UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN THE CANDLE, HOLY CROSS, NORTON BAY, NULATO, AND UNALAKLEET QUADRANGLES, ALASKA

OPEN-FILE REPORT 76-866

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

Menlo Park, California
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By

Edward H. Cobb

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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 Candle, Holy Cross, Norton Bay, Nulato, and Unalakleet quadrangles in west-central Alaska. All references to reports of the Geological Survey, to most reports of the U.S. Bureau of Mines, and to most reports of the State of Alaska Division of Geological and Geophysical Surveys and its predecessor State and Territorial agencies released before January 1, 1976, are summarized. Certain, mainly statistical, reports such as the annual Minerals 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.

This report is divided into three parts: a section made up of summaries of references arranged alphabetically first by quadrangle and second 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.

ALASKA
ARCTIC OCEAN
BERING SEA
GULF OF ALASKA
PACIFIC OCEAN

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 for metallic commodities [FM is used for uranium and(or) thorium determined chemically or present as a constituent of an identified mineral other than monazite; RE is used if a mineral (other than monazite) containing any rare-earth element was identified; platinum includes all members of the platinum group] and then for nonmetallic commodities); the mining district (Ransome and Kerns, 1954) in which the occurrence is located; the name of the 1:250,000-scale topographic quadrangle; coordinates (as described by Cobb and Kachadoorian, 1961, p. 3-4); the metallic mineral resources map number (Cobb, 1972, in the reference list for each quadrangle) and the occurrence number on that map if the occurrence is shown; and the latitude and longitude of the occurrence. 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 all 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 are given if such names appear in the reports summarized. If a deposit does not have such a name, but is near a named geographic feature, the name of that feature is shown in parentheses in lieu of a proper name. If a deposit has no proper name and is not near a named geographic feature, it

is titled "Unnamed occurrence" and appears at the end of the list. If a part of a proper name is not always used in a reference, that part of the name is shown in parentheses. This is most common in company names and in place names with minor variations in spelling.

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:

B	U.S. Geological Survey Bulletin
BMB	U.S. Bureau of Mines Bulletin
C	U.S. Geological Survey Circular
I	U.S. Geological Survey Miscellaneous Geologic Investigations Map
IC	U.S. Bureau of Mines Information Circular
OF	U.S. Geological Survey Open-file Report (numbers 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
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 edit out ambiguities.

References cited only in these introductory paragraphs are:

Cobb, E. H., and Kachadoorian, Reuben, 1961, Index of metallic and nonmetallic mineral deposits of Alaska compiled from published reports of Federal and State agencies through 1959: U.S. Geol. Survey Bull. 1139, 363 p.

Ransome, A. L., and Kerns, W. H., 1954, Names and definitions of regions, districts, and subdistricts in Alaska (used by the Bureau of Mines in statistical and economic studies covering the mineral industry of the Territory): U.S. Bur. Mines Inf. Circ. 7679, 91 p.

(Alameda Cr.) Gold

Koyuk district Candle (7.1, 0.8)
MF-389, loc. 46 65°02'N, 161°03'W

Summary: Small amounts of gold found in prospect shafts. Never was any commercial mining.

Smith and Eakin, 1910 (B 442), p. 336-339 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 110-113 -- Several prospecting shafts sunk before 1909. One was sunk 192 ft. without reaching bedrock; mainly in well-rounded quartz gravel; pan concentrates contained a little gold, much magnetite, some undecomposed sulfides, but no garnet. Another shaft hit lava at 32 ft.; gravel on bedrock contained about one cent in gold per pan. Gold seems to be in an old channel that present stream has not yet cut down to. Prospects not economic as of 1909. Report of gold assays as high as $3.72 on samples of megascopically unmineralized amygdaloidal trap is open to serious question.

Koschmann and Bergendahl, 1968 (P 610), p. 16-18 -- Presence of placer gold known in 1900. [Date of 1902 seems more likely from wording in cited reference (B 442).]

Cobb, 1973 (B 1374), p. 81 -- Regional bedrock is schist and limestone. Gold too scarce to support mining operations.

(Anzac Cr.) FM

Koyuk district Candle (6.9, 6.8)
MF-389, loc. 37 65°24'N, 161°03'W

Summary: Uranothorianite in concentrate samples. One sample (concentration ratio of 90:1) contained 0.033% eU, of which 0.016% was from uranium and the rest supposedly from thorium.

Gault and others, 1953 (C 250), p. 5-6, 9 -- Sample of concentrate of material from a gravel bar (concentration ratio of 90:1) contained 0.033% eU, of which 0.016% was from uranium and the rest supposedly from thorium.

p. 24-25 -- Uranothorianite in placer concentrates collected in 1947.

(Bear Cr.) — Gold, Lead, Platinum, Silver, Zinc

Fairhaven district — Candle (6.5-6.9, 9.3-9.9)
MF-389, locs. 15, 29, 30 — 65°32'-65°34'N, 161°02'-161°06'W

Summary: Bedrock is mainly altered andesitic tuffs and lavas (greenstone) cut by more mafic (biotite pyroxenite) and acidic dikes. Sulfide minerals (pyrite, galena, sphalerite, arsenopyrite, and bournonite) and a little gold in or near quartz and calcite veinlets and as disseminated grains in breccia zones in greenstone near pyroxenite dike; thin oxidized cap. Placer deposits staked in 1901 and mined for gold sporadically and on a small scale until as recently as 1947. Concentrates contain gold, magnetite, ilmenite, hematite, chrome spinel, garnet and platinum, some of which was recovered and marketed.

Moffit, 1904 (B 225), p. 78-79 -- In 1903 mining was between Sherdon [Sheridan] and Cub Creeks. Gold on bedrock. Much magnetite in concentrates.

Moffit, 1905 (B 247), p. 63-64 -- Bedrock is a "complex of granites, andesites, and lavas." Flaky gold that assays $19.20 an ounce is on bedrock. Concentrates contain a little pyrite and much magnetite.

Purington, 1905 (B 263), p. 209 -- Gold worth $19.20 an ounce.

Smith, 1908 (B 345), p. 226 -- Production small in 1907; ditch building.

Henshaw, 1909 (B 379), p. 369 -- Prospecting at mouth of Split Cr., 1908. Bright, flaky gold in cracks of upper several inches of bedrock. New ditch could not be used; water shortage.

Smith and Eakin, 1910 (B 442), p. 344 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 125-126 -- Gold discovered, 1901. Reference to and quotation from B 247. No mining in 1909.

Eakin, 1915 (B 622), p. 371-372 -- Four mining plants operated, 1914.

Smith, 1917 (BMB 142), p. 28 -- Mining, 1915.

Brooks, 1918 (B 662), p. 21, 24 -- Platinum recovered, 1916.

Mertie, 1918 (B 662), p. 455 -- Mining, 1916.

p. 458 -- Some placer platinum recovered, 1916.

Brooks, 1919 (B 666), p. 96 -- Some placer platinum recovered, 1916.

Harrington, 1919 (B 692), p. 380 -- Said to have been discovered, 1900; staked and recorded, 1901. Production has been (as of 1917) variable; little or none in some years.

p. 392-394 -- Mining and assessment work, 1917. Bedrock altered andesite tuffs and flows with more basic intrusives; many acidic dikes. Bedrock surface very irregular; must be thoroughly cleaned as much of gold is close to bedrock. Concentrates contain gold, platinum, magnetite, hematite, pyrite, garnet and both rounded grains and perfect octahedra of chrome spinel.

Martin, 1919 (B 692), p. 41 -- Mining, including a few pennyweight of platinum, 1917.

(Bear Cr.) - Continued

Cathcart, 1920 (B 712), p. 189 -- Mining, 1918.
p. 196 -- Small amount of platinum recovered, 1918.
Martin, 1920 (B 712), p. 23, 52 -- Platinum recovered, 1918.
Brooks, 1921 (B 714), p. 38 -- Reference to B 692, p. 369-400.
Brooks and Martin, 1921 (B 714), p. 71 -- Platinum recovered, 1919.
Harrington, 1921 (B 714), p. 236 -- Platinum recovered, 1919.
Brooks, 1923 (B 739), p. 13 -- Platinum recovered, 1921.
Mertie, 1923 (B 739), p. 158 -- Platinum has been found in placers.
Brooks, 1925 (B 773), p. 30 -- Platinum has been recovered.
Smith, 1926 (B 783), p. 17 -- One mine operated, 1924.
Smith, 1930 (B 810), p. 34 -- Mining, 1927.
Smith, 1930 (B 813), p. 40 -- Mining, 1928.
Smith, 1932 (B 824), p. 45 -- Probably was mining, 1929.
Smith, 1933 (B 836), p. 47 -- Probably was mining, 1930.
Smith, 1933 (B 844-A), p. 47 -- Mining in area, 1931.
Smith, 1934 (B 857-A), p. 44 -- Mining in area, 1932.
Smith, 1934 (B 864-A), p. 49 -- Mining in area, 1933.
Smith, 1936 (B 868-A), p. 51 -- Less mining in area in 1934 than in previous years.
Smith, 1937 (B 880-A), p. 54-55 -- A little mining in area, 1935.
Smith, 1938 (B 897-A), p. 62-63 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 68 -- Probably was little mining activity in 1937.
Smith, 1939 (B 917-A), p. 67 -- Probably was little mining activity in 1938.
Smith, 1941 (B 926-A), p. 63 -- Probably was little mining activity in 1939.
Smith, 1942 (B 933-A), p. 59-60 -- Probably was little mining activity in 1940.
Anderson, 1947 (TDM 5-R), p. 39-40 -- Reference to B 692 [p. 392-394].
Gault and others, 1953 (C 250), p. 3 -- Has been mining.
p. 22 -- Mining in 1947. Minor amounts of platinum recovered with the gold.
Cass, 1959 (I-287) -- Gold and platinum have been produced.
Herreid, 1965 (GR 12), p. 8 -- Most placer mining in area has been on Bear Cr. above and below mouth of Split Cr.
p. 12-13 -- Near airstrip greenstone is cut by a mafic syenite dike. Greenstone in breccia zones and near calcite and quartz-pyrite veins contains disseminated pyrite, galena, and some instances sphalerite. A little gold can be panned from oxidized capping. Prospecting (but no mining) in 1964. Some pans of material from surface of bedrock ran as high as 25 cents [gold at $35 an ounce].
Berg and Cobb, 1967 (B 1246), p. 115 -- Sparse pyrite, sphalerite, and galena disseminated in greenstone adjacent to quartz-pyrite veinlats; galena- and pyrite-bearing calcite veinlets; disseminated pyrite and galena in greenstone breccia zones as much as 2-1/2 ft. wide. A little gold can be panned from thin oxidized zone.

(Bear Cr.) - Continued

Miller and Elliott, 1916 (C 614), p. 14 -- Galena, sphalerite, and pyrite in andesite at north end of airstrip; in quartz-calcite veinlets and as disseminated grains near a biotite pyroxenite dike that contains potassium feldspar. Sulfide aggregate also contains arsenopyrite, bournonite, and a little gold.

p. 19 -- Analyses of samples from above prospect.

Cobb, 1973 (B 1374), p. 69 -- Creek staked in 1901.

p. 73 -- Mined sporadically since 1901. Concentrates contained gold, magnetite, ilmenite, hematite, chrome spinel, garnet, and platinum, some of which was recovered and marketed.

(Bear Gulch)	Gold, Platinum
Koyuk district	Candle (4.9, 6.1)
MF-389, loc. 42	65°21'N, 161°20'W

Summary: A little platinum and undoubtedly some placer gold have been recovered. Bedrock is andesite tuffs and flows.

Harrington, 1919 (B 692), p. 395 — Platinum reported, 1917.
Gault and others, 1953 (C 250), p. 3-4 — Gold reported to have been mined near forks. A little platinum was recovered. Bedrock mapped (pl. 1) as pre-Cretaceous andesite tuffs and flows.
Cobb, 1973 (B 1374), p. 81 -- Platinum has been recovered.

Bel(t)z — Copper

Fairhaven district — Candle (6.3, 9.8)
MF-389, loc. 14 — 65°33'N, 161°08'W

Summary: Small open cuts and a trench were only developments. Bedrock is andesite, probably with chalcopyrite and copper carbonate stain in one or more quartz veins.

Harrington, 1919 (B 692), p. 399 -- Ten or more small open cuts, all caved and filled with talus in 1917. Vein quartz with some chalcopyrite and alteration products seen near some of pits.

Cathcart, 1922 (B 722), p. 181 -- Reference to B 692, p. 399.

Anderson, 1947 (TDM 5-R), p. 22-23 -- Reference to B 692.

Wedow, 1952 (OF 51), p. 42 -- Preliminary to C 250, p. 22.

Gault and others, 1953 (C 250), p. 22 -- Chalcopyrite and copper carbonate stain in quartz veins cutting andesite. Reference to B 692, p. 399.

Herraid, 1965 (GR 12), p. 12 -- In 1964 prospect consisted of a trench 80 ft. long and 3-5 ft. deep in greenstone country rock. A few pieces of quartz float and one piece of malachite-stained greenstone were only signs of mineralization.

Berg and Cobb, 1967 (B 1246), p. 115 -- Open cuts in early 1900's explored sparse chalcopyrite and secondary copper minerals in a quartz vein in andesite.

(Boulder Cr.) FM, Gold (?)

Koyuk district Candle (6.9, 7.1) approx.
MF-389, loc. 36 65°24'N, 161°03'W approx.

Summary: Uranothorianite in concentrate samples. Has been either prospecting or mining for gold; no data on results.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels have been prospected or mined for gold. No mining in 1947.

p. 24 -- Uranothorianite in concentrate samples collected in 1947.

(Buckland R.) Gold (?)

Fairhaven district Candle
N 1/2 quad.

Summary: Not very successful prospecting.

Moffit, 1927 (B 792), p. 22 -- Has been prospecting for many years with only indifferent success.

(Buckland R., trib. to West Fork) FM

Fairhaven district — Candle (7.2, 8.4) approx.
65°28'N, 161°01'W approx.

Summary: Uranothorianite in concentrates.

Gault and others, 1953 (C 250), p. 24-25 -- Uranothorianite in placer concentrates from a creek that heads against Cub Cr. near Granite Mtn. Samples contained 0.030 and 0.048 percent eU.

(Candle Cr.) Copper, Gold, Lead

Fairhaven district Candle (0.0-0.55, 15.0-16.0)
MF-389, locs. 1, 18 65°51'-65°55'N, 161°55'-162°00'W

Summary: Bedrock is mainly Paleozoic schist and limestone; cut by many quartz veins and granitic dikes. Galena veins uncovered by placer mining; dredge concentrates from gravel downstream from them were mainly galena. Concentrates in sluice boxes contained arsenopyrite, pyrite, galena, chalcopyrite, magnetite, ilmenite, rutile, garnet, cerusite, and gold. All deposits frozen. Gold discovered in 1901 and mined until at least as recently as World War II. Most of creek gravels were dredged (first dredge installed in 1913) and bench gravels hydraulicked. Was principal producing creek in Fairhaven district. See also (Candle Cr.) Bendeleben quad.

Mendenhall, 1902 (P 10), p. 51 -- Creek gravels mined with rockers in 1901; about $20,000 to $25,000 reported to have been recovered.

Moffit, 1904 (B 225), p. 77-79 — Creek and bench claims staked, 1903. Gravels mainly schist with a little quartz. Production, 1901-03, worth about $325,000. Gold dark; nugget worth $62.10 was recovered.

Moffit, 1905 (B 247), p. 60-63 -- Creek staked from headwaters to mouth. Gravels are schist, some quartz, and a little limestone. Gold on clay bedrock; flattened and black. Pyrite and rutile, but no magnetite, in concentrates. Bench deposits frozen.

Purington, 1905 (B 263), p. 209 -- Gold worth $17.77 an ounce.

Brooks, 1907 (B 314), p. 35 -- Winter drift mining of bench deposits, 1906.

Smith, 1908 (B 345), p. 226 -- Mining and prospecting of bench deposits, 1907.

Henshaw, 1909 (B 379), p. 364-368 -- Creek and bench claims produced $2,245,400 in gold, 1901-08; more than half from benches. Benches near mouth of creek on right bank (John Bull Hill) prospected by drilling; 3 holes hit limestone and the other 50 decomposed schist. Bedrock surface slopes toward Kiwalik R. Gold well worn and coarse. Averages of drill-hole data were: ice and muck, 35 ft.; barren gravel, 4.2 ft.; gravel with values, 6.7 ft.; bedrock with values, 3.1 ft.

Henshaw, 1910 (B 442), p. 369-370 -- Largest producer in Kiwalik basin, 1909. Candle ditch open; ground sluicing overburden at John Bull Hill.

Smith and Eakin, 1910 (B 449), p. 126-127 -- Reference to and quotation from B 247; reference to B 379, p. 364-369.

Chapin, 1914 (B 592), p. 388 -- Dredge operated, 1913.

p. 394-395 -- Dredge operated, 1913. Very little other mining because of water shortage.

Eakin, 1915 (B 622), p. 371 -- Dredge and other mining, 1914.

Smith, 1917 (BMB 142), p. 28 -- Mining, 1915.

(Candle Cr.) - Continued

Mertie, 1918 (B 662), p. 451-452 -- Dredge operated, 1916. Dredge from Kugruk R. [Bendeleben quad.] to be moved to Candle Cr. also.
p. 454-455 -- Mining other than dredging, 1916.
Harrington, 1919 (B 692), p. 380 -- Staked in 1901
p. 391-392 -- Bedrock in lower claims is mainly schist; in many places on bench claims it is porphyritic andesite. On upper bench pay streak is said to follow rather closely the contact between andesite and schist. Heavy minerals in sluice boxes include arsenopyrite, pyrite, galena, chalcopyrite, magnetite, ilmenite, rutile, garnet, and cerusite; also shot coated with lead oxide. Mining, including a dredge, 1917.
Cathcart, 1920 (B 712), p. 187-189 -- Mining, including a dredge, 1918.
Harrington, 1921 (B 714), p. 232-233, 235 -- Mining, including a dredge, 1919.
Brooks, 1922 (B 722), p. 62 -- Gravel thawed in preparation for dredging; no dredging, 1920.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
Smith, 1926 (B 783), p. 17 -- Mining (no dredge), 1924.
Moffit, 1927 (B 792), p. 22, 24 -- 2 dredges operated, 1925.
Smith, 1929 (B 797), p. 30 -- 2 dredges operated, 1926.
Smith, 1930 (B 810), p. 34, 40 -- Mining, including 2 dredges for part of summer, 1927.
Smith, 1930 (B 813), p. 40, 47 -- Mining, including a dredge, 1928.
Smith, 1932 (B 824), p. 45, 53 -- Mining, including a dredge, 1929.
Smith, 1933 (B 836), p. 46, 54 -- Mining, including a dredge, 1930.
Smith, 1933 (B 844-A), p. 46-47, 54 -- Mining, including a dredge, 1931.
Smith, 1934 (B 857-A), p. 43-44, 51 -- Mining, including a dredge, 1932.
Smith, 1934 (B 864-A), p. 49, 57 -- Mining, including a dredge, 1933.
Smith, 1936 (B 868-A), p. 50, 59 -- Mining, including a dredge, 1934.
Smith, 1937 (B 880-A), p. 53-54, 61 -- Mining, including a dredge, 1935. New company consolidated holdings along creek.
Smith, 1938 (B 897-A), p. 61-62, 71 -- Mining, including a dredge, 1936.
Smith, 1939 (B 910-A), p. 66-67, 76-77 -- Mining, including 2 dredges (1 new); 1937.
Smith, 1939 (B 917-A), p. 66, 75 -- Mining, including 2 dredges, 1938.
Smith, 1941 (B 926-A), p. 62, 71 -- Mining, including 2 dredges, 1939.
Smith, 1942 (B 933-A), p. 58-59, 68 -- Mining, including 2 dredges, 1940.
Anderson, 1947 (TDM 5-R), p. 31 -- Small veins of galena in bedrock; dredge concentrates from short distances below them are mainly galena rather than pyrite as otherwise is usual. [May be in Bendeleben quad.]
p. 39-40 -- Erroneously cited reference to platinum.
Gault and others, 1953 (C 250), p. 11-12 -- Bedrock predominantly mica schist cut by quartz stringers and rhyolite dikes and sills. Creek placers are 12-18 ft. of gravel under 10-20 ft. of tundra; frozen; worked by dredges. Bench placers are 4-10 ft. of gravel under 5-10 ft. of tundra; frozen; ground is sluiced with hydraulic giants. Mining in 1945.

(Candle Cr.) - Continued

Cass, 1959 (I-287) -- Largest gold producer in Candle quad.

Berg and Cobb, 1967 (B 1246), p. 115 -- Small veins of galena in bedrock exposed during placer operations. [May be in Bendeleben quad.]

Koschmann and Bergendahl, 1968 (P 610), p. 17 -- Rich placers; most productive in Fairhaven district, found in 1901.

Cobb, 1973 (B 1374), p. 69-71 -- Bedrock in area is mainly poorly exposed Paleozoic schist and limestone cut by at least one granitic dike. Source of gold was gold-bearing quartz veins in old rocks, particularly schist. Gold discovered, 1901. Creek gravels dredged; bench gravels hydraulicked.

(Canoe Cr.) Lead, Silver

Fairhaven district Candle (0.55, 9.7) approx.
MF-389, loc. 2 65°33'N, 161°55'W approx.

Summary: Argentiferous galena reportedly occurs in a vein 1-1/2 ft. thick.

Anderson, 1947 (TDM 5-R), p. 31 -- Specimen from a vein about 1-1/2 ft. wide was identified at a Territorial Dept. of Mines assay office as "galena rich in silver."

Berg and Cobb, 1967 (B 1246), p. 115 -- Specimen of argentiferous galena reportedly taken from a vein 1-1/2 ft. thick.

(Connolly Cr.) FM

Fairhaven district Candle (2.8, 11.65) approx.
MF-389, loc. 26 65°40'N, 161°37'W approx.

Summary: Uranothorianite in concentrate samples. Granitic bedrock in area.

Gault and others, 1953 (C 250), p. 25, 27 -- Uranothorianite identified in 2 samples of concentrates from a small right-limit tributary. Bedrock mapped (pl. 3) as early Tertiary granitic rocks.

(Cub Cr.) FM, Gold

Fairhaven district Candle (7.1, 9.0)
MF-389, loc. 31 65°31'N, 161°02'W

Summary: Placer gold mining in early 1900's. Uranothorianite in concentrates from creek and headwater tributaries. A little pyrite and much magnetite also in concentrates. Bedrock in headwaters is syenite of Granite Mtn. stock; farther downstream are metamorphosed andesitic rocks.

Moffit, 1904 (B 225), p. 78-79 -- Mining, 1903. Gold distributed through entire thickness of gravel. Gold fine and flaky.

Moffit, 1905 (B 247), p. 64 -- Bedrock is a "complex of granites, andesites, and lavas." Gold distributed through entire 2-ft. thickness of gravel. Gold light and flaky; assays $19.20 an ounce. A little pyrite and much magnetite in concentrates.

Henshaw, 1909 (B 379), p. 369 -- Mining, 1901-07; not enough water in 1908.

Smith and Eakin, 1910 (B 442), p. 344 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 125 -- Reference to and quotation from B 247.

Harrington, 1919 (B 692), p. 392-393 -- Gold has been mined, but no work in 1917. Bedrock on lower part of creek is metamorphosed andesitic rocks, but boulders in creek largely syenite, monzonite, or diorite.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench placers in valleys of several streams, including Cub Cr., have been prospected or mined for placer gold.

p. 24 -- Uranothorianite in placer concentrates of Cub Cr. and its headwater tributaries. Creek drains syenite of Granite Mtn. [pls. 1, 3].

Cass, 1959 (I-287) -- Has been gold mining.

Herreid, 1965 (GR 12), p. 8 -- Reference to B 247.

p. 12 -- Claims staked and prospecting cuts made, 1964, but apparently there was no mining.

Cbbb, 1973 (B 1374), p. 73 -- Uranothorianite identified in a sample. Gold has been mined.

(Dime Cr.) Chromite, Gold, Platinum

Koyuk district Candle (6.15-6.35, 3.5-3.9)
MF-389, loc. 45 65°12'-65°13'N, 161°08'-161°10'W

Summary: Creek flows near the probably faulted contact between Paleozoic recrystallized carbonate rocks and Mesozoic andesitic volcanic rocks that were intruded by small mafic and ultramafic plutons. Gold placers were discovered in 1915 and were mined until as recently as 1952. Placers contained platinum in an approximate ratio to gold of 1:200; derived from andesitic volcanics or from mafic and ultramafic plutons. Most of mining was by drifting and other nonmechanized methods; a small dredge operated 1923-31 and 1934-40. In addition to gold and platinum, heavy minerals in concentrates include magnetite, chromite, a little rutile and a few garnets. Includes references to: (Haycock), Haycock Mining Co. See also (Eldorado Cr.).

Brooks, 1916 (B 642), p. 22 -- Placers developed, 1915.
p. 70 -- Bedrock schist and crystalline limestone. Pay streak about 2 mi. long. Mining on 3 claims yielded about $3,000 in 1915.

Smith, 1917 (BMB 142), p. 27 -- New placer gold discovery, 1915.

Smith, 1917 (BMB 153), p. 56 -- Gold worth $150,000 mined in 1916. Rich strikes on benches reported.

Brooks, 1918 (B 662), p. 21, 24 -- Platinum recovered incidental to placer gold mining, 1916.

Mertie, 1918 (B 662), p. 454 -- Pay streak 2 or more miles long; in a deep bench channel; mining (as of 1916) all by drifting. Gold very high value ($19.77 to $19.84 an ounce); one assay showed 957 parts Au, 38 parts Ag. Platinum also present.
p. 458 -- Platinum has been recovered.

Harrington, 1919 (B 692), p. 380-381 -- Staked, 1910; some prospecting. More prospecting in 1915; gold discovered at mouth of Eldorado Cr.; creek and 2 tiers of bench claims staked.
p. 396-398 -- At lower end of creek 1 oz. Pt per $5,000 in Au; on upper claims may be as much as 1 oz. Pt per $2,000 in Au; 35 oz. produced in 1917. Analysis of platinum is Pt, 71.5%; Ir(?), 3.8%; Pd, 0.9%; Rh, 0.9%; osmiridium, silica, and undetermined, 3.4%; Au, Ag, Pb, Cr, Fe, and Ni, 17.7%. Highest value gold ($19.88 per oz.) was 961 parts Au, 32 parts Ag. On creek claims being mined in 1917 depths range from 10 or 12 to 30 ft.; bench claims about the same; frozen. Gold mainly on bedrock; some in lower 2-3 ft. of gravel. Bedrock is metamorphosed andesite in some creek claims; older slate and limestone west of creek; Eldorado Cr. follows contact. Cretaceous conglomerate, shale, and sandstone below Silver Gulch [not shown on available maps]. Platinum from claims farthest upstream more angular than that from downstream. Heavy minerals with gold and platinum include iron oxides, much chrome spinel and olivine, rare garnet, and a little rutile.

(Dime Cr.) - Continued

Martin, 1919 (B 692), p. 21 -- Platinum mined, 1917.
p. 40-41 -- Mining, 1917.
Cathcart, 1920 (B 712), p. 188-189 -- Mining, 1918.
p. 196 -- Most of the 56 oz. of platinum recovered from gold placers on the Seward Peninsula in 1918 came from Dime Cr.
Martin, 1920 (B 712), p. 23, 52 -- Most of the approximately 56 oz. of platinum recovered from gold placers on the Seward Peninsula in 1918 came from Dime Cr.
Brooks, 1921 (B 714), p. 38 -- Reference to B 692, p. 369-400.
Brooks and Martin, 1921 (B 714), p. 71 -- Platinum recovered 1919.
p. 94 -- About 32 oz. of platinum recovered from gold placers in Dime Cr. region, 1919 [May include production from Bear and Sweepstakes Creeks; see below, B 714, p. 236, which states about 20 oz.].
Harrington, 1921 (B 714), p. 236 -- Platinum recovered, 1919. Total from Seward Peninsula was probably about 20 oz. [see above, B 714, p. 94, which states 32 oz.].
Brooks, 1922 (B 722), p. 23 -- Platinum recovered, 1920.
Cathcart, 1922 (B 722), p. 183-184 -- Platinum is recovered with gold; ratio thought to be about 1 oz. platinum to $4,000 in gold. Bedrock source of platinum not known.
Brooks, 1923 (B 739), p. 13 -- Platinum recovered, 1921.
Mertie, 1923 (B 739), p. 158 -- Platinum has been found in placers.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
p. 30, 50 -- Platinum recovered, 1923.
Smith, 1926 (B 783), p. 17-18 -- Dredge operated part of season, 1924. Platinum metals in some of placer deposits.
p. 25 -- Platinum recovered, 1924.
Moffit, 1927 (B 792), p. 24 -- Dredge operated, 1925.
p. 33 -- Platinum recovered, 1925.
Smith, 1929 (B 797), p. 27, 30 -- Mining, including a dredge, 1926. Very dry year.
p. 39 -- Platinum recovered, 1926.
Smith, 1930 (B 810), p. 36, 40 -- Mining, including a dredge, 1927.
p. 52 -- Platinum recovered, 1927.
Smith, 1930 (B 813), p. 41-42, 47 -- Mining, including a dredge, 1928.
p. 59 -- Platinum recovered, 1928.
Smith, 1932 (B 824), p. 46, 53 -- Mining, including a dredge, 1929.
p. 65-66 -- Platinum recovered, 1929.
Smith, 1933 (B 836), p. 48, 54 -- Mining, including a dredge, 1930.
p. 68 -- Platinum recovered, 1930.
Smith, 1933 (B 844-A), p. 49, 55 -- Mining, including a dredge, 1931.
p. 67 -- Platinum recovered, 1931.
Smith, 1934 (B 857-A), p. 46 -- Mining (no dredge), 1932.
p. 63 -- Platinum recovered, 1932.
Smith, 1934 (B 864-A), p. 52 -- Mining, 1933.
p. 68 -- Platinum recovered, 1933.
Smith, 1936 (B 868-A), p. 53, 59 -- Mining, including a dredge, 1934.
p. 70 -- Platinum recovered, 1934.
Smith, 1937 (B 880-A), p. 57, 62 -- Mining, including a dredge, 1935.

(Dime Cr.) - Continued

p. 74 -- Platinum recovered, 1935.
Smith, 1938 (B 897-A), p. 66, 71 -- Mining, including a dredge, 1936.
p. 84 -- Platinum recovered, 1936.
Smith, 1939 (B 910-A), p. 70, 76 -- Mining, including a dredge, 1937.
p. 89-90 — Platinum recovered, 1937.
Smith, 1939 (B 917-A), p. 68-69, 75 -- Mining, including a dredge, 1938.
p. 83 -- Platinum recovered, 1938.
Smith, 1941 (B 926-A), p. 64, 71 -- Mining, including a dredge, 1939.
p. 77-78 -- Platinum recovered, 1939.
Smith, 1942 (B 933-A), p. 61, 68 -- Mining, including a dredge, 1940.
p. 74 -- Platinum recovered, 1940.
Anderson, 1947 (TDM 5-R), p. 18 -- Chromite and chrome spinels in concentrates.
p. 39-40 -- Reference to B 692 [p. 396-398].
Gault and others, 1953 (C 250), p. 2 -- Mining, 1945.
Cass, 1959 (I-287) -- Gold and platinum have been produced.
Mertie, 1969 (P 630), p. 89-90 — Platinum metals in gold placers. Tenor estimated at 1 oz. Pt metals per $5,000 in gold (at $20.67 per fine oz). In 1917, 35 oz. of Pt metals was produced. Area not glaciated. Bedrock sources of Pt metals have not been recognized. Recalculated analysis (B 692, p. 396) is Pt - 88.8%; Ir - 4.7%; Ir + Os - 4.3%; Pd - 1.1%; total - 100%.
Cobb, 1973 (B 1374), p. 80-81 -- Flows near probably faulted contact between Paleozoic recrystallized carbonate rocks and Mesozoic andesitic volcanic rocks that were intruded by small mafic and ultramafic plutons. Gold placers discovered in 1915 and mined in practically every year until as recently as 1952. Dredge operated for a few years, but much of mining was by drifting and other nonmechanized methods. Platinum, derived either from andesitic volcanics or from mafic or ultramafic bodies intruded into them, was recovered. Other heavy minerals include magnetite, chromite, a little rutile, and a few garnets.

(Dome Cr.)	Gold (?)
Fairhaven district	Candle (?) NW 1/4 NW 1/4 NW 1/4 quad. (?)

Summary: Good prospects reported in 1901. No other data. Only location given is west of Candle. Probably (but not certainly) in Bendeleben quad.

Mendenhall, 1902 (P 10), p. 51 -- Good prospects reported in 1901; west of Candle.

(Duck Cr.) FM

Fairhaven district Candle (4.1, 16.25) approx.
MF-389, loc. 20 65°56'N, 161°26'W approx.

Summary: Uranothorianite in concentrate sample.

Gault and others, 1953 (C 250), p. 26-27 -- Uranothorianite identified in concentrate of a sample from a small tributary of Duck Cr. Bedrock mapped (pl. 3) as early Tertiary granitic rocks.

(East Clem Cr.) FM

Fairhaven district Candle (4.8, 16.95)
MF-389, loc. 22 65°58'N, 161°20'W

Summary: Uranothorianite and thorite in concentrate samples.

Gault and others, 1953 (C 250), p. 26-27 -- Uranothorianite and trace of thorite in concentrate (concentration ratios of 800:1 and 2,400:1) samples. Bedrock mapped (pl. 3) as early Tertiary granitic rocks.

(Eldorado Cr.) Gold

Koyuk district Candle (6.15, 6.7-6.85)
MF-389, loc. 45 65°12'-65°13'N, 161°10'W

Summary: Creek follows the probably faulted contact between Paleozoic recrystallized carbonate rocks and Mesozoic andesitic volcanics. Placer gold claims were staked in 1915. There has been gold production. Includes reference to (Little Eldorado Cr.). See also (Dime Cr.).

Harrington, 1919 (B 692), p. 380, 396 -- Gold discovered and creek staked, 1915.

p. 398 -- Creek follows contact between metamorphosed andesite and older slates and limestones.

Cass, 1959 (I-287) -- Gold has been produced.

Cobb, 1973 (B 1374), p. 80 -- Near probably faulted contact between Paleozoic recrystallized carbonate rocks and Jurassic(?) and Cretaceous andesitic volcanic rocks. Placer gold claims were staked in 1915, but claims on Dime Cr. were richer.

(Fairhaven Cr.) Gold (?)

Fairhaven district Candle (6.0-6.5, 12.0-13.1) approx.
65°40'-65°45'N, 161°05'-161°10'W approx.

Summary: Has been mining or prospecting for placer gold. No data on results.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in many valleys, including that of Fairhaven Cr., have been prospected or mined for placer gold.

(Farmer Cr.)	Gold (?)
Koyuk district	Candle (6.8, 6.5) approx. 65°22'N, 161°04'W approx.

Summary: Claims have been staked.

Harrington, 1919 (B 692), p. 394 -- Claims have been staked [as of 1917].

(Gold Run (Cr.)) Gold

Fairhaven district Candle (0.0, 10.2) approx.
65°35'N, 162°00'W approx.

Summary: Mining or prospecting reported 1909, 1927-40. Most of activity probably was in part of stream in Bendeleben quad. See also (Gold Run) Bendeleben quad.

Henshaw, 1910 (B 442), p. 369, 371 -- Mining, 1909 [probably all in Bendeleben quad.].
Smith, 1930 (B 810), p. 34 -- Mining, 1927.
Smith, 1930 (B 813), p. 40 -- One miner recovered a little gold, 1928.
Smith, 1932 (B 824), p. 45 -- Mining, 1929.
Smith, 1933 (B 836), p. 46 -- Prospecting, 1930.
Smith, 1933 (B 844-A), p. 47 -- Prospecting, 1931.
Smith, 1934 (B 857-A), p. 44 -- Prospecting, 1932.
Smith, 1934 (B 864-A), p. 49 -- Prospecting, 1933.
Smith, 1936 (B 868-A), p. 50-51 -- Prospecting, 1934.
Smith, 1937 (B 880-A), p. 54 -- Prospecting, 1935.
Smith, 1938 (B 897-A), p. 62 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 67 -- Prospecting, 1937.
Smith, 1939 (B 917-A), p. 66 -- Prospecting, 1938.
Smith, 1941 (B 926-A), p. 62 -- Prospecting, 1939.
Smith, 1942 (B 933-A), p. 59 -- Prospecting, 1940.
Cobb, 1973 (B 1374), p. 71 -- Considerable placer mining for a few years beginning in 1908 or 1909. Drains a highland area (mainly in Bendeleben quad.] underlain by schist, limestone, and granite.

(Granite Cr.) Gold (?)

Koyuk district Candle (5.1, 6.3) approx.
65°06'N, 161°18'W approx.

Summary: Stream flows from Granite Mtn. stock across locally sheared andesitic volcanics. Claims for placer gold have been staked.

Gault and others, 1953 (C 250), p. 3 -- Stream heads in Granite Mtn. stock (pls. 1-3). Creek and bench claims have been staked. 2,000 ft. above mouth clay is beneath 2-1/2 ft. of gravel; elsewhere bedrock crops out in stream. Lower part of creek flows through locally sheared andesitic flows and tuffs.

(Greenstone Cr.) Platinum (?)

Koyuk district Candle (6.6, 3.25) approx.
65°11'N, 161°06'W approx.

Summary: Platinum reported to be present; not confirmed. See also (Dime Cr.).

Mertie, 1918 (B 662), p. 458 -- In 1916 it was reported to Mertie that platinum is present in gravels of Greenstone Cr. and in gravels of Dime Cr. below mouth of Greenstone Cr.

(Hunter Cr.) Gold

Fairhaven district Candle
W 1/2 NW 1/4 quad.

Summary: Gold has been mined; location uncertain; could have been on a tributary. Prospecting on Right Fork in 1947.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels have been prospected or mined for placer gold. One man prospecting on Right Fork in 1947.

Cass, 1959 (I-287) -- Gold has been produced.

(Jump Cr.) Gold

Fairhaven district Candle (0.0-0.4, 15.65-15.8)
MF-389, loc. 18 65°54'N, 161°57'-162°00'W

Summary: Major tributary of Candle Cr. on which gold was discovered in 1901. Mining was reported or implied most years 1914-18, 1927-33, 1936-40, 1945, and probably was carried on in many of the intervening years. See also (Jump Cr.) Bendeleben quad.

Henshaw, 1909 (B 379), p. 364 -- Gold discovered, July, 1901.
Eakin, 1915 (B 622), p. 371 -- Drift mining, 1914.
Harrington, 1919 (B 692), p. 392 -- Mining, winter of 1916-17.
Cathcart, 1920 (B 712), p. 189 -- Hydraulicking, 1918.
Smith, 1930 (B 810), p. 34 -- Small mining camps, 1927.
Smith, 1930 (B 813), p. 40 -- Probably was mining in 1928; reference is somewhat ambiguous.
Smith, 1932 (B 824), p. 45 -- Probably was mining in 1929; reference is somewhat ambiguous.
Smith, 1933 (B 836), p. 46 -- Probably was mining in 1930; reference is somewhat ambiguous.
Smith, 1933 (B 844-A), p. 46 -- Probably was mining in 1931; reference is somewhat ambiguous.
Smith, 1934 (B 857-A), p. 43 -- Probably was mining in 1932; reference is somewhat ambiguous.
Smith, 1934 (B 864-A), p. 49 -- Probably was mining in 1933; reference is somewhat ambiguous.
Smith, 1938 (B 897-A), p. 62 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 67 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 66 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 62 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 59 -- Mining, 1940.
Gault and others, 1953 (C 250), p. 11 -- Gold discovered, 1901.
p. 14 -- Sluice-box concentrates from hydraulic mining in 1945 were slightly radioactive.
Cobb, 1973 (B 1374), p. 70 -- Mining was by simple methods until many ditches had been built.

(Kenwood Cr.) Gold

Koyuk district Candle
S 1/4 SW 1/4 quad.

Summary: Colors of gold in prospect shafts near head; probably related to an old channel. Prospects reported on lower Kenwood Cr. Small-scale mining reported, 1914. See also (Alameda Cr.).

Smith and Eakin, 1910 (B 442), p. 339 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 112-113 -- Prospectors reported that they had found good prospects on lower Kenwood Cr. several years before 1909; low water prevented their return in 1909. Colors of gold in prospect shafts near head of creek; probably related to old channel of Alameda Cr.
Eakin, 1915 (B 622), p. 371 — Small-scale mining reported, 1914.

(Kiwalik R., headwaters) — Gold, Lead, Silver, Tungsten, Zinc

Fairhaven district — Candle (3.8-5.0, 7.3-8.3)
MF-389, locs. 8, 11-13 — 65°25'-65°28'N, 161°19'-161°29'W

Summary: Samples from an area near the contact between andesite and quartz monzonite contained as much as 1 ppm gold, 150 ppm silver, galena, sphalerite, pyrite, scheelite, and tourmaline.

Miller and Elliott, 1969 (C 614), p. 12 -- Scheelite found in pyrite-tourmaline-quartz vein material in frost-riven rubble.

p. 16-18 -- Semiquantitative spectrographic analyses of bedrock and soil samples. Identified minerals include galena, sphalerite, pyrite, scheelite, tourmaline. Silver contents of samples as high as 150 ppm. Gold (by atomic absorption) as high as 1 ppm. Samples from near contact between andesite (Jurassic(?)-Cretaceous) and quartz monzonite (Cretaceous).

(Kiwalik R., lower) Gold

Fairhaven district Candle (0.65, 16.15)
MF-389, loc. 19 65°55'N, 161°55'W

Summary: Gold-bearing gravel in the Kiwalik flats north of Candle was dredged.

Gault and others, 1953 (C 250), p. 11 — Gold-bearing gravels in flats north of Candle.
p. 13 -- Samples from dredge contain very little eU.
Cass, 1959 (I-287) -- Gold has been produced.
Cobb, 1973 (B 1374), p. 70 — Has been dredging in Kiwalik flats.

(Koopuk R.)(Cr.) — Gold

Fairhaven district — Candle (6.95, 17.1) approx.
MF-389, loc. 47 — 65°58'N, 161°01'W approx.

Summary: Entire drainage basin underlain by Cenozoic lava flows. Gold discovered in 1922 and mined until 1927. Source of gold not known. Includes reference to (Koo-o-puk Cr.).

Brooks, 1925 (B 773), p. 50 -- Gold discovered, 1922. Some mined in 1923.
Smith, 1926 (B 783), p. 17 -- Mining, 1924. Deposits do not seem to be as good as originally rumored.
Moffit, 1927 (B 792), p. 22 -- Small gold output, 1925.
Smith, 1930 (B 810), p. 34 -- Mining, 1927.
Cobb, 1973 (B 1374), p. 73 -- A little gold mined in early 1920's. Drainage area underlain entirely by Cenozoic lava flows; source of gold unknown.

(Meinzer Cr.)

FM, Gold (?)

Fairhaven district
MF-389, loc. 23

Candle (5.45, 13.7)
65°47'N, 161°15'W

Summary: Has been some mining or prospecting for gold; no data on results. Uranothorianite in a concentrate sample.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in the valleys of several streams, including Meinzer Cr., have been prospected or mined for placer gold.

p. 27 -- Uranothorianite identified in concentrate sample. Bedrock along most of creek (pl. 3) is early Tertiary granitic rocks.

(Minnehaha Cr.) Gold

Fairhaven district Candle (0.15, 16.7)
MF-389, loc. 17 65°57'N, 161°58'W

Summary: Good prospects reported to have been found by 1901. Candle D-6 quad. map (1:63,360) shows mined area.

Mendenhall, 1902 (P 10), p. 51 -- One of several creeks that has been prospected and reported to have given good results.

(Muck Cr.)

FM, Tungsten

Fairhaven district
MF-389, loc. 25

Candle (3.45, 13.2)
65°45'N, 161°31'W

Summary: Concentrate samples contained scheelite, powellite, ilmenite, magnetite, uranothorianite, and pyrite.

Gault and others, 1953 (C 250), p. 24-25, 27 -- Samples of concentrates (concentration ratios of 300:1 and 350:1) contained 0.125 and 0.160 percent eU. Heavy minerals identified in samples included garnet, sphene, zircon, epidote, apatite, scheelite, powellite, ilmenite, magnetite, uranothorianite, and pyrite.

Cobb, 1973 (B 1374), p. 73 -- Scheelite in concentrate sample.

(Mud Cr.) Gold, Lead, Mercury

Fairhaven district
MF-389, loc. 17

Candle (0.15, 16.7)
65°57'N, 161°58'W

Summary: Small-scale placer gold mining as recently as 1967. Cinnabar and galena are reported to have been found in concentrates.

Anderson, 1947 (TDM 5-R), p. 31 -- Galena in concentrates from drifting operation.

p. 34 -- Small amounts of cinnabar in concentrates.

Cobb, 1973 (B 1374), p. 70-71 -- Cinnabar and galena have been reported. A two-man operation on Mud Cr. was the only mining in the area in 1967.

(Negromoon Cr.) Gold

Koyuk district Candle
SW 1/4 SE 1/4 quad.

Summary: Low-grade gold-bearing gravel reported. No other data. Stream may be the one shown on modern maps as Nigikmigoon R.

Smith and Eakin, 1910 (B 442), p. 334 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 108-109 -- Gold-bearing gravels are too low in tenor to be of commercial significance in 1909; no adequate prospecting.

(Peace R.)

Bismuth, Chromite, Copper, FM, Gold, Lead, Molybdenum, Silver, Tungsten, Zinc; Corundum, Fluorite

Koyuk district
MF-389, locs. 16, 34, 44

Candle (6.45-6.75, 5.0-8,1)
65°15'-65°28'N, 161°04'-161°07'W

Summary: Headwaters near contacts between Jurassic(?)-Cretaceous volcanic rocks and the syenite of the Granite Mtn. pluton and a small satellitic stock. Rock and concentrate samples contained the following minerals (listed at random): pyrite, pyrrhotite, hematite, magnetite, limonite, ilmenite, chalcopyrite, bornite, covellite, chromite, picotite, bismuth, tetradymite, molybdenite, powellite, galena, sphalerite, scheelite, uranothorianite, thorite, gummite, gold, silver, corundum, and fluorite. Has been prospecting and probably some placer gold mining near the mouth of Sweepstakes Cr. See also: (Bear Gulch), (Sweepstakes Cr.).

Smith and Eakin, 1910 (B 442), p. 340 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 114 -- Prospecting, 1908; several shafts sunk near forks.

p. 135 -- Copper sulfide minerals in pink granite near head of stream.

Harrington, 1919 (B 692), p. 380 -- Prospecting near mouth of Sweepstakes Cr. in 1909.

Anderson, 1947 (TDM 5-R), p. 23 -- Reference to B 449 [p. 135].

Wedow and others, 1952 (OF 51), p. 17, 43-45 — Preliminary to C 196.

White and others, 1952 (C 196), p. 2, 5 -- Concentrate sample collected in 1947 contained pyrite, chalcopyrite, hematite, ilmenite, uranothorianite, bismuth, bornite, gold, silver, chromite, thorite, gummite, and common accessory minerals from granite.

Gault and others, 1953 (C 250), p. 24, 26 -- Samples from headwater area near contact between syenite of Granite Mtn. and older andesites contain thorite, powellite, picotite, ilmenite, hematite, limonite, magnetite, chromite, uranothorianite, gummite, pyrite, chalcopyrite, bornite, molybdenite, gold, silver, bismuth, and corundum.

p. 28-31 -- Samples collected from headwaters in 1951 contained in addition to minerals listed above, galena, sphalerite, pyrrhotite, covellite, tetradymite, scheelite, and fluorite. Mineral associations suggest that the uranium minerals are derived from a sulfide-bearing lode (possibly a vein) rather than occurring as accessory minerals in the granitic rock of Granite Mtn.

Cass, 1959 (I 287) -- Has been gold mining.

Berg and Cobb, 1967 (B 1246), p. 119 -- Copper sulfides in granite along upper part of stream.

Miller and Elliott, 1969 (C 614), p. 12-14 -- Small satellitic syenite stock of Granite Mtn. pluton (Cretaceous) intruded andesitic volcanic rocks (Jurassic(?)-Cretaceous). Locally the syenite contains pyrite, molybdenite, magnetite, and purple fluorite. Reference to C 250, p. 29-30. Deposits probably not related to those near Quartz Cr.

(Peace R.) - Continued

p. 18 — Semiquantitative spectrographic analyses of bedrock and soil samples. Identified minerals include pyrite, quartz, and fluorite. Silver content as high as 150 ppm; gold (by atomic absorption) no higher than 0.04 ppm.

Cobb, 1973 (B 1374), p. 81 -- Reference to Ç 250; short list of heavy minerals.

(Placer Cr.) Gold

Koyuk district Candle (?)
SW 1/4 quad. (?)

Summary: Gold mining in 1912. Creek is a tributary of Koyuk R. No other data. May be in Bendeleben or Norton Bay quads.

Brooks, 1913 (B 542), p. 49 -- Was some mining in 1912; tributary of Koyuk R.

(Quartz Cr. trib. Kiwalik R.) Copper, FM, Gold, Lead, Platinum, RE, Silver, Zinc; Fluorite

Fairhaven district Candle (3.6-5.1, 8.5-10.25)
MF-389, locs. 3-7, 9, 10, 32 65°29'-65°35'N, 161°18'-161°30'W

Summary: Country rock is Jurassic(?)-Cretaceous andesitic volcanic rocks intruded by the Cretaceous Granite Mtn. (syenite) and Quartz Cr. (quartz monzonite) plutons and fine-grained dikes. Oxidized areas and carbonate replacement bodies in andesite and quartz monzonite; sulfides associated with tourmaline. Tin is high in analyses of some samples, but no tin mineral was found. Minerals identified in samples include (listed at random): gold, platinum, magnetite, ilmenite, hematite, pyrite, arsenopyrite, chalcopyrite, galena (some argentiferous), sphalerite, realgar, orpiment, uranothorianite, thorite, allanite, fluorite, tourmaline, spinel, melanite, zircon, and quartz. Placer gold mining and the recovery of a little platinum in most years was reported from 1927 to 1940.

Smith, 1930 (B 810), p. 34 -- Mining, 1927.
Smith, 1930 (B 813), p. 40 -- Mining, 1928.
Smith, 1932 (B 824), p. 45 -- A little mining, 1929.
Smith, 1933 (B 836), p. 46 -- A little mining, 1930.
Smith, 1933 (B 844-A), p. 47 -- A little mining, 1931.
Smith, 1934 (B 857-A), p. 44 -- A little mining, 1932.
p. 63 -- Platinum reported to have been recovered, 1932.
Smith, 1934 (B 864-A), p. 49 -- A little mining, 1933.
p. 68 -- Platinum recovered, 1933.
Smith, 1936 (B 868-A), p. 50-51 -- A little mining, 1934.
p. 70 -- Platinum recovered, 1934.
Smith, 1937 (B 880-A), p. 54 -- A little mining, 1935.
p. 74 -- Platinum recovered, 1935.
Smith, 1938 (B 897-A), p. 62 -- A little mining, 1936.
p. 84 -- Platinum recovered, 1936.
Smith, 1939 (B 910-A), p. 67 -- Mining (a good season), 1937.
p. 89-90 -- Platinum recovered, 1937.
Smith, 1939 (B 917-A), p. 66 -- Mining (a good season), 1938.
p. 83 -- Platinum recovered, 1938.
Smith, 1941 (B 926-A), p. 62 -- Mining, 1939.
p. 77-78 -- Platinum recovered, 1939.
Smith, 1942 (B 933-A), p. 59 -- Mining, 1940.
p. 74 -- Platinum recovered, 1940.
Anderson, 1947 (TDM 5-R), p. 39-40 -- Platinum has been recovered with gold; reference citation is incorrect.
Gault and others, 1953 (C 250), p. 3 -- Has been mining.
p. 15-18 -- Heads in syenite of Granite Mtn. Creek gravels were mined for gold. Bedrock is syenite and older andesitic flows and intrusives. Fragments of narrow quartz veins and pegmatites in

(Quartz Cr. trib. Kiwalik R.) - Continued

float. One piece of pegmatite float on Granite Mtn. contained magnetite, biotite, sphene, zircon, fluorite, and allanite. Stream-gravel concentrates contained sphene, melanite, magnetite, hornblende, ilmenite, spinel, hematite, zircon, apatite, thorite(?), and uranothorianite.

p. 22-23 -- Stream and bench gravels from the valleys of several streams, including Quartz Cr., have been prospected or mined for placer gold. Uranothorianite from Quartz Cr. contains about equal amounts of uranium and thorium. Thorite from Quartz Cr. contains mainly thorium with about 10% uranium and less than 1% Fe, Pb, Zr, Cu, Mn, and Y.

Cass, 1959 (I-287) -- Gold has been produced.

Miller and Elliott, 1969 (C 614), p. 5-7, 12 -- Jurassic(?)-Cretaceous andesitic volcanic rocks intruded by Cretaceous quartz monzonite pluton with hook-shaped outcrop pattern. Fine-grained dikes near the pluton locally contain disseminated pyrite, galena, and sphalerite. Oxidized areas and carbonate replacement bodies in andesite and quartz monzonite; sulfides associated with tourmaline. Tin is high in analyses of some samples, but no tin mineral was found. Sulfide minerals in one area include galena, sphalerite, pyrite, arsenopyrite, realgar, orpiment, and small blebs of chalcopyrite; they are in altered tourmalinized rock and carbonate veins. Some of galena is argentiferous.

p. 16-18 -- Semiquantitative spectrographic analyses of rock and soil samples. Silver as high as 300 ppm. Gold (by atomic absorption) no more than 0.2 ppm. Minerals identified in samples include pyrite, arsenopyrite, galena, sphalerite, tourmaline, quartz, realgar, orpiment.

Cobb, 1973 (B 1374), p. 73-74 -- Placer gold has been mined. Headwater tributaries cross contact zone around Granite Mtn. pluton. Gold and platinum have been recovered; uranothorianite and other radioactive minerals in concentrate samples.

(Quartz Cr., trib. Kwik R.) Gold (?)

Koyuk district Candle (3.0, 0.4) approx.
65°02'N, 161°35'W approx.

Summary: Gold prospecting and possibly a little mining in early 1900's.

Smith and Eakin, 1910 (B 442), p. 341 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 115 -- Location notices dated about 1902. Old claim stakes and evidence of sluicing found in 1909.

(Rock Cr.) FM, Gold (?)

Koyuk district Candle (6.95, 7.25) approx.
MF-389, loc. 35 65°25'N, 161°03'W approx.

Summary: Uranothorianite in concentrates. Has been some mining or prospecting placer gold; no data on results.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in the valleys of several streams, including Rock Cr., have been mined or prospected for placer gold.

p. 24 -- Uranothorianite in placer concentrates collected in 1947.

(Rube Cr.) — Gold, Platinum (?)

Koyuk district — Candle (6.8, 6.5) approx.
MF-389, loc. 38 — 65°22'N, 161°04'W approx.

Summary: Gold was mined in 1917 and possibly in one or two of the following years. Reports of platinum are unconfirmed. Gold is on a clayey false bedrock and in the overlying 2-3 ft. of gravel. Heavy minerals in concentrates include gold, hematite, zircon, a little chrome spinel, and much black garnet.

Harrington, 1919 (B 692), p. 380-381 -- Said to have been staked in 1910, but no gold found. Restaked in 1917.

p. 394-395 -- Mining, 1917. Gold on clayey false bedrock and in overlying 2-3 ft. of gravel. Overburden is a variable amount of barren gravel and sand and a few feet of muck. Gold bright; several colors to the pan. Report of platinum not verified. Heavy minerals include gold, hematite, olivine, zircon, a little chrome spinel, and much black garnet. Same minerals in a pan of dirt from a bare spot between Rube and Farmer Creeks.

Anderson, 1947 (TDM 5-R), p. 39 -- Platinum reported; reference to B 692 [p. 394-395].

Gault and others, 1953 (C 250), p. 3 -- Sites of old placer working could not be recognized in 1945. Little mining was done after stampede in early day of the district.

p. 22 -- Stream and bench gravels in valleys of several streams, including Rube Cr., have been mined or prospected for placer gold.

Cass, 1959 (I-287) -- Has been gold mining.

Cobb, 1973 (B 1374), p. 81 -- Gold has been mined.

(Scotch Cr.) Gold (?)

Fairhaven district Candle (5.8, 12.4) approx.
65°42'N, 161°22'W approx.

Summary: Has been mining or prospecting for placer gold. No data on results.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in the valleys of several streams, including Scotch Cr., have been prospected or mined for gold.

(Sheridan Cr.) Gold

Fairhaven district Candle (6.6, 10.2)
MF-389, loc. 28 65°35'N, 161°06'W

Summary: Bedrock is mainly andesite tuffs and flows with some more basic intrusives. Gold is on bedrock and assayed $19.20 an ounce (gold $20.67 per fine oz.). Other heavy minerals mainly magnetite with a little pyrite. Sporadic mining, 1903-17. Includes references to (Sherdon Cr.).

Moffit, 1904 (B 225), p. 78-79 -- Mining, 1903. Gold coarser than that from Bear and Cub Creeks; found on bedrock. Much magnetite in concentrates.

Moffit, 1905 (B 247), p. 64 -- Bedrock is a "complex of granites, andesites, and lavas." Gold heavy, bright yellow, on bedrock; assays $19.20 an ounce. A little pyrite and much magnetite in concentrates.

Henshaw, 1909 (B 379), p. 369 -- Mining, 1901-07; not enough water in 1908.

Smith and Eakin, 1910 (B 442), p. 344 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 125 -- Reference to and quotation from B 247.

Eakin, 1915 (B 622), p. 371-372 -- Mining, 1914.

Harrington, 1919 (B 692), p. 392-394 -- Has been mining off and on from about 1903 to 1917. Bedrock mainly andesite tuffs and flows with some basic intrusives. Heavy minerals essentially the same as in concentrates from Bear Cr., which include magnetite, hematite, ilmenite, pyrite, garnet, and olivine.

Cass, 1959 (I-287) — Placer gold has been mined.

Herreid, 1965 (GR 12), p. 8 -- Reference to B 247.
p. 12 — No sign of recent work, 1964.

(Spring Cr.) Gold

Koyuk district Candle (5.45, 6.45)
MF-389, loc. 43 65°22'N, 161°15'W

Summary: Creek and bench claims have been staked; ground 10-12 ft. deep. Probably has been some gold mining. Stream flows from Granite Mtn. stock across andesitic volcanics to Sweepstakes Cr.

Gault and others, 1953 (C 250), p. 3-4 -- Creek and bench claims staked along part of stream. Gold said to have been mined about a mile below the hot springs. Creek rises in area underlain by syenite [Granite Mtn. stock], flows across contact with andesitic volcanics, and into Sweepstakes Cr. Ground at mouth of creek about 10 ft. deep; some of bench ground is 12 ft. deep.

(Spruce Cr.)

FM, Gold (?)

Fairhaven district
MF-389, loc. 27

Candle (3.85, 12.0) approx.
65°41'N, 161°28'W approx.

Summary: Stream or bench gravels have been mined or prospected for gold; no data on results. Uranothorianite and gummite in concentrate sample.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in the valleys of several streams, including Spruce Cr., have been mined or prospected for placer gold.

p. 25, 27 -- Concentrate sample (concentration ratio of 325:1) contained 0.033% eU; uranothorianite and gummite were identified in it. Bedrock is mapped (pl. 3) as early Tertiary granitic rocks.

(Sugar Loaf Cr.) FM, Gold (?)

Fairhaven district Candle (5.95, 13.0)
MF-389, loc. 24 65°44'N, 161°10'W

Summary: Stream or bench gravels have been prospected for gold; no data on results. Thorium minerals in concentrate samples.

Gault and others, 1953 (C 250), p. 22 -- Stream and bench gravels in the valleys of several streams, including Sugar Loaf Cr., were prospected or mined for placer gold.

p. 26-27 -- Orangite (a thorium mineral) and thorite were identified in concentrate samples.

(Sweepstakes Cr.) FM, Gold, Platinum

Koyuk district Candle (4.85-5.15, 6.1-7.0)
MF-389, locs. 39-41 65°22'-65°24'N, 161°18'-161°20'W

Summary: Left-limit tributaries drain southwestern part of Granite Mtn. syenite pluton; main stream flows through area underlain by [Jurassic(?)-Cretaceous] andesite and older [Paleozoic] metamorphosed rocks. Placer deposits, mainly in benches along left limit, yielded a few thousand dollars worth of gold in most years from 1910 to 1965. A little platinum recovered below mouth of Bear Gulch. Other minerals in concentrate samples include magnetite, ilmenite, hematite, chrome spinel, garnet, zircon, pyrite, uranothorianite, and hydrothorite. See also (Bear Gulch).

Brooks, 1913 (B 542), p. 49 -- Good prospects said to have been found, 1912.
Eakin, 1915 (B 622), p. 371 -- Four claims being worked, 1914.
Smith, 1917 (BMB 153), p. 56 -- Has been a steady producer for several years. Mining, 1916.
Harrington, 1919 (B 692), p. 380 -- Staked in 1909. Average annual production, 1910-17, was between $4,000 and $5,000.
p. 395 -- Mining, 1917. Depth to bedrock increases from 6 ft. at upper claims being worked to as much as 15 ft. on lower claims. Bedrock syenitic at upper claims; rest mainly metamorphosed andesites and, in a few places, older metamorphic rocks. Platinum found at mouth of Bear Gulch. Other heavy minerals include magnetite, garnet, zircon, hematite, ilmenite, and considerable chrome spinel.
Martin, 1919 (B 692), p. 21 -- Small amount of platinum produced, 1917.
p. 41 -- Gold worth $10,000 mined, 1917. Also about an ounce of platinum.
Cathcart, 1920 (B 712), p. 189 -- Mining, 1918.
Martin, 1920 (B 712), p. 23 -- Platinum recovered from gold placers, 1918.
Brooks, 1921 (B 714), p. 38 -- Reference to B 692, p. 369-400.
Brooks and Martin, 1921 (B 714), p. 71 -- Platinum recovered, 1919.
Harrington, 1921 (B 714), p. 236 -- Platinum recovered, 1919.
Brooks, 1923 (B 739), p. 13 -- Platinum recovered, 1921.
Mertie, 1923 (B 739), p. 158 -- Platinum has been found in placers.
Smith, 1926 (B 783), p. 17 -- Mining, 1924.
Smith, 1929 (B 797), p. 27 -- Mining, 1926. Severe water shortage.
Smith, 1930 (B 810), p. 36 -- Mining, 1927.
Smith, 1930 (B 813), p. 42 -- Mining until latter part of August, 1928.
Smith, 1932 (B 824), p. 46 -- One mining camp active, 1929.
Smith, 1933 (B 836), p. 48 -- One mining camp active, 1930.
Smith, 1933 (B 844-A), p. 49 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 46 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 52 -- Mining, 1933.
Smith, 1936 (B 868-A), p. 53 -- Mining, 1934.

(Sweepstakes Cr.) - Continued

Smith, 1937 (B 880-A), p. 57 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 66 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 70 -- Mining, 1937.
Smith, 1939 (B 917-A), p. 69 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 64 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 61 -- Mining, 1940.
Anderson, 1947 (TDM 5-R), p. 39-40 -- Reference to B 692 [p. 395].
Wedow and others, 1952 (OF 51), p. 43 -- Preliminary to C 250.
Gault and others, 1953 (C 250), p. 1 -- Old sample of sluice-box concentrate contained more than 80% combined U and Th with about the same amount of each. Gold mining in 1945.

p. 3-9 -- Placer mining since 1910, mainly in bench deposits along left limit. Gravel in creek bed 6-14 ft. deep. On benches 2-12 ft. of muck overlies 2-8 ft. of gravel. Mining was mainly for gold, but a little platinum was recovered near the mouth of Bear Gulch; no platinum farther upstream. Bedrock is andesite; left-limit tributaries drain syenite of Granite Mtn. stock. Heavy minerals in concentrates include magnetite, melanite, zircon, apatite, pyrite, gold, picotite, ilmenite, platinum, and uranium-thorium minerals. A sample of blowings (concentration ratio 900,000:1) contained 14.2% eU and 2.17% chemically determined U.

p. 15 -- Further data on sample described on p. 1; about 42% U and 43% Th.

p. 21-22 -- Uranothorianite more abundant north of Granite Mtn. than at Sweepstakes Cr. Stream and bench gravels in the valleys of several streams, including Sweepstakes Cr., have been prospected or mined for placer gold.

Cass, 1959 (I-287) -- Gold and platinum have been produced.
Cobb, 1973 (B 1374), p. 80-81 -- Gold discovered about 1909. Drains southwestern part of Granite Mtn. pluton. Staked in 1909 and a few thousand dollars worth of gold produced from low bench deposits in most years prior to 1965. Platinum recovered from below Bear Gulch. Uranothorianite, hydrothorite, magnetite, ilmenite, hematite, chrome spinel, and garnet in concentrates.

(Syenite Gulch) FM

Fairhaven district Candle (5.6, 8.2)
MF-389, loc. 33 65°28'N, 161°24'W

Summary: Uranothorianite and thorite (?) in samples concentrated from surface wash.

Gault and others, 1953 (C 250), p. 17 -- Uranothorianite and thorite (?) in surface wash. Amount of radioactivity decreases with depth. Bedrock is syenite of Granite Mtn.

(West Clem Cr.) FM

Fairhaven district Candle (4.4, 16.9)
MF-389, loc. 21 65°57'N, 161°23'W

Summary: Uranothorianite in concentrate sample

Gault and others, 1953 (C 250), p. 26-27 -- Concentrate sample contained 0.106% eU; radioactive minerals were zircon, sphene, and uranothorianite. Bedrock mapped (pl. 3) as early Tertiary granitic rocks.

(Willow Cr.) Gold (?)

Koyuk district Candle
SW 1/4 SW 1/4 quad.

Summary: Has been prospecting.

Smith and Eakin, 1910 (B 442), p. 339 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 114 -- Signs of former prospecting (probably in about 1902) visible in 1909.

Unnamed occurrence	Gold
Fairhaven district	Candle (6.3, 9.8)
MF-389, loc. 14	65°33'N, 161°08'W

Summary: Auriferous quartz vein.

Gault and others, 1953 (C 250), p. 22 -- "The only known gold lode in the area is an auriferous quartz vein on a hillside between Split and Polar Creeks, tributaries to Bear Creek."

(Anvik R.)

Gold (?), Platinum (?)

Anvik district

Holy Cross
NE 1/4 NW 1/4 quad. (?)

Summary: Unconfirmed report of placer gold and platinum. May be in Unalakleet quad.

Harrington, 1918 (B 683), p. 62-63 -- Anvik R. and tributaries have been prospected since 1900 or earlier. Gold found in bars, but not in quantities to justify mining. Prospecting, 1916-17. Platinum said to occur with gold and to be mined with it.

Martin, 1919 (B 692), p. 21-22 -- Unconfirmed report of platinum.
p. 40 -- Strike of platinum with gold reported, 1917.

Cobb, 1973 (B 1374), p. 106 -- Reference to B 683, p. 62-63.

(Flat Cr.) Gold, Mercury

Anvik district
MF-376, loc. 2

Holy Cross (8.5, 1.1)
62°04'N, 160°58'W

Summary: Gold discovered in 1918. Mining, 1921-40, when principal operator mined out his ground. No good data on production; possibly as much as 23,000-30,000 fine oz. of gold. Scarce cinnabar in concentrates. Includes references to (Stuyahok R.).

Harrington, 1918 (B 683), p. 56 -- Placer gold said to be present on Stuyakok.
Martin, 1920 (B 712), p. 50 -- Valuable placers reported to have been found on Stuyakok R., 1918.
Brooks, 1923 (B 739), p. 6-7 -- Placer mining began, 1921.
p. 40 -- 50 prospectors in region, 1921.
Smith, 1926 (B 783), p. 15 -- Mining, 1924.
Smith, 1929 (B 797), p. 23-24 -- Mining, 1926.
Smith, 1930 (B 810), p. 30 -- Prospecting (a little gold produced), 1927.
Smith, 1930 (B 813), p. 35-36 -- Prospecting, 1928.
Smith, 1932 (B 824), p. 41 -- Prospecting, 1929.
Smith, 1933 (B 836), p. 41 -- Preparations for installing hydraulic plant, 1930.
Smith, 1933 (B 844-A), p. 40-41 -- Hydraulic mining, 1931.
Smith, 1934 (B 857-A), p. 38 -- Mining, 1932; successful season.
Smith, 1934 (B 864-A), p. 43-44 -- Mining, 1933; dry season.
Smith, 1936 (B 868-A), p. 43 -- Mining, 1934.
Smith, 1937 (B 880-A), p. 45 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 53 -- Dragline operation began, 1936.
Smith, 1939 (B 910-A), p. 54-55 -- Mining, 1937; very successful season.
Smith, 1939 (B 917-A), p. 52 -- Mining, 1938.
Smith, 1941 (B 926-A), p. 47 -- Mining, 1939.
Joesting, 1942 (TDM 1), p. 27 -- Scarce placer cinnabar.
Smith, 1942 (B 933-A), p. 44 -- Principal operator mined out his ground and moved his equipment to Ruby district, 1940.
Malone, 1962 (IC 8131), p. 56 -- Scarce placer cinnabar.
Malone, 1965 (IC 8252), p. 55 -- Placer cinnabar present.
Cobb, 1973 (B 1374), p. 106 -- Only commercially mined placer in Anvik district. Discovered in 1918 and mined out in 1940. Cinnabar in concentrates. Production data lacking; was possibly as much as 23,000 to 30,000 fine oz. of gold.

(Wolf Creek Mtn.) Antimony, Mercury

Anvik district
MF-376, loc. 1

Holy Cross (4.8, 6.45)
62°22'N, 161°25'W

Summary: Small amounts of cinnabar and stibnite in hydrothermally altered rhyolite that intrudes Cretaceous or Tertiary basalt and andesite.

U.S. Geological Survey, 1963 (P 475-A), p. A5 -- Thin films of drusy cinnabar with small blebs of stibnite in highly altered rhyolite in a small area about 2 mi. NW of Wolf Creek Mtn.

Berg and Cobb, 1967 (B 1246), p. 195, 198 -- Cinnabar and stibnite in hydrothermally altered rhyolite that intrudes Cretaceous or Tertiary basalt and andesite. Mineralization slight. Only lode mineralization known in Anvik district.

Cobb, 1973 (B 1374), p. 106 -- Reference to B 1246, p. 195, 198.

(Bonanza Cr.) Antimony, Gold, Tungsten

Koyuk district Norton Bay (9.4, 9.7)
MF-381, loc. 2 64°33'N, 160°45'W

Summary: Sulfide-bearing granitic rocks cut Cretaceous sedimentary rocks. Gold discovered in 1899; mining of creek and bench placers continued until 1918 or later. Vein quartz attached to many gold nuggets. Other heavy minerals include magnetite, ilmenite, stibnite, and so much scheelite that production of a few pounds of concentrate was reported in 1918. Dredge reported as on Bonanza Cr. and Ungalik R., 1938-40, was probably mining gravels of Ungalik R. near mouth of Bonanza Cr.

Mendenhall, 1901, p. 213 -- 3 or 4 paying claims worked in 1900 on small tributary of Ungalik R. 5 or 6 mi. from the coast.

Brooks, 1906 (B 284), p. 7 -- Claims have been worked since 1900 [as of 1905]; nuggets worth $5 to $10 have been found; small pumping plant to supply water.

Brooks, 1909 (B 379), p. 58 — Only productive placers of Norton Bay region, 1908. Considerable production for several years.

Brooks, 1910 (B 442), p. 46 — Mining, 1909.

Smith and Eakin, 1910 (B 442), p. 331-333 -- Preliminary to B 449.

Brooks, 1911 (B 480), p. 52 — Gold in placers probably derived from contact zones between Mesozoic sedimentary rocks and intrusive granite.
p. 62 -- Reference to B 449.

Smith and Eakin, 1911 (B 449), p. 105-107 — Gold discovered in 1899. Bedrock is shattered black shale or slate cut by granitic dikes; one, about 10 ft. thick, is iron stained and contains pyrite. Both creek and bench placers; water had to be pumped up to work bench placers. Gold medium coarse; some attached quartz. Concentrates mainly magnetite and ilmenite; very little garnet. Some antimony [sic] float. Mining, 1909.

Brooks, 1916 (B 649), p. 64 -- Float stibnite in creek gravels. Gold placers were mined. Bedrock is Cretaceous (?) slates cut by granitic dikes.

Martin, 1919 (B 692), p. 21 -- Scheelite in concentrates.

Martin, 1920 (B 712), p. 22 -- A few pounds of placer scheelite saved, 1918.
p. 50 -- Gold and a few pounds of scheelite concentrate produced, 1918.

Smith, 1939 (B 910-A), p. 70-71 -- Carries placer gold; bedrock mainly dark slate and sandstone.

Smith, 1939 (B 917-A), p. 75-76 -- Dredge operated on Bonanza Cr. and Ungalik R., 1938.

Smith, 1941 (B 926-A), p. 64, 71 -- Dredge operated, 1939.

Joesting, 1942 (TDM 1), p. 40 -- Reference to B 712, p. 22.

Smith, 1942 (B 933-A), p. 60-61, 68 -- Dredge operated near junction of Bonanza Cr. and Ungalik R., 1940.

Anderson, 1947 (TDM 5-R), p. 13 — Occasional stibnite particles in placer concentrates.
p. 45 -- Scheelite common in placers.

(Bonanza Cr.) - Continued

Cass, 1959 (I-286) -- Has been placer mining.
Cobb, 1973 (B 1374), p. 80 -- Cretaceous sedimentary rocks cut by sulfide-bearing granitic dikes. Creek and bench placers mined despite having to pump water from Ungalik R. Gold of local origin; vein quartz attached to many nuggets. Concentrates also contained magnetite, ilmenite, scheelite, and stibnite. Scheelite so plentiful that a few pounds of concentrate was produced in 1918. Has been dredging near mouth in Ungalik R.

(Christmas Cr.) Gold (?)

Koyuk district Norton Bay
SE 1/4 NW 1/4 or SW 1/4 NE 1/4 quad.

Summary: Placer claims were staked, but there is no record of any work having been done.

Smith and Eakin, 1910 (B 442), p. 334 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 108 -- Several placer claims had been staked, but no work had been done as of 1909.

(Christmas Mtn.) — Antimony, Gold (?)

Koyuk district — Norton Bay (10.8, 9.8) approx. 64°33'N, 160°34'W approx.

Summary: Many lode claims have been staked; a little sulfide mineralization; float stibnite reported.

Smith and Eakin, 1910 (B 442), p. 334 -- Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 108 -- Many lode claims have been staked; a little sulfide mineralization. Float stibnite reported.
Brooks, 1916 (B 649), p. 64 -- Stibnite float. Mountain is dioritic stock intruded into Cretaceous sedimentary rocks.
Anderson, 1947 (TDM 5-R), p. 13 -- Reference to B 449.
Cass, 1959 (I-286) -- Reference to B 449, p. 108.

(Garryowen Cr.) — Gold (?)

Koyuk district — Norton Bay (11.2, 16.5) approx. (?)
64°56'N, 160°30'W approx. (?)

Summary: Colors of gold reported. Location of creek uncertain; probably is not the creek called Garryowen on recent maps of Candle quad.

Smith and Eakin, 1910 (B 442), p. 334 — Preliminary to B 449.
Smith and Eakin, 1911 (B 449), p. 108-109 -- Colors of gold reported; has not been adequate prospecting.

(Ropeful Gulch) — Bismuth, Tungsten

Koyuk district — Norton Bay (9.5, 9.7) approx.
MF-381, loc. 2 — 64°33'N, 160°45'W approx.

Summary: Concentrates contain bismuthinite, scheelite, and wolframite; gold not mentioned.

Anderson, 1947 (TDM 5-R), p. 18 -- Bismuthinite fairly common in sample of placer concentrate.
p. 45 -- Scheelite and wolframite present.
Cobb, 1973 (B 1374), p. 80 -- Bismuthinite, scheelite, and wolframite present.

(June Cr.) Gold (?)

Koyuk district Norton Bay
NW 1/4 NW 1/4 quad. (?)

Summary: Prospecting in 1928. No data on results.

Smith, 1930 (B 813), p. 41 -- Prospector reported finding a little gold, 1928.

Smith, 1932 (B 824), p. 46 -- Prospecting reported in 1928 was apparently fruitless; creek deserted in 1929.

Moon

Antimony

Koyuk district
MF-381, loc. 1

Norton Bay (12.0, 12.5) approx.
64°42'N, 160°24'W approx.

Summary: Stibnite reported to occur in small veinlets and lenses in large quartz veins.

Anderson, 1947 (TDM 5-R), p. 13 -- Stibnite lode found by Moon in about 1911 on ridge between Shaktolik and Ungalik Rivers. Stibnite reported to occur in small veinlets and lenses in large quartz veins. Authenticity of high gold and silver assays is questioned.

Berg and Cobb, 1967 (B 1246), p. 119 -- Same data as in TDM 5-R, p. 13.

(Nulato R.) Gold (?)

Anvik district Norton Bay
SE 1/4 NE 1/4 quad. (?)

Summary: Unconfirmed report of gold on headwaters.

Schrader and Brooks, 1900, p. 28 -- "According to native reports, which are not always trustworthy, gold occurs on the headwaters of the Nulato...."

(Unalakleet R.) Gold (?)

Anvik district Norton Bay
SE 1/4 quad. (?)

Summary: Unconfirmed report of gold discoveries; could refer to part of river in Unalakleet quad.

Schrader and Brooks, 1900, p. 28 -- "Late in the fall of 1898, gold discoveries were reported from this river."
Cobb, 1973 (B 1374), p. 106 -- Reference to Schrader and Brooks, 1900, p. 28.

(Ungalik R.) Gold

Koyuk district
MF-381, loc. 2

Norton Bay (9.4-9.55, 9.7-9.75)
64°33'N, 160°44'-160°45'W

Summary: Placer gold deposits near mouth of Bonanza Cr. in about 1909; low tenor. Dredging began in 1938 and for several years accounted for much of production from district.

Smith and Eakin, 1910 (B 442), p. 333-334 -- Preliminary to B 449.

Smith and Eakin, 1911 (B 449), p. 108 -- Gold has been found near mouth of Bonanza Cr. [1909]. Gold reported to be irregularly distributed and tenor low. Would require equipment that could handle large amounts of gravel at low cost.

Smith, 1939 (B 917-A), p. 68, 75-76 -- 2 dredges (1 new, 1 reconstructed) began operating in 1938.

Smith, 1941 (B 926-A), p. 64, 71-72 -- One dredge operated, the second was being repaired part of the season; 1939.

Smith, 1942 (B 933-A), p. 60-61, 68 -- Dredge operated in valley near junction of Bonanza Cr. and Ungalik R.

Cobb, 1973 (B 1374), p. 80 -- Area underlain by Cretaceous sedimentary rocks cut by sulfide-bearing granitic dikes. Dredges installed near mouth of Bonanza Cr. and a short distance downstream in 1938 accounted for much of the production of the Koyuk district for several years.

Unnamed occurrence	Tin
Koyuk district	Norton Bay (6.5, 15.75) 64°54'N, 161°07'W

Summary: Trace of cassiterite in sample of beach sand.

Berryhill, 1962, p. 5-6, 11 -- Sample 32 was a concentrate of 8 pans of beach sand that contained a trace of cassiterite; could have come from anywhere in Koyuk basin.

Unnamed occurrence	Tungsten
Koyuk district	Norton Bay (4.7, 14.0) 64°48'N, 161°22'W

Summary: Trace of scheelite in sample of sand from a creek.

Berryhill, 1962, p. 6, 11 -- Sample 30 was a concentrate of 15 pans of creek sands taken 600 ft. inland from beach. It contained a trace of scheelite.

(Kluklaklatna R.) Gold

Kaiyuh district Nulato (9.5, 2.6) approx.
MF-423, loc. 2 64°09'N, 157°45'W approx.

Summary: Placer gold prospects reported in 1909 or earlier. Fine colors of gold panned from a tributary near a granitic pluton in 1934. No record of any mining.

Maddren, 1910 (B 410), p. 23 -- Placer gold prospects reported, 1909 or earlier.

Mertie, 1937 (B 868-D), p. 173 -- Fine colors of gold panned by Survey in 1934 at approximate location of MF-423, loc. 2. Granitic rocks crop out nearby. Reference to B 410, p. 23.

Cobb, 1973 (B 1374), p. 153 — Fine colors of gold panned from a tributary near a granitic pluton.

Perseverance — Lead, Silver

Kaiyuh district — Nulato (13.9, 8.95)
MF-423, loc. 1 — 64°39'N, 157°09'W

Summary: Argentiferous galena veins as much as 3 ft. thick are parallel to foliation of schist. Mined 1920-23; production about 225 tons of ore that yielded an average 73% lead and 104 oz. silver per ton. Mining said to have been discontinued because of high shipping costs.

Brooks, 1923 (B 739), p. 39 — Country rock is quartzose, micaceous, and chloritic schists and limestones. Workings (caved in 1921) are said to have shown an irregular ore body up to 2 or 3 ft. thick; broken up by bands and masses of barren or low-grade rock. Silver-bearing galena is only valuable mineral. Mine operated under lease in winter of 1920-21. Ore sledded to Yukon.

Brooks and Capps, 1924 (B 755), p. 16 -- Mining, 1922.
p. 43 — Produced 50 tons of very high-grade ore, 1922.

Mertie, 1936 (B 864-C), p. 227 -- References to and summaries of B 739, p. 39, and B 755, p. 43.

Mertie, 1937 (B 868-D), p. 174-175 -- Reference to B 739, p. 39. During winter of 1920-21 and in 1922 production was about 225 tons of ore, which averaged 73% lead and 104 oz. silver per ton. Mining said to have been discontinued because of high shipping costs.

Cass, 1959 (I-291) — Silver-lead deposit. Country rock is schist. Worked in small way, 1921-23.

Berg and Cobb, 1967 (B 1246), p. 228 -- Argentiferous veins as much as 3 ft. thick strike northeastward parallel to foliation of schist country rock. Shipment of ore reported to have contained 73% Pb and 104 oz. Ag per ton.

(Tlatskokot) Gold

Kaiyuh district Nulato (11.1, 6.55)
MF-323, loc. 3 64°22'N, 157°32'W

Summary: A little placer gold recovered immediately after World War II.

Cass, 1959 (I-291) -- Only placer mining in quadrangle was at abandoned town of Tlatskokot. [Cass's statement that town was on Bonanza Cr. seems to be an error; he shows it on Portage Cr., which newer maps call Camp Cr.]

Cobb, 1973 (B 1374), p. 153 -- Site of only placer mining in district. Small amount of gold recovered immediately after World War II.

Valley	Lead, Silver
Kaiyuh district MF-423, loc. 1	Nulato (13.9, 8.95) 64°30'N, 157°09'W

Summary: Argentiferous galena deposit near and similar to Perseverance mine. Any production was probably included with that from Perseverance. See Perseverance.

Brooks, 1923 (B 739), p. 39 -- For general data see entry under Perseverance. Worked in a small way, winter of 1920-21.

Mertie, 1936 (B 864-C), p. 227 -- Reference to B 739, p. 39.

Mertie, 1937 (B 868-D), p. 175 -- Near and similar to Perseverance lode. Any ore produced was probably included with shipments from Perseverance.

Cass, 1959 (I-291) -- Perseverance and Valley silver-lead deposits were worked in a small way, 1921-23.

Berg and Cobb, 1967 (B 1246), p. 228 -- Near Perseverance and lumped with it in description.

(Anvik R.)

Gold (?), Platinum (?)

Anvik district

Unalakleet
E 1/4 SW 1/4 quad. (?)

Summary: Unconfirmed reports of placer gold and platinum. May be in Holy Cross quad.

Schrader and Brooks, 1900, p. 28 -- Prospectors report finding coarse gold in region about headwaters of Anvik R. Rocks said to be crystalline.

Harrington, 1918 (B 683), p. 62-63 -- Anvik R. and tributaries have been prospected since 1900 or earlier. Gold found on bars, but not in quantities to justify mining. Prospecting, 1916-17. Platinum said to occur with gold and to be mined with it.

Martin, 1919 (B 692), p. 22 -- Unconfirmed report of platinum.
p. 40 -- Strike of platinum and gold reported, 1917.

Cobb, 1973 (B 1374), p. 106 -- References to Schrader and Brooks, 1900, p. 28, and B 683, p. 62-63.

McLeod — Molybdenum

Kaiyuh district — Unalakleet (21.4, 5.25)
MF-427, loc. not numbered — 63°16'N, 159°17'W

Summary: Quartz vein in rhyolite porphyry contains about 4% molybdenite, iron sulfides, and secondary molybdenum and iron minerals. Explored in 1942 by a few pits and trenches. No production reported. Includes reference to McLead.

Mertie, 1937 (B 868-D), p. 174 -- Specimens from low hills on SE side of Yukon R. opposite Thompson were vein quartz containing grains and clumps of molybdenite and pieces of fine-grained rhyolite porphyry containing considerable pyrite.

Smith, 1942 (B 926-C), p. 197-198 -- Reference to and quotation from B 868-D, p. 174.

Joesting, 1943 (TDM 2), p. 18 -- Reference to B 868-D, p. 174. In 1942 McLeod submitted sample from what may be the same deposit; contained about 4% molybdenite. Deposit appears to be a stockwork of molybdenite stringers in quartz.

Wedow and others, 1953 (C 248), p. 2-4 -- Quartz veins containing iron and molybdenum minerals cut rhyolite porphyry. Vein material contains less than 0.001% eU; porphyry contains 0.003% eU. Vein material is quartz, molybdenite, molybdite, pyrite, limonite, and hematite.

West, 1954 (C 328), p. 2 -- Deposit is about 14 mi. E of lower end of largest island in Yukon R. in this vicinity.

p. 9-10 -- Prospect pits and trenches excavated in 1942 had slumped by 1945 so molybdenite-bearing vein was no longer visible in place. Vein appears to strike about N 60° E and to be in rhyolite porphyry. Vein float can be traced for several hundred feet. Vein material mainly quartz with scattered grains and clumps of molybdenite largely altered to ferrimolybdite. Pyrite, pyrrhotite, and magnetite and their alteration products, zircon, and tourmaline also present. No samples of vein material, rhyolite porphyry, or greenstone contained more than 0.003% eU.

Berg and Cobb, 1967 (B 1246), p. 228-229 -- Clumps and veins of molybdenite in NE-striking milky quartz vein in rhyolite porphyry; about 2% Mo.

(Unalakleet R.)

Gold (?)

Anvik district

Unalakleet
NE 1/4 NE 1/4 NW 1/4 and
NW 1/4 NW 1/4 NE 1/4 quad. (?)

Summary: Unconfirmed report of gold; more likely to be in Norton Bay quad.

Schrader and Brooks, 1900, p. 28 -- "Late in the fall of 1898, gold discoveries were reported from this river."
Cobb, 1973 (B 1374), p. 106 -- Reference to above.

Synonyms, Claim Names, Operators, and Owners

Many mines and prospects have undergone changes in both their own names and in the names of their operators and owners. All names that appear in the cited references appear in this summary either in the first section as occurrence names or in this as synonyms. Descriptions of placer deposits commonly give little information on the location of individual mines or claims, so the names of all operators and owners of placer mines and claims are in this section with a notation to refer to the description of the stream that was mined or prospected.

Alaska Dredging Assn. -- see (Candle Cr.)
Arctic Circle Exploration, Inc. -- see (Candle Cr.)
Candle Creek Dredging Co. -- see (Candle Cr.)
Candle Creek Mining Co. -- see (Candle Cr.)
Candle Ditch Co. -- see (Candle Cr.)

Circle -- see (Sweepstakes Cr.)
(Diamond Cr.) -- see (Rube Cr.)
Dime Creek Dredging Co. -- see (Dime Cr.)
Dime Creek Mining Co. -- see (Dime Cr.)
Douglass -- see (Cub Cr.)

Douglass & Edwards -- see (Bear Cr.)
Douglass & Milligrock -- see (Bear Cr.)
Eagle -- see (Sweepstakes Cr.)
Fairbanks -- see (Sweepstakes Cr.)
Fairhaven Gold Dredging Co. -- see (Candle Cr.)

French -- see (Jump Cr.)
Golden Center Mines, Inc. -- see (Candle Cr.)
(Haycock) -- see (Dime Cr.)
Haycock Mining Co. -- see (Dime Cr.)
Hozie, Tendness & Barr -- see (Bear Cr.)

Jack -- see (Quartz Cr., trib. Kiwalik R.)
(John(ny) Bull Hill) -- see (Candle Cr.)
Johnson, A. -- see (Sweepstakes Cr.)
Johnson, I. -- see (Candle Cr.)
Keewalik Mining Co. -- see (Candle Cr.)

(Koobuk Cr.) -- see (Koopuk R.)
(Koo-o-puk Cr.) -- see (Koopuk R.)
(Little Eldorado Cr.) -- see (Eldorado Cr.)
Moon -- see (Sweepstakes Cr.)
Moon & Ryan -- see (Dime Cr.)

New York Alaska Gold Dredging Co. -- see (Candle Cr.)
Porter -- see (Bear Cr.), (Sweepstakes Cr.)
Rampart -- see (Sweepstakes Cr.)
(Sherdon Cr,) -- see (Sheridan Cr.)
Smith -- see (Dime Cr.)

Smith & Shane -- see (Jump Cr.)
Weinard -- see (Mud Cr.)
Winder -- see (Sweepstakes Cr.)
Wright -- see (Bear Cr.)

Hitt -- see (Flat Cr.)
(Stuyahok Cr.) (R.) (Valley) -- see (Flat Cr.)

Moon and partner -- see (Bonanza Cr.)
Nelson -- see (Bonanza Cr.)
Shaw and associates -- see (Ungalik R.)
Shaw & Cook -- see (Ungalik R.)
Ungalik Syndicate -- see (Bonanza Cr.), (Ungalik R.)

(Bishop Cr.) -- see Perseverance, Valley
(Camp Cr.) -- see (Tlatskokot)
(Little Mud R.) -- see (Kluklaklatna R.)

McLead -- see McLeod

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