UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF REFERENCES TO MINERAL OCCURRENCES (OTHER THAN MINERAL FUELS AND CONSTRUCTION MATERIALS) IN THE IDITAROD AND OPHIR QUADRANGLES, ALASKA

By

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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 Iditarod and Ophir 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.

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 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:

Index map

B	U.S. Geological Survey Bulletin
BMB	U.S. Bureau of Mines Bulletin
C	U.S. Geological Survey Circular
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
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 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.

(Beaver Cr.) Gold

Aniak district Iditarod
NW 1/4 SE 1/4 quad.

Summary: Mining in 1911 reported. Location not specified.

Brooks, 1912 (B 520), p. 40 — Mining in 1911 reported. Location on creek not given.

(Black Cr.) (Gulch)

Antimony, Gold, Mercury, Tin, Tungsten

Iditarod district
MF-363, locs. 9, 31

Iditarod (8.65-8.75, 7.75-7.9)
62°26'-62°27'N, 157°56'W

Summary: Bedrock is Cretaceous sedimentary rocks intruded by monzonite pluton. Placer mining carried on 1910-16, 1940; dredge operated in 1916. Concentrates contained much cinnabar, rare scheelite and cassiterite. Placer operations uncovered a quartz vein in a fissure in monzonite; contained stibnite accompanied by a little cinnabar and pyrite. Maloney (1962) reported short adit (inaccessible in 1956) driven on a quartz vein; it probably did not encounter ore.

Maddren, 1911 (B 480), p. 267 — Mining, 1910.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 300, 302-303 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 — Mining, 1913.
Eakin, 1914 (B 578), p. 31-32 — Placers probably not continuous. Bedrock Cretaceous sedimentary rocks and local monzonite intrusives. Placers 12-16 ft. deep.
p. 35 — Mining, 1912.
Brooks, 1915 (B 622), p. 56-57 — Mining, 1914.
Smith and Maddren, 1915 (B 622), p. 286 — Much cinnabar in concentrates. 500-1,000 lbs. in an ordinary string of sluice boxes in 3 or 4 days of shovelling in.
Brooks, 1916 (B 649), p. 48-49 — Vitreous quartz vein 2-12 in. thick was uncovered by placer mining; occupies fissure in monzonite. Stibnite, principal metallic mineral, appears to have been deposited after the quartz; accompanied by a little cinnabar and pyrite. Stibnite in granular aggregates; most abundant in widest parts of vein. Scheelite in placer concentrates, but not seen in vein.
Mertie and Harrington, 1916 (B 642), p. 253 — Mining, 1915.
p. 255 — Mining, 1915, and quotation from B 578.
p. 266 — Mining, 1915.
Smith, 1917 (B 655), p. 145 — Much cinnabar in concentrates; same data as B 622, p. 286.
Smith, 1917 (BMB 142), p. 26 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Dredge installed, 1916.
Brooks, 1918 (B 662), p. 59 — Dredge installed, 1916.
Mertie and Harrington, 1924 (B 754), p. 110-112 — Mining established by 1912; being carried on in 1915; rest of data quoted from B 578.
Mertie, 1936 (B 864-C), p. 198 — Placer gold has been mined.
p. 207 — Dredge operated in 1916.
Joesting, 1942 (TDM 1), p. 26 — Cinnabar abundant; reference to B 655, p. 145.
p. 35 — Rare cassiterite in placers.
Smith, 1942 (B 933-A), p. 43 — Mining, 1940.
White and Killeen, 1953 (C 255), p. 9 — Sample from antimony prospect was essentially negative for radioactivity.
Malone, 1962 (IC 8131), p. 51 — USBM trenching and sampling program in 1956 found no significant cinnabar mineralization in place. Some veins and veinlets showed fair gold values.
p. 56 — Reference to TDM 1.

(Black Cr.) (Gulch) - Continued

Maloney, 1962 (RI 5991), p. 5 -- Lode prospect; short adit driven on quartz vein; inaccessible in 1956; probably no ore was encountered.

p. 8-9 -- Stibnite-bearing veins and stringers uncovered by placer mining. Much cinnabar in placers; some nuggets weighed as much as 10 lbs.

p. 18 -- Placer cinnabar sample contained less than 0.1% Sb.

Malone, 1965 (IC 8252), p. 50 -- Same as IC 8131, p. 51.

p. 54 -- Reference to Martin and Harrington, 1916 (B 642).

Kimball, 1969 (USBM OF 6-69), p. 6 -- Production, 1915-66, lumped with that from Granite and Slate Creeks, Malamute and Glen Gulches; total was 21,011 ounces gold.

(Bonanza Cr.) — Gold (?)

Iditarod district — Iditarod (8.95, 5.85) approx. (?)
62°20'N, 157°55'W approx. (?)

Summary: Good prospects reported, 1911. Location not given; coordinates are for mouth of Prince Cr.

Brooks, 1912 (B 520), p. 40 — Stream to which Chicken Cr. is tributary; good prospects reported, 1911. Location not given.

(Chicken Cr.)

Antimony, Chromite, Gold, Mercury, RE, Silver, Tungsten

Iditarod district
MF-363, locs. 4, 26, 27

Iditarod (8.35-8.5, 5.85-6.35)
62°20'-62°23'N, 157°58'W

Summary: Monzonite stock at head of Chicken, Flat, and Happy Creeks is deeply (as much as 20 ft.) weathered. Stock (Tertiary) intruded Cretaceous sandstone, shale, and argillite; some contact metamorphism. Weathered monzonite constitutes a residual placer, which grades into eluvial placers and then into bench and stream placers. A quartz vein in monzonite contains stibnite and cinnabar; many veinlets contain free gold. Minerals identified in concentrate samples include: cinnabar, scheelite, allanite, magnetite, chromite, gold, ilmenite, and zircon. Assays of gold and concentrate indicated silver to be present (5 gold assays showed 128 part per thousand silver). Mining began in 1911 and continued until at least as recently as 1940.

Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 300, 302-303 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 — Mining, 1913.
Eakin, 1914 (B 578), p. 31, 33 — Residual placers in area of weathered monzonite near head. Depth to solid bedrock as much as 20 ft.
p. 35 — Mining and prospect drilling, 1912.
Brooks, 1915 (B 622), p. 56-57 — Mining, 1914.
Smith, 1915 (B 622), p. 257 — Placer gold has been mined.
Brooks, 1916 (B 642), p. 66 — Mining, 1915.
Brooks, 1916 (B 649), p. 49 — Quartz and cinnabar along walls of vein in monzonite; with intergrowth of stibnite and vitreous quartz in middle.
Mertie and Harrington, 1916 (B 642), p. 253 — Mining, 1915.
p. 257 — Placers at head are residual; developed on monzonite with many quartz veinlets up to 2 in. wide that contain free gold. Monzonite deeply weathered (5-10 ft. or more). Much of gold is very fine.
p. 259 — Near head of creek 2-in. vein has quartz and cinnabar along edges and stibnite in center.
p. 266 — Mining, 1915.
Smith, 1917 (BMB 142), p. 26 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Mining, 1916.
Brooks, 1918 (B 662), p. 59 — Mining, 1916.
Brooks, 1922 (B 722), p. 56 — Mining, 1920.
Brooks, 1923 (B 739), p. 40 — Mining, 1921.
Mertie and Harrington, 1924 (B 754), p. 110-111 — Mining, 1912, 1915.
p. 114-116 — Same as B 642, p. 257, 259.
Brooks, 1925 (B 773), p. 14 — Monzonite at head might constitute a large body of low-grade ore.
p. 19 — Residual and eluvial placers at head of creek.
Smith, 1926 (B 783), p. 14 — Mining, 1924.
Smith, 1929 (B 797), p. 21 — Mining, 1926.
Smith, 1930 (B 813), p. 29 — Mining, 1928.
Smith, 1932 (B 824), p. 34 — Mining, 1929.
Smith, 1933 (B 836), p. 34 — Mining, 1930.

(Chicken Cr.) - Continued

Smith, 1933 (B 844-A), p. 34 — Mining, 1931.
Smith, 1934 (B 857-A), p. 32 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37 — Mining, 1933.
Mertie, 1936 (B 864-C), p. 213-215 — Heads in same monzonite mass as Flat and Happy Creeks. Most of creek has been mined. Highest grade placers in creek bed. Near head of creek the placers are "semiresidual" (eluvial) and unfrozen. Some gold throughout gravels and in decomposed monzonite bedrock. Average of 5 assays is 862 Au, 128 Ag. Depth to bedrock at mouth of creek said to be 90 ft. A mile above mouth bedrock and most of gravel are sandstone and argillite. Bench east of creek was being mined in 1933.
Smith, 1936 (B 868-A), p. 37 — Mining, 1934.
Smith, 1937 (B 880-A), p. 41 — Mining, 1935.
Smith, 1939 (B 910-A), p. 50 — Mining, 1937.
Smith, 1942 (B 933-A), p. 43 — Mining, 1940.
White and Killeen, 1953 (C 255), p. 1 — An old concentrate sample contained 0.03 or more percent eU.

p. 9 — Has been extensively mined; monzonite at head disintegrated and mined as placer material. Any radioactivity due to zircon.

Cady and others, 1955 (P 268), p. 107 — Mercury-antimony veins intersect monzonite stock, which probably was intruded in Oligocene or Miocene; mercury deposits probably are Miocene or younger.
Malone, 1962 (IC 8131), p. 51 — Reference to Mertie and Harrington, 1916 (B 642 USBM took soil samples in 1956.
Maloney, 1962 (RI 5991), p. 8 — Placer cinnabar in upper Chicken Cr.

p. 16-17 — Results of soil sampling for mercury were negative. A placer-concentrate sample contained 53.3% Hg, less than 0.05% Sb, and 0.06 oz. Au and 0.52 oz. Ag per ton.

p. 21 — Composite of concentrate samples contained cinnabar, scheelite allanite, magnetite, chromite, trace of gold, ilmenite, zircon, other minerals, and rock fragments; 0.01% eU.

Malone, 1965 (IC 8252), p. 50 — Same as IC 8131, p. 51.

p. 55 — Reference to RI 4065.

Kimball, 1969 (USBM OF 6-69), p. 6 — Production, 1915-66, lumped with that from Prince, Happy, and Willow Creeks; total was 106,486 oz. gold.

p. 8-9 — Residual or semiresidual placers at head of creek have been worked. Decomposed monzonite bedrock was auger sampled, showing that some of the gold is erratically distributed in quartz veinlets.

Cobb, 1973 (B 1374), p. 147-148 — Weathered monzonite at head rich enough to mine as a residual placer. Chromite and scheelite reported.

DeCourcy

Antimony, Mercury

Iditarod district
MF-363, loc. 1

Iditarod (4.4, 1.1)
62°04'N, 158°28'W

Summary: Sill-like bodies of Tertiary basalt or diabase intruded Cretaceous graywacke and shale. Intrusives and wall rocks extensively but not completely altered to silicified fine-grained silica-carbonate rock that contains ore bodies of cinnabar and minor stibnite(cervantite and arsenopyrite also reported) in a gangue of silica, carbonate, and clay minerals in small irregular lenses, veins, and stockworks localized in breccia, along contacts between igneous and sedimentary rocks, and also bedding surfaces. Deposit discovered, 1910-11; staked, 1919; mined intermittently, 1920-50; DMEA drilling program, 1953-54. About 1,375 ft. of adits and minor drifts, crosscuts, and stopes; surface pits and trenches. Total production about 1,200 flasks of mercury. Probable ore encountered in DMEA drill holes not further explored. Tributary of Return Cr. contains an unevaluated amount of placer cinnabar. Includes references to: (DeCoursey Mtn.), (Montana Cr.), (Return Cr.), Thrift.

Brooks, 1922 (B 722), p. 24 -- Cinnabar-bearing lode discovered, 1919, and development begun, 1920. Sinking of 50-ft. shaft reported.

p. 57 -- Reference to p. 24 [above].

Brooks, 1923 (B 739), p. 13 -- Only quicksilver production in Alaska, 1921. Company reports that vein is 3 ft. 8 in. wide and that there are others on property.

p. 40 -- Reference to p. 13 [above].

Brooks, 1925 (B 773), p. 31, 47 -- Some work was done and some quicksilver was produced, 1923.

Smith, 1926 (B 783), p. 25-26 -- Small production. Developments are proceeding satisfactorily, 1924.

Martin, 1936 (B 864-C), p. 243 -- Discovered, 1919; opened 1920. In 1925 was largest producer of quicksilver in region, but in later years work was discontinued. Other data same as B 739, p. 13.

Joesting, 1942 (TDM 1), p. 24-26 -- 157 flasks of mercury produced before 1927; from open cuts. Cinnabar associated with light-colored porphyry dikes; in stringers in dikes, in adjacent sedimentary rocks, and along contacts. Also a reference to B 864-C, p. 243.

Smith, 1942 (B 933-A), p. 91 -- Work by prospectors, 1940.

Joesting, 1943 (TDM 2), p. 17 -- Exploration in 1942 opened bodies of minable cinnabar; some mercury was also produced.

Bain, 1946 (IC 7379), p. 63-64 -- Ore in joints, fault zones, and breccias associated with altered andesitic and more basic Tertiary (?) rocks; rest of rocks in area are sandstone, shale, and graywacke. 3 zones of mineralization. 700 flasks of mercury produced; financed by RFC loan.

Webber and others, 1947 (RI 4065), p. 3 -- USBM trenching and sampling program, June-October, 1943.

p. 9 -- A block of high-grade ore was mined in 1943.

p. 29-43 -- Prospect located before 1920. Mining resulted in small production in 1921, 1924-26. In 1942 80 flasks of mercury was produced from surface float. Country rock is sandstone, shale, and graywacke intruded by diabase dikes and sills; silicification near cinnabar lenses and veins. Stripping and trenching uncovered ore in a horizontal range of 1,800 ft. and

a vertical range of 345 ft. Ore bodies in or near hydrothermally altered diabase porphyry sills; generally parallel strike of bedding; may be cross cutting or concordant along dip. Post-ore faulting minor. Ore bodies pinch and swell from a few inches to over a foot; both open-space filling and replacement. Transverse faults may have localized some ore. Metallic minerals in ore include cinnabar, stibnite, cervantite, and arsenopyrite. Details of USBM and owners exploration and sampling programs, data on retorting, and cost information follow. About 720 flasks of mercury was produced, 1943-44, and soot was stockpiled.

Cady and others, 1955 (P 268), p. 108 — Ore bodies do not persist far below the surface and have yielded less ore than expected.

p. 111-113 — Production through 1949 was about 1,200 flasks of mercury. Bedrock is graywacke and shale of the Cretaceous Kuskokwim Group intruded by sill-like bodies of diabase and basalt. Both igneous and sedimentary rocks have been extensively altered to silica-carbonate rock; ore bodies are restricted to this rock and its immediate vicinity. Apparent offsets of veins are probably due to pre-ore faulting; very little post-ore faulting. Very little stibnite with the cinnabar. Cinnabar bodies are known over a surface area 2,600 ft. long, as much as 2,000 ft. wide, and a vertical range of 420 ft. There is much placer cinnabar in a tributary of Return Cr.

Pennington, 1959 (IC 7941), p. 12 — Ore in breccia zones in silicified and carbonatized basalt and adjacent silicified graywacke; contains cinnabar and a little stibnite. Inferred reserves of several thousand flasks.

p. 52 — Produced during part of World War II.

Jasper, 1961, p. 65 — Has been production.

Malone, 1962 (IC 8131), p. 2-3 — Was production during and after World War II. Mine is in Yukon R. drainage basin.

p. 8 — Mine closed in 1949 and reopened in 1954 with DMEA loan.

p. 11 — General resource data; [DeCourcy is not treated separately].

p. 46-50 — First staked in 1919. Small production, 1921-26; some prospecting, 1927-1940; total production to 1941 was 100-300 flasks of mercury. Mining, 1942-49; production about 1,200 flasks. Further exploration under DMEA loan began in 1951 or a little later. Bedrock is Cretaceous graywacke and shale intruded by sill-like bodies of basalt and diabase; both extensively altered to silica-carbonate rock. Cinnabar mineralization in breccia zones in and adjacent to silica-carbonate rock. Minerals with cinnabar include cervantite, arsenopyrite, chalcedony, kaolin, and a very little stibnite. Data on individual workings essentially as in RI 4065 [no citation]. DMEA drilling, 1953-54, totalled 2,614 ft., but was not followed with exploratory workings.

Malone, 1965 (IC 8252), p. 31-33, 47-49 — Same [almost word for word] as IC 8131.

p. 54 — References to IC 8131 and RI 4065.

Sainsbury and MacKevett, 1965 (B 1187), p. 2-3 — Has produced mercury. DMEA exploration found ore that was not fully explored.

p. 43-46 — Discovered, 1910-11; staked, 1919; operated intermittently, 1920- about 1950. Production about 1,200 flasks of mercury. DMEA exploration was restricted to drilling. Underground workings were about 1,375 ft. of adits and minor drifts, crosscuts and stopes. Also several surface cuts, pits, and trenches. Bedrock is interbedded graywacke and shale of Kuskokwim Gp. cut by numerous sill-like diabase and basalt bodies. Intrusive and

sedimentary rocks extensively but not completely altered to silicified fine grained masses (silica-carbonate rock) that contain ore bodies of cinnabar and minor stibnite in gangue of silica, carbonate, and clay minerals in small irregular lenses, veins, and veinlets localized in breccia zones, along intrusive-sedimentary rock contacts, and along bedding surfaces. Ore zones strike parallel to bedding and dip across or nearly parallel to bedding. Veins pinch and swell (a few inches to several feet) and are discontinuous. Drilling disclosed potentially minable ore. Placer cinnabar in tributary of Return Cr. has not been evaluated.

Berg and Cobb, 1967 (B 1246), p. 226 -- Produced more than 1,200 flasks of mercury. In or near sill-like masses of altered basalt or diabase that intruded graywacke and shale; ore consists of lenses, veins, and stockworks of cinnabar and minor stibnite in gangue of silica, carbonate, and clay minerals. Ore bodies distributed throughout a block at least 2,000 ft. long, 250 ft. wide, and 300 ft. deep.

Cobb, 1973 (B 1374), p. 146 -- Major Alaskan mercury mine outside of Kuskokwim River region; production more than 1,200 flasks.

(Donlin Cr.) Antimony, Gold, Mercury, Tin, Tungsten

Aniak district
MF-363, locs. 2, 3, 16-22

Iditarod (6.15-8.15, 0.0-2.9)
62°00'-62°10'N, 158°00'-158°15'W

Summary: Cretaceous graywacke and shale intruded by small silicified porphyritic albite rhyolite intrusives. Float specimens of brecciated rhyolite contain stibnite. Specimens from a quartz(?) lode are reported to have contained about half an ounce of gold per ton and a small amount of silver. Placer deposits are on benches about a mile wide east and southeast of Donlin and Crooked Creeks; richest placer are where Snow and other left-limit gulches have cut into benches an further concentrated the gold. Gold derived from small fracture fillings at or near contacts between sedimentary rocks and intrusives. Other minerals in concentrates include: magnetite, garnet, scheelite, cassiterite, pyrite, cinnabar, and stibnite. Mining from 1910 to as recently as 1956. Includes references to: (Crooked Cr.), (Lewis Gulch), (Quartz Gulch), (Queen Gulch), (Ruby Cr.), (Snow Gulch); see also (Crooked Cr.) Sleetmute quadrangle.

Maddren, 1911 (B 480), p. 267, 270 — Good prospects found, 1910.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Maddren, 1915 (B 622), p. 304 — Small amount of placer gold has been mined on Crooked Cr.
p. 351-353 — Bedrock is a thick series of interbedded sandstones and shales cut by considerable bodies of siliceous intrusive rock. Placer gold discovered in 190?; found in paying amounts on Snow Gulch in 1910; small stampede followed. As of 1914 productive mining had been on Quartz, Ruby, and Snow Gulches; total production worth about $44,300. Gold in bench gravels east of main stream that had been intrenched 15-30 ft. by tributary gulches, causing reconcentration from bench gravels. Gold may have been derived from contact zones around intrusives.
Smith, 1915 (B 622), p. 257 — Placer gold has been mined.
p. 261 — Reference to B 622, p. 351-353.
Brooks, 1922 (B 722), p. 60 — Production reported, 1920.
Smith, 1926 (B 783), p. 15 — Mining, 1924.
Smith, 1929 (B 797), p. 24 — Mining, 1926.
Smith, 1930 (B 810), p. 31-32 — Mining, 1927.
Smith, 1930 (B 813), p. 37 — Small hydraulic plant on bench gravel, 1928.
Smith, 1932 (B 824), p. 42 — Mining, 1929. Good returns from small hydraulic plant.
Smith, 1933 (B 836), p. 43 — Small-scale profitable mining, 1930.
Smith, 1933 (B 844-A), p. 43 — Mining, 1931.
Smith, 1934 (B 857-A), p. 41 — Mining, 1932.
Smith, 1934 (B 864-A), p. 45 — Mining, 1933.
Mertie, 1936 (B 864-C), p. 224 — Mining, 1933.
Smith, 1936 (B 868-A), p. 46 — Mining, 1934.
Smith, 1937 (B 880-A), p. 49 — Mining, 1935.
Smith, 1938 (B 897-A), p. 58 — Mining, 1936.
Smith, 1939 (B 910-A), p. 60 — Mining, 1937
Smith, 1939 (B 917-A), p. 59 — Mining, 1938.
Smith, 1941 (B 926-A), p. 56 — Mining, 1939.
Smith, 1942 (B 933-A), p. 52 — Mining on Crooked Cr. and tributaries, 1940.

(Donlin Cr.) - Continued

Cady and others, 1955 (P 268), p. 68-69 — Principal igneous rock in area is silicified rhyolite exposed in 6 areas SE of Donlin Cr.; contacts covered by thick residual deposits. May have been a common hydrothermal origin for alteration products in rhyolite and lode sources of placer gold.

p. 116 — Source lodes appear to be chiefly quartz fracture fillings in breccia zones at or near contacts of altered rhyolite and rocks of Kuskokwim Gp. (Cretaceous).

p. 118 — Placers extend upstream from Omega Gulch nearly to head of Donlin Cr.; include most of side gulches that enter from E and SE. Placers are on benches about a mile wide E and SE of creek. Richest deposits are where bench gold has been concentrated by gulches cutting through the benches; Lewis, Quartz, Queen, Ruby, and Snow Gulches have been mined. Total production worth at least $125,000. Bedrock is interbedded graywacke and shale intruded by albite rhyolite domes that trend NW between gulches. Float on hill between Queen and Snow Gulches contains stibnite and quartz near contact of rhyolite and sedimentary rocks; quartz and blades of stibnite fill openings in brecciated rhyolite. Gold lode on hill between Dome Cr. and Quartz Gulch reported to have assayed about $10 a ton in gold and a small amount of silver. Placer concentrates contain magnetite, scheelite, cassiterite, garnet, cinnabar, stibnite, pyrite, and gold. All gold coarse. Nuggets containing both gold and cinnabar have been found.

Berg and Cobb, 1967 (B 1245), p. 94 — Float specimens of brecciated rhyolite containing stibnite near apparent contact between albite-rhyolite intrusive and interbedded graywacke and shale. Specimens of auriferous quartz(?) said to have contained about $10 per ton in gold and a small amount of silver. Such lodes are the probable source of gold in placers.

Koschmann and Bergendahl, 1968 (P 610), p. 15 — Mining begun about 1910. Low gold content required that large volumes of gravel be handled; successful hydraulicking. Cretaceous graywacke and shale intruded by albite rhyolite bodies. Quartz veins near contacts probable source of gold. Placers are stream, bench, old channel.

Hawley and others, 1969 (C 615), p. 16 — Cinnabar associated with gold deposits.

Cobb, 1973 (B 1374), p. 43 — Benches about a mile wide E and SE of main stream were mined from about 1910 to as recently as 1956. Gold derived from small quartz fracture fillings in Cretaceous graywacke and shale near small silicified porphyritic albite rhyolite intrusives. Richest placers on left-limit gulches where gold from benches was further concentrated. Concentrates contained gold, magnetite, garnet, scheelite, cassiterite, pyrite, cinnabar, and stibnite.

(Flat Cr.)

Antimony, Gold, Mercury, Silver, Tungsten

Iditarod district
MF-363, locs. 6, 30

Iditarod (8.05-8.25, 7.0-7.95)
62°24'-62°27'N, 157°59'-158°01'W

Summary: Monzonite stock at head of Chicken, Flat, and Happy Creeks is deeply (10 ft. or more) weathered. Stock (Tertiary) intruded Cretaceous sandstone, shale, and argillite; some contact metamorphism. Weathered monzonite constitutes a residual placer, which grades into an eluvial placer and then into bench and stream placers. Quartz veins in decomposed monzonite contain free gold and sulfide minerals; some has been dug out and shipped to smelter. Minerals identified in concentrate include: gold, cinnabar, stibnite, scheelite. Silver alloyed with gold; fineness of gold decreases downstream. Mining began in 1910, dredging began in 1912; dredge and 2 hydraulic plants operating as recently as 1956. Most of creek was worked more than once. Includes reference to Sakow & Co.

Maddren, 1911 (B 480), p. 255-258 — Lower 4 mi. of valley has gradient of about 100 ft./mi.; headwater mile falls about 1,000 ft. Granitic intrusive at head of valley; rest of valley cut in sandstone and shale; much contact alteration. Quartz veins in intrusive and contact zone. Gold, mainly in thin gravels, decomposed granite, and bedrock crevices, is rough and much still has attached quartz. Best pay is 3-4 mi. above mouth.

p. 262 — Some prospecting with a drill; some by ground sluicing out a cut.

p. 267 — Production in 1910 worth about $300,000.

Brooks, 1912 (B 520), p. 40 — Major producer in area in 1911. Mining also on divide between Flat Cr. and Happy Gulch.

Eakin, 1913 (B 542), p. 299, 302-303 — Preliminary to B 578.

Brooks, 1914 (B 592), p. 69 — 2 dredges operating, 1913; one had begun in 1912.

Eakin, 1914 (B 578), p. 31-35 — Rises in area of weathered monzonite and flows over Cretaceous sandstone and shale to Otter Cr. Stream is .5 mi. long with placer deposits 12-16 ft. deep for practically all of length. Dredge installed in 1912; 13 claims also being mined by other methods.

Brooks, 1915 (B 622), p. 56-57 — Dredge and other mining, 1914.

Smith, 1915 (B 622), p. 257 — Placer gold has been mined.

p. 260 — Dredge has been installed.

p. 267 — Stibnite in concentrates near head.

Brooks, 1916 (B 642), p. 23-24 — Dredge operated, 1915. Much of ground had to be thawed. For years 1912-1915 dredge handled 2,264,782 yd^3 gravel and recovered $2,817,089 worth of gold.

p. 66 — Mining, including a dredge, 1915. At head of creek quartz veins in monzonite carry considerable gold; some was mined and shipped in 1915.

Martin and Harrington, 1916 (B 642), p. 253 — Mining, 1915.

p. 255-258 — Mining, including a dredge, 1915. Bedrock near head is monzonite; sandstone and shale (more indurated than other Cretaceous rocks nearby) rest of the way down to Otter Cr. Dikes cut sedimentary rocks. Bedrock bench near head separated from creek gravels by bedrock reef; deposits merge downstream. Gold from benches is coarser and higher grade than that from creek gravel. Gold derived from monzonite body at head. Placers near head are residual on sheared, mineralized, deeply weathered

monzonite with many quartz veinlets (up to 2 in. thick) with free gold. Placer gold very fine; 10% recovered by amalgamation. Mining difficult because of lack of water. Gold-bearing quartz mined and more than 500 lbs. sent to smelter. Arsenopyrite and cinnabar in placer concentrates.

p. 266 — Mining, 1915.

Smith, 1917 (B 655), p. 152 — Stibnite in placers probably derived from same source as the gold.

Smith, 1917 (BMB 142), p. 26 — Mining, including a dredge, 1915.

Smith, 1917 (BMB 153), p. 54 — Dredge operated, 1916. Also mining at head.

Brooks, 1918 (B 662), p. 59 — Mining, including a dredge, 1916.

Martin, 1920 (B 712), p. 48 — Claim at head yielded $84,000, 1918.

Brooks, 1922 (B 722), p. 56 — Mining (no dredging), 1920.

Brooks, 1923 (B 739), p. 40 — Mining, 1921.

Brooks and Capps, 1924 (B 755), p. 44 — Mining, 1922.

Mertie and Harrington, 1924 (B 754), p. 110-116 — Mining, 1910; dredge, 1912; mining, 1915.. Rest of data same as B 642, p. 255-258.

Brooks, 1925 (B 773), p. 14 — Monzonite at head might constitute a large body of low-grade ore.

p. 19 — Residual and eluvial placers at head of creek.

Smith, 1926 (B 783), p. 14 — Mining, 1924.

Smith, 1929 (B 797), p. 21 — Mining, 1926

Smith, 1930 (B 813), p. 29 — Mining, 1928.

Smith, 1932 (B 824), p. 34 — Mining, 1929.

Smith, 1933 (B 836), p. 34 — Mining, 1930.

Smith, 1933 (B 844-A), p. 34 — Mining, 1931.

Smith, 1934 (B 857-A), p. 33, 51 — Mining, including a dredge, 1932.

Smith, 1934 (B 864-A), p. 36-37, 56 — Mining, including a dredge, 1933.

Mertie, 1936 (B 864-C), p. 198-208 — Heads in Tertiary monzonite mass that intruded Upper Cretaceous sandstone, argillite, and shale; some contact metamorphism; some of shale now slaty. Monzonite deeply (10 ft. or more) weathered. Many quartz veins with free gold and metallic sulfides; gold also may have been deposited in iron-stained fractures and joint planes with little or no quartz. Residual and eluvial placers grade downstream into normal stream placers in Flat and other creeks draining from monzonite area. Buried bedrock channels in bench on east side of upper Flat Cr. Upper part of valley is steep amphitheater; lower part broad and gentle. Stream placers are on and in the upper part of the sandstone, slate, and blocky argillite bedrock. Cinnabar present, but not abundant. Fineness of gold decreases downstream (normally it increases by loss of silver), which Mertie interprets as indicating that gold from diverse sources was mixed and that modern stream placers were formed by reworking old placers. Details of equipment and mining methods used in 1933.

p. 243 — Placer operations at head of creek exposed many small quartz stringers carrying free gold, cinnabar, and arsenopyrite; some so decomposed that they can be gouged out and sluiced.

Smith, 1936 (B 868-A), p. 37-38, 59 — Mining, including a dredge, 1934.

Smith, 1937 (B 880-A), p. 41, 61 — Mining, including a dredge, 1935.

Smith, 1938 (B 897-A), p. 48-49, 71 — Mining, including a dredge, 1936.

Smith, 1939 (B 910-A), p. 50 — Mining (no dredge), 1937.

Smith, 1941 (B 926-A), p. 45 — Mining, 1939.

Joesting, 1942 (TDM 1), p. 26 — Placer cinnabar is common.. Lode at head of creek [reference to B 754, p. 116, which is to lode at head of Chicken Cr.].

(Flat Cr.) - Continued

Smith, 1942 (B 933-A), p. 43 — Mining, 1940 [Table on p. 67 shows a dredge on both Flat and Otter Creeks; text on p. 42 states dredging was all on Otter Cr.].

Wedow and Killeen, 1953 (C 255), p. 1 — Two old concentrate samples contained 0.03 or more percent eU.

p. 9 — Essentially no radioactivity in samples from gold-quartz stringers in monzonite near head. Creek has been extensively placer mined; any radioactivity probably due to zircon.

Malone, 1962 (IC 8131), p. 51 — Reference to Mertie and Harrington, 1916 (B 642)

p. 56 — Reference to TDM 1.

Maloney, 1962 (RI 5991), p. 5 — Dredge and 2 hydraulic plants operated, 1956.

p. 8 — Quartz monzonite at head is source of gold, stibnite, cinnabar, and scheelite in placers.

p. 17 — Sample of float on tailings on lower Flat Cr. contained pieces of cinnabar. Assay showed 31.2% Hg, less than 0.05% Sb, 0.36% Wo_3, and 0.41 oz. Au and 0.15 oz. Ag per ton.

Malone, 1965 (IC 8252), p. 50 — Same as IC 8131.

p. 55 — Reference to RI 4065.

Koschmann and Bergendahl, 1968 (P 610), p. 28 — Productive gravel; also general data from old reports.

Kimball, 1969 (USBM OF 6-69), p. 5-6 — Dredge installed, 1912. Production, 1915-66, was 240,572 oz. gold.

p. 8-9 — Residual or semiresidual placers near head have been worked. Decomposed monzonite bedrock was auger sampled, showing that some of the gold is erratically distributed in quartz veinlets.

Cobb, 1973 (B 1374), p. 146-148 — First dredge in district, 1912. Weathered deposits on monzonite stock at head of creek rich enough to have been mined as residual placers. Residual placers grade downstream into deposits of modern creeks. One of the two most productive creeks in the area; dredged through most of minable length, even though some stretches had been mined by other methods.

(Fourth of July Cr.) Gold

McGrath district
MF-363, loc. 38

Iditarod (15.4, 11.4) approx.
62°39'N, 157°05'W approx.

Summary: Creek rises near a small pluton that intruded Cretaceous rocks. Has been a little mining and prospecting, but no lasting operation was established.

Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Smith, 1939 (B 910-A), p. 59 — Prospect drilling, 1937.
Cobb, 1973 (B 1374), p. 52 — Has been a little mining and prospecting. Rises near a small pluton intruding Cretaceous rocks.

(Ganes Cr.) Gold

Innoko district
MF-363, loc. 39

Iditarod (19.6-20.0, 16.9-17.6)
62°57'-63°00'N, 156°30'-156°33'W

Summary: Regional bedrock is mainly Cretaceous slate with many felsic dikes. Ganes Cr. beheaded upper part of Beaver Cr.; all gold below point of capture. Benches 60-100 ft. above creek level and modern valley gravels were mined from 1907 to as recently as 1964; one or two dredges annually from 1923 on. No data on composition of concentrates. See also (Ganes Cr.) Ophir quad.

Brooks, 1908 (B 345), p. 47-48 -- Gold discovery during winter of 1906-07 reported; on a bench 8-10 ft. above water level. $10,000-$20,000 in coarse gold mined.

Maddren, 1909 (B 379), p. 238-239, 258-263, 265-266 -- Preliminary to B 410.

Brooks, 1910 (B 442), p. 45 -- Major gold producer of region, 1909.

Maddren, 1910 (B 410), p. 21-23 -- Gold discovered in summer of 1906, followed by a stampede in 1907.

p. 64 -- Placer gold probably derived from quartz veins associated with siliceous dikes that cut slates.

p. 67-72 -- Creek 20 mi. long; upper part is beheaded upper part of Beaver Cr. and carries no gold. Both creek and bench deposits; most production as of 1908 was from bench remnants about 60 ft. above creek level. Bedrock is mainly slate. Stream gravel contains many igneous boulders and cobbles. Gold coarse (one 16-oz. nugget), some with attached quartz.

p. 74 -- Gold coarse.

Maddren, 1911 (B 480), p. 236 -- Gold discovered, 1906.

p. 246-247 -- Mining all on benches, 1910. Scarcity of water. Total production through 1910 was worth about $150,000. Gold in gravel and splintered top few feet of bedrock.

Brooks, 1912 (B 520), p. 40 -- Mining, 1911.

Eakin, 1913 (B 542), p. 296-299 -- Preliminary to B 578.

Brooks, 1914 (B 592), p. 70 -- Mining, 1913. Potential dredging ground prospected.

Eakin, 1914 (B 578), p. 35 -- Workable gold placers.

p. 37-38 -- Gold concentrated in a paystreak in an old valley at the level of the preserved benches; reconcentrated when stream cut down to present position. Stream gravels not frozen; not minable in 1912, but might be suitable for dredging. Benches nearly mined out.

p. 40 -- Most of available bench ground worked out by end of 1912 season.

Brooks, 1915 (B 622), p. 62 -- Mining, 1914.

Brooks, 1916 (B 642), p. 65 -- Mining and prospect drilling, 1915.

Mertie and Harrington, 1916 (B 642), p. 249-251 -- Quotation from B 578.

p. 265 -- Mining, 1915.

Smith, 1917 (BMB 142), p. 25 -- Mining, 1915.

Smith, 1917 (BMB 153), p. 54 -- Mining, 1916.

Brooks, 1918 (B 662), p. 58 -- Mining, 1916.

Martin, 1919 (B 692), p. 38 -- Mining, 1917.

Brooks and Martin, 1921 (B 714), p. 92 -- Mining, 1919.

Brooks, 1922 (B 722), p. 55 -- Mining, 1920.

Brooks, 1923 (B 739), p. 39 -- Mining, 1921.

(Ganes Cr.) - Continued

Brooks and Capps, 1924 (B 755), p. 43-44 -- Mining, 1922. Dredge freighted in, but not installed.
Mertie and Harrington, 1924 (B 754), p. 105-106 -- Quotation from B 578.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
Smith, 1926 (B 783), p. 14, 18 -- 2 dredges operated, 1924.
Moffit, 1927 (B 792), p. 25 -- Dredge operated, 1925.
Smith, 1929 (B 797), p. 20, 30 -- Mining, including 2 dredges, 1926.
Smith, 1930 (B 810), p. 26, 40 -- Dredge operated, 1927.
Smith, 1930 (B 813), p. 30-31, 47 -- Mining, including a dredge, 1928.
Smith, 1932 (B 824), p. 35, 52 -- Mining, including 2 dredges, 1929.
Smith, 1933 (B 836), p. 35, 54 -- Dredge operated, 1930; short season.
Smith, 1933 (B 844-A), p. 35, 54 -- Dredge operated, 1931.
Smith, 1934 (B 864-A), p. 37, 57 -- Dredge operated, 1933.
Mertie, 1936 (B 864-C), p. 174-175 -- Gold discovered, 1906. Country rock is Cretaceous slate and other rocks cut by many dikes of andesite, dacite, and related rocks. Dikes highly weathered. Very little quartz in stream gravels. Maddren had considered that dikes were channels for mineralizing solutions; Mertie thinks mineralization was more diffuse and possibly unrelated to dikes.

p. 184-188 -- One of the major producing streams in district. Upper part of drainage pirated from Beaver Cr. All of gold placers below point of capture. Auriferous gravel preserved on benches 60-100 ft. above stream level. Gold in stream placers derived from local bedrock and reconcentrated from bench deposits. Gold on or in upper foot or so of slate bedrock. In 1933 a dredge and several smaller mining operations were active. One assay showed fineness of 888-1/4 Au, 107 Ag.

Smith, 1936 (B 868-A), p. 38, 59 -- 2 dredges operated, 1934.
Smith, 1937 (B 880-A), p. 41-42, 62 -- Mining, including 2 dredges, 1935.
Smith, 1938 (B 897-A), p. 50, 71 -- Mining, including 2 dredges, 1936.
Smith, 1939 (B 910-A), p. 51, 76 -- 2 dredges operated, 1937.
Smith, 1939 (B 917-A), p. 49, 75 -- 2 dredges operated, 1938.
Smith, 1941 (B 926-A), p. 45, 71 -- 2 dredges operated, 1939.
Smith, 1942 (B 933-A), p. 41, 68 -- Mining, including 2 dredges, 1940.
Koschmann and Bergendahl, 1968 (P 610), p. 28 -- Gold discovered, 1906. Production in area through 1957. References to B 480, B 754.
Cobb, 1973 (B 1374), p. 149 -- Rich placers discovered in 1906. Source area underlain by Cretaceous slate cut by many dacitic dikes.

p. 151 -- Early mining by drifting. Dredges followed and were active until as recently as 1965.

Garnet

Gold

Iditarod district
MF-363, loc. 11 (?)

Iditarod (8.75, 7.85) approx. (?)
62°27'N, 157°55' approx. (?)

Summary: Gold-bearing quartz vein. This may refer to the Golden Horn property coordinates for which are given above. Probably it does not refer to the Garnet shaft of the Nixon Fork mine (Medfra quad.); that mine is referred to elsewhere in this report.

Smith, 1932 (B 824), p. 23 — "A little prospecting was done on the Garnet claims, near Flat, in the Iditarod region, and a narrow stringer of gold-bearing quartz was found," 1929.

(George Cr.)

Gold (?)

Aniak district

Iditarod
SE 1/4 quad. (?)

Summary: Mining in 1920 was reported from both George Cr. and George R. George Cr. not identified; may mean Julian Cr.

Brooks, 1922 (B 722), p. 60 -- Mining reported, 1920.

(Glacier Gulch) | Gold

Innoko district | Iditarod (19.75, 17.05)
MF-363, loc. 41 | 62°57'N, 156°32'W

Summary: Small tributary of Ganes Cr. from which a little gold was mined near mouth.

Maddren, 1909 (B 379), p. 261 -- Preliminary to B 410.
Maddren, 1910 (B 410), p. 70 -- Small tributary of Ganes Cr. At mouth a little gold was recovered from washed gravel about 4 ft. deep. Two claims upstream a cut 20 ft. deep did not reach bedrock.

(Glen Gulch) (Cr.) — Antimony, Gold, Mercury, Tungsten

Iditarod district — Iditarod (8.75, 7.9)
MF-363, locs. 11, 31 — 62°27'N, 157°56'W

Summary: Bedrock is monzonite in which are quartz veins and veinlets, some with fair gold values; at least one of which contains some cinnabar and stibnite and another scheelite and arsenopyrite. Placer gold is on bedrock or in top few feet of blocky monzonite. Concentrates also contain cinnabar (some nuggets up to 10 lbs.) and scheelite. See also Golden Horn; many references to lode occurrences at or near Glen Gulch are ambiguous.

Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 300, 302-303 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 — Mining, 1913.
Eakin, 1914 (B 578), p. 31-32 — Placer deposits on one claim underlain by weathered monzonite.
p. 35 — Mining, 1912.
Brooks, 1915 (B 622), p. 56 — Mining, 1914.
Smith and Maddren, 1915 (B 622), p. 287 — In lower part of gulch cinnabar is a minor constituent of stibnite-bearing quartz veins in joints in granitic rock and, to a lesser extent, altered sedimentary rocks at or near contacts with granitic rocks.
Brooks, 1916 (B 649), p. 48-49 — Quartz vein uncovered during placer mining is 2-12 in. thick, filled a fissure in monzonite. Contains granular aggregates of stibnite with a little cinnabar and pyrite. Stibnite in irregular kidneys and most abundant in widest parts of vein. Scheelite in placer concentrates, but not seen in vein.
Mertie and Harrington, 1916 (B 642), p. 253 — Mining, 1915.
p. 255 — Mining, 1915. Bedrock monzonite; gold in base of gravel and in disintegrated bedrock.
p. 266 — Mining, 1915.
Smith, 1917 (B 655), p. 145 — Cinnabar with quartz in small veins and with stibnite.
Smith, 1917 (BMB 142), p. 26 — Mining, 1915.
Mertie and Harrington, 1924 (B 754), p. 110-112 — Mining, 1912, 1915. Other data the same as B 642, p. 255.
Mertie, 1936 (B 864-C), p. 218-219 — Bedrock monzonite; gold on bedrock or in top 2-3 ft. where monzonite is blocky. Claim at mouth mined, 1933.
Joesting, 1942 (TDM 1), p. 26 — Placer cinnabar common (reference to B 655, p. 145). [Reference actually is to quartz-stibnite-cinnabar veins.]
White and Killeen, 1953 (C 255), p. 9 — Essentially no radioactivity of cinnabar-bearing quartz vein.
Malone, 1962 (IC 8131), p. 51 — USBM trenching and sampling in 1956 found no significant cinnabar mineralization in bedrock. Numerous veins and veinlets, some with fair gold values, were uncovered.
p. 56 — Reference to TDM 1.
Maloney, 1962 (RI 5991), p. 8-9 — Abundant placer cinnabar; occasional nuggets up to 10 lbs.
p. 12 — Mineralized quartz stringers on slope west of creek contained arsenopyrite and scheelite; assay of a sample showed 0.64 oz. Au per ton.

(Glen Gulch) (Cr.) - Continued

p. 17-20 -- Data on miscellaneous samples; stibnite and scheelite in bedrock samples; cinnabar in gravel.

Malone, 1965 (IC 8252), p. 50 -- Same as IC 8131.

Kimball, 1969 (USBM OF 6-69), p. 6 -- Production, 1915-66, lumped with that from Granite, Black, and Slate Creeks and Malamute Gulch; total was 21,011 oz. gold.

(Gold Cr.) (Rmn)

Gold

Iditarod district
MF-363, loc. 23

Iditarod (7.6, 6.5)
62°22'N, 158°05'W

Summary: Tributary of Willow Cr. on which mining in 1911 was reported. Mining was probably at mouth of Gold Cr. and, except for 1911, considered to have been on Willow Cr.

Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Mertie, 1936 (B 864-C), p. 209 — Enters Willow Cr. at Fine Gold association claim.

Golden Horn (Mining Co.)

Antimony, Gold, Lead, Mercury, Silver, Tungsten, Zinc

Iditarod district
MF-363, loc. 11

Iditarod (8.75, 7.85)
62°27'N, 157°55'W

Summary: At or near contact between monzonite stock and sandstone and shale are irregularly distributed quartz veins that carry gold values, stibnite, cinnabar, and scheelite. Golden Horn mine opened on a quartz vein in 1922; some ore mined and milled; operation not profitable. Mine reopened and new mill installed in 1935; mining and(or) milling, 1935-37; 528 tons of ore yielded 2,706 oz. gold, 2,620 oz. silver, 9,336 lbs. lead, and 653 lbs. zinc. Includes references to lode at head of Glen Gulch, Mohawk lode; see also (Glen Gulch); some of the following references may apply to lode occurrences on Glen Gulch that are not on Golden Horn property.

Smith, 1915 (B 622), p. 266-267 — Stibnite in quartz veins and near contact of granite with sandstone and shale; irregularly distributed.

Smith and Maddren, 1915 (B 622), p. 287 — Stibnite-cinnabar mineralization in slaty rocks along contact with granitic rocks; irregular distribution of sulfides in much barren vein quartz.

Brooks, 1916 (B 649), p. 47-48 — At or near margin of a monzonite stock. Shaft said to be 35 ft. deep and a few pits. Lode reported to be 2-2-1/2 ft. wide. Ore is intergrown quartz and stibnite and reportedly carries gold values. Very little oxidation of stibnite. Stibnite younger than most of quartz.

Mertie and Harrington, 1916 (B 642), p. 259 — Stibnite in mineralized shear zone along contact between monzonite and country rock; carries gold also.

Smith, 1917 (B 655), p. 145 — Same data as in B 622, p. 287.
p. 152 — Quotation from B 649.

Brooks and Capps, 1924 (B 755), p. 44 — Promising gold quartz discovery reported. Stamp mill installed and considerable ore mined, 1922.

Mertie and Harrington, 1924 (B 754), p. 116-117 — Same as B 642, p. 259.

Mertie, 1936 (B 864-C), p. 242 — Quartz vein with gold and probably stibnite and cinnabar. Stamp mill installed and considerable ore mined in 1922, but operation was not profitable. Another mill and machinery shipped in, 1935.

Smith, 1936 (B 868-A), p. 25 — Mine reopened, 1934; mainly surface preparatory work.

Smith, 1937 (B 880-A), p. 27 — Not enough ore for large-scale development, so mine was closed and ore that had been mined was shipped to a smelter, 1935.
p. 72 — Some lead was produced, 1935.

Smith, 1939 (B 910-A), p. 32-33 — Exploration work, 1937; some ore may have been taken out. [No production, according to RI 5991, p. 4.]

Joesting, 1942 (TDM 1), p. 26 — Lode cinnabar; reference to B 655, p. 145.

White and Killeen, 1953 (C 255), p. 9 — Essentially no radioactivity.

Malone, 1965 (IC 8131), p. 51 — Reference to B 655.

Maloney, 1962 (RI 5991), p. 4-5 — Mine and(or) mill operated in 1922, 1935-37; total of 528 tons of ore sent to smelter contained 2,706 oz. gold, 2,620 oz. silver, 9,336 lbs. lead, and 653 lbs. zinc. Pumps pulled in 1935; some exploration and development thereafter, but no mining. In 1956 USBM did some trenching on property.
p. 8-9 — Trenching in area and sampling of dump, 1956.
p. 17-18 — Details of USBM sampling data; Au as much as 2.8 oz. per ton and Ag as much as 5.16 oz. per ton. Hg, Sb, Wo3, Cu, and Pb all low.

Golden Horn (Mining Co.) - Continued

p. 20 -- Sample contained scheelite and arsenopyrite.
Malone, 1965 (IC 8252), p. 55 -- Reference to B 655.
Berg and Cobb, 1967 (B 1246), p. 227 -- Exploration as recently as 1937. Some ore shipped; gold and a small amount of lead and zinc recovered.
Kimball, 1969 (USBM OF 6-69), p. 5 -- Reference to RI 5991.
Cobb, 1973 (B 1374), p. 146 -- Reference to RI 5991.

(Granite Cr.)

Iditarod district
MF-363, loc. 33

Chromite, Gold

Iditarod (8.9, 8.1-8.25)
62°28'N, 157°54'W

Summary: Bedrock is sandstone and argillite cut by gold-bearing quartz veins in upper part of valley. Chromite, probably derived from small ultramafic dikes, in placer workings. Gold fine but shotty; 2 ft. of bedrock must be mined to get all of it. Mining in most years from 1924 to as recently as 1940. Includes references to Salen.

Smith, 1926 (B 783), p. 14 — Mining, 1924.
Smith, 1929 (B 797), p. 21 — Mining, 1926.
Smith, 1932 (B 824), p. 34-35 — Salen mining, 1929.
Smith, 1933 (B 836), p. 35 — Mining, 1930.
Smith, 1933 (B 844-A), p. 34 — Mining, 1931.
Smith, 1934 (B 864-A), p. 37 — Mining, 1933.
Mertie, 1936 (B 864-C), p. 220-221 — Bedrock sandstone and argillite; granitic dikes reported in upper part of valley. 2 ft. of bedrock must be removed to get all of gold, which is fine but shotty and iron stained. Fineness is 853 Au, 134 Ag. Mining, 1933.
Smith, 1936 (B 868-A), p. 37-38 — Mining, 1934.
Smith, 1937 (B 880-A), p. 41 — Mining, 1935.
Smith, 1939 (B 910-A), p. 50 — Mining, 1937.
Smith, 1942 (B 933-A), p. 43 — Mining, 1940.
White and Killeen, 1953 (C 255), p. 9 — Gold-bearing quartz veins in upper part of creek; essentially no radioactivity.
Kimball, 1969 (USBM OF 6-69), p. 6 — Production, 1915-66, lumped with that from Black and Slate Creeks, Malamute and Glen Gulches; total was 21,011 oz. gold.
Cobb, 1973 (B 1374), p. 148 — Chromite, probably derived from small ultramafic dikes, found in placer pits.

(Happy Cr.) (Gulch)

Antimony, Chromite, PM, Gold, Mercury, Monazite, Silver, Tin, Tungsten

Iditarod district
MF-363, locs. 5, 25

Iditarod (7.7-8.3, 6.7-6.8)
62°23'N, 157°59'-158°03'W

Summary: Monzonite stock at head of Chicken, Flat, and Happy Creeks is deeply (more than 10 ft.) weathered. Stock (Tertiary) intruded Cretaceous sandstone, shale, and argillite; some contact metamorphism. Weathered monzonite constitutes a residual placer which grades into an eluvial placer and then into stream and bench placers. Quartz veins (in place or pieces of float) in and around monzonite carry scheelite, cinnabar, argentiferous stibnite, and gold. Concentrate samples contain: gold, cinnabar, ilmenite, scheelite, chromite (probably derived from small ultramafic dikes), magnetite, monazite, realgar, a trace of cassiterite, and radioactive zircon; one sample contained 0.073% uranium and 0.013% thoria. Mining began in 1910 and continued until as recently as 1940.

Maddren, 1911 (B 480), p. 256 — Headwater of Willow Cr. on which there is gold.
p. 258-259 — Heads in same granite body as Flat Cr. and crosses contact zone. Mineralization at and near contact. Gold rough, some with preserved crystal form. Surface of granite deeply weathered; much residual material. Mining, 1910.
Eakin, 1913 (B 542), p. 300, 302-303 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 — Mining, 1913.
Eakin, 1914 (B 578), p. 31-33 — Residual placers on monzonite at head; stream placer downstream from contact with sedimentary rocks.
p. 35 — Mining stream and residual placers in 1912.
Brooks, 1915 (B 622), p. 56-57 — Mining residual placers, 1914.
Smith, 1915 (B 622), p. 257 — Has been gold placer mining.
Smith and Maddren, 1915 (B 622), p. 286 — Cinnabar in residual material near head of creek.
Brooks, 1916 (B 642), p. 66 — Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 253 — Mining at head, 1915.
p. 257 — Residual placer developed on deeply weathered, mineralized monzonite. Quartz veins carry free gold.
p. 266 — Mining, 1915.
Smith, 1917 (B 655), p. 145 — In residual material at head of creek are vein quartz fragments that contain cinnabar.
Smith, 1917 (BMB 142), p. 26 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Mining, 1916. Snow fences at head caused 80-ft. drifts, which gave enough water to sluice until Aug. 1.
Brooks, 1918 (B 662), p. 59 — Mining, 1916.
Brooks, 1922 (B 722), p. 56 — Mining, 1920.
Brooks and Capps, 1924 (B 755), p. 44 — Mining, 1922.
Mertie and Harrington, 1924 (B 754), p. 110-111 — Gold discovered by 1910; mining, 1915.
p. 114 — Same as B 642, p. 257.
Brooks, 1925 (B 773), p. 14 — Monzonite at head might constitute a large body of low-grade ore.
p. 19 — Residual and eluvial placers at head of creek.
Smith, 1926 (B 783), p. 14 — Mining, 1924.
Smith, 1929 (B 797), p. 21 — Mining, 1926.

(Happy Cr.) (Gulch) - Continued

Smith, 1932 (B 824), p. 34-35 — Mining, 1929.
Smith, 1933 (B 836), p. 34-35 — Mining, 1930.
Smith, 1933 (B 844-A), p. 34 — Mining, 1931.
Smith, 1934 (B 857-A), p. 32 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37 — Mining, 1933.
Mertie, 1936 (B 864-C), p. 211-213 — Tributary of Willow Cr. that heads in body of monzonite at head of Flat Cr. [see Flat Cr.]. Residual, stream, and bench placers. Much cinnabar in concentrates. Range of fineness of gold 856 to 876 Au. Some of gold worn and some rough.
Smith, 1936 (B 868-A), p. 37 — Mining, 1934.
Smith, 1937 (B 880-A), p. 41 — Mining, 1935.
Smith, 1938 (B 897-A), p. 49 — Mining, 1936.
Smith, 1939 (B 910-A), p. 50 — Mining, 1937.
Smith, 1941 (B 926-A), p. 45 — Mining, 1939.
Joesting, 1942 (TDM 1), p. 25-26 — Abundant placer cinnabar; reference to B 864-C, p. 212.
Smith, 1942 (B 933-A), p. 43 — Mining, 1940.
Webber and others, 1947 (RI 4065), p. 5 — Cinnabar in placers; reference to TDM 1.
White and Killeen, 1953 (C 255), p. 1 — Old placer-concentrate sample contained 0.092% eU; 0.073% U and 0.013% thoria. Zircon is principal radioactive mineral in area.

p. 9 — Creek has been extensively mined; disintegrated monzonite near head was mined as placer material. Scheelite-bearing and cinnabar-bearing quartz-vein fragments in concentrates. Stibnite in quartz at head of creek.

Malone, 1962 (IC 8131), p. 51 — Reference to Mertie and Harrington, 1916 (B 642), p. 56 — Reference to TDM 1.
Maloney, 1962 (RI 5991), p. 8 — Placer cinnabar present.

p. 17-18 — Argentiferous stibnite in float near head. Concentrate samples high in Hg; one contained 0.8% WO_3.

p. 21-22 — Composite placer concentrate samples contained cinnabar, ilmenite, scheelite, chromite, gold, magnetite, monazite, a trace of cassiterite, zircon, realgar, and other nonmetallic minerals.

Malone, 1965 (IC 8252), p. 50 — Same as IC 8131.
Kimball, 1969 (USBM OF 6-69), p. 6 — Production, 1915-66, lumped with that of Chicken, Prince, and Willow Creeks; total was 106,486 oz. gold.

p. 8-9 — Residual or semiresidual placers near head have been worked. Decomposed monzonite was auger sampled, showing that some of the gold is erratically distributed in quartz veinlets.

Cobb, 1973 (B 1374), p. 147-148 — Weathered monzonite at head rich enough to mine as residual placer, which grades downhill into stream placer. Chromite (probably derived from small ultramafic dikes) and scheelite (probably from quartz veins in and around monzonite stock) in concentrates.

(Julian Cr.)

Gold, Mercury, Monazite, Tin

Aniak district
MF-363, loc. 36

Iditarod (13.35, 3.8)
62°12'N, 157°52'W

Summary: Cretaceous graywacke and shale were intruded by porphyritic granite (White and Killeen) or rhyolite (Cady and others) bodies. Source of heavy minerals probably is quartz fracture fillings in breccia zones near contacts between altered intrusive bodies and sedimentary rocks. Concentrates contain gold, pyrite, cinnabar, cassiterite, and monazite; one sample of heavy mineral fraction contained 5% monazite and 80% pyrite. Intermittent mining, some highly profitable, from 1911 to 1939. Includes references to: (George R.), (Jualin Cr.), (Julien Cr.)

Maddren, 1911 (B 480), p. 267, 270 — Good prospects found, 1910.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Smith, 1915 (B 622), p. 261 — Good prospects had been reported in 1910, but there was no permanent settler in 1914.
Brooks, 1922 (B 722), p. 60 — Mining on George R., 1920.
Smith, 1933 (B 844-A), p. 43 — Mining, 1931. Highly satisfactory results.
Smith, 1934 (B 857-A), p. 41 — Mining, 1932.
Smith, 1934 (B 864-A), p. 45 — Mining, 1933.
Martie, 1936 (B 864-C), p. 224 — Hydraulic plant operated, 1933.
Smith, 1936 (B 868-A), p. 46 — Mining, 1934.
Smith, 1937 (B 880-A), p. 49 — Mining, 1935.
Smith, 1938 (B 897-A), p. 58 — Mining, 1936.
Smith, 1939 (B 910-A), p. 60 — Mining, 1937.
Smith, 1939 (B 917-A), p. 59 — Mining, 1938.
Smith, 1941 (B 926-A), p. 56 — Mining, 1939.
Wedow and others, 1952 (OF 51), p. 88 — Cassiterite in gravels. Radioactivity investigation was negative.
White and Killeen, 1953 (C 255), p. 16, 18 — Bedrock is sandstone and slate cut by a few narrow porphyritic granite dikes. Heavy fraction of a sluice-box concentrate contained 80% pyrite and 5% monazite.
Cady and others, 1955 (P 268), p. 71 — Rhyolite apparently similar to that near Donlin Cr. on divide between Michigan Cr. and head of Julian Cr.

p. 116 — Source lodes appear to be quartz fracture fillings in breccia zones near contacts between altered rhyolite and graywacke and shale of Kuskokwim Gp. (Cretaceous).

p. 119 — Creek mined intermittently for 20-30 years. Concentrates contain cinnabar and traces of monazite.

Overstreet, 1967 (P 530), p. 111 — Reference to C 255.
Koschmann and Bergendahl, 1968 (P 610), p. 15 — Mining began about 1910. Interbedded Cretaceous graywacke and shale intruded by albite rhyolite bodies. Source of placer gold is small auriferous quartz veins near contacts.
Cobb, 1973 (B 1374), p. 43 — Mined sporadically from about 1911 to 1939. Concentrates contain gold, pyrite, some cinnabar, and traces of monazite.

Kaatz

Antimony

Innoko district
MF-363, loc. 13

Iditarod (19.6, 16.8) approx.
62°56'N, 156°33'W approx.

Summary: Quartz vein 8-10 ft. wide in a fissure in sandstone cut by a rhyolite dike; specks of stibnite throughout, but most abundant in 1-ft. zone next to footwall. Only traces of gold and silver. Includes references to Katz.

Brooks, 1916 (B 649), p. 49-50 -- Quartz vein 8-10 ft. wide in a fissure in sandstones; rhyolite dike in extension of fissure. Vein and dike can be traces for several thousand feet. Specks of stibnite throughout vein, but most abundant in 1-ft. zone next to footwall where there are granular aggregates of quartz and stibnite. Sample across face contained only trace of gold and silver.

Martie and Harrington, 1916 (B 642), p. 259 -- Summary of data in B 649 [from same source].

Martie and Harrington, 1924 (B 754), p. 116 -- Summary of data in B 649 [from same source].

Martie, 1936 (B 864-C), p. 228 -- Repetition of some of data in B 649 [from same source].

Berg and Cobb, 1967 (B 1246), p. 227 -- Same data as B 649.

(Kieland Cr.)

Gold (?)

Aniak district

Iditarod
S 1/4 quad. (?)

Summary: Prospects reported in 1911. No further mention of this creek, which is not shown on available maps, but may be in basin of George R. and now known by another name.

Brooks, 1912 (B 520), p. 40 — Prospects reported, 1911.

(Last Chance Gulch) | Gold

Innoko district | Iditarod (19.85, 17.25)
MF-363, loc. 42 | 62°58'N, 156°31'W

Summary: A few colors of gold found.

Maddren, 1909 (B 379), p. 261 -- Preliminary to B 410.
Maddren, 1910 (B 410), p. 70 -- Tributary of Ganes Cr. A few colors found in an open cut about 10 ft. deep.

(Little Cr.)

Gold, Mercury

Iditarod district
MP-363, loc. 15

Iditarod (2.5, 0.5) approx.
62°02'N, 158°42'W approx.

Summary: Cretaceous shale and graywacke have been intruded by sill-like bodies of basalt now altered to silica-carbonate rock. Placer gold and cinnabar reported; many vein-quartz pebbles. No specific mention of activity other than prospecting.

Maddren, 1911 (B 480), p. 267, 270 -- Prospects reported, 1910.
Brooks, 1912 (B 520), p. 40 -- Good prospects reported, 1911.
Maddren, 1915 (B 622), p. 304 -- Prospects that reportedly went 1 to 2 cents in fine gold per pan. No productive mining in this part of Iditarod R. valley as of 1914.
Cady and others, 1955 (P 268), p. 120 -- Placer gold and cinnabar reported on middle course of creek. Test shafts sunk 12 ft. to bedrock. Graywacke and shale of Kuskokwim Gp. (Cretaceous) intruded by sill-like bodies of basalt altered to silica-carbonate rock. Pebbles of vein quartz abundant in gravel. Gold reported to be evenly distributed in a continuous pay streak.
Hawley and others, 1969 (C 615), p. 16 -- Cinnabar associated with gold deposits.
Cobb, 1973 (B 1374), p. 146 -- Placer gold and cinnabar have been found; may have been some commercial mining.

(Mackie Cr.) Gold

Innoko district
MF-363, loc. 43

Iditarod (20.0, 17.7)
62°59'N, 156°30'W

Summary: Gold in sandy slate bedrock beneath 6-7 ft. overburden. Mined in 1933.

Mertie, 1936 (B 864-C), p. 188 -- Mining near mouth, 1933. Gold all in sandy slate bedrock beneath 5 ft. gravel and 1-2 ft. moss and clay.

(Malamute Cr.) (Gulch) (Pup)

Chromite, Gold, Mercury, RE, Tin, Tungsten

Iditarod district
MF-363, locs. 10, 32

Iditarod (B.85, B.1)
62°28'N, 157°55'W

Summary: Bedrock is decomposed monzonite overlain by about 35 ft. of poorly sorted material that is largely vesicular basalt fragments. Placer gold mainly near or on bedrock. A prospect about 400 ft. west of mouth of creek is reported to have been explored by an adit 70 ft. long (caved by 1933) that followed quartz stringers with arsenopyrite, cinnabar, and gold. Placer concentrates contained gold, scheelite, ferberite, chromite (probably derived from small ultramafic dikes), realgar, cinnabar, allanite, and cassiterite. Mining reported from 1926 to 1934. Includes references to prospect about 400 ft. west of mouth of creek and to Lusher.

Smith, 1929 (B 797), p. 21 -- Mining, 1926.
Smith, 1932 (B 824), p. 34-35 -- Lusher mined, 1929.
Smith, 1933 (B 836), p. 35 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 34 -- Mining, 1931.
Smith, 1934 (B 864-A), p. 37 -- Mining, 1933.
Martie, 1936 (B 864-C), p. 220-221 -- Overburden 35 ft. of poorly sorted angular material in a sandy matrix; largely vesicular basalt. Bedrock is decomposed monzonite. Gold mainly near or on bedrock.

p. 242-243 -- Lode prospect north of Otter Cr. 100 yds. below Malamute Gulch. Workings caved; vein appears to be parallel to that at Golden Horn (S. 25° W.). Deposit is arsenopyrite in quartz and calcite; "said to have carried considerable gold."

Smith, 1936 (B 868-A), p. 37-38 -- Mining, 1934.
White and Killeen, 1953 (C 255), p. 9 -- Quartz vein carries small amounts of gold and sulfides.
Malone, 1962 (IC 8131), p. 51 -- Cinnabar associated with gold-bearing quartz stringers reported in caved 70-ft. adit 400 ft. west of mouth of Malamute Gulch.
Maloney, 1962 (RI 5991), p. 5 -- Lode gold prospect near mouth; cinnabar in gold-bearing quartz reported. Also a small shaft on a quartz vein on ridge [no statement on what was in the vein].

p. 17 -- Analyses of placer concentrate samples showed as much as 1.76% Hg, 0.05% Sb, 1.80% WO_3, and gold and silver.

p. 21 -- Composite placer concentrate sample contained, among others, scheelite, ferberite, chromite, realgar, cinnabar, allanite, and cassiterite; 0.01% eU.

Malone, 1965 (IC 8252), p. 50, 55 -- Same as IC 8131.
Kimball, 1969 (USBM OF 6-69), p. 6 -- Production, 1915-66, lumped with that from Granite, Black, and Slate Creeks and Glen Gulch; total was 21,011 oz. gold.
Cobb, 1973 (B 1374), p. 148 -- Chromite (probably derived from small ultramafic dikes) and scheelite (probably quartz veins in or around a monzonite stock) in concentrates.

(Marietta Cr.) Gold

Aniak district Iditarod
S 1/4 quad. (?)

Summary: Mining in 1911 reported; location of creek not known, but probably is in basin of George R. and may now be known by another name.

Brooks, 1912 (B 520), p. 40 — Mining reported, 1911.

(Michigan Cr.)

Gold (?)

Aniak district

Iditarod
S 1/2 quad.

Summary: Prospects reported; location on creek not given.

Brooks, 1912 (B 520), p. 40 — Prospects said to have been found, 1911.

(Minnie Gulch)

Gold, Mercury

Iditarod district
MF-363, loc. 9

Iditarod (B.6, 7.7)
62°26'N, 157°56'W

Summary: Trenching uncovered a few thin quartz stringers, one of which contained small pockets of visible cinnabar and another which assayed 0.24 oz. gold per ton.

Maloney, 1962 (RI 5991), p. 8-9 -- In 1956 USBM collected placer concentrate samples and did some trenching.

p. 12 -- Trenches exposed monzonite bedrock, some deeply weathered. One exposed a quartz stringer 1-1/4 in. wide with pockets of visible cinnabar.

p. 20 -- Data on trench samples; highest gold assay was 0.24 oz. per ton.

(Moore Cr.) Chromite, Gold, Mercury, Tungsten

McGrath district Iditarod (14.85-15.15, 10.65-10.75)
MP-363, loc. 37 62°36'N, 157°08'-157°10'W

Summary: Bedrock is Cretaceous graywacke and shale. Small quartz monzonite pluton at head of a headwater tributary is a probable source of much of the placer gold; neighboring sedimentary rocks may also be mineralized. Mafic igneous rock bodies (such material in gravels) probably in basin and source of chromite in concentrates. Both stream and bench placers with, respectively, 12-18 ft. and 5-7 ft. of overburden. Concentrates contain gold, chromite, zircon, cinnabar, scheelite, and pyrite. Gold discovered about 1910; mining from 1911 to at least as recently as 1967. Includes references to Moore Creek Mining Co.

Maddren, 1911 (B 480), p. 267, 270 -- Good prospects reported, 1910.
Brooks, 1912 (B 520), p. 40 -- Mining, 1911.
Eakin, 1913 (B 542), p. 300, 302-303 -- Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 -- Mining, 1913; preparation for installing a dredge.
Eakin, 1914 (B 578), p. 34-35 -- Shallow ground being mined on one claim, 1912.
Brooks, 1915 (B 622), p. 67 -- Mining, 1914.
Smith, 1915 (B 622), p. 259 -- Quotation from B 578.
p. 261 -- 3 small placer mines operated, 1914.
Mertie and Harrington, 1916 (B 642), p. 252-253 -- Gold discovered, 1910. Mining, 1915. Bedrock sandstone and shale. Gravel composed of sandstone, shale, granitic material, and basic igneous rock. Gold little worn and contains much quartz. Much cinnabar, some zircon and magnetite in concentrates. Both creek and bench placers mined in 1915. Gold "connected genetically with the mineralizing effect of monzonite." Monzonite in hills to the north.
p. 265 -- Mining, 1915.
Martin, 1919 (B 692), p. 40 -- Mining, 1917.
Brooks, 1922 (B 722), p. 60 -- Mining, 1920. Gravel 14 ft. deep.
Mertie and Harrington, 1924 (B 754), p. 108-109 -- Same as B 642, p. 252-253.
Smith, 1926 (B 783), p. 15 -- Mining, 1924.
Smith, 1933 (B 836), p. 43 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 43 -- Largest producer of placer gold in district, 1931.
Smith, 1934 (B 857-A), p. 40 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 45 -- Largest producer of placer gold in district, 1933.
Mertie, 1936 (B 864-C), p. 223-224 -- Staked in 1911. Both stream and bench placers. Bedrock is steeply dipping sandstone and slaty shale. Small body of quartz monzonite at head of Willow Cr. (a headwater tributary) is the probable source of much of the gold; neighboring country rock probably also mineralized. Creek placers have 12-18 ft. and bench placers 5-7 ft. of overburden. Fineness of gold 767 Au, 225 Ag. Cinnabar principal mineral in concentrates. Mining, 1933.
Smith, 1936 (B 868-A), p. 46 -- Largest individual producer in district, 1934.
Smith, 1937 (B 880-A), p. 48 -- Largest individual producer in district, 1935.
Smith, 1938 (B 897-A), p. 57 -- Better season than usual, 1936.
Smith, 1939 (B 910-A), p. 59 -- Especially successful season, 1937; also some prospect drilling.

(Moore Cr.) - Continued

Smith, 1939 (B 917-A), p. 58 — Mining, 1938.
Smith, 1941 (B 926-A), p. 55-56 — Mining, 1939.
Joesting, 1942 (TDM 1), p. 26 — Abundant placer cinnabar; reference to B 754, p. 108.
Smith, 1942 (B 933-A), p. 51-52 — Mining, 1940.
White and Killeen, 1953 (C 255), p. 16, 18 — Bedrock is Cretaceous sandstone and shale; gravel also contains mafic igneous and granitic rocks. Heavy fraction of concentrate sample contained 80% chromite, 3% zircon, and traces of cinnabar, scheelite, and pyrite.
Malone, 1962 (IC 8131), p. 56 — Reference to B 864-C.
Malone, 1965 (IC 8252), p. 55 — Reference to Martin and Harrington, 1916 (B 642).
Cobb, 1973 (B 1374), p. 52 — Gold discovered in 1910 and worked intermittently until at least as recently as 1967. Stream and bench placers. Principal minerals in concentrates were cinnabar and chromite, with smaller amounts of zircon, magnetite, pyrite, and scheelite. Chromite probably derived from a mafic igneous, pebbles of which are in creek gravels.

(Mt. Joaquin) Mercury

McGrath district Iditarod (22.25, 15.4)
MF-363, loc. 14 62°51'N, 156°13'W

Summary: Limestone inclusion in a large monzonite mass contains cinnabar. Staked in 1957, but has been no production.

Malone, 1962 (IC 8131), p. 46 — Claims located in 1957. Cinnabar in a limestone inclusion in a large monzonite mass.
Malone, 1965 (IC 8252), p. 41 — Same as IC 8131.
p. 53 — Reference to IC 8131.
Berg and Cobb, 1967 (B 1246), p. 96 — Same as IC 8131.

(Otter Cr.)

Antimony, Chromite, Gold, Lead, Mercury, Silver, Tin, Tungsten

Iditarod district
MF-363, locs. 8, 31

Iditarod (7.9-8.9, 8.9-9.05)
62°27'N, 157°54'- 158°02'W

Summary: Bedrock for about 1-1/2 mi. near Discovery bedrock is a monzonite stock (decomposed near surface) that intruded Cretaceous sandstone and shale. In the monzonite and its contact aureole are many quartz veins that contain gold, stibnite, cinnabar, scheelite, and arsenopyrite; some were uncovered during placer mining. Stream and bench gravels are 10-20 ft. deep and grade laterally into each other. Concentrates contain gold, cinnabar, arsenopyrite, scheelite, stibnite, chromite, ilmenite, magnetite, pyrite, galena, garnet, and cassiterite. Samples of dredge concentrate contained as much as 16.1% mercury, 30.2% antimony, 0.48% tungstic oxide, gold, and silver. Gold discovered in 1908, mining began in 1909 and continued until at least as recently as 1956. One or two dredges were active from 1914 on. Most of creek has been mined at least twice.

Brooks, 1910 (B 442), p. 45 -- Thousands stampeded to Otter Cr. in 1909.

Maddren, 1910 (B 410), p. 63 -- About a thousand men expect to prospect during winter of 1909-10. Gold said to be fine. Gravel said to be 12 ft. deep and frozen; 7-10 cents per pan.

Maddren, 1911 (B 480), p. 238 -- Gold discovered at depth of 12 ft. on Christmas day, 1908.

p. 240 -- Practically all productive ground in Otter Cr. and valleys just south of it.

p. 253-255 -- Mining (as of 1910) in area about 2 mi. long and 1/4 mi. wide about 12 mi. above mouth. Stream gradient too low for hydraulicking. Bedrock in productive area mainly granitic and decomposed; overlain by residual material. 2-6 ft. of bedrock taken up to recover gold in crevices.

p. 262 -- Prospecting by shafts, but much of ground wet; mining by open cuts.

p. 267 -- Production for 1910 worth about $200,000.

Brooks, 1912 (B 520), p. 40 -- Mining, 1911.

Eakin, 1913 (B 542), p. 299, 302-303 -- Preliminary to B 578.

Brooks, 1914 (B 592), p. 69 -- Mining, 1913; preparations for installing a dredge.

Eakin, 1914 (B 578), p. 31-32 -- Principal placers being worked in 1912 are about 2 mi. above mouth of Flat Cr. Depth to bedrock about 10 ft., increasing to 20 ft. near sides of valley. Bedrock mainly igneous; weathered.

p. 34 -- Mining, 1912.

Brooks, 1915 (B 622), p. 56-57 -- Dredge installed; frozen muck had to be thawed ahead of dredge; other mining also; 1914.

Smith, 1915 (B 622), p. 257 -- Has been gold placer mining.

p. 260 -- Dredge has been installed.

Brooks, 1916 (B 642), p. 66 -- Dredge operated, 1915.

Martin and Harrington, 1916 (B 642), p. 238 -- Scheelite in concentrates.

p. 253-255 -- Mining, 1915. Bedrock is monzonite in area being mined; Cretaceous (?) sandstone and shale both upstream and downstream. Both bench and stream placers. Concentrates contain cinnabar, arsenopyrite, and scheelite.

Smith, 1917 (BMB 142), p. 26 -- Mining, including a dredge, 1915.

(Otter Cr.) - Continued

Smith, 1917 (BMB 153), p. 54 — Dredge operated, 1916.
Brooks, 1918 (B 662), p. 59 — Mining, including a dredge, 1916.
Martin, 1919 (B 692), p. 38 — Dredge had "continued breakdowns," 1917.
Brooks, 1922 (B 722), p. 56 — 2 dredges operated, 1920.
Brooks, 1923 (B 739), p. 9, 40 — 2 dredges operated, 1921.
Mertie, 1923 (B 739), p. 157 — Scheelite is found with cinnabar and stibnite in gold placers, suggesting common origin.
Brooks and Capps, 1924 (B 755), p. 14, 44 — 2 dredges operated, 1922.
Mertie and Harrington, 1924 (B 754), p. 83 — Scheelite in concentrates.
p. 109-112 — Quotation from B 480, p. 237-238, on history of discovery; mining, 1910, 1912, 1915; other data same as B 642, p. 253-255.
Brooks, 1925 (B 773), p. 27 — 2 dredges operated, 1923.
Smith, 1926 (B 783), p. 18 — 2 dredges operated, 1924.
Moffit, 1927 (B 792), p. 18, 25 — 2 dredges operated, 1925.
Smith, 1929 (B 797), p. 21, 30 — 2 dredges operated, 1926.
Smith, 1930 (B 810), p. 27, 40 — 2 dredges operated, 1927.
Smith, 1930 (B 813), p. 29-30, 47 — Mining, including 2 dredges, 1928.
Smith, 1932 (B 824), p. 34, 52 — Mining, including 2 dredges, 1929.
Smith, 1933 (B 836), p. 34-35, 54 — Mining, including 2 dredges, 1930.
Smith, 1933 (B 844-A), p. 34, 54 — Mining, including 2 dredges, 1931.
Smith, 1934 (B 857-A), p. 32, 51 — Mining, including a dredge, 1932.
Smith, 1934 (B 864-A), p. 36-37, 56 — Mining, including a dredge, 1933.
Mertie, 1936 (B 864-C), p. 216-220 — Valley assymetric; stream close to north wall. Monzonite bedrock from Slate Cr. downstream for about 1-1/2 mi.; Cretaceous sandstone and shale downstream from monzonite. Placers in stream and ill-defined benches; two kinds grade into each other. Fineness of gold decreases downstream, apparently through increase in dross rather than silver. Higher grade gold probably derived from mineralized zones in monzonite; lower grade gold from stibnite and mercury veins at some distance from monzonite mass. Placers have not been much reworked and gold has not travelled far downstream. A quartz-stibnite vein with minette wall rock was uncovered during mining. Cobble containing quartz-cinnabar vein was found in gravel. Dredge and hydraulic plants operated, 1933.
Smith, 1936 (B 868-A), p. 37-38, 59 — Mining, including a dredge, 1934.
Smith, 1937 (B 880-A), p. 41, 61 — Mining, including a dredge, 1935.
Smith, 1938 (B 897-A), p. 48-49, 71 — Mining, including a dredge, 1936.
Smith, 1939 (B 910-A), p. 50, 76 — Mining, including 2 dredges, 1937.
Smith, 1939 (B 917-A), p. 48-49, 75 — Mining, including 2 dredges, 1938.
Smith, 1941 (B 926-A), p. 44-45, 71 — Mining, including 2 dredges, 1939.
Joesting, 1942 (TDM 1), p. 26 — Abundant placer cinnabar; reference to B 739, p. 157, and to L. C. Doheny.
p. 40 — Placer scheelite common; reference to B 642, p. 238 [reference reports scheelite, but does not say it is common].
Smith, 1942 (B 933-A), p. 42-43, 67 — Mining, including 2 dredges, 1940.
White and Killeen, 1953 (C 255), p. 4 — Monzonite body at and above Discovery contains quartz veins with scheelite, cinnabar, stibnite, and arsenopyrite.
p. 9 — Near Discovery quartz veins contain scheelite and gold, arsenopyrite, scheelite, and stibnite.
Malone, 1962 (IC 8131), p. 51 — Placer cinnabar found.
p. 54 — Reference to TDM 1.
Maloney, 1962 (RI 5991), p. 5 — Dredge and nonfloat plant operated, 1956.
p. 8 — Stibnite-bearing quartz vein near monzonite mass uncovered by placer operations.

(Otter Creek) - Continued

p. 17 -- Samples of dredge concentrate contained as much as 16.1% Hg, 30.2% Sb, 0.48% WO_3, and gold and silver.

p. 21 -- Dredge concentrate contained, among others, cinnabar, chromite, ilmenite, magnetite, pyrite, scheelite, galena, limonite, garnet, and cassiterite.

Malone, 1965 (IC 8131), p. 51 -- Same as IC 8131.

Koschmann and Bergendahl, 1968 (P 610), p. 28 -- Productive gravel; also general data from old reports.

Kimball, 1969 (USBM OF 6-69), p. 5-6 -- Gold discovered, 1908. Production, 1915-66 was 265,125 oz. gold.

p. 8-9 -- Decomposed monzonite was auger sampled, showing that some of the gold is erratically distributed in quartz veinlets.

Cobb, 1973 (B 1374), p. 146-148 -- Gold discovered 1908. Source of gold in placers is quartz veins in monzonite stock and surrounding contact aureole near Discovery. Creek dredged most of minable length, even though much had already been mined by other methods. Heavy minerals include chromite (probably from small ultramafic dikes) and scheelite.

(Prince Cr.)

Gold, Mercury

Iditarod district
MF-363, locs. 28, 29

Iditarod (8.55-8.95, 5.85-6.5)
62°20'-62°22'N, 157°54'-157°57'W

Summary: Flows southward from monzonite mass at head of Flat, Happy, and Chicken Creeks where residual placer containing gold had developed on disintegrated monzonite. Cinnabar occurs in placer near head of Prince Cr. Some of placer ground mined was buried by 22-30 ft. of overburden. Mining reported for 1932-33, 1937, 1956; undoubtedly was carried on in other years also.

Mertie, 1936 (B 864-C), p. 216 -- Heads in monzonite mass at head of Flat Cr. [see Flat Cr.]. Mining in 1932-33 was near head where bedrock is argillite with 22-30 ft. of overburden. Some gold on clay false bedrock. Monzonitic sand at base of gravel.

Smith, 1939 (B 910-A), p. 50 -- Hydraulic plant near head, 1937.

Maloney, 1962 (IC 5991), p. 5 -- Nonfloat mining, 1956.

p. 8 -- Placer cinnabar in upper Prince Cr.

p. 18 -- Piece of float contained 1/16-in. cinnabar stringer in fine-grained basalt.

p. 22 -- Cinnabar and limonite are only metallic minerals found in 5 miscellaneous samples.

Kimball, 1969 (USBM OF 6-69), p. 6 -- Production, 1915-66, lumped with that from Chicken, Happy, and Willow Creeks; total was 106,486 oz. gold.

(Slate Cr.) Antimony, Gold, Mercury, Silver, Tungsten

Iditarod district
MF-363, locs. 12, 34, 35

Iditarod (8.7-8.95, 7.0-7.75)
62°24'-62°26'N, 157°54'-157°56'W

Summary: Bedrock mainly slate, but one headwater fork heads in monzonite. Some quartz veins, one of which contains stibnite. Placer gold in lower part of gravel, which may be as much as 10 ft. thick under another 20 ft. of muck; very little gold on bedrock. Analyses of concentrate samples showed as much as 8.51 oz. gold and 2.61 oz. silver per ton and enough mercury and tungstic oxide to suggest the presence of very small amounts of cinnabar and scheelite. Mining in 1915 and from 1933 to 1940 was reported.

Brooks, 1916 (B 649), p. 49 — Stibnite-bearing vein approximately on strike with a similar one on Glen Cr.

Mertie and Harrington, 1916 (B 642), p. 253, 255, 266 — Mining, 1915.

Mertie and Harrington, 1924 (B 754), p. 110-112 — Mining, 1915.

Smith, 1934 (B 864-A), p. 37 — Mining; new dragline; 1933.

Mertie, 1936 (B 864-C), p. 222-223 — Bedrock mainly slate, but west fork heads in monzonite. Some of slate cut by granitic dikes and vein quartz. Sources of gold probably in these areas. Most of gold in lower part of gravel; very little on bedrock. Overburden as much as 30 ft. thick; includes about 10 ft. of gravel on one claim.

Smith, 1936 (B 868-A), p. 37 — Mining, 1934.

Smith, 1938 (B 897-A), p. 49 — Mining, 1936.

Smith, 1939 (B 910-A), p. 50 — Mining, 1937.

Smith, 1941 (B 926-A), p. 45 — Mining, 1939.

Smith, 1942 (B 933-A), p. 43 — Mining, 1940.

Maloney, 1962 (RI 5991), p. 17 — Concentrate samples contained as much as 0.28% Hg, less than 0.05% Sb, 0.03% WO_3, 8.51 oz. Au per ton, and 2.61 oz. Ag per ton. [No identification of minerals.]

Kimball, 1969 (USBM OF 6-69), p. 6 — Production, 1915-66, lumped with that from Granite and Black Creeks, Malamute and Glen Gulches; total was 21,011 oz. gold.

(Spaulding Cr.) Gold

Innoko district Iditarod (19.7, 16.9)
MF-363, loc. 40 62°57'N, 156°33'W

Summary: Mining reported, 1935–1939. Spaulding Cr. is a tributary of Ganes Cr. For regional data see (Ganes Cr.); none is given in the references that are specifically to this creek.

Smith, 1937 (B 880-A), p. 41-42 — Mining, 1935.
Smith, 1938 (B 897-A), p. 50 — Mining, 1936.
Smith, 1939 (B 910-A), p. 51 — Mining, 1937; new dragline.
Smith, 1939 (B 917-A), p. 49 — Mining, 1938.
Smith, 1941 (B 926-A), p. 46 — Mining, 1939.

(Spaulding Gulch) Gold

Innoko district Iditarod
NE 1/4 NE 1/4 quad. (?)

Summary: Mining in 1935; location not known beyond being in "Ophir district." This may be the same as Spaulding Cr., with the same mining in 1935 reported by different sources.

Smith, 1937 (B 880-A), p. 41-42 -- Mining, 1935.

(Spruce Cr.)

Gold (?)

Aniak district

Iditarod
S 1/4 quad. (?)

Summary: Prospects reported in 1911. This creek, probably a tributary of the George R., is not shown by name on available maps; may now be known by another name.

Brooks, 1912 (B 520), p. 40 — Prospects said to have been found, 1911.

(Willow Cr., trib. Iditarod R.) Gold

Iditarod district
MF-363, locs. 23, 24

Iditarod (7.35-7.7, 6.3-6.8)
62°21'-62°23'N, 158°03'-158°06'W

Summary: Bedrock mainly slate; major headwater tributary is Happy Cr., which drains a monzonite stock and its contact aureole. Gold in both creek and bench placers; in basal 1-2 ft. of gravel and in upper part of decomposed bedrock. All of gold is fine grained. Mining reported for most years from 1910 to 1940. Shortage of water necessitated ditch 11 miles long; built in 1925.

Maddren, 1911 (B 480), p. 256 -- Placer gold has been found.
p. 258-262 -- Bedrock sandstone and shale; altered near head by granitic mass at head of Happy Cr. Gold found for several miles below mouth of Happy Cr. Some ground tested by ground sluicing in 1910.
p. 267 -- Some gold recovered during development work, 1910.
Brooks, 1912 (B 520), p. 40 -- Mining, 1911.
Eakin, 1913 (B 542), p. 300, 302-303 -- Preliminary to B 578.
Brooks, 1914 (B 592), p. 69 -- Mining, 1913.
Eakin, 1914 (B 578), p. 31-32 -- Below Happy Gulch bedrock is sedimentary rocks. Placers 3-4 mi. below head of stream. Alluvium 16-18 ft. thick.
p. 35 -- Mining, 1912; prospect drilling.
Brooks, 1915 (B 622), p. 57 -- Mining, 1914.
Brooks, 1916 (B 642), p. 66 -- Dragline used in mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 253 -- Mining, 1915.
p. 256 -- Bedrock slate; gravels sedimentary rock, lesser amounts of granitic and basaltic material. Source of gold not known; probably not from Happy Cr. (a tributary). Both creek and bench claims. Gold in basal 1-2 ft. of 3-4 ft. of gravel and in decomposed bedrock.
p. 266 -- Mining, 1915.
Smith, 1917 (BMB 142), p. 26 -- Mining, 1915.
Brooks, 1922 (B 722), p. 56 -- Mining, 1920.
Brooks, 1923 (B 739), p. 40 -- Mining, 1921.
Brooks and Capps, 1924 (B 755), p. 44 -- Mining, 1922.
Mertie and Harrington, 1924 (B 754), p. 110-111 -- Gold had been found by 1910. Mining, 1915.
p. 113-114 -- Same as B 642, p. 256.
Smith, 1926 (B 783), p. 14 -- Mining, 1924.
Moffit, 1927 (B 792), p. 11 -- 11 miles of ditch line built from Bonanza Cr., 1925.
Smith, 1929 (B 797), p. 21 -- Mining, 1926.
Smith, 1930 (B 813), p. 29 -- Mining, 1928.
Smith, 1932 (B 824), p. 34 -- Mining, 1929.
Smith, 1933 (B 836), p. 34 -- Mining, 1930.
Smith, 1933 (B 844-A), p. 34 -- Mining, 1931.
Smith, 1934 (B 857-A), p. 32 -- Mining, 1932.
Smith, 1934 (B 864-A), p. 37 -- Mining, 1933.
Mertie, 1936 (B 864-C), p. 208-211 -- Creek and tributaries head in monzonite mass at head of Flat Cr. [see Flat Cr.]. Valley very asymmetric with creek along steep NW wall. Bedrock mainly slate. Very little monzonite in gravels. Both creek and bench placers. Bedrock beneath benches drops to creek in small steps. All gold fine grained. Mining, 1933.
Smith, 1936 (B 868-A), p. 37-38 -- Mining, 1934.

(Willow Cr., trib. Iditarod R.) - Continued

Smith, 1937 (B 880-A), p. 41 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 48-49 -- Mining, 1936.
Smith, 1939 (B 910-A), p. 50 -- Mining, 1937.
Smith, 1941 (B 926-A), p. 45 -- Mining, 1939.
Smith, 1942 (B 933-A), p. 43 -- Mining, 1940.
White and Killeen, 1953 (C 255), p. 1 -- 2 old placer concentrate samples. contain 0.03 o- more percent eU.
Koschmann and Bergendahl, 1968 (P 610), p. 28 -- Productive gravels; also general data from old reports.
Kimball, 1969 (USBM OF 6-69), p. 6 -- Production, 1915-66, lumped with that from Chicken, Prince, and Happy Creeks; total was 106,486 oz. gold.

[Willow Cr., trib. Moore Cr.) Gold (?)

McGrath district Iditarod (15.2, 10.7) approx.
62°36'N, 157°08'W approx.

Summary: Development work on this tributary of Moore Cr. was reported in 1939.

Smith, 1941 (B 926-A), p. 56 -- Development work, 1939.

(Yankee Cr.) Gold

Innoko district
MF-363, loc. 44

Iditarod (20.8-20.9, 17.7-17.9)
62°59'-63°00'N, 156°23'-156°24'W

Summary: Bedrock is slate, sandstone, and decomposed igneous rock. Valley floor and bedrock surface slope gently up to steep valley walls. Gravel shallow and generally unfrozen. Mined from 1909 to as recently as 1940. First dredge in district installed in 1921 and operated every year thereafter; took up 1-2 ft. of bedrock with gravel. No data on composition of concentrates. See also (Yankee Cr.) Ophir quad.

Maddren, 1910 (B 410), p. 74 -- Prospecting in winter of 1908-09 said to have been encouraging.
Maddren, 1911 (B 480), p. 252-253 -- Auriferous deposits (coarse gravels) about 8 ft. deep; 1-3 ft. of muck and silt. Open-cut mining. Production 1909-10 about $75,000.
Brooks, 1912 (B 520), p. 40 -- Mining, 1911.
Eakin, 1913 (B 542), p. 296, 298-299 -- Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 -- Mining, 1913.
Eakin, 1914 (B 578), p. 35 -- Workable gold deposits exist.
p. 38-40 -- Gold placers 6-7 mi. upstream from mouth. Gravel, mainly unfrozen, is 5-7 ft. thick and overlain by thin bed of muck. Worked by open-cut methods. Mining in 1912.
Brooks, 1915 (B 622), p. 62 -- 4 mines operating, 1914.
Brooks, 1916 (B 642), p. 65 -- Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 249, 251 -- Quotation from B 578.
p. 265 -- Mining, 1915.
Smith, 1917 (BMB 142), p. 25 -- Mining, 1915.
Smith, 1917 (BMB 153), p. 54 -- Mining, 1916.
Brooks, 1918 (B 662), p. 58 -- Mining, 1916. Also prospecting for dredging ground.
Martin, 1919 (B 692), p. 38 -- Mining, 1917.
Brooks, 1922 (B 722), p. 55 -- Mining, 1920.
Brooks, 1923 (B 739), p. 9, 39 -- Dredge operated, 1921.
Brooks and Capps, 1924 (B 755), p. 14, 43-44 -- Dredge operated, 1922.
Mertie and Harrington, 1924 (B 754), p. 106 -- Quotation from B 578.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
Smith, 1926 (B 783), p. 14, 18 -- Dredge operated, 1924.
Moffit, 1927 (B 792), p. 25 -- Dredge operated, 1925.
Smith, 1929 (B 797), p. 20, 30 -- Dredge operated, 1926.
Smith, 1930 (B 810), p. 26, 40 -- Dredge operated, 1927.
Smith, 1930 (B 813), p. 30-31, 47 -- Dredge operated, 1928.
Smith, 1932 (B 824), p. 35, 52 -- Dredge operated, 1929.
Smith, 1933 (B 836), p. 35, 54 -- Dredge operated, 1930; short season.
Smith, 1933 (B 844-A), p. 54 -- Felder, Gale & Higgins dredge operated, 1931. [On p. 35 this dredge is reported as mining on Little Cr. (Ophir quad.).]
Smith, 1934 (B 857-A), p. 32-33 -- Mining, 1932. Dredge operated only a short time at beginning of season. [Not shown in list of active dredges, p. 51.]
Smith, 1934 (B 864-A), p. 37-38, 57 -- Mining, including a dredge, 1933.

(Yankee Cr.) - Continued

Mertie, 1936 (B 864-C), p. 188-190 -- Open valley with both floor and bedrock surface sloping gently upward to valley walls. Gravel shallow and mainly unfrozen. Bedrock slate, sandstone, and decomposed igneous rocks. Dredge takes up 1-2 ft. of slate bedrock with the gravels. In 1933 a dredge and 3 open-cut mines were being operated.
Smith, 1936 (B 868-A), p. 38, 59 -- Mining, including a dredge, 1934.
Smith, 1937 (B 880-A), p. 41, 61 -- Dredge operated, 1935.
Smith, 1938 (B 897-A), p. 60, 71 -- Dredge operated, 1936.
Smith, 1939 (B 910-A), p. 51, 76 -- Dredge operated, 1937.
Smith, 1939 (B 917-A), p. 49, 75 -- Dredge operated, 1938.
Smith, 1941 (B 926-A), p. 45, 71 -- Dredge operated, 1939.
Smith, 1942 (B 933-A), p. 41, 68 -- Mining, including a dredge, 1940.
Koschmann and Bergendahl, 1968 (P 610).-- References to B 480, B 754.
Cobb, 1973 (B 1374), p. 151 -- First dredge in district installed in 1921.

(Anvil Cr.)

Gold, Mercury

Innoko district
MF-367, loc. 15

Ophir (19.75, 2.65)
63°08'N, 156°31'W

Summary: Narrow paystreak in stream gravels and less rich bench deposits were mined. Gold on bedrock surface and in crevices in upper six inches of bedrock; some nuggets up to 6 oz. Considerable cinnabar in concentrates. Intermittent mining from 1917 to as recently as 1936.

Brooks and Cappa, 1924 (B 755), p. 43 — Mining, 1922.
Smith, 1932 (B 824), p. 35 — Mining in 1929.
Martie, 1936 (B 864-C), p. 190-191 — Gold discovered in 1917 and creek worked intermittently since then. Narrow paystreak beneath stream channel was worked by drift mining. Less rich bench deposits worked by open cuts. Gold on bedrock or in upper 6 in. of bedrock. Gold "rather shotty" with many nuggets (largest 6 oz.). Fineness 878 Au, 117 Ag. Considerable cinnabar in concentrates.
Smith, 1936 (B 868-A), p. 38 — Drift mining, 1934.
Smith, 1938 (B 892-A), p. 50 — Mining, 1936.
Malone, 1962 (IC 8131), p. 56 — Reference to B 864-C.
Malone, 1965 (IC 8232), p. 54 — Reference to B 864-C.
Cobb, 1973 (B 1374), p. 151 — Cinnabar reported.

(Bear Cr.) Gold

Innoko district
MF-367, loc. 7

Ophir (22.3-22.5, 10.45-10.5)
64°34'N, 156°07'-156°09'W

Summary: In Cripple Creek Mts. Mining began in 1922. Large-scale mining was in what (from study of aerial photographs) was probably a bench between Bear and Cripple Creeks.

Brooks and Capps, 1924 (B 755), p. 44 -- Mining, 1922.
Smith, 1939 (B 910-A), p. 51 -- Preparation for extensive nonfloat mining, 1937.
Smith, 1942 (B 933-A), p. 42 -- Mining, 1940.
White and Killeen, 1953 (C 255), p. 16-18 -- Heavy mineral fraction of concentrate samples contains 0.001% eU. Mining in 1947 is implied.
Cobb, 1973 (B 1374), p. 151 -- Large mined area between Bear and Cripple Creeks was probably a bench deposit (photo interpretation).

(Beaver Cr.)

Gold (?)

Innoko district

Ophir (22.3, 10.5) approx.
64°34'N, 156°09'W approx.

Summary: Prospecting and development work reported in 1940. Creek not named on available maps; probably is first right-limit tributary of Bear Cr. above its mouth.

Smith, 1942 (B 933-A), p. 42 -- Prospecting and development work reported in 1940.

(Bedrock Gulch) Gold

Innoko district
MF-367, loc. 10

Ophir (18.95, 1.2)
63°03'N, 156°37'W

Summary: Mining in 1935.

Smith, 1937 (B 880-A), p. 41-42 — Mining (not dredge), 1935.

(Boob Cr.) — Gold, Mercury, Platinum, Tin

Innoko district — Ophir (15.7-15.8, 5.95-6.1)
MF-367, loc. 2 — 63°20'N, 157°00'W

Summary: Gold discovered, winter of 1915-16. Concentrates contained platinum (about 1 percent of precious metal content); about 30 oz. sold in 1917. Cinnabar and cassiterite also present. Gravels 2-4 ft. thick beneath 25-30 ft. of muck.

Martie and Harrington, 1916 (B 642), p. 251 — Gold strike reported, winter of 1915-16.
Smith, 1917 (BMB 153), p. 2 — Good pay reported, 1916.
p. 54 — Important discovery; only a few thousand dollars produced, 1916.
Brooks, 1918 (B 662), p. 23-24 — Platinum and palladium in sample of placer concentrate.
p. 58 — Gold discovered, March 1916; accompanied by a little platinum. Gravels a few feet thick under 30 ft. of overburden.
Brooks, 1919 (B 666), p. 96 — Platinum has been found.
Harrington, 1919 (B 692), p. 349-350 — Only conside able production from area in 1917 was from Boob Cr. Gravels 2-4 ft. thick beneath 25-30 ft. of muck. Platinum sold to bank with gold and made up about 1% of total; about 30 oz. of platinum in 1917. Concentrates also contain cinnabar (pebbles up to 1/2 in.), cassiterite, magnetite, pyrite, and garnet. Obsidian also noted. Analysis of sample of platinum showed: Pt - 83.4%; Ir - 0.4; Pd - 0.3; Rh - 0.3; Fe - 9.8; osmiridium, silica, and undetermined - 0.6; total - 94.8
Martin, 1919 (B 692), p. 20-21 — Cassiterite in concentrates. Platinum produced in 1917.
Martin, 1920 (B 712), p. 23 — Platinum recovered, 1918.
Brooks and Martin, 1921 (B 714), p. 71 — Platinum may have been recovered, 1919.
Martie, 1923 (B 739), p. 158 — Platinum has been found.
Brooks and Cappa, 1924 (B 755), p. 44 — No mining, 1922.
Martie and Harrington, 1924 (B 754), p. 106 — Quotation from Harrington, 1919 (B 692).
p. 118 — Wood tin (cassiterite) present.
Brooks, 1925 (B 773), p. 30 — Platinum has been mined.
Moffit, 1927 (B 792), p. 33 — Platinum has been produced.
Smith, 1929 (B 797), p. 40 — Platinum has been found.
Smith, 1930 (B 810), p. 53 — Platinum has been recovered.
Smith, 1930 (B 813), p. 60 — Platinum has been produced.
Smith, 1932 (B 824), p. 66-67 — Platinum has been produced.
Smith, 1933 (B 836), p. 69 — Platinum has been produced.
Smith, 1933 (B 844-A), p. 67 — Platinum has been produced.
Smith, 1938 (B 897-A), p. 84 — Platinum has been recovered and sold.
Smith, 1939 (B 910-A), p. 90 — Platinum has been produced.
Joesting, 1942 (TDM 1), p. 20 — Small amounts of platinum have been produced with gold intermittently for a number of years.
p. 26 — Reference to B 754.
p. 35 — Reference to B 754.
Malone, 1965 (IC 8252), p. 54 — Reference to B 754.

(Boob Cr.) - Continued

Martin, 1969 (P 630), p. 89-90 — Minor producer of platinum (about 30 oz. sold in 1917), which occurs in gold placer. Bedrock source of platinum has not been found. Recalculated analysis (B 692, p. 350) showed: Pt - 98.1; Ir - 0.5; Ir + Os 0.7; Rh - 0.4; Pd - 0.3 percent.

Cobb, 1973 (B 1374), p. 149 — Production began, winter of 1915-16. Small amount of by-product platinum recovered with gold.

p. 152 — Concentrates contained gold, platinum (about 1 percent of precious metal content), magnetite, pyrite, garnet, and scarce cassiterite and cinnabar. Obsidian also found.

(Butte Cr.)

Gold (?)

Innoko district

Ophir
SE 1/4 SE 1/4 NE 1/4 quad.

Summary: Prospecting reported. No data on results.

Eakin, 1914 (B 578), p. 38 — Has been prospecting.
Martie and Harrington, 1916 (B 642), p. 249 — Quotation from B 578.
Martie and Harrington, 1924 (B 754), p. 101 — Quotation from B 578.

(Colorado Cr.) Gold

Innoko district
MF-367, loc. 9

Ophir (23.3-23.4, 10.15-10.85)
63°33'-63°35'N, 156°00'-156°01'W

Summary: Mining began in 1913 and continued until as recently as 1940. Bedrock sandstone (Upper Cretaceous (?)); gravels largely of granitic rocks and chert. Large nonfloat mining operations were in both creek and bench deposits.

Eakin, 1913 (B 542), p. 296 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913.
Eakin, 1914 (B 578), p. 35 — Placer gold found in 1912.
p. 38 — Prospecting only; gravels of streams in area are 10-20 ft. deep.
Martie and Harrington, 1916 (B 642), p. 249 — Quotation from B 578.
p. 265 — Mining, 1915.
Martie and Harrington, 1924 (B 754), p. 101 — Quotation from B 578.
Smith, 1933 (B 836), p. 35 — Mining, 1930.
Martie, 1936 (B 864-C), p. 172-173 — Gradient steeper than that of Cripple Cr. Gravel is coarse, about 8 ft. thick, and composed largely of granitic rocks and chert. Bedrock is soft, iron-stained sandstone "probably of Upper Cretaceous or Eocene age." Several feet of bedrock has to be mined to get good recovery. Assays showed average fineness of 873 Au, 121 Ag.
Smith, 1937 (B 880-A), p. 41-42 — Mining, 1935.
Smith, 1941 (B 926-A), p. 46 — Mining, 1939.
Smith, 1942 (B 933-A), p. 42 — Mining, prospecting, and development, 1940.
Cobb, 1973 (B 1374), p. 151 — In Cripple Creek Mts. Large nonfloat operations. Photointerpretation indicates that both creek and bench placers were mined.

(Cripple Cr.) Gold

Innoko district
MF-367, locs. 6-8

Ophir (22.35-23.3, 9.9-10.8)
63°32'-63°35'N, 156°01'-156°08'W

Summary: Mining of stream and bench placers from 1913 to after World War II; possibly to 1967. Bedrock is varied; serpentinized greenstone near Bear Cr. and Upper Cretaceous (?) sandstone and shale near head of creek. Gravels largely chert, greenstone, andesite, and basalt. No data on composition of concentrates. Drift mining in early days, followed by large-scale nonfloat operations. No data on total production. Includes references to (Fox Gulch)(Cr.).

Eakin, 1913 (B 542), p. 294, 296 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913.
Eakin, 1914 (B 578), p. 35 — Gold found at mouth of Fox Gulch, 1912.
p. 38 — Prospecting only; gravels of streams in area 10-20 ft. deep.
Brooks, 1915 (B 622), p. 62 — 5 underground placer mines, 1914; total output about $15,000.
Martie and Harrington, 1916 (B 642), p. 249 — Quotation from B 578.
Martie and Harrington, 1924 (B 754), p. 101 — Quotation from B 578.
Smith, 1926 (B 783), p. 14 — Mining, 1924.
Smith, 1930 (B 813), p. 31 — Mining in valley, 1928.
Smith, 1932 (B 824), p. 35 — Mining, 1929.
Smith, 1933 (B 836), p. 35 — Mining, 1930.
Smith, 1933 (B 844-A), p. 35-36 — Mining, 1931.
Smith, 1934 (B 857-A), p. 32-33 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37-38 — Largest nondredge operation in district, 1933.
Martie, 1936 (B 864-C), p. 170-172 — Stream gradient about 2.75%; valley floor about 150 yds. wide between steep walls. Bedrock varied; greenstone, chert, soft sandstone and shale (Cretaceous or Tertiary); igneous complex in mountains at head of Cripple and neighboring creeks. Gravels being worked at 2 places in 1933. Lower place near mouth of Bear Cr. 5-6 ft. of gravel beneath 2-12 ft. of muck is on serpentinous greenstone. Gold in lower part of gravel and on bedrock. Fineness is 910-1/4 Au, 86 Ag. At upper plant near mouth of Fox Gulch bedrock is soft sandstone and shale. Fineness is 888 Au, 111 Ag.
Smith, 1936 (B 868-A), p. 38 — Drag-line mining, 1934.
Smith, 1937 (B 880-A), p. 41-42 — Major nonfloat mining, 1935.
Smith, 1938 (B 897-A), p. 50 — Drag-line mining, 1936.
Smith, 1939 (B 910-A), p. 51 — Mining, 1937.
Smith, 1939 (B 917-A), p. 49 — Mining, 1938.
Smith, 1941 (B 926-A), p. 46 — Mining, 1939.
Smith, 1942 (B 933-A), p. 42 — Mining, 1940.
White and Killeen, 1953 (C 255), p. 16-18 — Bedrock at lower workings (near mouth of Bear Cr.) is serpentinized greenstone; at upper workings (Fox Gulch) it is sandstone and slate of presumed Late Cretaceous age. Gravels largely chert, greenstone, andesite, and basalt porphyry; smaller amounts of sandstone, slate, and granitic rocks. Highest eU of heavy fraction of samples is 0.002 percent. Mining in 1947 is implied.
Cobb, 1973 (B 1374), p. 151 — In Cripple Creek Mts., which are made up of sandstone, shale, greenstone, and chert intruded by a complex monzonite plutons. Both creek and bench placers (interpreted from aerial photos) were mined by large-scale nonfloat methods. Last mining reported in area was in 1967. No data on composition of concentrates.

(Dodge Cr.) Gold

Innoko district
MF-367, loc. 12

Ophir (19.3, 2.8)
63°08'N, 156°34'W

Summary: Deep placer ground found in 1915. No record of mining.

Brooks, 1916 (Br642), p. 65 — Deep placer ground found, 1915, and preparations made for winter mining.

(Dominion Cr.) Gold

Innoko district Ophir
NE1/4 SE1/4 quad.

Summary: Prospecting, 1940. No data on results.

Smith, 1942 (B 933-A), p. 42 — Prospecting deep ground by shafts said to have been in progress in 1940.

(Esperanto Cr.)

Gold

Innoko district
MF-367, loc. 5

Ophir (17.4-17.6, 17.6-17.85)
63°25'-63°26'N, 156°46'-156°47'W

Summary: Practically no information other than reports of mining, beginning in 1922 and ending after World War II. Mining reported in every year from 1935 to 1940. Near Mt. Hurst.

Harrington, 1919 (B 692), p. 350 — Has been prospecting [as of 1917].
Brooks and Capps, 1924 (B 755), p. 44 — Mining, 1922.
Mertie and Harrington, 1924 (B 754), p. 107 — Quotation from Harrington, 1919 (B 692).
Mertie, 1936 (B 864-C), p. 193 — Auriferous gravel said to be 1 ft. thick was being mined in 1933.
Smith, 1937 (B 880-A), p. 41-42 — Mining, 1935.
Smith, 1938 (B 897-A), p. 50 — Mining, 1936.
Smith, 1939 (B 910-A), p. 51 — Mining, 1937.
Smith, 1939 (B 917-A), p. 49 — Mining, 1938.
Smith, 1941 (B 926-A), p. 46 — Mining, 1939.
Smith, 1942 (B 933-A), p. 42 — Mining, 1940.
Cobb, 1973 (B 1374), p. 152 — Has been mining; small-scale nonfloat operation after World War II had ceased by 1965.

(Ester Cr.) Gold

Innoko district
MF-367, loc. 11

Ophir (19.05, 0.85)
63°02'N, 156°37'W

Summary: Mining in 1933. Gold 836 fine.

Mertie, 1936 (B 864-C), p. 192 — Was being worked in 1933. Average of 2 assays showed fineness of 836 Au and 156 Ag.

(Ganes Cr.) Gold

Innoko district
MF-367, locs. 22, 23

Ophir (19.4-20.45, 0.35-1.1)
63°00'-63°06'N, 156°26'-156°30'W

Summary: Regional bedrock is mainly Cretaceous slate with many felsic dikes, at least one of which was followed by an auriferous quartz vein (see Independence). Ganes Cr. beheaded upper part of Beaver Cr. (Iditarod quad.); all gold below point of capture. Benches 60-100 ft. above creek level and modern valley gravels were mined from 1907 to as recently as 1964; one or two dredges annually from 1923 on. No data on composition of concentrates. See also: (Ganes Cr.) Iditarod quad., Independence.

Brooks, 1908 (B 345), p. 47-48 -- Gold discovery during winter of 1906-07 reported; one a bench 8-10 ft. above water level. $10,000-$20,000 in coarse gold mined. Quartz ledge with free gold said to have been found and a 30-ft. shaft sunk; did not reach solid bedrock [Independence prospect].

Maddren, 1909 (B 379), p. 238-239, 258-263, 265-266 -- Preliminary to B 410.

Brooks, 1910 (B 442), p. 45 -- Major gold producer of region in 1909.

Maddren, 1910 (B 410), p. 21-23 -- Gold discovered in summer of 1906, followed by a stampede in 1907.

p. 64 -- Placer gold probably derived from quartz veins associated with siliceous dikes that cut altered slates. Occurrence at head of Carter Gulch [Independence] is an example. Both stream and bench placers.

p. 67-72 -- Creek 20 mi. long; upper part [in Iditarod quad.] is beheaded upper part of Beaver Cr. and carries no gold. Both creek and bench deposits; most production as of 1908 was from bench remnants about 60 ft. above creek level. Bedrock is mainly slate. Stream gravel contains many igneous boulders and cobbles. Gold coarse, some with attached quartz. A nugget weighing more than 16 oz. was recovered.

p. 74 -- Gold coarse.

Maddren, 1911 (B 480), p. 236 -- Gold discovered, 1906.

p. 246-247 -- Mining all on benches, 1910. Scarcity of water. Total production through 1910 was worth about $150,000. Gold in gravel and splintered top few feet of bedrock.

Brooks, 1912 (B 520), p. 40 -- Mining, 1911.

Eakin, 1913 (B 542), p. 296-299 -- Preliminary to B 578.

Brooks, 1914 (B 592), p. 70 -- Mining; potential dredging ground prospected; 1913.

Eakin, 1914 (B 578), p. 35 -- Workable gold placers.

p. 37-38 -- Gold concentrated in a paystreak in an old valley at the level of the preserved benches; reconcentrated when stream cut down to present position. Stream gravels not frozen; not minable in 1912, but might be suitable for dredging. Benches nearly mined out.

p. 40 -- Most of available bench ground worked out by end of 1912 season.

Brooks, 1915 (B 622), p. 62 -- 2 mining plants operating, 1914.

Brooks, 1916 (B 642), p. 65 -- Mining and prospect drilling, 1915.

(Ganes Cr.) -- Continued

Mertie and Harrington, 1916 (B 642), p. 249-251 -- Quotation from B 578.
p. 265 -- Mining, 1915.
Smith, 1917 (BMB 142), p. 25 -- Mining, 1915.
Smith, 1917 (BMB 153), p. 54 -- Mining, 1916; new bench discovery on left limit.
Brooks, 1918 (B 662), p. 58 -- Mining, 1916; new deposit found on bench near mouth of Little Cr.
Martin, 1919 (B 692), p. 38 -- Mining, 1917.
Brooks and Martin, 1921 (B 714), p. 92 -- Mining, 1919.
Brooks, 1922 (B 722), p. 55 -- Mining, 1920.
Brooks, 1923 (B 739), p. 39 -- Mining, 1921.
Brooks and Capps, 1924 (B 755), p. 43-44 -- Mining, 1922. Dredge freighted in, but not installed.
Mertie and Harrington, 1924 (B 754), p. 105-106 -- Quotation from B 578.
Brooks, 1925 (B 773), p. 27 -- Dredge operated, 1923.
Smith, 1926 (B 783), p. 14, 18 -- 2 dredges operated, 1924.
Moffit, 1927 (B 792), p. 25 -- Dredge operated, 1925.
Smith, 1929 (B 797), p. 20, 30 -- Mining, including 2 dredges, 1926.
Smith, 1930 (B 810), p. 26, 40 -- Dredge operated, 1927.
Smith, 1930 (B 813), p. 30-31, 47 -- Mining, including a dredge, 1928.
Smith, 1932 (B 824), p. 35, 52 -- Mining, including 2 dredges, 1929.
Smith, 1933 (B 836), p. 35, 54 -- Dredge operated, 1930; short season.
Smith, 1933 (B 844-A), p. 35, 54 -- Dredge operated, 1931.
Smith, 1934 (B 864-A), p. 37, 57 -- Dredge operated, 1933.
Mertie, 1936 (B 864-C), p. 174-175 -- Gold discovered, 1906. Country rock is Cretaceous slate and other rocks cut by many dikes of andesite, dacite, and related rocks. Dikes highly weathered. Very little quartz in stream gravels. Maddren had considered that dikes were channels for mineralizing solutions; Mertie thinks mineralization was more diffuse and possibly unrelated to dikes.
p. 184-188 -- One of the major producing streams in district. Upper part of drainage pirated from Beaver Cr. All of gold placers below point of capture. Auriferous gravel preserved on benches 60-100 ft. above creek level. Gold in stream placers derived from local bedrock and reconcentrated from bench deposits. Gold on or in upper foot or so of slate bedrock. In 1933 a dredge and several smaller mining operations were active. One assay showed fineness of 888-1/4 Au, 107 Ag.
Smith, 1936 (B 868-A), p. 38, 59 -- 2 dredges operated, 1934.
Smith, 1937 (B 880-A), p. 41-42, 61 -- Mining, including 2 dredges, 1935.
Smith, 1938 (B 897-A), p. 50, 71 -- Mining, including 2 dredges, 1936.
Smith, 1939 (B 910-A), p. 51, 76 -- 2 dredges operated, 1937.
Smith, 1939 (B 917-A), p. 49, 75 -- 2 dredges operated, 1938.
Smith, 1941 (B 926-A), p. 45, 71 -- 2 dredges operated, 1939.
Smith, 1942 (B 933-A), p. 41, 68 -- Mining, including 2 dredges, 1940.
Koschmann and Bergendahl, 1968 (P 610), p. 28 -- Gold discovered, 1906. Production in area through 1957. References to B 480, B 754.
Cobb, 1973 (B 1374), p. 149 -- Rich placers discovered in 1906. Source area underlain by Cretaceous slate cut by many dacitic dikes.
p. 151 -- Early mining by drifting. Dredges followed and were active until as recently as 1965.

(Graham Cr.) — Gold (?)

Innoko district — Ophir (22.5, 10.5) approx. 64°34'N, 156°07'W

Summary: Prospecting and development work reported, 1940.

Smith, 1942 (B 933-A), p. 42 — Report of prospecting and development work in 1940.

Independence	**Gold**
Innoko district	**Ophir (20.4, 0.5) approx.**
MF-367, loc. 1	**63°00'N, 156°26'W approx.**

Summary: Quartz vein about 2 ft. thick follows hanging wall of a felsic dike that intruded sedimentary rocks. Veins of iron carbonate seam vein and wall rocks. Gold in iron-stained vugs and crevices in vein and in magnetite grains; a little gold in wall rocks. Was mined for a year or two about 1912; crusher and stamp mill; no data on production. Workings consisted of 60-ft. tunnel, 60-ft. winze, and 80 ft. of drifts on 2 levels. Mine abandoned, probably before 1920. Includes references to (Carter Gulch) and to lode on Ganes Cr.

Brooks, 1908 (B 345), p. 48 — Quartz ledge said to carry free gold. Shaft sunk about 30 ft. did not reach solid bedrock.

Maddren, 1909 (B 379), p. 255 — Preliminary to B 410.

Maddren, 1910 (B 410), p. 64 — Quartz deposited along walls of a siliceous dike cutting altered slate carries free gold; some panned from residual material in outcrop. 30-ft. shaft did not get below zone of weathering.

Eakin, 1913 (B 542), p. 294, 298-299 — Preliminary to B 578.

Eakin, 1914 (B 578), p. 28-29 — Quartz vein averaging 2 ft. thick on hanging wall of rhyolite dike intrusive into sedimentary rocks. Gold in iron-stained crevices and vugs and embedded in magnetite grains. Iron carbonate in veins that cut quartz and in wall rocks of quartz vein; wall rocks also contain some gold. Workings show that vein is continuous to a depth of more than 40 ft. This and similar veins probably supplied gold to placers in area. Independence is a workable gold lode.

p. 38 — Reference to p. 28-29.

p. 40 — 60-ft. tunnel, 60-ft. winze at end, and 2 drifts (total length 80 ft.) at 2 lower levels. Crusher and stamp mill. 5 men employed, 1912 [No data on production, if any.]

Mertie and Harrington, 1924 (B 754), p. 115 — Quotation from B 578 and statement that little work has been done since Eakin's visit (1912).

Mertie, 1936 (B 864-C), p. 229 — Reference to B 410. Statement that property was abandoned sometime after 1912.

Berg and Cobb, 1967 (B 1246), p. 228 — Mined for a year or two about 1912; mine consisted of several drifts and a shaft; production figures not available. Auriferous quartz vein 2 ft. thick follows hanging wall of felsic dike. Some of gold associated with magnetite; vein seamed by stringers of iron carbonate.

(Iron Cr.) Gold

Innoko district
MF-367, loc. 3

Ophir (16.5, 18.0)
63°26'N, 156°54'W

Summary: Mining in 1917. 2-4 ft. of gravel beneath 4 ft. of muck.

Harrington, 1919 (B 692), p. 350-351 — Mining in 1917. 2-4 ft. of gravel (phyllitic rocks and granite) overlain by about 4 ft. of muck. No platinum in concentrates.

Mertie and Harrington, 1924 (B 754), p. 107 — Quotation from Harrington, 1919 (B 692).

(Keating Gulch)

Innoko district
MF-367, loc. 5

Gold

Ophir (17.5, 17.8)
63°26'N, 156°47'W

Summary: Mining in 1938.

Smith, 1939 (B 917-A), p. 49 -- Mining in 1938. Power equipment used.

(Little Cr.) Gold, Tungsten

Innoko district
MF-367, locs. 19-21

Ophir (19.5-20.35, 1.1-1.95)
63°02'-63°05'N, 156°27'-156°33'W

Summary: Bedrock mainly slate. Stream and bench placers merge laterally with no sharp break in bedrock surface. Gold in crevices in bedrock, so top 2-6 ft. was removed in mining. Much scheelite in concentrates from lower part of No. 6 Pup; may have come from area about 1,000 ft. upstream from mining cut where there is a large dike. Gold discovered in 1907. Mining continued until at least 1940; dredge operated in most years after 1925. Includes references to (No. 6 Pup).

Maddren, 1909 (B 379), p. 239, 256, 263-265 — Preliminary to B 410.
Maddren, 1910 (B 410), p. 22-23 — Gold discovered and prospecting begun in 1907.
p. 64 — Gold in both stream and bench gravels.
p. 72-74 — Same slaty bedrock as at Canes Cr. Drift mining in 1908. 4-7 ft. of gravel beneath muck; total depth to bedrock 15-24 ft. Gold coarse with many nuggets.
Maddren, 1911 (B 480), p. 247-249 — Bedrock shale or argillite beneath 10-25 ft. of unconsolidated material. Most of gold in cracks in shattered bedrock, of which 2-6 ft. is mined. Much of mining by drifting; not enough water for hydraulicking. "Benches" beside stream are not terraces reflecting bedrock surface. Production 1908-10 about $150,000.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 296-299 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913. Rich placer ground found.
Eakin, 1914 (B 578), p. 35-37 — Floodplain and bench placers rich enough to mine for about 2 mi. along creek. Benches and downstream part of floodplain mined by open cuts; shafts and drifts farther upstream.
p. 39 — Mining in 1912.
Brooks, 1915 (B 622), p. 62 — 8 mines operating, 1914.
Brooks, 1916 (B 642), p. 65 — Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 249-250 — Quotation from B 578.
p. 265 — Mining, 1915.
Smith, 1917 (BMB 142), p. 25 — Mining, 1915.
Brooks, 1918 B 662), p. 58 — Mining, 1916.
Martin, 1919 (B 692), p. 38 — Mining, 1917.
Brooks, 1923 (B 739), p. 39 — Mining, 1921.
Brooks and Capps, 1924 (B 755), p. 43-44 — Mining, 1922. Dredge to be installed.
Mertie and Harrington, 1924 (B 754), p. 105 — Quotation from B 578.
Moffit, 1927 (B 792), p. 18, 25 — New dredge began operating, 1925.
Smith, 1929 (B 797), p. 20, 30 — Mining, including a dredge, 1926.
Smith, 1930 (B 810), p. 26, 40 — Mining, including a dredge, 1927.
Smith, 1930 (B 813), p. 31 — Mining other than dredging, 1928.
Smith, 1932 (B 824), p. 35, 52 — Mining, including a dredge, 1929.
Smith, 1933 (B 836), p. 35, 54 — Mining, including a dredge, 1930.
Smith, 1933 (B 844-A), p. 35-36 — Mining, 1931; dredge operated by Felder, Gale & Higgins.
p. 54 — [Confusion here; Felder, Gale & Higgins dredge listed as operating on Yankee Cr., which is not mentioned on p. 35-36].

(Little Cr.) - Continued

Smith, 1934 (B 857-A), p. 32-33, 51 — Mining, including a dredge, 1932.
Smith, 1934 (B 864-A), p. 37-38, 57 — Mining, including a dredge, 1933.
Mertie, 1936 (B 864-C), p. 181-184 — Mined since 1908. Stream and bench placers merge laterally with no sharp break in bedrock surface. Bedrock mainly slate; conglomerate on at least one claim. Dredge and other mining in 1933.
Smith, 1936 (B 868-A), p. 38, 59 — Mining, including a dredge, 1934.
Smith, 1937 (B 880-A), p. 41-42, 61 — Mining, including a dredge, 1935.
Smith, 1938 (B 897-A), p. 50, 71 — Mining, including a dredge, 1936.
Smith, 1939 (B 910-A), p. 51, 76 — Dredge operated, 1937.
Smith, 1939 (B 917-A), p. 49, 75 — Dredge operated, 1938.
Smith, 1941 (B 926-A), p. 45, 71 — Dredge operated, 1939.
Joesting, 1942 (TDM 1), p. 39 — Abundant scheelite in No. 6 Pup.
p. 42 — Abundant scheelite in lower 700 ft. of No. 6 Pup.
Large dike (possible source of scheelite) about 1,000 ft. upstream.
Smith, 1942 (B 933-A), p. 41, 68 — Mining, including a dredge, 1940.
Koschmann and Bergendahl, 1968 (P 610), p. 28 -- References to B 480, B 754.
Cobb, 1973 (B 1374), p. 151 — Dredge used for many years. Much scheelite in concentrates from Little Cr. and No. 6 Pup.

(Madison Cr.) Gold

Innoko district
MF-367, loc. 4

Ophir (17.3-17.35, 17.35-17.5)
63°24'-63°25'N, 156°47'-156°48'W

Summary: Sporadic placer mining from as early as 1917 until after World War II; all small scale. Concentrates contained gold, magnetite, ilmenite, augite, hornblende, garnet, and zircon.

Brooks, 1908 (B 345), p. 48 -- Depth to bedrock 31 ft.; gold, but not in paying quantities; 1907.

Harrington, 1919 (B 692), p. 350-351 -- Has been considerable prospecting. Mining in 1917 on 2 claims. Fine gold on lower claim; coarse gold on upper. Concentrates contain magnetite, ilmenite, augite, hornblende, garnet, and zircon.

Brooks, 1922 (B 722), p. 55 -- Mining in basin [may have been on tributaries], 1920.

Brooks and Capps, 1924 (B 755), p. 44 -- Mining, 1922.

Mertie and Harrington, 1924 (B 754), p. 107 -- Quotation from Harrington, 1919 (B 692).

Smith, 1939 (B 910-A), p. 51 -- Mining, 1937.

Cobb, 1973 (B 1374), p. 152 -- One of creeks in "Tolstoi district" where there was mining; small-scale nonfloat after World War II; had ceased by 1965.

(Ophir Cr.) Gold

Innoko district
MF-367, locs. 13, 14

Ophir (19.15-19.6, 1.7-2.5)
63°05'-63°08'N, 156°32'-156°35'W

Summary: Most of bedrock is slate; some sandstone. Igneous rock pebbles and cobbles and some vein quartz in gravels. Both stream and bench deposits. One of major producing creeks in district (about a million dollars by 1933); no dredge ever installed. Most of gold in crevices in top 2-5 ft. of bedrock. Much of creek was worked twice. Mining from 1908 to as recently as 1940. No data on composition of concentrates.

Maddren, 1909 (B 379), p. 239-240, 256, 264-265 — Preliminary to B 410.
Brooks, 1910 (B 442), p. 45 — Mining in 1909.
Maddren, 1910 (B 410), p. 22-23 — Gold discovered in 1907; rich prospects at several places found in 1908, followed by a small stampede.
p. 64 — Gold in both stream and bench gravels.
p. 73-74 — Same slaty bedrock as at Ganes Cr. Depth to bedrock 15-24 ft; 4-7 ft. gravel on bedrock. Gold coarse, with many nuggets.
Maddren, 1911 (B 480), p. 250-252 — Surficial deposits mainly fine-grained, frozen, and 25-30 ft. thick. Most of gold in crevices in top 2-5 ft. of bedrock. Most of mining by drifting. Production 1908-10 was about $350,000.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 296-299 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913.
Eakin, 1914 (B 578), p. 35-36 — Chief producer of district, but deposits nearly exhausted. Most of alluvium permanently frozen. Only one bench claim was mined; bedrock floor is 7 ft. above floodplain level; 10 ft. of gravel.
p. 39 — Mining in 1912.
Brooks, 1915 (B 622), p. 62 — 8 mines operating, 1914.
Brooks, 1916 (B 642), p. 65 — Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 249-250 — Quotation from B 578.
p. 265 — Mining, 1915.
Smith, 1917 (BMB 142), p. 25 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Mining, 1916.
Brooks, 1918 (B 662), p. 58 — Mining, 1916.
Martin, 1919 (B 692), p. 38 — Mining, 1917.
Brooks and Martin, 1921 (B 714), p. 92 — Mining, 1919.
Brooks, 1922 (B 722), p. 55 — Mining, 1920.
Brooks, 1923 (B 739), p. 39 — Mining, 1921.
Brooks and Capps, 1924 (B 755), p. 43 — Mining, 1922.
Mertie and Harrington, 1924 (B 754), p. 104-105 — Quotation from B 578.
Smith, 1929 (B 797), p. 20 — Mining, 1926.
Smith, 1930 (B 810), p. 26 — Mining, 1927.
Smith, 1930 (B 813), p. 31 — Mining, 1928.
Smith, 1932 (B 824), p. 35 — Mining, 1929.
Smith, 1933 (B 836), p. 35 — Mining, 1930.
Smith, 1933 (B 844-A), p. 35-36 — Mining, 1931.
Smith, 1934 (B 857-A), p. 32-33 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37-38 — Mining, 1933.

(Ophir Cr.) - Continued

Mertie, 1936 (B 864-C), p. 176-179 -- As of 1933 had been the major producing creek of the district (close to a million dollars). Creek placers and bedrock benches. Some of the ground on one claim ran as high as $7-8 per bedrock foot. Paystreak mainly of recent origin, but there was undoubtedly some enrichment from eroded bench placers. Gold mainly on or in upper part of fractured slaty bedrock; some bedrock is sandstone. Many fine-grained igneous rock pebbles and cobbles in gravel; some vein quartz. A 14-oz. nugget was recovered. Much of creek has been mined twice; mechanical equipment (no dredges) used the second time.

Smith, 1936 (B 868-A), p. 38 -- Mining, 1934.

Smith, 1937 (B 880-A), p. 41-42 -- Mining, 1935.

Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.

Smith, 1939 (B 910-A), p. 51 -- Mining, 1937.

Smith, 1939 (B 917-A), p. 49 -- Mining, 1938.

Smith, 1941 (B 926-A), p. 46 -- Mining, 1939.

Smith, 1942 (B 933-A), p. 41 -- Mining, 1940.

Koschmann and Bergendahl, 1968 (P 610), p. 28 -- References to B 480, B 734.

(Spruce Cr.) Gold

Innoko district Ophir (19.6-19.75, 1.85-2.1)
MF-367, loc. 17 63°05'-63°06'N, 156°31'-156°32'W

Summary: Bedrock mainly slate cut by highly altered dacitic(?) dikes. Mining all on a gently rising terrace SE of creek. Most of gold on bedrock; some very coarse (16-oz. nugget). Gold discovered in 1907; mining from about 1910 to as recently as 1940. No dredging on this creek.

Maddren, 1909 (B 379), p. 239, 264 — Preliminary to B 410.
Maddren, 1910 (B 410), p. 22 — Gold discovered in 1907.
p. 72-73 — Similar to Little and Ophir Crs. Same slaty bedrock as at Ganes Cr. No commercial mining as of 1908.
Maddren, 1911 (B 450), p. 249-250 — Bedrock blocky shale or argillite. Best prospects on low bench 200 yds. from stream. Overburden groundsluiced off and gold recovered from bedrock crevices by shovelling in shattered bedrock. About $20,000 in gold mined in 1910.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 296-297, 299 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913.
Eakin, 1914 (B 578), p. 35-36 — Developed placers on low bench on east side of creek. Gold in shattered top of bedrock and overlying 2-6 ft. of gravel beneath 10-15 ft. of muck or silt.
p. 39 — Mining in 1912.
Brooks, 1915 (B 622), p. 62 — 3 mines operating, 1914.
Brooks, 1916 (B 642), p. 65 — Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 249-250 — Quotation from B 578.
p. 265 — Mining, 1915.
Smith, 1917 (BMB 142), p. 25 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Mining, 1916.
Brooks, 1918 (B 662), p. 58 — Mining, 1916.
Martin, 1919 (B 692), p. 38 — Mining, 1917.
Brooks, 1922 (B 722), p. 55 — Mining, 1920.
Mertie and Harrington, 1924 (B 754), p. 105 — Quotation from B 578.
Smith, 1929 (B 797), p. 20 — Mining, 1926.
Smith, 1930 (B 810), p. 26 — Mining, 1927.
Smith, 1930 (B 813), p. 31 — Mining, 1928.
Smith, 1932 (B 824), p. 35 — Mining, 1929.
Smith, 1934 (B 857-A), p. 32-33 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37-38 — Mining, 1933.
Mertie, 1936 (B 860-C), p. 179-181 — All mining on a gently rising terrace southeast of creek; creek gravels have no workable paystreak. Much of bedrock is slate cut by highly altered dacitic(?) dikes. Gold mainly on bedrock. Some coarse gold; one 16-oz. nugget. Mining in 1933.
Smith, 1936 (B 868-A), p. 38 — Mining, 1934.
Smith, 1937 (B 880-A), p. 41-42 — Mining, 1935.
Smith, 1938 (B 897-A), p. 50 — Mining, 1936.
Smith, 1941 (B 926-A), p. 46 — Mining, 1939.
Smith, 1942 (B 933-A), p. 41 — Mining, 1940.
Koschmann and Bergendahl, 1968 (P 610), p. 28 — References to B 480, B 754.

(Tamarack Cr.)

Gold

Innoko district
MP-367, loc. 18

Ophir (19.75, 2.0)
63°05'N, 156°31'W

Summary: Has been mining; reported as of 1934.

Mertie, 1936 (B 864-C), p. 180 -- A paystreak has been mined and yielded good returns (as of 1934).

(Tolstoi Cr.)

Gold (?)

Innoko district

Ophir
NW 1/4 SE 1/4 quad.

Summary: Placer gold strike, winter 1915-16, reported. Probably means on some tributary. See also: (Esperanto Cr.), (Madison Cr.)

Mertie and Harrington, 1916 (B 642), p. 251 — Placer gold strike during winter of 1915-16 reported.

(Victor Gulch) (Cr.) — Gold, Mercury

Innoko district — Ophir (19.9, 2.55)
MF-367, loc. 16 — 63°08'N, 156°30'W

Summary: Bedrock is slate with vertical cleavage; many highly altered dacitic and andesitic dikes. Average thickness of overburden is 25 ft., but in places is 40 ft. Gold on or in crevices in bedrock. Some quartz in gravel contains free gold. Concentrates contain cinnabar. Mining reported from 1920 to 1936.

Brooks, 1922 (B 722), p. 55 -- Mining, 1920.
Brooks, 1923 (B 739), p. 39 -- Rich deep placer ground discovered and developed, 1921.
Smith, 1929 (B 797), p. 20 -- Mining, 1926.
Smith, 1930 (B 810), p. 26 -- Mining, 1927.
Smith, 1932 (B 824), p. 35 — Mining, 1929.
Smith, 1934 (B 857-A), p. 32-33 — Mining, 1932.
Smith, 1934 (B 864-A), p. 37-38 -- Mining, 1933.
Mertie, 1936 (B 864-C), p. 176 -- Mining, 1933.
p. 191 -- Operator worked 1920-1933 near road crossing. Average thickness of overburden about 25 ft., but is nearly 40 ft. in some places. Bedrock is slate with vertical cleavage; cut by numerous fine-grained and highly altered dacitic and andesitic dikes. Some of fractured debris is pyritized. Gold on and in crevices in bedrock; many nuggets. Some quartz; some contains free gold. Concentrates contain cinnabar.
Smith, 1936 (B 868-A), p. 38 — Mining, 1934.
Smith, 1937 (B 880-A), p. 41-42 -- Mining, 1935.
Smith, 1938 (B 897-A), p. 50 -- Mining, 1936.
Malone, 1962 (IC 8131), p. 56 -- Reference to B 864-C.
Malone, 1965 (IC 8252), p. 56 -- Reference to B 864-C).
Cobb, 1973 (B 1374), p. 151 -- Cinnabar reported.

(Yankee Cr.) Gold

Innoko district
MF-367, locs. 24, 25

Ophir (20.8-21.2, 0.4-0.85)
63°00'-63°01'N, 156°20'-156°23'W

Summary: Bedrock is slate, sandstone, and decomposed igneous rock. Valley floor and bedrock surface slope gently up to steep valley walls. Gravel shallow and generally unfrozen. Mined from 1909 to as recently as 1940. First dredge in district installed in 1921 and operated every year thereafter; took up 1-2 ft. of bedrock with gravel. No data on composition of concentrates. See also (Yankee Cr.) Iditarod quad.

Maddren, 1910 (B 410), p. 74 — Prospecting in winter of 1908-09 said to have been encouraging.
Maddren, 1911 (B 480), p. 252-253 — Auriferous deposits (coarse gravels) about 8 ft. deep; 1-3 ft. of muck and silt. Open-cut mining. Production 1909-10 about $75,000.
Brooks, 1912 (B 520), p. 40 — Mining, 1911.
Eakin, 1913 (B 542), p. 296, 298-299 — Preliminary to B 578.
Brooks, 1914 (B 592), p. 70 — Mining, 1913.
Eakin, 1914 (B 578), p. 35 — Workable gold deposits exist.
p. 38-40 — Gold placers 6-7 mi. upstream from mouth. Gravel, mainly unfrozen, is 5-7 ft. thick and overlain by thin bed of muck. Worked by open-cut methods. Mining in 1912.
Brooks, 1915 (B 622), p. 62 — 4 mines operating, 1914.
Brooks, 1916 (B 642), p. 65 — Mining, 1915.
Mertie and Harrington, 1916 (B 642), p. 249, 251 — Quotation from B 578.
p. 265 — Mining, 1915.
Smith, 1917 (BMB 142), p. 25 — Mining, 1915.
Smith, 1917 (BMB 153), p. 54 — Mining, 1916.
Brooks, 1918 (B 662), p. 58 — Mining, 1916. Also prospecting for dredging ground.
Martin, 1919 (B 692), p. 38 — Mining, 1917.
Brooks, 1922 (B 722), p. 55 — Mining, 1920.
Brooks, 1923 (B 739), p. 9 — Dredge operated, 1921.
p. 39 — Dredge operated for 50 days.
Brooks and Capps, 1924 (B 755), p. 14, 43-44 — Dredge operated, 1922.
Mertie and Harrington, 1924 (B 754), p. 106 — Quotation from B 578.
Brooks, 1925 (B 773), p. 27 — Dredge operated, 1923.
Smith, 1926 (B 783), p. 14, 18 — Dredge operated, 1924.
Moffit, 1927 (B 792), p. 25 — Dredge operated, 1925.
Smith, 1929 (B 797), p. 20, 30 — Dredge operated, 1926.
Smith, 1930 (B 810), p. 26, 40 — Dredge operated, 1927.
Smith, 1930 (B 813), p. 30-31, 47 — Dredge operated, 1928.
Smith, 1932 (B 824), p. 35, 52 — Dredge operated, 1929.
Smith, 1933 (B 836), p. 35, 54 — Dredge operated, 1930; short season.
Smith, 1933 (B 844-A), p. 54 — Dredge of Felder, Gale & Higgins operated, 1931. [On p. 35 this dredge is reported as mining on Little Cr.].
Smith, 1934 (B 857-A), p. 32-33 — Mining, 1932. Dredge operated only a short time at beginning of season. [List of dredges, p. 51, does not include this dredge.]
Smith, 1934 (B 864-A), p. 37-38, 57 — Mining, including a dredge, 1933.
Mertie, 1936 (B 864-C), p. 188-190 — Open valley with both floor and bedrock surface sloping gently upward to valley walls. Gravel shallow and mainly

unfrozen. Bedrock slate, sandstone, and decomposed igneous rock. Dredge takes up 1-2 ft. of slate bedrock with the gravels. In 1933 a dredge and 3 open-cut mines were being operated.

Smith, 1936 (868-A), p. 38, 59 — Mining, including a dredge, 1934.
Smith, 1937 (B 880-A), p. 41, 61 — Dredge operated, 1935.
Smith, 1938 (B 897-A), p. 60, 71 — Dredge operated, 1936.
Smith, 1939 (B 910-A), p. 51, 76 — Dredge operated, 1937.
Smith, 1939 (B 917-A), p. 49, 75 — Dredge operated, 1938.
Smith, 1941 (B 926-A), p. 45, 71 — Dredge operated, 1939.
Smith, 1942 (B 933-A), p. 41, 68 — Mining, including a dredge, 1940.
Koschmann and Bergendahl, 1968 (P 610), p. 28 — References to B 480, B 754.
Cobb, 1973 (B 1374), p. 151 — First dredge in district installed in 1921.

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 -- see (Moore Cr.)
Alaska Mines & Minerals, Inc. -- see DeCourcy
Alpha Mining Co. -- see (Flat Cr.)
Awe -- see (Chicken Cr.)
Awe & Durant -- see (Flat Cr.)

Backstrom -- see (Flat Cr.)
B & C -- see (Moore Cr.)
Bauquier & Hatton -- see (Willow Cr., trib. Iditarod R.)
Beatson & Donnelly -- see (Otter Cr.)
Becker -- see (Chicken Cr.)

Belanger, Thibault & La Chance -- see (Willow Cr., trib. Iditarod R.)
Black Bear Mining Co. -- see (Chicken Cr.)
Bonanza -- see (Flat Cr.)
Brink -- see DeCourcy
Chicago -- see (Flat Cr.)

Chicken Creek Mining Co. -- see (Chicken Cr.)
Corona -- see DeCourcy
(Crooked Cr.) -- see (Donlin Cr.)
DeCoursey-Brewis Minerals, Ltd. -- see DeCourcy
(DeCoursey Mtn.) -- see DeCourcy

DeCoursey Mountain Mining Co. -- see DeCourcy
Duffy & Co. -- see (Chicken Cr.)
Durand & Awe Bros. -- see (Flat Cr.)
Erickson -- see (Ganes Cr.)
Felder-Gale & Co. -- see (Yankee Cr.)

Felder, Gale & Higgins -- see (Ganes Cr.)
Fidelity-Kuskokwim (Quicksilver Cr.) -- see DeCourcy
Fine Gold -- see (Willow Cr., trib. Iditarod R.)
Flume Dredging Co. -- see (Yankee Cr.)
French Hill -- see (Ganes Cr.)

Ganes Creek Dredging Co. -- see (Ganes Cr.)
Gane, Spencer, Roke & Maki -- see (Ganes Cr.)
Ganes Creek Mining Co. -- see (Ganes Cr.)
(George R.) -- see (Julian Cr.)
Gibbs & Eison -- see (Ganes Cr.)

Glen -- see (Flat Cr.)
Guinan & Ames Dredging Co. -- see (Ganes Cr.)
Gum Boot -- see (Otter Cr.)
Haggerty -- see (Willow Cr., trib. Iditarod R.)
Hardluck -- see (Glen Gulch)

Higgins -- see (Yankee Cr.)
Hillside -- see (Flat Cr.)
Hilltop -- see (Flat Cr.)
Holky & Shonbeck -- see (Ganes Cr.)
Holky Dredging Co. -- see (Ganes Cr.)

Idaho -- see (Flat Cr.)
Iditarod Mining Co. -- see (Willow Cr., trib. Iditarod R.)
Innoko Dredging Co. -- see (Ganes Cr.)
Jensen -- see (Willow Cr., trib. Iditarod R.)
Joaquin -- see (Ganes Cr.)

Johnson & Martin -- see Golden Horn
(Jualin Cr.) -- see (Julian Cr.)
(Julien Cr.) -- see (Julian Cr.)
Kaskinen -- see (Moore Cr.)
Katz -- see Kaatz

Keturi -- see (Moore Cr.)
K.P.M. -- see (Otter Cr.)
LaChance & Thibault -- see (Willow Cr., trib. Iditarod R.)
Last Chance -- see DeCourcy
(Lewis Gulch) -- see (Donlin Cr.)

Lind -- see (Mt. Joaquin)
Lindfors and associates -- see DeCourcy
Lorager (& Jensen) -- see (Willow Cr., trib. Iditarod R.)
Lusher -- see (Malamute Cr.)
Lyman -- see DeCourcy

Lyman & Markle -- see Golden Horn
Lyman (, Johnston) & Rocheleau -- see DeCourcy
Manley (& Loranger) -- see (Willow Cr., trib. Iditarod R.)
Marietta -- see (Flat Cr.)
Miscovich & Rodman -- see (Julian Cr.)

Miscovich (Bros.) -- see (Otter Cr.)
Miscovich & Roslund -- see (Otter Cr.)
Mohawk -- see (Flat Cr.), Golden Horn, (Otter Cr.)
(Montana Cr.) -- see DeCourcy
Moore Creek Mining Co. -- see (Moore Cr.)

Moore Creek Placers -- see (Moore Cr.)
(Moose Cr.) -- see DeCourcy
Moss & Larson Mining Co. -- see (Ganes Cr.)
Myrtle -- see (Flat Cr.)
Nexto -- see DeCourcy

Nextu -- see DeCourcy
North American Dredging Co. -- see (Flat Cr.,), (Otter Cr.)
Northern Alaska Dredging Co. -- see (Otter Cr.)
Northland Development Co. -- see (Flat Cr.), (Willow Cr., trib. Iditarod R.)
Ogriz -- see (Slate Cr.)

OK -- see (Moore Cr.), (Mt. Joaquin)
Olson & Co. -- see (Happy Cr.)
Otter -- see (Otter Cr.)
Otter Creek Dredging Co. -- see (Black Cr.), (Otter Cr.)
Pelky -- see (Ganes Cr.)

Prince Creek Mining Co. -- see (Prince Cr.)
Prospector -- see (Otter Cr.)
Puntilla -- see (Ganes Cr.)
(Quartz Gulch) -- see (Donlin Cr.)
(Queen Gulch) -- see (Donlin Cr.)

Ray -- see (Happy Cr.)
(Return Cr.) -- see DeCourcy
Riley & Marston -- see (Otter Cr.)
Riley, J. E., Investment Co. -- see (Otter Cr.)
Roslund -- see (Otter Cr.)

(Ruby Cr.) (Gulch) -- see (Donlin Cr.)
Sacco & Scott -- see (Flat Cr.)
Sakow & Co. -- see (Flat Cr.)
Salen -- see (Granite Cr.)
Savage -- see (Flat Cr.)

Savage & Matheson -- see (Ganes Cr.)
Schwaesdall & Vibe -- see (Spaulding Cr.)
Shonbeck -- see (Ganes Cr.)
(Six Gulch) -- see (Last Chance Gulch)
Snowbird -- see DeCourcy

(Snow Gulch) -- see (Donlin Cr.)
Speljack (, Messick, Myuttic & Repo) -- see (Ganes Cr.)
S.S.S. -- see (Slate Cr.)
Star -- see (Slate Cr.)
Steen (& Sternberg) -- see (Julian Cr.)

Strandberg (& Son) -- see (Flat Cr.)
Struver -- see (Flat Cr.)
Stuver (Bros.) -- see (Flat Cr.), (Happy Cr.)
Summit -- see (Happy Cr.)
Svexm -- see DeCourcy

Svexne -- see DeCourcy
Svextu -- see DeCourcy
Thrift (Mining Cr.) -- see DeCourcy
Tunnel -- see DeCourcy
Uotila (& Ogriz) -- see (Slate Cr.)

Uotila & Scott -- see (Flat Cr.)
Upgrade -- see (Flat Cr.)
U.S. Smelting, Refining & Mining Co. -- see (Fourth of July Cr.), (Moore Cr.)
Utilla & Ogris -- see (Slate Cr.)
Vibe & Schwaesdall -- see (Spaulding Cr.)

Virgin -- see (Otter Cr.)
White Star -- see (Willow Cr., trib. Iditarod R.)
Wildcat -- see (Flat Cr.), (Willow Cr., trib. Iditarod R.)
Yost & Nash -- see (Flat Cr.)
Yukon Gold (Dredging) Co. -- see (Flat Cr.)

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