetite probably replaced brecciated sedimentary rock in a poorly defined and poorly exposed zone apparently 20-30 ft. wide; some chalcopyrite and copper stain. Nearby a mineralized fracture zone contains sphalerite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 44 -- Reference to above. Data combined with those for Twin Hills. In Paleozoic metamorphic rocks intruded by Tertiary plutons.

Unnamed occurrence — Copper, Lead

Kantishna district — Mt. McKinley (20.3, 19.2)
63°57'N, 150°22'W

Summary: Quartz vein in Totatlanika Schist contains chalcopyrite, galena, and malachite. Vein is one of a vein system 2-3 ft. thick.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 73 -- Vein system in rhyolite porphyry unit of Totatlanika Schist is 2-3 ft. thick; exposed in cliff face; trends N 40° W, dips 70° SW; quartz vein contains chalcopyrite, galena, and malachite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 32 -- Data from above.

Unnamed occurrence

Gold, Silver

Kantishna district
MF-366, loc. 4

Mt. McKinley (15.8, 9.45)
63°31'N, 150°59'W

Summary: Small quartz veins in mineralized zone about 12 ft. wide contain pyrite, arsenopyrite, and as much as 0.04 oz. gold and 0.64 oz. silver per ton.

Morrison, 1964, p. 98-99 -- Mineralized zone about 12 ft. wide trends N 40° E; small quartz veins with schist fragments contain pyrite and arsenopyrite; sample with visible sulfides assayed 0.04 oz. gold and 0.64 oz. silver per ton. Small calcite veins also in mineralized zone.

Unnamed occurrence

Gold, Silver

Kantishna district
MF-366, loc. 10

Mt. McKinley (16.05, 10.1)
63°34'N, 150°57'W

Summary: Quartz vein 4 ft. thick carries 0.04 oz. gold per ton and a trace of silver; no visible sulfides.

Morrison, 1964, p. 100-101 -- Quartz vein 4 ft. thick strikes N 20° E and dips 74° N. No visible sulfides. Sample assayed 0.04 oz. gold per ton and a trace of silver.

MacKevett and Holloway, 1977 (OF 77-169A), p. 44, loc. 8 -- Data combined with those for Florence; reference to above.

Unnamed occurrence	Lead
Kantishna district	Mt. McKinley (15.7, 9.35) approx. 63°31'N, 150°58'W approx.

Summary: Quartz-siderite vein in "Birch Creek" schist contains pyrite, and minor to trace amounts of galena. Vein 6 in. to 2 ft. thick.

Bundtzen and others, 1976 (AOF-98), p. 30, loc. 12 -- Vein 6 in. to 2 ft. thick in quartzite and phyllite of Birch Creek Schist strikes N 35° E and dips 80° SE; mainly quartz, siderite, and pyrite; minor to trace galena.

Unnamed prospect — Lead

Kantishna district — Mt. McKinley (16.25, 10.15)
63°34'N, 150°55'W

Summary: Quartz-carbonate vein containing minor amounts of fine-grained galena, arsenopyrite, and pyrite was trenched for 80 ft.

Bundtzen and others, 1976 (AOF-98), p. 33, loc. 34 -- Quartz-carbonate vein trending N 40° E contains minor amounts of fine-grained galena, arsenopyrite, and pyrite. Was trenched for 80 ft.

Unnamed occurrence - Lead

Kantishna district — Mt. McKinley (18.75, 11.35)
63°38'N, 150°36'W

Summary: Swarm of quartz veins in "Birch Creek" schist is 25-30 ft. thick; contains pyrite and minor galena.

Bundtzen and others, 1976 (AOF-98), p. 38, loc. 62 -- Vein swarm 25-30 ft. thick has at least 250 ft. of strike length; in Birch Creek Schist. Major components quartz and pyrite; minor galena.
MacKevett and Holloway, 1977 (OF 169A), p. 44, loc. 23 -- Data from above.

Unnamed occurrence — Lead, Silver, Zinc

Kantishna district — Mt. McKinley (16.65, 10.0)
63°33'N, 150°53'W

Summary: Vein 2 ft. thick in "Birch Creek" schist contains pyrite, galena, quartz, anglesite, minor sphalerite, and oxidation products; good silver assays.

Bundtzen and others, 1976 (AOF-98), p. 34, loc. 37 -- 2-ft. vein in felsic phyllite of Birch Creek Schist trends N 10° W and dips steeply; contains pyrite, galena, quartz, anglesite, minor sphalerite, and oxidation products; good silver assays.

MacKevett and Holloway, 1977 (OF 77-169A), p. 45, loc. 12 -- Data from above.

Unnamed occurrence — Lead, Zinc

Kantishna district — Mt. McKinley (16.35, 10.3)
63°34'N, 150°54'W

Summary: Quartz-carbonate vein 1-4 ft. thick contains galena, tetrahedrite, and sphalerite; no data on probable silver content.

Bundtzen and others, 1976 (AOF-98), p. 33, loc. 35 -- Quartz-carbonate vein 1-4 ft. thick trends N 40°-60° E and dips steeply SE. Contains galena, tetrahedrite, and sphalerite [no data on probable silver content].

Unnamed occurrence	Lead, Zinc
Kantishna district	Mt. McKinley (20.5, 19.3) 63°58'N, 150°20'W

Summary: Limonite boxwork in gossan above vertical vein system in Totatlanika Schist contains galena, sphalerite, and cerussite.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 74 — Vertical vein system in rhyolite porphyry unit of Totatlanika Schist trends N 20°-40° W; gossan extends 250 ft. on slope. Limonite boxwork structure with galena, sphalerite, and minor cerussite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 33 -- Data from above.

Unnamed occurrence — Zinc

Kantishna district — Mt. McKinley (15.7, 9.3)
63°31'N, 150°59'W

Summary: "Stratabound" occurrence of quartz with pyrite, sphalerite, and minor marcasite in carbonate of Birch Creek" schist; euhedral quartz cavities.

Bundtzen and others, 1976 (AOF-98), p. 30, loc. 11 -- "Stratabound" occurrence of quartz and sulfides (pyrite and sphalerite with minor marcasite) trends N 70° E and dips 10° SE; in carbonate of Birch Creek Schist; euhedral quartz cavities.

Unnamed occurrence

Zinc

Kantishna district

Mt. McKinley (19.75, 18.5)
63°55'N, 150°27'W

Summary: Gossan in metavolcanic rocks of Totatlanika Schist contains much pyrite with exsolved sphalerite blebs.

Bundtzen and others, 1976 (AOF-98), p. 39, loc. 70 -- Gossan zone in metavolcanic rocks contains much pyrite with exsolved blebs of sphalerite. May be stratiform or related to low-angle fault zones.

MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 31 -- Data from above; in Totatlanika Schist.

Unnamed occurrence

Zinc

Kantishna district

Mt. McKinley (20.2, 18.8)
63°56'N, 150°23'W

Summary: Heavily pyritized zone in metavolcanic rocks of Totatlanika Schist has exsolved blebs of sphalerite in pyrite.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 72 — Heavily pyritized zone in metavolcanic rocks has exsolved blebs of sphalerite in pyrite.

MacKevett and Holloway, 1977 (OF 77-169A), p. 40, loc. 31 -- Data from above; in Totatlanika Schist.

Unnamed occurrence — Zinc

Kantishna district — Mt. McKinley (20.0, 18.7)
63°56'N, 150°24'W

Summary: Heavily pyritized zone in metavolcanic rocks of Totatlanika Schist has exsolved blebs of sphalerite in pyrite.

Bundtzen and others, 1976 (AOF-98), p. 40, loc. 71 -- Heavily pyritized zone in metavolcanic rocks has exsolved blebs of sphalerite in pyrite.
MacKevett and Holloway, 1977 (OF 77-169A), p. 46, loc. 30 -- Data from above; in Totatlanika Schist.

Synonyms, Owners and Operators, and Claim Names

Aitken -- see Little Annie, (Mt. Eielson)
Alice -- see Little Annie
Anderson -- see (Mt. Eielson), (Thorofare Cr.)
Antimony -- see (Slate Cr.)
Azurite -- see Greiss
Bear -- see (Mt. Eielson)
Beaver -- see (Mt. Eielson)
Biglow & Perry -- see (Mt. Eielson)
Bonnell -- see Neversweat
Busia -- see Neversweat
Caribou (Mt. Eielson) -- see (Mt. Eielson)
Caribou Mines Co. -- see (Caribou Cr.)
Carrie -- see (Mt. Eielson)
Chloride -- see Banjo
Chlorine -- see Banjo
Christenia -- see (Mt. Eielson)
Cleary -- see Highway (Mt. Eielson)
Copley and associates -- see (Spruce Cr.)
Copper Base -- see (Mt. Eielson)
(Copper Mtn.) -- see (Mt. Eielson)
Dalton -- see Caribou (Quigley Hill), Jumbo, Polly Wonder, North Star (Friday Cr.)
Dalton & Stiles -- see (Eureka Cr.)
Damon & Pythias -- see Banjo
Dee -- see (Mt. Eielson)
Denver -- see (Mt. Eielson)
Drayton & Trundy -- see Stampede
Dunkel -- see (Caribou Cr.), (Slippery Cr.)
Eureka -- see Banjo
Eva -- see (Mt. Eielson)
Ferrara -- see Alpha
Fox -- see (Mt. Eielson)
Frances -- see Francis
Fransen & Hawkins -- see Little Annie
Fuksa -- see (Friday Cr.)
Galena No. 1 -- see (Mt. Eielson)
Galena No. 2 -- see (Mt. Eielson)
Georgia -- see (Mt. Eielson)
(Glacier Creek divide) -- see Banjo
Grant -- see Apex, (Mt. Eielson)
Grant, Anderson & McGarvey -- see (Mt. Eielson)
Grant & Henderson -- see (Mt. Eielson)
Grant & Jiles -- see (Mt. Eielson)
Grant & McGarvey -- see (Mt. Eielson)
Guggenheim -- see (Mt. Eielson)
Gustafson, Fransen & Hawkins -- see Banjo, Red Top
Haney -- see Galena

Highlander -- see (Mt. Eielson)
Hugh John -- see (Mt. Eielson)
Imperial Mining Co. -- see (Eureka Cr.)
Isobel -- see (Mt. Eielson)
Jiles -- see (Mt. Eielson)
Julen -- see Banjo
Julian -- see Home Lode
Jupiter Mars -- see Banjo
Kantishna Hydraulic Mining Co. -- see (Moose Cr.)
Kantishna Mining Co. -- see (Clearwater Cr.)
Karponek and partners -- see (Caribou Cr.)
Kelly -- see (Mt. Eielson)
Kentucky -- see (Mt. Eielson)
Kirk, Morris P., & Sons, Inc. -- see Stampede
Kobuck -- see Stampede
Last Chance -- see Caribou (Caribou Cr.)
Lead -- see (Mt. Eielson)
(Lee Bench) -- see (Caribou Cr.)
Loposky -- see (Stampede Cr.)
Lillian -- see (Mt. Eielson)
Lloyd and associates -- see Glen, Lloyd
Mackenzie -- see (Mt. Eielson)
Malachite -- see Greiss
Mammoth -- see North Star (Spruce Cr.)
Marjorie -- see (Mt. Eielson)
Martin -- see (Mt. Eielson)
(Martin Cr.) -- see (Marten Cr.)
Mary -- see (Mt. Eielson) [2 different claims have had this name.]
Matheson -- see (Mt. Eielson)
Maurer -- see (Slate Cr.)
McGarvey -- see (Mt. Eielson)
McGonagall -- see McGonogill
Mehling & Maurer -- see (Caribou Cr.)
Merry Widow -- see Banjo
Mt. McKinley Gold Placers, Inc. -- see (Caribou Cr.), (Glacier Cr.)
Nord -- see (Mt. Eielson)
Northwest Mining Co. -- see (Eldorado Cr.)
Owen -- see (Mt. Eielson)
Pearl Harbor -- see Stampede
Pilgrim -- see (Little Moose Cr.), Stampede
Pioneer -- see Caribou (Caribou Cr.)
Quigley (& Dalton) -- see Apex, Banjo, Blue Bell, Bosart, Caribou (Quigley Hill), Eureka, Florence, Francis, Galena, Gold Dollar, Golden Eagle, Gold King, Greiss, Jumbo, Keystone, Little Annie, Little Maud, Lucky Strike, Martha Q, (Mt. Eielson), Pennsylvania, Pittsburgh, Polly Wonder, Red Top, Silver Pick, Star, Sulphide, Water Level, White Hawk
Quigley & Horn -- see (Glacier Cr.)
Red Top Mining Co. -- see Banjo

Ruth -- see (Mt. Eielson)
Shannon -- see Copper Lode, Galena Lode, Greenback, Magnet, Merinser, (Mt. Eielson), Old Sourdough, Question Mark, Stibner, (Straightaway Glacier) Terminus, Twin Hills
Silver King -- see Hillside
Silver Mine -- see (Mt. Eielson)
Silver Peak -- see (Mt. Eielson)
Skookona -- see Glen Ridge No. 1
Snowdrift -- see (Mt. Eielson)
Sour Dough -- see (Mt. Eielson)
Standard Mines, Inc. -- see (Eureka Cr.)
Stanford -- see (Mt. Eielson)
Star -- see North Star (Friday Cr.)
Stendall -- see Humboldt
Stendhal -- see Humboldt
Stone and partner -- see (Eureka Cr.)
Swisher -- see Glen, (Stampede Cr.)
Taylor -- see Banjo, (Eureka Cr.), (Slate Cr.)
Taylor and associates -- see (Glacier Cr.), Stampede
Tennessee -- see (Mt. Eielson)
Trundy -- see Glen Ridge No. 1, Lena, North Star (Spruce Cr.), Silver Wire, Spruce Creek No. 1
Venora -- see (Mt. Eielson)
Virginia -- see (Mt. Eielson)
Waterloo -- see Banjo
Weasel -- see (Mt. Eielson)
Weller -- see Weiler
(Wickersham Cr.) -- see (Twenty-two Gulch)
Wieler & Wieler -- see (Glen Cr.)
Wolf -- see (Mt. Eielson)
Wolverine -- see (Mt. Eielson)
Zelma -- see (Mt. Eielson)

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