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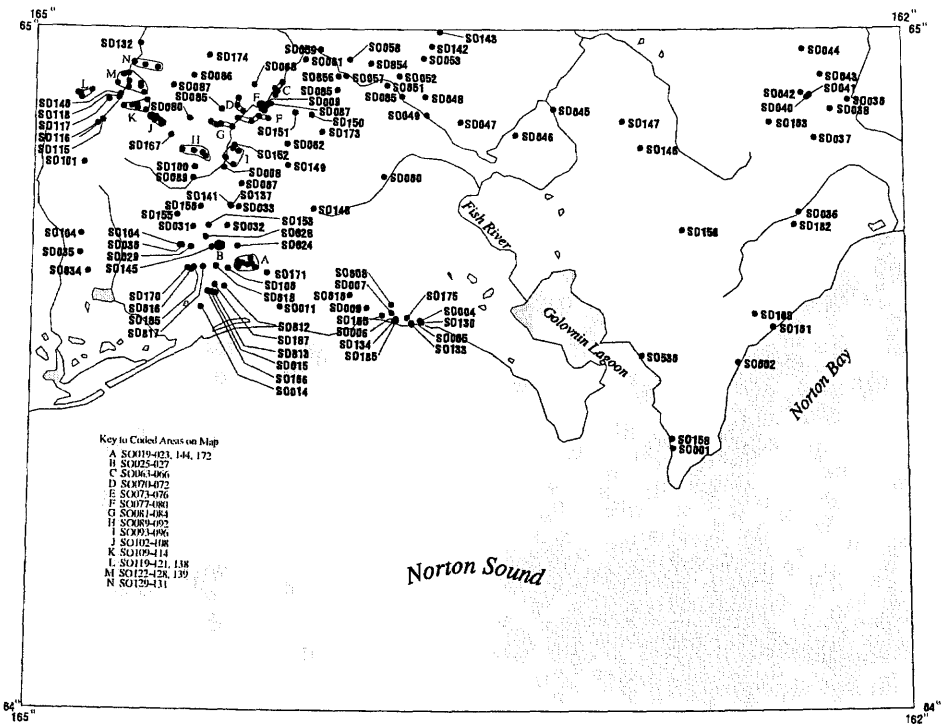
Alaska Resource Data File

Solomon quadrangle

Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



Distribution of mineral occurrences in the Solomon 1:250,000-scale quadrangle, western Alaska

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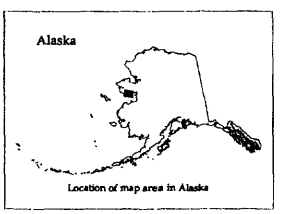

OPEN-FILE REPORT 99-573

Site name(s): Cape Darby

Site type: Occurrence

ARDF no.: SO001

Latitude: 64.385 **Quadrangle:** SO B-2

Longitude: 162.796

Location description and accuracy:
This occurrence is on the east coast of Golovin Bay. It is on a sea cliff 3.3 miles southeast of Golovin Mission and 4.1 miles northeast of Cape Darby. This is occurrence 136 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U, W

Other:

Ore minerals: Allanite, monazite, scheelite

Gangue minerals: Biotite, epidote, fluorite, hematite, ilmenite, magnetite, zircon

Geologic description:
West (1953) collected slope wash or detrital material from a small drainage at this locality. A heavy mineral concentrate obtained from the sample material (concentration ratio approximately 1,200:1) contained 0.049 percent equivalent uranium. The minerals identified in this concentrate included allanite, scheelite, monazite, fluorite, hematite, ilmentite, magnetite, epidote, biotite, and zircon. The bedrock here is an amphibolite facies, metasedimentary assemblage that forms a regional selvage between the Darby pluton to the east the the Kachauik pluton to the west (Miller and others, 1972; Till and others, 1986). The Darby pluton, is a large mid-Cretaceous granodiorite and granite body that has elevated background levels of uranium and thorium (Miller an Bunker, 1976; Johnson and others, 1979; Till and others, 1986). The Kachauik pluton is a composite syenite to granodiorite body, locally cut by nepheline syenite dikes, that is slightly older than the Darby pluton (99.9 +/- 3 Ma; Miller and others, 1972; Miller, 1972; Miller and Bunker, 1976). Parts of the Kachauik pluton contain U, Th, and REE mineralization near nepheline syenite dikes (Miller and others, 1976). Many of the minerals identified in the heavy mineral concentrate from this location are known accessory minerals in the Darby pluton.

Alteration:

Age of mineralization:

Mid-Cretaceous?; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976). A K/Ar age for the Kachauik pluton is 99.9 +/- 3 Ma (Miller and others, 1972; Miller and Bunker, 1976).

Deposit model:
Disseminated; the heavy mineral concentrate is from a sample of detrital materials.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:
The reconnaissance sampling by West (1953) is the only work known in the area.

Production notes:

Reserves:

Additional comments:

References:
West, 1953; Cobb, 1972 (MF 445); Miller, 1972; Miller and others, 1972; Miller and Bunker, 1976; Berry and others, 1976; Miller and others, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Carson Creek

Site type: Prospect

ARDF no.: SO002

Latitude: 64.51 **Quadrangle:** SO C-2

Longitude: 162.57

Location description and accuracy:

This prospect is on the east coast of Darby Peninsula, about 3 miles northeast of Carson Creek (Smith and Eakin, 1911). It is apparently near a faulted (?) contact between schist and marble. This is location 24 of Cobb (1972, MF442; 1978, OF 78-181). It is probably located within 0.5 mile.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals:

Geologic description:

A short , open-cut exploration trench exposes copper carbonates and some chalcocite disseminated in schist and along joint surfaces (Smith and Eakin, 1911, p. 134-135). Miller and Grybeck (1973) report a 10 feet by 10 feet area of copper staining in quartz-biotite-feldspar schist; a grab sample of the copper-stained schist contained 20,000 ppm Cu, 15 ppm Ag, 0.15 ppm Au, and 200 ppm Mo. Slickensides in schist are well developed and the prospect is a short distance north of massive, light gray limestone (marble). Till and others (1986) identify the marble as lower Paleozoic in age. The metasedimentary rocks are on the east flank of the mid-Cretaceous Darby pluton (Miller and others, 1972; Miller and Bunker, 1976; Berry and others, 1976; Johnson and others, 1979).

Alteration:

Oxidation; secondary copper minerals are present.

Age of mineralization:

Unknown; emplacement of the Darby pluton (K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma, Berry and others, 1976) and ampihibolite facies metamorphism of metasedimentary rocks are mid-Cretaceous but the mineralization here could be older or younger than these important regional events.

Deposit model:
Disseminations or replacements of metasedimentary rocks and joint fillings by copper-bearing minerals.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
A small surface trench was excavated prior to 1909.

Production notes:

Reserves:

Additional comments:

References:
Smith and Eakin, 1911; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Miller and Bunker, 1976; Berry and others, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Golovnin Bay

Site type: Occurrence

ARDF no.: SO003

Latitude: 64.52 **Quadrangle:** SO C-2

Longitude: 162.92

Location description and accuracy:
This occurrence is on the northeast coast of Golovin Bay where outcrops of the Kachauik pluton are exposed (Till and others, 1986). This location is about 0.3 miles north of a coastal light and 1.5 miles northwest of the mouth of McKinley Creek. It is locality 135 of Cobb (1972, MF 445; 1978, OF 78-181); it is probably located within 0.5 mile.

Commodities:

Main: REE, U, W

Other:

Ore minerals: Scheelite, uranium-titanium-niobate

Gangue minerals: Allanite, biotite, hematite, hornblende, ilmentite, magnetite, sphene

Geologic description:
A heavy mineral concentrate from slope wash over intrusive rocks of the Kachauik pluton contained 0.074% equivalent uranium, primarily in an unidentied uranium-titanium-niobate mineral (West, 1953, p. 4). Other minerals idenitied in the heavy mineral concentrate included allanite, biotite, hematite, hornblende, ilmenite, magnetite, scheelite, and sphene. Most of these are probably assessory minerals in monzonite/syenite of the Kachauik pluton (Miller and others, 1972; Miller, 1972). However, parts of this pluton along nepheline syenite dikes locally contain up to 0.15% U3O8, 1.05% Th, and 2% REE (Miller and others, 1976). A K/Ar age for the Kachauik pluton is 99.9 +/- 3 Ma (Miller and Bunker, 1976).

Alteration:

Age of mineralization:
Mid-Cretaceous; a K/Ar age for the Kachauik pluton is 99.9 +/- 3 Ma (Miller and Bunker, 1976).

Deposit model:

Disseminated; heavy minerals in slope wash close to their source in intrusive rocks of the Kachauik pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Koyana Creek

Site type: Mine

ARDF no.: SO004

Latitude: 64.571 **Quadrangle:** SO C-4

Longitude: 163.667

Location description and accuracy:
Koyana Creek is a small drainage that flows south to Norton Sound, 2.6 miles east of Bluff. This is locality 112 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals:

Geologic description:
Small-scale placer mining took place on Koyana Creek in the early part of the 1900's (Collier, 1908) and between 1928 and 1930 (Cobb, 1978, OF 78-181). The placer deposits were shallow and apparently low grade. Mulligan (1971) estimates that less than 100 ounces were produced. Cinnabar was recovered in the placer concentrates (Cathcart, 1922). The Koyana Creek area is better known for the lode gold prospects here (ARDF SO136) than for placer mining. Bedrock in the area is a lower Paleozoic metasedimentary sequence that includes marble and schist (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the placer deposits here are at low enough elevation (50 to 100 feet) to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive ?

Workings/exploration:

Small open-cut placer pits are present. Most reported exploration activity in the area was focused on lode gold deposits (ARDF SO136).

Production notes:

Reserves:

Additional comments:

References:

Collier and others, 1908; Cathcart, 1922; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Swede Creek

Site type: Mine

ARDF no.: SO005

Latitude: 64.568 **Quadrangle:** SO C-4

Longitude: 163.696

Location description and accuracy:
Swede Creek (Gulch) is a small, 0.4 mile long drainage that flows south to Norton Sound, 1.7 miles east of Bluff. It is locality 111 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals:

Geologic description:
Placer gold was discovered on Swede Creek between 1900 and 1902 (Collier and others, 1908) but most mining was between 1918 and WW II (Mulligan, 1971). The placer workings were shallow and extended 600 feet upstream from the coastal bluff (Herreid, 1965). Recorded gold production from the placer is less than 1,000 ounces but the extent of the workings suggested to Mulligan (1971) that production could have been greater. Bedrock in the area is Paleozoic marble and a band of intercalated metsedimentary schist (Herried, 1965; Mulligan, 1971; Till and others, 1986). The gold is thought to have been derived from mineralization in schist (as in the nearby Bluff/Daniels Creek area, ARDF localities SO006 and SO135) and part of the placer deposit here could be residual. Cinnabar was reported to be present in the placer deposits as early as 1922 (Cathcart, 1922) and lode cinnabar deposits were subsequently identified and locally explored (ARDF locality SO133).

Alteration:

Age of mineralization:
Quaternary; the placer deposits here are at low enough elevation (50 to 100 feet) to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The placer workings were shallow and extend about 600 feet upstream from the coastal bluff (Herreid, 1965).

Production notes:
The reported production from Swede Creek back to 1910 is less than 1,000 ounces but the extent of placer workings suggests that production was greater (Mulligan, 1971).

Reserves:

Additional comments:

References:
Collier and others, 1908; Cathcart, 1922; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Daniels Creek

Site type: Mine

ARDF no.: SO006

Latitude: 64.574 **Quadrangle:** SO C-4

Longitude: 163.749

Location description and accuracy:

Daniels Creek is a 1 mile drainage that flows south to Norton Sound at Bluff. Mining took place upstream from the mouth of the creek for a distance of about 2,500 feet, between elevations of 20 and 120 feet. This is locality 110 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Hg, W

Ore minerals: Cinnabar, gold, scheelite

Gangue minerals:

Geologic description:

A rich gold placer was discovered on the beach at Bluff in 1899 and by 1900, placers on Daniels Creek were also being exploited (Brooks and others, 1901). Placer mning on Daniels Creek took place for about 2,500 feet from its mouth to where schist crosses the drainage. Downstream, bedrock in the drainage is Paleozoic marble (Herreid, 1965; Mulligan, 1971; Till and others, 1986). The marble bedrock is characterized by irregular solution channels, crevices, sink holes, pits, and collapsed caverns that are in places tens of feet deep and below sea level. Cumulative gold production from Daniels Creek, mostly between 1900 and 1920, is about 44,000 ounces (Mulligan, 1971). Ditch systems brought water to the area and much of the mining was by hydraulic methods. Total placer production from the Bluff area (Daniels Creek, modern beaches, and offshore submerged channels or beaches - see ARDF locality SO134) is about 90,000 ounces. The initial discoveries were very rich; production in 1900 included about 10,000 ounces from Daniels Creek and 29,000 ounces from the modern beaches (Brooks and others, 1901; Cobb, 1978, OF 78-181). Manganese oxide locally cemented the paystreak and cinnabar, scheelite, magnetite, and ilmentite accompanied gold in heavy mineral concentrates.

Alteration:

Manganese oxide cementation was at least locally present.

Age of mineralization:
Quaternary; the placer deposits here are at low enough elevation (below sea level to 100 feet) to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; medium

Site Status: Active

Workings/exploration:
Hydraulic placer mining took place over 2,500 feet of the drainage upstream from the mouth. Much hand digging must have been required to exploit placers on the very irregular bedrock; shaft-digging buckets were scattered over the length of the mined area in 1966 (Mulligan, 1971). Ditch systems were constructed to bring water to the area for hydraulic operations. Other operations and exploration activities nearby were associated with beach and offshore mining (see ARDF locality SO134) and lode gold epxploitation (see ARDF locality SO135).

Production notes:
The initial discoveries were very rich; production in 1900 was about 10,000 ounces of gold from Daniels Creek and 29,000 ounces of gold from the modern beaches (Brooks and others, 1901; Collier and others, 1908; Cobb, 1978, OF 78-181). Cumulative gold production from Daniels Creek, mostly between 1900 and 1920, is about 44,000 ounces (Mulligan, 1971). Total placer production from the Bluff area (Daniels Creek, modern beaches, and offshore submerged channels or beaches - see ARDF locality SO134) is about 90,000 ounces.

Reserves:
The Daniels Creek placer is mostly worked out but offshore extensions of the very irregular and locally deep channel probably still contain gold (see ARDF locality 134).

Additional comments:

References:
Brooks and others, 1901; Collier and others, 1908; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Cox and Singer, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Eldorado Creek

Site type: Mine

ARDF no.: SO007

Latitude: 64.583 **Quadrangle:** SO C-4

Longitude: 163.764

Location description and accuracy:

Eldorado Creek flows south to its mouth on Norton Sound, 1 mile west of Bluff. It is the first stream west of Daniels Creek and placer mining here is only 0.8 miles northwest of the Daniels Creek placer mine (ARDF SO006). Placer mining took place over a distance of 3,000 feet downstream from an area of metasedimentary schist bedrock that trends across the drainage at an elevation of about 75 feet. This is locality 100 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold was discovered on Eldorado Creek by 1902 (Collier and others, 1908), soon after discovery of the rich placers at nearby Bluff and Daniels Creek (ARDF localities SO134 and SO006). Some cinnabar is reported to be present in the Eldorado Creek placer (Cathcart, 1922). Open-cut placer mining took place over a distance of 3,000 feet downstream from an area of metasedimentary schist bedrock that trends across the drainage at an elevation of about 75 feet (Herried, 1965; Mulligan, 1971). The bedrock through most of the mined area is a 'rough' marble but one pit, separate from the stream channel workings, is 100 by 200 feet in area and possibly 30 to 50 feet deep (Mulligan, 1971). Mulligan (1971) suggests that this pit may be the location of a sink hole. Mulligan also noted that a shaft on the east side of Eldorado Creek, 600 feet from the creek and 3,000 feet inland from the beach, was associated with placer mining equipment and might indicate the presence of a residual placer deposit on schist bedrock here. The marble and intercalated metasedimentary schist of the area are lower Paleozoic (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the placer deposits here are at low enough elevation (about 50 to 100 feet) to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Open-cut placer mining took place over a distance of 3,000 feet downstream from an area of schist that trends across the drainage at an elevation of about 75 feet (Herried, 1965; Mulligan, 1971). The bedrock through most of the mined area is a 'rough' marble but one pit, separate from the stream channel workings, is 100 by 200 feet in area and possibly 30 to 50 feet deep (Mulligan, 1971). Mulligan (1971) suggests that this pit may be the location of a sink hole. Mulligan also noted that a shaft on the east side of Eldorado Creek, 600 feet from the creek and 3,000 feet inland form the beach, was associated with placer mining equipment and might indicate the presence of a residual placer deposit on schist bedrock here. Most of the mining took place before WW II and was probably by hydraulic methods although a small dredge operated on the creek as recently as 1964 (Herried, 1965).

Production notes:
The production records for Eldorado Creek are incomplete but the extent of the workings suggests that production may have exceeded 1,000 ounces (Mulligan, 1971).

Reserves:

Additional comments:

References:
Collier and others, 1908; Cathcart, 1922; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Bunker Hill

Site type: Prospect

ARDF no.: SO008

Latitude: 64.595 **Quadrangle:** SO C-4

Longitude: 163.764

Location description and accuracy:
This prospect is on the low ridge between Eldorado Creek (ARDF SO007) and Lost Creek, 1.7 miles north-northwest of Bluff. It is at an elevation of about 320 feet and is locality 20 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite, gold, pyrite

Gangue minerals: Quartz

Geologic description:
A 5.5-foot-wide quartz vein or silicified zone at a marble-schist contact carries sparse chalcopyrite, pyrite, malachite, and azurite; the central 18 inches is barren (Cathcart, 1922). Assays reported by early workers ran up to up to $80 per ton of gold (3.9 ounces per ton) (Cathcart, 1922). Bedrock in this area is part of a lower Paleozoic metasedimentary marble-schist assemblage (Herried, 1965; Till and others, 1986). The mineralization may be mid-Cretaceous in age, the age of some lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Silicification is indicated.

Age of mineralization:
Not known - possibly mid-Cretaceous.

Deposit model:

Quartz vein or replacement at marble-schist contact; possibly low sulfide Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: No

Site Status: Inactive

Workings/exploration:
Exploration consists of two, old shallow trenches, 2 feet deep and 20 feet long (Cathcart, 1922).

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Herreid, 1965; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Silverbow Creek (Little Anvil Creek)

Site type: Mine

ARDF no.: SO009

Latitude: 64.59 **Quadrangle:** SO C-4

Longitude: 163.85

Location description and accuracy:
Silverbow Creek flows south to its mouth on Norton Sound, 3.1 miles west of Bluff and 2.6 miles northeast of Topkok. This is locality 107 of Cobb (1972, MF 445; 1978, OF 78-181). The location of mining on this creek is not well known; the location could be within 1 mile or more.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Some placer mining took place locally on this creek up to 1930 (Cobb, 1978, OF 78-181); the presence of gold was first reported in 1908 (Collier and others, 1908). The placer deposits are apparently less extensive and lower grade than those on Daniels Creek (ARDF SO006), 3.1 miles to the east. Bedrock of the area is primarily a polydeformed, metapelitic schist of possible Precambrian age (Sainsbury and others, 1972); Till and others (1986) identify the Silverbow Creek drainage as an area of extensive Quaternary cover.

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Some open cut placer mine workings are probably locally present.

Production notes:
Some placer gold production from between 1908 and at least 1930.

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): California Creek

Site type: Mine

ARDF no.: SO010

Latitude: 64.609 **Quadrangle:** SO C-4

Longitude: 163.907

Location description and accuracy:
California Creek is a west tributary to Topkok Creek. Topkok Creek flows south to its mouth on Norton Sound at Topkok settlement, 5.7 miles west of Bluff. The confluence of California and Topkok Creek is about 3.5 miles upstream from the mouth of Topkok Creek. Pre-1985, 1:250,000 scale topographic maps of the area mislabeled California and nearby creeks. As a result, Cobb (1972, MF 445) mislocated the California Creek site on Allen Creek. This is locality 106 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
All that has been reported is that placer mining occurred on this creek during the years 1928-30, 1933, and 1939-40 (Cobb, 1978, OF 78-181. A dredge apparently worked on the creek in 1939 and 1940. Bedrock of the area is primarily a polydeformed, metapelitic schist of possible Precambrian age (Sainsbury and others, 1972); Till and others (1986) identify the Silverbow Creek drainage as an area of extensive Quaternary cover.

Alteration:

Age of mineralization:
Quaternary; the placer deposits here are at low enough elevation (about 125 feet) to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Some open cut placer workings are probably present on this creek.

Production notes:

Reserves:

Additional comments:
Some placer mining between 1928 and 1940.

References:
Cobb, 1972 (MF 445); Sainsbury and others, 1972; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Cache Creek (Spruce Creek)

Site type: Mine

ARDF no.: SO011

Latitude: 64.591 **Quadrangle:** SO C-5

Longitude: 164.149

Location description and accuracy:
Cache Creek is labeled Spruce Creek on older maps. Its mouth is on Taylor Lagoon adjacent to Norton Sound, 8.3 miles east of Solomon. This is locality 105 (Spruce Creek) of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
About 8,000 feet of placer workings have been mapped along this drainage between elevations of about 45 and 130 feet. The workings start about 5,000 feet upstream from the mouth of the creek on Taylor Lagoon. Although prospected in the 1900's (Collier and others, 1908), principal mining was by dredging in the 1930's (Cobb, 1978). Some gravels were locally-derived schist and greenstone that was coarse and not well-rounded (Smith, 1910). The gravels were about 11 feet thick on bedrock and permafrost was locally encountered (Smith, 1933). Some beach gravel was encountered and mined but the location was not reported. The paystreak was reported to have been mined out (Smith, 1939). The elevation and location of this placer indicates that it was influenced by Quaternary sea level fluctuations. Bedrock in the area is part of a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; medium

Site Status: Inactive

Workings/exploration:
About 8,000 feet of placer workings have mapped along this drainage between elevations of about 45 and 130 feet. The workings start about 5,000 feet upstream from the mouth of the creek on Taylor Lagoon. Although prospected in the 1900's (Collier and others, 1908), principal mining was by dredging in the 1930's (Cobb, 1978).

Production notes:
The dredge operating on this creek was apparently the major producer in the area between 1932 and 1935; considering the extent of the workings the deposits may have been high grade. The paystreak was reported to have been mined out (Smith, 1939).

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Smith, 1933; Smith, 1939 (B 910-A); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Rabbit Creek

Site type: Prospect

ARDF no.: SO012

Latitude: 64.62 **Quadrangle:** SO C-5

Longitude: 164.34

Location description and accuracy:
Rabbit Creek and Uncle Sam Creek merge to form Pine Creek on the southwest side of Uncle Sam Mountain. The mouth of Pine Creek is on the lagoon adjacent to Norton Sound, 4.5 miles east of Solomon. The location along Rabbit Creek is not closely constrained; possibly located within one mile. This is locality 102 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Prospect holes uncovered creek gravel overlying well-rounded beach gravels and sand. Two types of well-rounded beach wash are reported; these include black graphitic slate gravel and white, vein quartz, pebble gravel. These overlie a thin sand layer on bedrock. Fine gold was found in the sand on bedrock and in the upper part of decomposed schist bedrock suggesting that the gold may have not traveled far from its bedrock source (Smith, 1909). Most of Rabbit Creek is at elevations between 110 and 250 feet and Quaternary sea level fluctuations would probably have affected this area. Bedrock in the headwaters of Rabbit Creek is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist in this area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:

Possibly placer Au-PGE (Cox and Singer, 1986; model 39a), but can also include beach placer and residual placer accumulations.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: No

Site Status: Inactive

Workings/exploration:
Early prospecting included 4 exploration shafts (30, 45, 20 and 30 feet deep) and one shallow pit (Smith, 1909).

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Rock Creek

Site type: Mine

ARDF no.: SO013

Latitude: 64.61 **Quadrangle:** SO C-5

Longitude: 164.37

Location description and accuracy:
Rock Creek is a one-mile-long, east tributary to the lower Solomon River. The mouth of Rock Creek is 4,500 feet downstream from Lees Camp. This is locality 103 of Cobb (1972, MF 445; 1978, OF 78-181). It is probably located within 0.5 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Some small-scale mining took place as early as 1903 and between 1932 and 1934 (Cobb, 1978, OF 78-181). Bedrock is schist but the gravels include much greenstone, slate fragments, and quartz pebbles Both fine and coarse gold was recovered. The gold could have partly been reworked from coastal plain deposits (Smith, 1910). Most of Rock Creek is below 200 feet elevation. Bedrock here is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist in this area (Sainsbury and others, 1972 (OFR 511); Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation of this area indicate that it was probably affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked coastal plain deposits.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale open-cut placer mining operations took place locally on this creek between 1903 and 1934.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Manila Creek

Site type: Prospect

ARDF no.: SO014

Latitude: 64.59 **Quadrangle:** SO C-5

Longitude: 164.42

Location description and accuracy:
Manila Creek is a small east tributary to lower Solomon River. The mouth of Manila Creek is 2 miles northeast of Solomon. This is locality 104 of Cobb (1972, MF 445; 1978, OF 78-181). Probably located within one mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Manila Creek has cut through coastal plain deposits in its upper reaches but schist and marble are exposed along the lower 3/4 mile of the drainage (Smith, 1910; Sainsbury and others, 1972, OFR 511). Gold has apparently been discovered but mining has not taken place (Cobb, 1978, OF 78-181). Collier and others (1908) note that the gold has been reworked from coastal plain deposits. Bedrock here is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (25 to 150 feet) of this area indicate that it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked coastal plain deposits.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: No

Site Status: Probably inactive

Workings/exploration:
Prospecting pits are the principal workings.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Solomon River (lower)

Site type: Mine

ARDF no.: SO015

Latitude: 64.612 **Quadrangle:** SO C-5

Longitude: 164.384

Location description and accuracy:

Solomon River is a major drainage that flows south to its mouth on Norton Sound at Solomon. The lower part of Solomon River has been extensively dredged for a distance of 4 miles starting 2 miles above Solomon. This dredged area is between elevations of 25 and 75 feet. This is locality 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals: Garnet, ilmenite, magnetite

Geologic description:

Placer gold was discovered in 1899 and mining started in 1900 when about $10,000 (or 485 fine ounces) were produced (Brooks and others, 1901). Most of the active flood along this part of the river has been extensively worked by dredges starting as early as 1903 (Collier and others, 1908). Stream gravels are generally 3 to 9.5 feet thick with a maximum thickness of 30 feet, and the pay streak was several hundred to over 1,000 feet wide. Locally preserved benches had 8 to 12 feet of gravel with pay thicknesses of 1 to 4 feet over clay layers and bedrock. Gravels were well rounded and generally less than 6 to 8 inches in diameter. A dredge concentrate from about a mile below the mouth of Shovel Creek contained 22 ounces of gold and 9.1 pounds of scheelite per cubic yard (Coats, 1944). Other minerals in dredge concentrates include magnetite, ilmenite, and garnet (Smith, 1910). Dredges operated on various parts of the lower Solomon River up to as recently as 1963. Lu and others (1968) compiled reported production and determined that more than about $2,500,000 dollars, or 125,000 ounces at $20 per ounce, had been produced from the general Solomon River area. This is a minimum estimate of production. Bedrock here is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (25 to 75 feet) of this area indicate it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked coastal plain deposits.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; medium

Site Status: Active?

Workings/exploration:
Most of the active flood along this part of the river has been extensively worked by dredges starting as early as 1903 (Collier and others, 1908).

Production notes:
Placer gold was discovered in 1899 and mining started in 1900 when about $10,000 (or 485 fine ounces) were produced (Brooks and others, 1901). Lu and others (1968) compiled reported production and determined that more than about $2,500,000 dollars, or 125,000 ounces at $20 per ounce, had been produced from the greater Solomon River area. This is a minimum estimate of production.

Reserves:

Additional comments:

References:
Brooks and others, 1901; Collier and others, 1908; Smith, 1910; Coats, 1944; Lu and others, 1968; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Mystery Creek

Site type: Mine

ARDF no.: SO016

Latitude: 64.644 **Quadrangle:** SO C-5

Longitude: 164.453

Location description and accuracy:
Mystery Creek is a west tributary to Shovel Creek (SO017). Shovel Creek is a major northeast tributary to the lower Solomon River. The mouth of Mystery Creek is 1.6 miles upstream from the confluence of Shovel Creek and Solomon River. This is locality 86 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Hydraulic placer mining started on this creek as early as 1903 (Collier and others, 1908). Production was mostly at elevations from 150 to 200 feet between the Puzzle and Problem Creek tributaries, especially from benches that had a paystreak 100 to 150 feet wide (Smith, 1910). A shaft on this bench encountered 6-8 feet of gravel overlain by 2-18 inches of angular limestone fragments and about 30-35 feet of overburden; this shaft was located at an elevation 35 feet above the nearby stream bottom but encountered bedrock at a depth of 43 feet indicating an older and deeper channel than that of the present stream. Only 2 to 3 feet of gravel over bedrock is common in the present stream. The gold from the bench placer was fairly coarse, dark and rusty. Smith (1910) estimated that annual production from the early mining here was worth $30,000 or about 1,450 ounces. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (150 to 200 feet) of this area indicate that it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Mostly small-scale hydraulic placer mining operations, but a dredge operated in 1911 and winter drift mining took place on the benches.

Production notes:
Smith (1910) estimated that annual production from the early mining here was worth $30,000 or about 1,450 ounces. The gold was worth between $17.50 and $18.75 per ounce at the time when the price of gold was $20.67 per fine ounce.

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Shovel Creek

Site type: Mine

ARDF no.: SO017

Latitude: 64.648 **Quadrangle:** SO C-5

Longitude: 164.414

Location description and accuracy:
Shovel Creek is a major northeast tributary of the lower Solomon River. The mouth of Shovel Creek is 0.5 mile north of Lees Camp. This is locality 90 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
At least three of the lower three and a half miles of Shovel Creek has been extensively placer mined, mostly by dredges and mostly in the 1920s. Early mining (Smith, 1910) encountered thin, 1 to 3 feet thick gravels over bedrock in a pay streak up to 1,000 feet wide (based on the distribution of tailings shown on the recent topographic map of the area). The elevation of the workings is between 50 and 150 feet. Recorded production as compiled by Lu and others (1968) is about 20,000 ounces. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (50 to 150 feet) of this area indicate that it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Mined by dredging, hydraulic and small-scale operations over at least three of the lower three and a half miles of the creek.

Production notes:

Recorded production as compiled by Lu and others (1968) is about 20,000 ounces.

Reserves:

Additional comments:

References:

Smith, 1910; Lu and others, 1968; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Penny Creek

Site type: Mine

ARDF no.: SO018

Latitude: 64.649 **Quadrangle:** SO C-5

Longitude: 164.369

Location description and accuracy:
Penny Creek is a northeast tributary to lower Solomon River. The mouth of Penny Creek is 1.5 miles upstream from Lees Camp. This is locality 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Mining on Penny Creek started as early as 1900; some gold was as coarse as an $18 (1 ounce) nugget (Brooks and others, 1901). The lower 8,000 feet of the creek, which is at least locally incised up to 20 feet, has been mined mostly by small scale operations. The elevation of this part of the creek is between 75 and 150 feet. There is some marble bedrock with an overlying clay layer and thin gravels, but most of the creek is underlain by schist (Smith, 1910). The creek crosses a subdued upland about 500 feet in elevation or less that early workers called the Solomon River terrace (Brooks and others, 1901). This topographic feature does not closely follow the Solomon River and may instead be related to Quaternary sea level fluctuations. Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (75 to 150 feet) of this area indicate that it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale mining took place episodically between 1900 and at least 1934. These operations probably included hand, hydraulic and open-cut dozer/sluice methods.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Quiggley; Gray Eagle

Site type: Mine

ARDF no.: SO019

Latitude: 64.648 **Quadrangle:** SO C-5

Longitude: 164.293

Location description and accuracy:
This locality is on the south side of Big Hurrah Creek, at an elevation of about 250 feet, and 0.6 miles southeast of its mouth. It is locality 17 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Sb

Other: Au ?

Ore minerals: Pyrite, stibnite

Gangue minerals: Quartz

Geologic description:
A lense of stibnite, 12 to 18 inches thick, occurs within a 4-foot-thick quartz vein in a brecciated zone containing disseminated pyrite; the lense strikes northeast and dips northwest. Stibnite occurs in bladed crystals 1 to 3 inches long and as finely disseminated material. Collier and others (1908) report only traces of Au and Ag. Five tons of ore with 63.7% antimony, no lead or zinc, and only traces of arsenic, were mined and 3 tons were shipped in 1915-16 (Mertie, 1918). The host rock is black, very fine-grained, graphitic schist. Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

This deposit may be the same age as some gold-quartz veins of southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Silicification.

Age of mineralization:

Cretaceous?

Deposit model:
Quartz-stibnite vein in graphitic schist; simple Sb deposits (Cox and Singer, 1986; model 27a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
27d

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
A 12-foot shaft and several trenches exposed the vein in early workings (Cathcart, 1922).

Production notes:
Five tons of ore with 63.7% antimony, no lead or zinc , and only traces of arsenic, were mined and 3 tons were shipped in 1915-16 (Mertie, 1918).

Reserves:

Additional comments:

References:
Mertie, 1918; Cathcart, 1922; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Silver; Flynn

Site type: Prospect

ARDF no.: SO020

Latitude: 64.656 **Quadrangle:** SO C-5

Longitude: 164.294

Location description and accuracy:

The Silver prospect is located on the nose of a low ridge between lower Big Hurrah Creek and Solomon River. It is at an elevation of about 260 feet, on the north side of Big Hurrah Creek, about 0.5 miles northeast of its mouth. It is locality 16 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Ag, W

Ore minerals: Arsenopyrite, gold, scheelite

Gangue minerals: Quartz

Geologic description:

At least two quartz veins with ribbon rock in graphitic schist are present; these contain free gold and locally arsenopyrite (Cathcart, 1922). Vein widths vary from 0.5 to 3 feet, they strike northwest up to several hundred feet and dip south (Asher, 1969, DGGS R33). Eighteen samples of various mineralized rocks contained 0.01 to 1.53 ounces of gold per ton and a trace to 0.70 ounces of silver per ton (Asher, 1969, DGGS R33, p. 17); a grab sample of dump material contained 2.2 ounces of gold per ton. Anderson (1947) reports that a small amount of scheelite is present in the quartz veins. The country rock is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972; Till and others, 1986).

These veins may be same age as some other gold-quartz veins of southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

Silicification.

Age of mineralization:
Cretaceous?

Deposit model:
Gold-quartz vein in metamorphic rocks; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: Undetermined

Site Status: Active?

Workings/exploration:
There are 5 shafts and numerous surface pits and trenches. The 40- to 60- foot-deep Goode shaft was inclined 26 degrees at S 60 W and had 800 feet of workings; the 45-foot-deep Shamrock shaft was inclined 71 W; the 11-foot-deep Hot Air shaft was 8 by 10 feet in cross-section in 1934; no data are available for the other two shafts located near the Goode shaft. The longest surface trench was 50 feet long and 3 to 8 feet deep. A small mill was erected on the property some time after 1938.

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Anderson, 1947; Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Asher, 1969a

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (Big Hurrah Creek)

Site type: Prospect

ARDF no.: SO021

Latitude: 64.661 **Quadrangle:** SO C-5

Longitude: 164.251

Location description and accuracy:
This prospect is about 3/4 mile northwest of the Big Hurrah mine on the ridge east of Trilby Creek. It is at about 350 feet elevation and 1/2 mile north of big Hurrah Creek. It is locality 18 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Arsenopyrite, chalcopyrite, gold, pyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:
Quartz vein in graphitic schist with pyrite, pyrrhotite, arsenopyrite, chalcopyrite, and free gold. Three shafts and several trenches were caved in 1920 (Cathcart, 1922). The alignment of the trenches may indicate a N to NE strike, and dump samples contained up to 0.17 ounces Au per ton and 0.04 percent Cu (Asher, 1969, DGGS R33). The country rock is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

This quartz vein may be similar in age to some other gold-quartz veins of southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Silicification.

Age of mineralization:
Cretaceous?

Deposit model:
Gold-quartz vein in metamorphic rocks; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: No

Site Status: Probably inactive

Workings/exploration:
There were about a dozen trenches, 5 to 30 feet long and 3 to 4 feet deep, and three shafts that were caved and water filled in 1920.

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Big Hurrah Creek

Site type: Mine

ARDF no.: SO022

Latitude: 64.653 **Quadrangle:** SO C-5

Longitude: 164.247

Location description and accuracy:

Big Hurrah Creek is an east tributary to the Solomon River. The mouth of Big Hurrah Creek is 3.4 miles upstream of Lees Camp and 2.8 miles downstream from East Fork. Big Hurrah Creek has been continuously placer mined for about 4 miles upstream from the mouth. This is locality 100 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals: Garnet, ilmenite, magnetite

Geologic description:

Gold was discovered and placer mining started on Big Hurrah Creek in 1900 (Collier and others, 1908). This was apparently the richest creek in the lower Solomon River area (Smith, 1910). Lu and others (1968) compiled records that indicate at least $120,606 worth of gold or about 6,000 ounces (at $20 per oounce) were produced from Big Hurrah Creek. Dredging took place mostly in the 1920's and open-cut (probably dozer) operations took place in the 1930's (Cobb, 1978, OF 78-181). Stream gravels near mouth were 3 to 5 feet thick and the paystreak was 100 to 500 feet wide. At the upstream limit of mining (at the mouth of Lions Creek), the gravels were 2 to 3 feet thick and the paystreak 10 to 20 feet wide. The active drainage is incised 10 to 30 feet and bench gravels above the active creek were also auriferous. Much of the gold was fine but some nuggets were recovered, including many with attached quartz reflecting proximity to gold-quartz veins in bedrock (such as the Big Hurrah mine, SO022). Garnet was abundant in heavy mineral concentrates. Coats (1944) estimated that there was about 0.87 pounds of scheelite in a 1/4-cubic-yard sample of concentrate. This indicated that the scheelite content of the stream gravels was probably less than 0.1 pound per cubic yard. The bedrock in this drainage is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (75 to 250 feet) of this area indicate that it was affected by Quaternary sea level fluctuations; more than one cycle of erosion and deposition is indicated.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Big Hurrah Creek has been continuously placer mined for about 4 miles upstream from the mouth. Small-scale operations took place in the 1900s, dredging occurred in the 1920s, and open-cut (probably dozer) operations were carried out in the 1930s.

Production notes:
Lu and others (1968) compiled records that indicate at least $120,606 worth of gold or about 6,000 ounces (at $20 per oounce) were produced from Big Hurrah Creek.

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Coats, 1944; Lu and others, 1968; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Big Hurrah

Site type: Mine

ARDF no.: SO023

Latitude: 64.648 **Quadrangle:** SO C-5

Longitude: 164.235

Location description and accuracy:

The Big Hurrah mine is located on the south side of Big Hurrah Creek (SO022) and the east side of Little Hurrah Creek at an elevation of about 275 feet. It is about 1/4 mile southeast of the confluence of Little and Big Hurrah Creeks. It is locality 17 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Ag, Cu, W, Zn

Ore minerals: Arsenopyrite, chalcopyrite, electrum, gold, pyrite, scheelite, sphalerite

Gangue minerals: Albite, carbonate, quartz, sericite

Geologic description:

The Big Hurrah mine is the only productive lode gold mine on Seward Peninsula. Gold-quartz veins in slaty graphitic schist produced about 27,000 ounces of gold (Read and Meinert, 1986) primarily between 1903 and 1907, when a 20-stamp mill was in operation (Smith, 1908). The ore that was mined averaged a little less than 1 ounce gold per ton (Cobb, 1978, OF 78-181); six samples collected underground in 1952 from the 70 foot level contained 0.08 to 5.2 ounces Au per ton and 0.5 to 17.2 ounces Ag per ton (Asher, 1969, DGGS R33). The mill tailings were cyanided and there were attempts to restart underground mining in the 1950's. A fire and unstable ground prevented further underground work and all workings are now flooded. However, considerable core drilling and surface trenching has taken place in more recent years, primarily in the 1980s.

Read and Meinert (1986) describe five types of veins: 1) quartz +/- carbonate lenses, 2 to 7 cm thick, locally contain minor sphalerite, chlorite and arsenopyrite; 2) quartz, carbonate, pyrite, sphalerite and chalcopyrite form tabular veins 2 to 5 mm thick; 3) ribbon quartz veins up to 4 m wide (average 0.5 m wide) occupy NW-trending faults and contain more than 90 % quartz, dolomite, albite, sericite, scheelite, arsenopyrite, pyrite and native gold; the total sulfide content is less than 2 to 3 percent and scheelite is less than 1%; 4) quartz-albite +/- arsenopyrite veins 5 to 25 cm wide contain up to 25% albite, up to 20% arsenopyrite and minor gold; thought to be syngenetic; 5) post-mineralization carbonate-

quartz veinlets 2 to 3 mm thick that cut all other vein types. Coats (1944) estiimated that the scheelite content of gold ore that remained in the bins was 0.25 percent by volume. Some veins are up to several hundred feet long; the larger veins strike northwest and dip southwest (Asher, 1969, DGGS R33). Fluid inclusion data from these veins indicate multiple generations of fluids; early veins contain CO2-CH4 and later veins are rich in H2O-NaCl. Homogenization temeratures vary from 390 to 90 degrees C. The available data suggest the gold-bearing fluids were produced by regional metamorphic processes. The country rock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972; Till and others, 1986) that includes a distinctive black, very fine-grained, graphitic schist that early workers called the Hurrah Slate in this area.

The Big Hurrah veins are probably similar in age to some other gold-quartz veins of southern Seward Peninsula. The other southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

Silicification, carbonatization, and development of quartz-carbonate stockworks.

Age of mineralization:

Cretaceous?

Deposit model:

Gold-quartz vein in metamorphic rocks; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

36a

Production Status: Yes; small

Site Status: Active

Workings/exploration:

A 60-degree inclined shaft extended to the 250 feet level; there are about 1,800 feet of lateral workings developed off it on the 70, 150, and 250 foot-levels. In 1954, a 105-foot-long sublevel was driven at 20 feet below the 150-East level (Asher, 1969, DGGS R33). Surface prospecting pits and trenches are widespread including many dug in the 1980's.

Production notes:

The Big Hurrah mine is the only productive lode gold mine on Seward Peninsula. The gold-quartz veins in slaty graphitic schist produced about 27,000 ounces of gold (Read and Meinert, 1986) primarily between 1903 and 1907, when a 20-stamp mill was in operation (Smith, 1908).

Reserves:

Additional comments:

References:

Smith, 1910; Coats, 1944; Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Read and Meinert, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Read and Meinert, 1986

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Solomon River

Site type: Mine

ARDF no.: SO024

Latitude: 64.679 **Quadrangle:** SO C-5

Longitude: 164.297

Location description and accuracy:
The part of Solomon River included here has been continuously placer mined from an elevation of about 100 feet upstream to an elevation of about 175 feet. It extends for a distance of about 5 miles starting 0.7 miles downstream from Quigleys Camp and continuing upstream to the mouth of Winston Creek, 1 mile above East Fork. This part of the Solomon River was included in localities 99 and 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals:

Geologic description:
The active drainage of the Solomon River has been continuously placer mined mined, mostly by dredging, from an elevation of about 100 feet upstream to an elevation of about 175 feet. This is a distance of about 5 miles starting 0.7 miles downstream from Quigleys Camp and continuing upstream to the mouth of Winston Creek, 1 mile above East Fork. Also see SO015 (lower Solomon River). Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation (100 to 170 feet) of this area indicate that it was affected by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
About 5 miles of dredge and open-cut placer workings are present along this part of the Solomon River, primarily along the active drainage.

Production notes:
Placer gold was discovered in 1899 and mining started in 1900 when about $10,000 (or 485 fine ounces) were produced (Brooks and others, 1901). Lu and others (1968) compiled reported production and determined that more than about $2,500,000 dollars, or 125,000 ounces at $20 per ounce, had been produced from the general Solomon River area. This is a minimum estimate of production.

Reserves:

Additional comments:

References:
Lu and others, 1968; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Sapphire Gulch

Site type: Mine

ARDF no.: SO025

Latitude: 64.676 **Quadrangle:** SO C-5

Longitude: 164.362

Location description and accuracy:
Sapphire Gulch is a very small north tributary to Minnesota Creek located 1 mile upstream of the confluence of Minnesota and Penny Creek (SO018) and about 2 miles north of Quigleys Camp on the Solomon River. The lower part of this drainage is at about 275 feet elevation. This is locality 93 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1910) reports that most of the gravels in this drainage were mined by 1907. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
The early mining was probably mostly hand operations.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Bear Gulch

Site type: Mine

ARDF no.: SO026

Latitude: 64.679 **Quadrangle:** SO C-5

Longitude: 164.349

Location description and accuracy:
Bear Gulch is a very small north tributary to Minnesota Creek; it is located about 1.5 miles upstream of the confluence of Minnesota Creek and Penny Creek (SO018) and about 2.3 miles north of Quigleys Camp on the Solomon River. The lower part of Bear Gulch is at an elevation of 350 feet. This is locality 92 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1910) reports that most of the gravels in this drainage were mined by 1907. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
The early mining was probably mostly hand operations.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Meddler Gulch

Site type: Mine

ARDF no.: SO027

Latitude: 64.682 **Quadrangle:** SO C-5

Longitude: 164.362

Location description and accuracy:
Meddler Gulch is a small north tributary to Minnesota Creek; it is located between Sapphire (SO025) and Bear Gulch (SO026), about 2.5 miles north of Quigleys Camp on the Solomon River. Its headwaters are at elevations greater than 500 feet. This is locality 91 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1910) reports that most of the gravels in this drainage were mined by 1907. Material being worked in 1907 was in the headwaters and appeared to be colluvial materials (Smith, 1910, p. 179). The gold that was recovered was reported to be coarse and bright. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972 (OFR 511); Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale, probably mostly hand operations, took place on this creek in the earliest years of mining in the area prior to 1907.

Production notes:

Reserves:

Additional comments:

References:

Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Kasson Creek

Site type: Mine

ARDF no.: SO028

Latitude: 64.692 **Quadrangle:** SO C-5

Longitude: 164.408

Location description and accuracy:
Kasson Creek is a headwater tributary of Shovel Creek (SO017), about 3.8 miles northwest of Quigleys Camp on the Solomon River. Placer mining has occurred for 1 mile upstream of the mouth at an elevation of about 250 feet. This is locality 89 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The bedrock along this part of Kasson Creek is marble and gold was found in crevices and pockets from 10 to 30 feet deep; paystreaks were from 16 to 100 feet wide (Collier and others, 1908). The spotty, deep character of the deposits suggests that karst features as at Daniels Creek (SO006) controlled gold deposition (Cobb, 1978, OF 78-181). Smith (1910) notes that gravels are practically absent and that, at least locally, 3 feet of fine sand is present on bedrock. The recovered gold is reported to be fine and well rounded although some is relatively coarse (Smith, 1910). Asher (1969, DGGS R33) collected a float sample of limonite-stained calcareous schist with disseminated sulfides that assayed 0.07 ounces gold per ton. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation of about 250 feet indicate that these placer deposits may have been influenced by Quaternary sea level fluctuations (also see Problem Creek, SO170).

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The creek was mined in early years mostly by small-scale hand methods; open-cut dozer (?) operations took place in the 1930s (Cobb, 1978, OF 78-181). Some early mining may have also taken place on two tributaries to Kasson Creek, Lost and Topnotch Creeks (Smith, 1910).

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): West Creek

Site type: Mine

ARDF no.: SO029

Latitude: 64.677 **Quadrangle:** SO C-5

Longitude: 164.456

Location description and accuracy:
West Creek is a west tributary to Shovel Creek (SO017). Placer mining took place over about the lower 1.5 miles of the creek, between elevations of 175 to 300 feet. This is locality 87 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, chalcopyrite, gold, pyrite

Gangue minerals: Garnet, magnetite

Geologic description:
Placer mining took place over about the lower 1.5 miles of the West Creek, between elevations of 175 to 300 feet. Gold-bearing gravels were 3 to 4 feet thick on bedrock; gold coarseness increased upstream. Crevices and cracks in marble bedrock locally controled gold deposition and gold was concentrated on a false clay bedrock in places. A 0.2 ounce gold nugget with quartz was found embedded in schist and heavy mineral concentrate contained arsenopyrite, chalcopyrite, garnet, magnetite, and pyrite (Brooks and others, 1901). Bedrock is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

Placer mining was mostly by small-scale methods but a dryland-dredge on tracks operated in 1908-11. Some open-cut (dozer ?) mining took place in the 1930's (Cobb, 1978, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:

Brooks and others, 1901; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Brooks and others, 1901

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): West Creek

Site type: Prospect

ARDF no.: SO030

Latitude: 64.679 **Quadrangle:** SO C-5

Longitude: 164.487

Location description and accuracy:

This lode prospect is located on the south side of West Creek (SO029) at an elevation of about 400 feet; it is about 1.6 miles upstream from the confluence of West Creek and Shovel Creek (SO017). It is locality 15 of Cobb (1972, MF 445; 1978, OF 78-181), locality 8 of Asher (1969, DGGS R33), and locality 117 of Gamble (1988).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, marcasite, pyrite

Gangue minerals: Chlorite, quartz

Geologic description:

Quartz veins in schist have been explored by an adit and 600 or 700 feet of underground workings (Smith, 1908). The quartz veins contain chlorite, small stringers and vugs of pyrite and marcasite, and arsenopyrite. Some gold and arsenopyrite is reported to be disseminated in the country rock (Smith, 1908). The adit trends about S 10 E; a zone of quartz-vein float about 50 feet wide trends S 30 W for 250 feet upslope from the adit (Asher, 1969, DGGS R33). Slickensides are present on both hanging and footwalls (Smith, 1910). A grab sample from the adit dump contained 0.04 ounces Au per ton and a composite grab sample of quartz-vein float contained 0.11 ounces Au per ton and 0.01 ounces Ag per ton (Asher, 1969, DGGS R33). Another composite grab sample of quartz on the adit dump contained 0.15 ppm Au, 5,100 ppm As, and 26 ppm Sb (Gamble, 1988). The country rock is described as chloritic schist by Smith (1910) and regional mapping indicates that it is part of a metavolcanic assemblage thought to be Ordovician in age (Till and others, 1986).

These veins are probably the same age as some other gold-quartz veins of southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was super-

imposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Silicification.

Age of mineralization:
Cretaceous?

Deposit model:
Gold-quartz vein in metamorphic rocks; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: No

Site Status: Inactive

Workings/exploration:
An adit was driven 350 feet on the main vein and a short crosscut was driven on a small stringer; there is a total of about 600 to 700 feet of underground workings (Smith, 1908). About 350 feet further west, a 300- foot-long adit was driven on similar vein.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Smith, 1910; Asher, 1969 (DGGS R33); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Gamble, 1988; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Smith, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Adams Creek

Site type: Mine

ARDF no.: SO031

Latitude: 64.707 **Quadrangle:** SO C-5

Longitude: 164.449

Location description and accuracy:
Adams Creek is the main headwater tributary to Shovel Creek (SO017). Very little mining is reported for this creek and the location of workings is uncertain; probably within 1.5 miles of the coordinates. This is locality 88 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
Gold was discovered early on Adams Creek and small-scale mining produced 50 to 60 ounces on one claim in 20 days (Brooks and others, 1901). The stream gravels are 4 to 6 feet thick and heavy mineral concentrate contains garnet and magnetite. The active drainage is incised 5 feet into an alluvial terrace. Bedrock in the area is mostly part of a metavolcanic assemblage thought to be Ordovician in age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

Small-scale sluicing took place somewhere on the drainage in 1900.

Production notes:

Brooks and others (1901) report that 50 to 60 ounces of gold (worth $19.40 per ounce) were recovered in a 20-day period from one claim.

Reserves:

Additional comments:

References:

Brooks and others, 1901; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Brooks and others, 1901

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Butte Creek

Site type: Mine

ARDF no.: SO032

Latitude: 64.709 **Quadrangle:** SO

Longitude: 164.332

Location description and accuracy:
Butte Creek is a west tributary to the Solomon River. The mouth of Butte Creek is 2 miles upstream of East Fork. Mining took place over the lower 0.3 miles of Butte Creek and about 0.5 miles of the South Fork tributary of Butte Creek. This is locality 95 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The gravels in lower part of creek were thoroughly worked prior to 1907 (Smith, 1910). Bench gravels on the west side of South Fork were productive. The bench gravels were about 8 feet thick on schist bedrock; the surface of the bench was 20 to 25 feet above the active channel. The part of Butte Creek that was mined follows a contact between schist and marble within a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining took place along this part of Butte Creek and its South Fork prior to 1907.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Fox Creek

Site type: Mine

ARDF no.: SO033

Latitude: 64.737 **Quadrangle:** SO C-5

Longitude: 164.296

Location description and accuracy:
Fox Creek is the first south tributary to Coal Creek. The mouth of Fox Creek is 0.5 miles upstream from the confluence of Coal Creek and Solomon River. This is locality 98 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale placer mining was reported on this creek in 1907 and 1908 (Smith, 1908; 1910). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining took place locally along this creek in at least 1907 and 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Beaver Creek

Site type: Mine

ARDF no.: SO034

Latitude: 64.64 **Quadrangle:** SO C-6

Longitude: 164.81

Location description and accuracy:
Beaver Creek is an east tributary to the Eldorado River. Placer mining took place along 1.5 miles of the headwaters of the creek between elevations of 225 and 390 feet. This is locality 85 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining took place along 1.5 miles of the drainage between 225 and 390 feet elevation. A dredge was moved into the area and operated in 1940 (Smith, 1942). Mining may have continued for some time following WW II as the next stream to the north (Pajara Creek, ARDF SO035) was dredged in the late 1940's (Cobb, 1973, B 1374). Other information about the placer deposit or mining here is not available. The deposit is at low enough elevations to have been influenced by Quaternary sea level changes. Bedrock in the area is the Ordovican Casadepaga Schist, a mafic metavolcanic assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the deposit is at low enough elevations to have been influenced by Quaternary sea level changes.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The main drainage has open-cut placer workings, at least in part the result of dredging in the 1940's over 1.5 miles of the creek between 225 and 390 feet elevation.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1942; Cobb, 1972 (MF 445); Cobb, 1973 (B 1374); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1942

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Pajara Creek

Site type: Mine

ARDF no.: SO035

Latitude: 64.667 **Quadrangle:** SO C-6

Longitude: 164.838

Location description and accuracy:
Pajara Creek is an east tributary to Eldorado River. Placer mining took place along 2 miles of the drainage between 200 and 300 feet elevation. These workings start 1 mile upstream of the confluence of Pajara Creek with Eldorado River. This is locality 84 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining took place along 2 miles of the creek between 200 and 300 feet elevation. These workings start 1 mile upstream of the confluence with Eldorado River. The placer mining apparently occurred in the late 1940's and included dredging (Hummel, 1975). It may have taken place concurrently or subsequent to mining on Beaver Creek (SO034), the next stream to the south. Other information about the placer deposit or mining here is not available. The deposit is at low enough elevations to have been influenced by Quaternary sea level changes. Bedrock in the area is the Ordovican Casadepaga Schist, a mafic metavolcanic assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the deposit is at low enough elevations to have been influenced by Quaternary sea level changes.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Placer mining took place along 2 miles of the Pajara Creek between 200 and 300 feet elevation. This mining apparently took place in the late 1940's and included dredging.

Production notes:

Reserves:

Additional comments:

References:
Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Hummel, 1975; Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Kwiniuk River

Site type: Occurrence

ARDF no.: SO036

Latitude: 64.729 **Quadrangle:** SO C-1

Longitude: 162.356

Location description and accuracy:
This occurrence is at about 175 feet elevation on a north tributary to the Kwiniuk River. The mouth of this tributary is 1.6 miles downstream from the confluence of Kwiniuk River and a major south tributary that is unnamed on the curent USGS topographic map, but is identified as Corral Creek by West (1953, Plate 1). This is locality 134 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu, REE, W

Other:

Ore minerals: Allanite, chalcopyrite, powellite, pyrite, scheelite

Gangue minerals: Apatite, epidote, garnet, hematite, hornblende, magnetite, rutile, sphene, spinel

Geologic description:
A heavy-mineral concentrate from stream gravels at this locality contained sphene, hornblende, allanite, apatite, hematite, garnet; traces of spinel, scheelite, powellite, magnetite, epidote, rutile, pyrite, and chalcopyrite. This sample (approximate concentration ratio of 230:1) contained 0.017% equivalent uranium (sample 2961, West, 1953). The stream drains the contact between the Darby pluton (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979) and Paleozoic marble and related metasedimentary rocks (Till and others, 1986). The slightly uraniferous granodiorite and granite of the Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976). The possible sources of heavy minerals in the stream gravels include skarns, veins, and disseminations at or near the contact of the Darby pluton and metasedimentary rocks. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973).

Alteration:

Age of mineralization:

The lode source of the heavy minerals in the stream gravels is probably mid-Cretaceous, the age of the Darby pluton; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Skarns, veins, or disseminations at or near the contact of the Darby pluton and metasedimentary rocks; disseminations in late, felsic phases of the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Clear Creek

Site type: Occurrence

ARDF no.: SO037

Latitude: 64.839 **Quadrangle:** SO D-1

Longitude: 162.301

Location description and accuracy:
This occurrence is on Clear Creek, a main west tributary to the Tubutuluk River, is at about 275 feet elevation. It is approximately sample locality 3016 of West (1953, Plate 1). This is locality 133 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Uraniferous titanium niobate mineral

Gangue minerals:

Geologic description:
Heavy-mineral concentrates from stream sediments in the Clear Creek drainage commonly contain 0.01 to 0.02% equivalent uranium (West, 1953). The source of this uranium is mostly an unidentified titanium niobate mineral. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). Other minerals common in the heavy mineral concentrates are magnetite, hematite, ilmenite, topaz, allanite, and sphene. Clear Creek and its north tributaries have headwaters in the Darby pluton. Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:
The heavy mineral concentrates are from Holocene surficial materials but these have been primarily derived from the nearby bedrock of the Darby pltuton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:
Disseminated uranium and rare-earth-bearing minerals may be accessory phases in the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:
West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Clear Creek)

Site type: Occurrence

ARDF no.: SO038

Latitude: 64.882 **Quadrangle:** SO D-1

Longitude: 162.243

Location description and accuracy:
This occurrence is on the second north tributary to Clear Creek upstream from the confluence of Clear Creek and the Tubutuluk River. It is 1.2 miles upstream from the tributaries confluence with Clear Creek and at about 275 feet elevation. This is sample locality 2983 of West (1953, Plate 1) and locality 132 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, Sn, U, W

Other:

Ore minerals: Allanite, cassiterite, scheelite, uraniferous titanium niobate

Gangue minerals: Garnet, hematite, ilmenite, sphene, topaz

Geologic description:
Heavy-mineral concentrate (concentration ratio of 1,100:1) from stream gravels at this locality contain 0.086% equivalent uranium. Minerals identified in the heavy-mineral concentrates include hematite, ilmenite, garnet, topaz, allanite, sphene, an unidentified uraniferous titanium niobate, and trace cassiterite and scheelite. This is the farthest downstream sample in this drainage (West, 1953) and it is located near the eastern contact of the Darby pluton with metasedimentary rocks (Till and others, 1986). Clear Creek and its north tributaries have headwaters in the Darby pluton. Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area may indicate specific mineralized zones of disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit (in the Bendeleben quadrangle to the north) during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3

+/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but these have been primarily derived from the nearby bedrock of the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated; uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton. Other types of deposits could be present locally as suggested by the presence of cassiterite and scheelite.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Clear Creek)

Site type: Occurrence

ARDF no.: SO039

Latitude: 64.895 **Quadrangle:** SO D-1

Longitude: 162.184

Location description and accuracy:

This occurrence is on the first north tributary to Clear Creek upstream from the confluence of Clear Creek and the Tubutuluk River. It is about 0.2 miles upstream from the confluence of the tributary and Clear Creek and at an elevation of about 125 feet. This is sample location 2974 of West (1953, Plate 1) and locality 131 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, uraniferous titanium niobate mineral (?)

Gangue minerals: Anatase, hematite, hornblende, ilmenite, magnetite, sphene, topaz

Geologic description:

A heavy-mineral concentrate (concentration ratio of 600:1) from stream gravels at this locality contained 0.023% equivalent uranium (West, 1953). Minerals identified in this concentrate include pyrite, ilmenite, magnetite, anatase, hornblende, topaz, allanite, biotie, and sphene. This drainage crosses the eastern contact of the Darby pluton with metasedimentary rocks (Till and others, 1986). Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread, elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north, may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but some of these have been derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton. Other types of deposits could be present in metasedimentary rocks of this drainage.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Clear Creek)

Site type: Occurrence

ARDF no.: SO040

Latitude: 64.899 **Quadrangle:** SO D-1

Longitude: 162.324

Location description and accuracy:
This occurrence is on a small, south headwater tributary to an unnamed north tributary of Clear Creek. It is at an elevation of 850 feet, 2.3 miles southeast of peak 2841. This is sample location 2993 of West (1953) and locality 129 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, uraniferous titanium niobate mineral

Gangue minerals: Hematite, ilmenite, magnetite, sphene

Geologic description:
A heavy-mineral concentrate (concentration ratio 1,450:1) from stream gravels here contained 0.079% equivalent uranium (West, 1953). Minerals identified in the heavy-mineral concentrate included hematite, ilmenite, magnetite, allanite, sphene and an unidentified U-Ti-Nb mineral. This drainage is within the Darby pluton (Till and others, 1986). Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but these have been locally derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Clear Creek)

Site type: Occurrence

ARDF no.: SO041

Latitude: 64.903 **Quadrangle:** SO D-1

Longitude: 162.315

Location description and accuracy:
This occurrence is on a small headwater tributary to an unnamed north tributary of Clear Creek. It is at an elevation of about 700 feet and 2.6 miles southeast of Peak 2841. This is sample location 2992 of West (1953) and locality 130 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, pyrite, uraniferous titanium niobate mineral

Gangue minerals: Sphene, topaz, zircon

Geologic description:
A heavy-mineral concentrate (concentration ratio of 1,850:1) from stream gravels at this locality contained 0.104% equivalent uranium (West, 1953). Minerals identified in the heavy-mineral concentrate included pyrite, topaz, allanite, sphene, zircon, and an unidentified U-Ti-Nb mineral. This drainage is within the Darby pluton (Till and others, 1986). Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but these have been locally derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment smampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Clear Creek)

Site type: Occurrence

ARDF no.: SO042

Latitude: 64.906 **Quadrangle:** SO D-1

Longitude: 162.344

Location description and accuracy:
This occurrence is on a small headwater tributary to an unnamed north tributary of Clear Creek. It is at an elevation of about 1,150 feet and 1.7 miles east of peak 2841. These are sample locations 2995 and 2996 of West (1953) and locality 130 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, uraniferous titanium niobate mineral

Gangue minerals: Hematite, hornblende, magnetite, sphene, topaz

Geologic description:
A heavy-mineral concentrate (concentration ratio 1,550:1) from stream gravels at this locality contained 0.065% equivalent uranium (West, 1953). Minerals identified in the heavy-mineral concentrate included pyrite, hematite, magnetite, zircon, topaz, allanite, sphene, an unidentified U-Ti-Nb mineral, and hornblende. This drainage is within the Darby pluton (Till and others, 1986). Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but these have been locally derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (tributary to Vulcan Creek)

Site type: Occurrence

ARDF no.: SO043

Latitude: 64.933 **Quadrangle:** SO D-1

Longitude: 162.275

Location description and accuracy:
This occurrence is at about 1,150 feet elevation on the unnamed but major west tributary of Vulcan Creek. Vulcan Creek is a west tributary to the Tubutuluk River. It is sample location 3033 of West (1953, Plate 1) and locality 137 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, pyrite, uraniferous titanium niobate mineral

Gangue minerals: Anatase, hematite, magnetite, sphene, zircon

Geologic description:
A heavy-mineral concentrate (concentration ratio 1,050:1) from stream gravels at this locality contained 0.067% equivalent uranium (West, 1953). Minerals identified in the heavy-mineral conccentrate included pyrite, hematite, magnetite, zircon, sphene, an unidentified U-Ti-Nb mineral, anatase, and allanite. This drainage is within the Darby pluton (Till and others, 1986). Many of the heavy minerals in the concentrates from stream sediments in the area are known accessory minerals in the Darby pluton. The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but these have been locally derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (on Rock Creek)

Site type: Occurrence

ARDF no.: SO044

Latitude: 64.971 **Quadrangle:** SO D-1

Longitude: 162.338

Location description and accuracy:

Rock Creek is a west tributary to the Tubutuluk River. This occurrence is at an elevation of about 900 feet along the main drainage; it is about 4.3 miles upstream from the north boundary of the Solomon D-1 quadrangle. It is sample location 3052 of West (1953, Plate 1) and locality 126 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: REE, U

Other:

Ore minerals: Allanite, uraniferous titanium niobate mineral (?)

Gangue minerals: Anatase, epidote, garnet, hematite, ilmenite, kyanite, sphene, topaz

Geologic description:

A heavy-mineral concentrate (concentration ratio 2,250:1) from stream gravels at this locality contained 0.036% equivalent uranium (West, 1953). Minerals identified in the concentrate included allanite, hematite, ilmenite, magnetite, anatase, garnet, topaz, kyanite, epidote, and sphene. An unidenitied uraniferous titanium niobate mineral is present in many heavy-mineral concentrates from the eastern part of the Darby pluton (West, 1953). The Rock Creek drainage is primarily within the Darby pluton but headwater areas cross the western contact of the pluton to areas of metasedimentary rocks (Till and others, 1986). The widespread elevated Nb values in stream sediments (Miller and Grybeck, 1973) and in heavy -mineral concentrates (West, 1953) of the Clear Creek-Vulcan Creek area to the north may indicate specific mineralized zones or disseminations in late, felsic phases of the Darby pluton (Miller and Grybeck, 1973). The Darby pluton is a mid-Cretaceous granodiorite and granite that has elevated background levels of uranium and thorium (Miller and others, 1972; Miller and Bunker, 1976; Johnson and others, 1979). This pluton is considered the bedrock source of uranium that was mobilized and deposited in the Death Valley sandstone uranium deposit during the Eocene (Dickinson and others, 1987). K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:

Age of mineralization:

The heavy mineral concentrates are from Holocene surficial materials but much of these materials have been derived from the Darby pluton. The Darby pluton is mid-Cretaceous; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:

Disseminated uranium- and rare-earth-bearing minerals are probably accessory phases in the Darby pluton. Other types of deposits could be present in metasedimentary rocks of this drainage.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment sampling and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

West, 1953; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Miller and Bunker, 1976; Cobb, 1978 (OF 78-181); Johnson and others, 1979; Till and others, 1986

Primary reference: West, 1953

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Aggie Creek

Site type: Mine

ARDF no.: SO045

Latitude: 64.883 **Quadrangle:** SO D-3

Longitude: 163.206

Location description and accuracy:
Aggie Creek is a south tributary to Fish River. Open-cut placer workings from hydraulic operations and some dredging, are present about 12 miles east of Council. These workings are between elevations of about 40 and 140 feet on the main channel and extend a distance of 1.7 miles starting 0.3 miles upstream from the mouth of Aggie Creek. This is locality 125 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Open-cut placer workings, from hydraulic operations and some dredging, are present on the main channel over a distance of 1.7 miles starting 0.3 miles upstream of the mouth of Aggie Creek. These workings are between elevations of about 40 and 140 feet. Bedrock of the Aggie Creek drainage is schistose Ordovician chlorite marble (Till and others, 1986). Miller and Grybeck (1973) note that quartz latite porphyry intrusives, like those present to the east, could be present in the Aggie Creek drainage and may be gold-bearing as at ARDF locality SO147. Copper concentrations in stream sediment samples are slightly elevated throughout the Aggie Creek drainage (Miller and Grybeck, 1973). Quartz latite intrusive rocks of the region are assumed to be mid-Cretaceous in age, the age of the Kachauik pluton. A K/Ar age for the Kachauik pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Alteration:

Age of mineralization:
Quaternary; the placer deposits are in the active channel of Aggie Creek. This area is at low enough elevations to have been influenced by Quaternary sea level changes.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: None

Site Status: Inactive

Workings/exploration:
Open-cut placer workings, from hydraulic operations and some dredging, are present on the main channel over a distance of 1.7 miles starting 0.3 miles upstream of the mouth of Aggie Creek. This mining took place between 1929 and 1941 (Cobb, 1978). Dredging was reported for the years 1939 to 1941; this was apparently on the lower part of the creek; where large boulders were encountered (Smith, 1939, B 917-A).

Production notes:
Lu and others (1968) report that $101,604 worth of gold (about 3,000 ounces at $35.00 per ounce) were produced from Aggie Creek.

Reserves:

Additional comments:

References:
Smith, 1939 (B 917-A); Lu and others, 1968; Cobb, 1972 (MF 445); Miller and others, 1972; Miller and Grybeck, 1973; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Fish River

Site type: Mine

ARDF no.: SO046

Latitude: 64.845 **Quadrangle:** SO D-3

Longitude: 163.339

Location description and accuracy:
This mine (?) is apparently located about one mile east of a point where Fish River enters onto the lowlands of the lower Niukluk River valley . It is on the western nose of an east-west ridge at about 400 feet elevation. It is locality 23 of Cobb (1972, MF 445; 1978, OF 78-181) and locality 71 of Gamble (1988).

Commodities:

Main: Ag, Hg, Pb

Other:

Ore minerals: Cinnabar

Gangue minerals:

Geologic description:
Mertie (1918) reports that a lead-silver lode is located near here and Gamble (1988) plots its location on the basis of recorded mining claims. Cinnabar is reported to be present and a few flasks of mercury were annually produced for a few years up to 1916 (Mertie, 1918). Bedrock in the area is schistose Ordovician chlorite marble (Till and others, 1986). There is no other information about the deposit.

Alteration:

Age of mineralization:

Deposit model:
Lead, silver, and mercury-bearing vein or replacement in schistose marble?

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: Yes; small

Site Status: Inactive ?

Workings/exploration:

Some small scale workings are probably present but they have not been described.

Production notes:

Mertie (1918) reports that a few flasks of mercury were annually produced for a few years up to at least 1916.

Reserves:

Additional comments:

References:

Mertie, 1918; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Gamble, 1988

Primary reference: Mertie, 1918

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Mystery Creek; Mud Creek

Site type: Mine

ARDF no.: SO047

Latitude: 64.863 **Quadrangle:** SO D-4

Longitude: 163.529

Location description and accuracy:
Mystery Creek is a north tributary to the lower Niukluk River. Its mouth is 4.9 miles downstream from Council. Dredging was reported to have been located 3 miles above the mouth of the creek. This is locality 124 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Dredging was reported to have taken place 3 miles above the mouth (Chapin, 1913); the gravels here were 2 to 15 feet thick on a clay false bedrock. One mile above the mouth, gravels were 7 feet thick and the pay was in the lower 3 feet. Mud Creek, a headwater tributary of Mystery Creek, contained coarse, rough gold in 3 to 4 feet of angular schist gravel and in 3 to 4 foot-deep crevices in schist bedrock (Collier and others, 1908). Mud Creek gravels were overlain by 2.5 feet of muck and sthe recovered gold was coarse, very rough, spongy, and somewhat rusty. Bedrock is calcareous mica schist with small quartz stringers (Collier and others, 1908); impure schistose Ordovician marble occurs in headwater parts of the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale mining started in the 1900's and some dredging operations took place up to 1914 (Cobb, 1978, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Chapin, 1914; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Melsing Creek; Basin Creek; Benson Gulch

Site type: Mine

ARDF no.: SO048

Latitude: 64.901 **Quadrangle:** SO D-4

Longitude: 163.653

Location description and accuracy:
Melsing Creek is a north tributary to the Niukluk River; its mouth is at Council. Placer mining occurred on the lower 1.1 miles of the drainage, between elevations of about 85 and 125 feet, and a dredge operated for a time several miles up from the mouth of Melsing Creek (D. Grybeck, oral communication, 1999). This is locality 123 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The gravels of Melsing Creek are generally thin, ranging from 1.5 to 8 feet thick. Several feet of gravel carried gold in places but better grades were present on or in bedrock (Collier and others, 1908) A clay false bedrock is at least locally present and low terraces adjacent to the active drainage were also gold-bearing. There is little documentation but a dredge operated in upper Melsing Creek, probably in section 36, prior to WW II (D. Grybeck, oral communication, 1999). Bedrock in Melsing Creek is part of a lower Paleozoic metasedimentary assemblage but an impure schistose Ordovician marble is the bedrock just to the east in the Basin Creek drainage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Placer mining took place for many years along Melsing Creek between the time of discovery in 1898 (Brooks and others, 1901) and 1938 (Smith, 1939, B 910-A). Much of the mining was by dredging and the entire lower 1.1 miles of Melsing Creek and nearby parts of its tributary Basin Creek have been worked. There is also some indication of dredging in upper Melsing Creek.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Collier and others, 1908; Smith, 1939 (B 910-A); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Niukluk River

Site type: Mine

ARDF no.: SO049

Latitude: 64.874 **Quadrangle:** SO D-4

Longitude: 163.646

Location description and accuracy:
This is a 1.2 mile-long segment of the Niukluk River floodplain starting 0.8 miles below Council. It is locality 122 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold, pyrite

Gangue minerals: Garnet, magnetite

Geologic description:
Gold was originally discovered on the bars of the Niukluk River in 1865 when a survey crew for a telegraph line passed through the area (Collier and others, 1908). This area was dredged over a length of 1.1 miles and over widths up to 500 feet. Heavy mineral concentrates from the river contain garnet, pyrite, and magnetite (Collier and others, 1908). The surface elevation is about 75 feet and the depth to bedrock is not known. Gold was present throughout the gravel but concentrated on bedrock. Some gravels were reported to be thick and bedrock to be at elevations below sea level in what were interpreted to be old river channels (Smith, 1908). This part of the Niukluk River is located proximally to the coastal lowlands of Golovin Bay and at low enough elevations to have been influenced by Quaternary sea level fluctuations.

Alteration:

Age of mineralization:
Quaternary; the elevation and location of these placers suggest that they are the result of more than one cycle of erosion and deposition and that sea level fluctuations influenced their development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
An area of the active floodplain, 1.1 miles long and up to 500 feet wide, has been dredged.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Niukluk River

Site type: Mine

ARDF no.: SO050

Latitude: 64.902 **Quadrangle:** SO D-4

Longitude: 163.732

Location description and accuracy:

This mine is a segment of the Niukluk River floodplain that starts at the mouth of Ophir Creek (SO053) and extends 1.3 miles downstream; there is another segment that extends 0.8 miles upstream from Council. These two dredged segments are apparently separated by an unmined segment 0.7 mile long. The lower of the two segments may be slightly elevated with respect to the active floodplain. It is locality 121 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold, pyrite

Gangue minerals: Garnet, magnetite

Geologic description:

Gold was originally discovered on the bars of the Niukluk River in 1865 when a survey crew for a telegraph line passed through the area (Collier and others, 1908). These two areas, with a combined length of 2.1 miles, were extensively dredged over widths up to 2,000 feet. Heavy mineral concentrates from the river contain garnet, pyrite, and magnetite (Collier and others, 1908). The surface elevation varies from about 85 to 150 feet here and the depth to bedrock is not known. Gold was present throughout the gravel but concentrated on bedrock. Some gravels were reported to be thick and bedrock to be at elevations below sea level in what were interpreted to be old river channels (Smith, 1908). The downstream segment included here may be slightly elevated, at the surface, relative to the active floodplain of the river. This part of the Niukluk River is located proximally to the coastal lowlands of Golovin Bay and at low enough elevations to have been influenced by Quaternary sea level fluctuations.

Alteration:

Age of mineralization:

Quaternary; the elevation and location of these placers suggest that they are the result of more than one cycle of erosion and deposition and that sea level fluctuations influenced their development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
An area totalling 2.1 miles long and up to 2,000 feet wide, has been dredged, from before WW I to as recently as the 1980's.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Richter Creek

Site type: Mine

ARDF no.: SO051

Latitude: 64.918 **Quadrangle:** SO D-4

Longitude: 163.785

Location description and accuracy:
Richter Creek is a southwest tributary to the Niukluk River. The mouth of Richter Creek is 1.2 miles upstream of the mouth of Ophir Creek (SO053). This is locality 118 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Some small-scale mining apparently took place along this creek in the early history of the area. The gold placers were reported to be nearly exhausted in 1906 (Smith, 1907). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined

Site Status: Inactive

Workings/exploration:
Some small-scale placer workings may be locally present.

Production notes:
Minor gold placers were apparently exhausted by 1906.

Reserves:

Additional comments:

References:
Smith, 1907; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1907

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Sweetcake Creek

Site type: Mine

ARDF no.: SO052

Latitude: 64.932 **Quadrangle:** SO D-4

Longitude: 163.741

Location description and accuracy:
Sweetcake Creek is a north tributary to Ophir Creek (SO053). The mouth of Sweetcake Creek (not named on current USGS topographic maps) is about 0.8 miles upstream of the confluence of Ophir Creek and the Niukluk River. Placer mining took place in the lower mile of Sweetcake Creek at elevations of about 150 feet. This is locality 119 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The first placer mining in the Ophir Creek area occurred on Sweetcake Creek soon after gold was discovered here in 1898 (Collier and others, 1908). A stratigraphic section near the mouth of Sweetcake Creek included, from top to bottom: 5 feet of fine micaceous sand, 2 feet of gravel and sand, and 1 foot of angular schist, pay gravel on bedrock (Collier and others, 1908). The gravels of Sweetcake Creek contained abundant mineralized quartz and calcite fragments. It is reported that gold worth $36,000 (about 1,800 ounces) was recovered in 1898 from one claim (Collier and others, 1908) and total production from the creek is probably a few thousand ounces (Cobb, 1978, OF 78-181). The lower part of Sweetcake Creek crosses a low bench as it nears Ophir Creek but early mining was on a narrow paystreak along the active drainage. Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining took place before WW I over the lower mile of the creek.

Production notes:
It is reported that gold worth $36,000 (about 1,800 ounces) was recovered in 1898 from one claim (Collier and others, 1908) and total production from the creek is probably a few thousand ounces (Cobb, 1978, OF 78-181).

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Ophir Creek

Site type: Mine

ARDF no.: SO053

Latitude: 64.958 **Quadrangle:** SO D-4

Longitude: 163.658

Location description and accuracy:

Ophir Creek is a major north tributary to the Niukluk River; its mouth is 3 miles upstream from Council. The entire Ophir Creek drainage within the Solomon D-4 quadrangle, over 6 miles of stream and many adjacent bench deposits, has been placer mined. Placer mining continued upstream into the Bendeleben A-4 quadrangle (BN099). This is locality 120 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold, pyrite

Gangue minerals: Garnet, hematite, ilmenite, magnetite

Geologic description:

Ophir Creek is the most important producer of placer gold in the Council district. The majority of the 707,000 ounces of gold production recorded for the Council district probably came from Ophir Creek (Hudson and DeYoung, 1978). Placer gold was discovered here in 1897 and extensive mining, especially dredging, has taken place over its entire length downstream from the mouth of Crooked Creek in the Bendeleben A-4 quadrangle. Benches have been mined at many places along the drainage. In the Solomon D-4 quadrangle, Ophir Creek is less than 250 feet above sea level. This low elevation suggest the possiblity that the character of Ophir Creek placer deposits was influenced by Quaternary sea level fluctuations. The presence of terrace gravels and bench placer deposits indicates that two or more cycles of placer deposit development have occurred. However, there are gold-bearing lode deposits in lower Paleozoic metasedimentary bedrock (schist and marble; Till and others, 1986) near the mouth of Ophir Creek (Smith and Eakin, 1911), the mouth of Crooked Creek (BN100), and the headwaters of Crooked Creek (BN104). The gold-bearing rocks are most commonly described as areas with small quartz or quartz-carbonate veins in schist or schistose limestone.

Alteration:

Age of mineralization:
Quaternary; the elevation, less than 250 feet above sea level, location proximal to Niukluk River lowlands, and the many bench deposits suggest that these placers are the result of more than one cycle of erosion and deposition and that sea level fluctuations influenced their development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; medium

Site Status: Active?

Workings/exploration:
Gold was discovered in 1897 and the entire creek and many areas of bench deposits have been placer mined, much by dredging. A dredge continued to be active in the area at least as recently as 1968 and probably later.

Production notes:
Ophir Creek is the most important producer of placer gold in the Council district. The majority of the 707,000 ounces of gold production recorded for the Council district probably came from Ophir Creek (Hudson and DeYoung, 1978).

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith and Eakin, 1911; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Warm Creek

Site type: Mine

ARDF no.: SO054

Latitude: 64.951 **Quadrangle:** SO D-4

Longitude: 163.841

Location description and accuracy:
Warm Creek is an east tributary to Goldbottom Creek (SO058); it is about 7 miles northwest of Council. The location of placer mining along this creek is approximate, possibly within 1 mile of the coordinates. Collier and others (1908) note that the mines were in the upper part of the creek valley and that supplies were hauled overland from Ophir Creek (SO053). This is locality 117 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals: Garnet, hematite, ilmenite, magnetite

Geologic description:
Gold mining began on Warm Creek in 1900 and by 1907 perhaps $100,000 (5,000 ounces) had been produced (Collier and others, 1908). Most of the gold was rough and iron-stained, some was almost black, and a 2.8 ounce nugget was recovered. Heavy mineral concentrate contained hematite, ilmenite, garnet, rutile, scheelite, and magnetite. After panning to remove the free gold, this concentrate assayed 22.4 ounces of gold and 4.2 ounces of silver per ton (Collier and others, 1908). Schist, marble, and some greenstone bedrock in the area is cut by quartz veins and lenses. The gold is mostly on the foot of gravel above bedrock; gravels are up to 7 feet thick. The gravels are reported to be 6 to 9 feet thick near the mouth. Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Placer mining started in Warm Creek in 1900 but much of the mining was by dredging between 1911 and 1922 (Cobb, 1978, OF 78-181). The specific location of the placer workings along the creek is not known but the dredging may have taken place on the lower part of the drainage. Early mining was on claims in the upper part of the creek.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Brookins

Site type: Prospect

ARDF no.: SO055

Latitude: 64.911 **Quadrangle:** SO D-4

Longitude: 163.958

Location description and accuracy:
This prospect is located on Foster Creek, a west tributary to Camp Creek (SO057); it is about 8 miles west of Council. The location is approximate, probably within 1.5 miles of the coordinates. It is locality 12 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Sb

Other:

Ore minerals: Stibnite

Gangue minerals:

Geologic description:
An 8-foot-deep shaft and a 60-foot-long adit explore discontinuous stibnite lenses and stringers up to 1-foot wide in contorted mica schist (Anderson, 1947). Some stibnite is described as forming tiny stringers and pockets in the folds of the schist. Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Stibnite lenses and stringers in mica schist; simple Sb deposits? (Cox and Singer, 1986; model 27d).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
27d?

Production Status: No

Site Status: Inactive

Workings/exploration:
An 8-foot-deep shaft and a 60-foot-long adit have been driven on this prospect (Anderson, 1947).

Production notes:

Reserves:

Additional comments:

References:
Anderson, 1947; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Anderson, 1947

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Elkhorn Creek

Site type: Mine

ARDF no.: SO056

Latitude: 64.931 **Quadrangle:** SO D-4

Longitude: 163.954

Location description and accuracy:
Elkhorn Creek is a southwest tributary to the Niukluk River. The mouth of Elkhorn Creek is 0.5 miles upstream of the mouth of Camp Creek (SO057), which is about 9 miles upriver from Council. About the lower mile, between elevations of 125 and 200 feet, have been placer mined. This is locality 114 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining has taken place for about a mile along the lower part of Elkhorn Creek. The drainage is incised into a terrace along the Niukluk River. Creek gravels were 2.5 feet thick near the mouth and bench deposit at the mouth consisted of 4 feet of cross-bedded sand and gravel that are overlain by 6 feet of clay, muck, and vegetation. The paystreak was apparently spotty but some coarse gold was recovered; one nugget was worth $55 (about 2.75 ounces). Quartz was commonly attached to the coarser gold and one nugget was embedded in schist (Brooks and others, 1901). Bedrock in the area is probably part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

Small-scale surface mining took place before WW I and a dredge operated between 1914 and 1918 (Cobb, 1978, OF 78-181). The lower mile of the creek has probably been extensively worked.

Production notes:

Production was $30,000 (about 1,450 ounces) in 1900 (Brooks and others, 1901) and totaled about $120,000 (about 6,000 ounces) by 1906 (Collier and others, 1908). Total production is probably more than 10,000 ounces (Cobb, 1978, OF 78-181).

Reserves:

Additional comments:

References:

Brooks and others, 1901; Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Brooks and others, 1901

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Camp Creek

Site type: Mine

ARDF no.: SO057

Latitude: 64.932 **Quadrangle:** SO D-4

Longitude: 163.926

Location description and accuracy:
Camp Creek is a southwest tributary to the Niukluk River. The mouth of Camp Creek is about 9 miles upstream from Council at about 130 feet elevation. Dredge tailings extend about 0.3 miles up the creek from the mouth and about 0.2 miles downstream along the west bank of the Niukluk River. This is locality 115 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Dredge tailings extend about 0.3 miles up the creek from the mouth and about 0.2 miles downstream along the west bank of the Niukluk River. Early mining was by hand and hydraulic methods (Collier and others, 1908); a dredge operated here in 1915-18 and 1939-40 (Cobb, 1978, OF 78-181). The early minng encountered three feet of gold-bearing gravel beneath 3 feet of overburden. A 40-foot shaft on a bench near the mouth of Camp Creek encountered 20 feet of ice and sand over 12 feet of frozen gold-bearing gravel. Bedrock exposures are poor; it may be part of a lower Paleozoic metasedimentary assemblage or possibly an Ordovician metavolcanic assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Dredge tailings extend about 0.3 miles up Camp Creek from the mouth and about 0.2 miles downstream along the west bank of the Niukluk River. Early mining was by hand and hydraulic methods (Collier and others, 1908); a dredge operated here in 1915-18 and 1939-40 (Cobb, 1978, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Goldbottom Creek

Site type: Mine

ARDF no.: SO058

Latitude: 64.956 **Quadrangle:** SO D-4

Longitude: 163.913

Location description and accuracy:
Goldbottom Creek is a north tributary to the Niukluk River. The mouth of Goldbottom Creek is across the river from Camp Creek (SO057) and about 6 miles upstream from the mouth of Ophir Creek (SO053). Mining may have taken place at several locations along Goldbottom Creek. The location used here is 1.6 miles upstream from the mouth at the confluence with Warm Creek (SO054), an east tributary. The elevation at this location is about 175 feet. This is locality 116 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals: Garnet, hematite, ilmenite

Geologic description:
Placer mining started early and about 485 ounces of gold ($10,000) were produced in 1900 (Brooks and others, 1901). Small dredges operated from 1909 to at least 1911. A heavy-mineral concentrate from near the mouth of Warm Creek (SO054) contained gold, hematite, ilmenite, garnet, and scheelite. Gravels were 5 to 6 feet thick and the gold, recovered from the lower 2 feet of gravel and 1 foot of bedrock, was coarse, well-rounded and mostly bright (Collier and ohters, 1908). Bedrock schist, marble, and some greenstone contains numerous pyrite-bearing quartz veins and lenses. Most of the drainage is probably underlain by a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Placer mining started early and about 485 ounces of gold ($10,000) were produced in 1900 (Brooks and others, 1901). Small dredges operated from 1909 to at least 1911.

Production notes:
About 485 ounces of gold ($10,000) were produced in 1900 (Brooks and others, 1901).

Reserves:

Additional comments:

References:
Brooks and others, 1901; Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Post Creek)

Site type: Prospect

ARDF no.: SO059

Latitude: 64.971 **Quadrangle:** SO D-5

Longitude: 164.017

Location description and accuracy:

Post Creek is a small north tributary to the Niukluk River. The mouth of Post Creek is about 13 miles from Council. This is locality 11 of Cobb (1972, MF 445; 1978, OF 78-181) who shows this prospect to be on the south side of upper Post Creek in the northwest corner of the Solomon D-4 quadrangle. Gamble (1988, locality 89) shows this prospect to be located on the north side of the Niukluk River, 0.5 mile downstream of the mouth of Post Creek in the Solomon D-5 quadrangle. It is the location of Gamble (1988) that is used here.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

There is an early report of a gold-bearing, 8-foot-wide quartz vein localized at a schist/marble contact 0.5 mile southeast of Post Creek (Smith, 1907). Crushing and panning of the quartz indicated that it could contain as much as 1.7 ounces of gold per ton. Bedrock in the Post Creek drainage is mostly a pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This quartz vein is probably the same age as some other gold-quartz veins of southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

Silicification.

Age of mineralization:
Cretaceous?

Deposit model:
Gold-quartz vein in metamorphic rocks?; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a?

Production Status: No

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Smith, 1907; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Gamble, 1988; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Smith, 1907

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Fox River; IXL Gulch

Site type: Mine

ARDF no.: SO060

Latitude: 64.783 **Quadrangle:** SO D-4

Longitude: 163.793

Location description and accuracy:
Fox River is a tributary to the lower Fish River that flows adjacent to the Nome-Council road in its upper reaches. A small amount of mining took place about 9.2 miles southeast of Council at IXL Gulch. This is locality 113 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The Fox River is incised and small-scale placer mining took place on bench deposits near the mouth of IXL Gulch as early as 1903 (Collier and others, 1908). The bench gravels were 2 to 6 feet thick on schist bedrock and covered by 2 to 3.5 feet of muck. Two ounces of gold were reported to have been recovered from 4 cubic yards of gravel near the mouth of IXL Gulch (Collier and others, 1908). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; system of benches indicates more than one cycle of erosion and deposition. Low elevation (about 200 feet) and proximity to Niukluk River lowlands suggests that sea level fluctuations may have influenced development of the placers.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining took place on benches in this area.

Production notes:
A few ounces of gold were produced before 1908.

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Puckmummie Creek

Site type: Prospect

ARDF no.: SO061

Latitude: 64.956 **Quadrangle:** SO D-5

Longitude: 164.068

Location description and accuracy:
Puckmummie Creek is a small creek that drains north to the Casadepaga River. Its mouth is about 0.5 miles upstream of the confluence of the Casadepaga and Niukluk Rivers. This is locality 71 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Gold colors are widely distributed in thin gravel, 2 to 3 feet thick, but there is no record of mining on the creek (Smith, 1910; Cobb, 1978, OF 78-181). The gravels are derived from bedrock of the drainage which is part of a pelitic schist assemblage inferred to be of Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: No

Site Status: Inactive

Workings/exploration:
Prospecting by panning is all that has been reported.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Birch Creek

Site type: Mine

ARDF no.: SO062

Latitude: 64.831 **Quadrangle:** SO D-5

Longitude: 164.129

Location description and accuracy:
Birch Creek is a major southwest tributary of Big Four Creek, a large south tributary to the Casadepaga River. The mouth of Birch Creek is about 5 miles upstream of the confluence of Big Four Creek and the Casadepaga River. Mining on Birch Creek took place about 1.2 miles upstream of its mouth at about 350 feet elevation. This is locality 82 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Very little is known about mining here other than some took place in 1906 below Shea Creek, a small south tributary (Collier and others, 1908). Bedrock in this part of the drainage is a metavolcanic assemblage thought to be Ordovician in age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Some small-scale surface workings may be present.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River (Fool Creek)

Site type: Mine

ARDF no.: SO063

Latitude: 64.922 **Quadrangle:** SO D-5

Longitude: 164.149

Location description and accuracy:

The Casadepaga River is a major west tributary to the Niukluk River. This locality is on the north side of the Casadepaga River, about 4 miles upstream from the confluence of the Casdepaga and Niukluk Rivers and across from Little Dixie Creek. It was referred to as the mouth of Fool Creek by Smith (1910). This is locality 57 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:

The only information specific to this locality along the Casadepaga River is that minor placer production occurred here early in the history of the area. The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general the river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present throughout bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite; pyrite accompanied gold at this locality (Smith, 1910). The minor gold production here was from a low schist bedrock bench and some of the gold was fairly coarse; a 0.6 ounce nugget was recovered from spotty concentrations on bedrock. The bench gravels are frozen. Bedrock in this area is Paleozoic marble (particularly on the north side of Casadepaga River) and a pelitic schist assemblage that may be Cambrian or Precambrian in age (Till and others, 1986). In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is

known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations of 170 to 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The only information specific to this locality along the Casadepaga River is that minor placer production occurred here early in the history of the area.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dawson Creek

Site type: Mine

ARDF no.: SO064

Latitude: 64.913 **Quadrangle:** SO D-5

Longitude: 164.176

Location description and accuracy:
Dawson Creek is a short north tributary to the Casadepaga River; it is located across from the mouth of Big Four Creek (SO066). The surface elevation here is about 225 feet. This is locality 70 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet

Geologic description:
Dawson Creek heads in Paleozoic marble of Mount Dixon (Till and others, 1986) but its lower reaches cross terraces of the Casadepaga River. Small-scale mining occurred along lower Dawson Creek where bedrock includes micaceous schist (Smith, 1910) and apparently at least some of this mining was of bench gravels that were 8 to 10 feet thick.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations from 170 to 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale surface placer mining occurred between 1900 and 1907 (Cobb, 1978, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): No Man Creek

Site type: Mine

ARDF no.: SO065

Latitude: 64.909 **Quadrangle:** SO D-5

Longitude: 164.166

Location description and accuracy:
No Man Creek is a south tributary to the Casadepaga River. Its mouth is about 1,000 feet downstream from the mouth of Big Four Creek (SO066). This is locality 69 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A little mining by one person took place here in 1907 (Smith, 1910). The mining was probably along the lower part of the creek where it crosses and reworks terrace deposits of the Casadepaga River.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations of 170 to 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale mining by hand is all that is indicated for this locality.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Big Four Creek

Site type: Mine

ARDF no.: SO066

Latitude: 64.903 **Quadrangle:** SO D-5

Longitude: 164.173

Location description and accuracy:
Big Four Creek is a major south tributary to the Casadepaga River. The mouth of Big Four Creek is at an elevation of 190 feet, 5 miles upstream of the confluence of the Casadepaga and Niukluk Rivers. Mining took place 0.5 mile upstream of the mouth of Big Four Creek. This is locality 68 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Mining on Big Four Creek took place 0.5 mile upstream of the creek's mouth where it crosses a terrace of the Casadepaga River. Bedrock was not encountered during mining and the gold was on the surface and on clay layers in fine creek gravels. Gold values were apparently better near the surface than at depth on clay layers (Smith, 1910).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 to 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale surface placer mining by one person in 1907 (Smith, 1910).

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Mine

ARDF no.: SO067

Latitude: 64.89 **Quadrangle:** SO D-5

Longitude: 164.19

Location description and accuracy:
The Casadepaga River is a major west tributary to the Niukluk River. This locality is 1.3 miles upstream from the mouth of Big Four Creek (SO066) at about 210 feet elevation. This is probably located within about 3/4 mile of the coordinates. It is locality 56 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). Smith (1910) noted that at this locality, an abandoned channel of the Casdepaga River (between Dixon and Dawson Creeks) was being mined by small-scale methods in 1907. The mining found some coarse gold that was spottily distributed on an irregular bedrock of schist and marble.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale surface operations recovered a little gold at this locality.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith and others, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Mount Dixon

Site type: Prospect

ARDF no.: SO068

Latitude: 64.918 **Quadrangle:** SO D-5

Longitude: 164.246

Location description and accuracy:
This prospect is at an elevation of about 750 feet in the headwaters of Dixon Creek, 0.6 miles due south of Mount Dixon. This is locality 9 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, malachite

Gangue minerals: Quartz

Geologic description:
Malachite and azurite are present along the silicified contact between schist and marble at this and nearby localities (Smith, 1908; Gamble, 1988). The marble is Paleozoic and makes up the main part of the Mount Dixon upland but the underlying pelitic schist is possibly Cambrian or Precambrian in age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In theTeller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peninsula. Quarzite at the base of

the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:
Silica-rich rocks at or near the the base of Paleozoic marble overlying metapelitic rocks characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at base of marble overlying metapelitic schist.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
No workings are known at this locality.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Sainsbury and others, 1969; Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Smith, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dixon Creek

Site type: Mine

ARDF no.: SO069

Latitude: 64.89 **Quadrangle:** SO D-5

Longitude: 164.22

Location description and accuracy:
Dixon Creek is a north tributarty to the lower Casadepaga River with headwaters against the south side of Mount Dixon. The mouth of Dixon Creek is across the Casadepaga River from the mouth of Thorpe Creek (SO074). This locality is probably located within about 1/2 mile; it is locality 67 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale mining took place on Dixon Creek, probably along the lower part of the creek, as early as 1899 and about 725 ounces are estimated to have been produced by 1907 (Smith, 1910). Some of the gold was coarse. The creek flows close to the contact between Paleozoic marble of Mount Dixon and underlying pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). The lower part of Dixon Creek crosses a terrace of the Casadepaga River.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale surface operations took place between 1899 and 1907, probably along lower parts of the creek.

Production notes:
Smith (1910) estimates that about $15,000 (725 ounces) worth of gold were recovered between 1899 and 1907.

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Gold Moon Gulch

Site type: Mine

ARDF no.: SO070

Latitude: 64.898 **Quadrangle:** SO D-5

Longitude: 164.3

Location description and accuracy:
Gold Moon Gulch is a small east tributary to Quartz Creek; it is about 2 miles southeast of Mount Dixon. The mouth of Gold Moon Gulch is 0.9 miles above the confluence of Quartz Creek and Goose Creek, a north tributary to the Casadepaga River. Gold Moon Gulch is not labeled on current USGS topographic maps. This is locality 60 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:
Gold Moon Gulch flows near the contact between marble and schist. A very uneven bedrock surface is developed on the marble including underground caverns (karst ?) that rob water from the surface. Coarse gold, some with quartz, to 0.8 ounce nuggets has been recovered. The bright, angular character and common attachment to quartz suggested to Smith (1910) that the gold was locally derived. Bedrock in the area is primarily part of a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986); some Paleozoic marble is also probably present.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer operations took place in 1907 or 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Quartz Creek

Site type: Mine

ARDF no.: SO071

Latitude: 64.887 **Quadrangle:** SO D-5

Longitude: 164.304

Location description and accuracy:
Quartz Creek is a north tributary to Goose Creek and Goose Creek is a north tributary to the Casadepaga River. The mouth of Quartz Creek is 1 mile above the confluence of Goose Creek and Casadepaga River. This is locality 59 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
By 1907, placer mining had taken place on Quartz Creek just above its mouth for several years (Smith, 1910). The creek is locally incised into older gravels. The gravels that were worked were 3 to 10 feet thick and the gold was recovered from the upper 2 feet of schist bedrock. The gold was coarse, some with attached quartz, and associated with garnet and magnetite. Bedrock in the area is primarily part of a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer workingstook place along the lower part of the creek for several years up to 1907.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Goose Creek

Site type: Mine

ARDF no.: SO072

Latitude: 64.879 **Quadrangle:** SO D-5

Longitude: 164.284

Location description and accuracy:
Goose Creek is a north tributary to the Casadepaga River. The mouth of Goose Creek, at an elevation of about 250 feet, is 2 miles downstream from the mouth of Canyon Creek. This is locality 61 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, limonite, magnetite

Geologic description:
Placer gold mining started on lower Goose Creek in 1900 (Brooks and others, 1901). Dredging started by 1909 and took place intermittantly to 1919 (Cobb, 1978, OF 78-181). Sainsbury and others (1972, OFR 511) show placer tailings to be present over the lower mile of the creek. This part of the creek crosses creek terraces and terraces of the Casadepaga River and some bench mining occurred. Near the mouth, bedrock was not exposed and gold was on a clay false bedrock. One half mile upstream, flat, bright gold was recovered from from a clay layer on schist bedrock (Smith, 1910). Bedrock in the area is primarily part of a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Placer gold mining started on lower Goose Creek in 1900 (Brooks and others, 1901). A water-powered scraper, 1/2 mile above the mouth in 1907, was designed to handle 50 cubic yards per day. Dredging started by 1909 and took place intermittantly to 1919 (Cobb, 1978, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dry Creek (Gulch)

Site type: Mine

ARDF no.: SO073

Latitude: 64.888 **Quadrangle:** SO D-5

Longitude: 164.227

Location description and accuracy:
Dry Creek (Gulch) is a short north tributary to the Casadepaga River. The mouth of Dry Creek is about 2.5 miles upstream from the mouth of Big Four Creek (SO069). This is locality 66 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Dry Creek is incised into a terrace of the Casadepaga River. Mining along the active channel started in 1900 and one person was mining here in 1907 (Smith, 1910). The gold was concentrated on a clay seam and most was fine; a 0.1 ounce nugget was recovered in 1900 (Brooks and others, 1901).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining took place between 1900 and 1907.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Brooks and others, 1901

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Thorpe Creek

Site type: Mine

ARDF no.: SO074

Latitude: 64.886 **Quadrangle:** SO D-5

Longitude: 164.205

Location description and accuracy:
Thorpe Creek is a very small south tributary to the Casadepaga River. The mouth of Thorpe Creek is about 1.9 miles upstream of the mouth of Big Four Creek (SO069). This is locality 65 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Magnetite

Geologic description:
Gold mining on Thorpe Creek took place where it crosses a bench of the Casadepaga River (Brooks and others, 1901). Bedrock was not encountered here although schist and marble are exposed in the creek's headwaters. Mining between 1900 and 1907 is reported and some coarse gold was recovered (Smith, 1910).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining took place between 1900 and 1907.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Brooks and others, 1901

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Prospect

ARDF no.: SO075

Latitude: 64.882 **Quadrangle:** SO D-5

Longitude: 164.221

Location description and accuracy:

The Casadepaga River is a major west tributary to the Niukluk River. This locality is near the mouth of Dry Creek (Gulch). It is at an elevation of about 210 feet, and 1.3 miles above the mouth of Big Four Creek (SO066). It is locality 55 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:

The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in the bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). Smith (1910) noted that prospecting of bench gravels took place at this locality, the mouth of Dry Creek or Gulch. The bench gravels were at least 10 feet thick, contained gold colors from grassroots down, and values to about 1/4 ounce of gold per cubic yard were locally present. Bedrock was not encountered and the bench gravels, in general more muddy than elsewhere along the river, may be up to 50 feet thick (Smith, 1910).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined

Site Status: Inactive

Workings/exploration:
Prospect pits to 10 feet deep were dug here before 1907.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Spruce Creek

Site type: Mine

ARDF no.: SO076

Latitude: 64.879 **Quadrangle:** SO D-5

Longitude: 164.211

Location description and accuracy:
Spruce Creek is a south tributary to the Casadepaga River; its mouth is about 2.5 miles upstream of the mouth of Big Four Creek. It is locality 64 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Spruce Creek cuts completely through the terrace of the Casadepaga River and flows on bedrock at its mouth. Sainsbury and others (1972) show placer tailings along the lower 0.7 miles of the creek. By 1907, an estimated $10,000 or about 400 ounces of gold had been recovered (Smith, 1910); 40 to 50 ounces were recovered in the first year of mining, 1899 (Brooks and others, 1901). The gold was bright and coarse, and primarlily recovered over marble bedrock. Bedrock in Spruce Creek is primarily part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining took place along the lower 0.7 miles of the creek prior to WW I.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Spruce Creek

Site type: Occurrence

ARDF no.: SO077

Latitude: 64.868 **Quadrangle:** SO D-5

Longitude: 164.198

Location description and accuracy:
This is a lode prospect on the west slope of Spruce Creek valley; it is at an elevation of about 450 feet, 1.2 miles upstream from the mouth of Spruce Creek on the Casadepaga River. It is locality 10 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu

Other:

Ore minerals: Azurite (?), chalcopyrite (?), malachite (?)

Gangue minerals: Quartz

Geologic description:
A zone of silicified rock, possibly replaced marble, near a contact with schist contains copper sulfides and carbonates (Smith, 1908; also see Mount Dixon, SO068). Bedrock in Spruce Creek is primarily part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Copper-bearing mineralization in silica-rich zones near marble/schist contact (also see Mount Dixon, SO068).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:
A little surface prospecting has probably taken place here.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Lightning Creek

Site type: Prospect

ARDF no.: SO078

Latitude: 64.871 **Quadrangle:** SO D-5

Longitude: 164.229

Location description and accuracy:
Lightning Creek is a small south tributary to the Casadepaga River. Its mouth is about 2.5 miles upstream from the mouth of Big Four Creek. This is locality 62 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1910) noted that considerable prospecting had occurred by 1907 along the active drainage of lower Lightning Creek where it crosses terraces of the Casadepaga River. The terrace gravels here are 5 to 10 feet above the active stream. Bedrock in the area is primarily part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Surface prospecting pits were dug along the active stream in about 1907.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Penelope Creek

Site type: Mine

ARDF no.: SO079

Latitude: 64.863 **Quadrangle:** SO D-5

Longitude: 164.255

Location description and accuracy:
Penelope Creek is a south tributary to the Casadepaga River. Its mouth is at an elevation of about 250 feet, about 4 miles upstream of the mouth of Big Four Creek. This is locality 63 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Penelope Creek was primarily placer mined along its lower part where it crosses terraces of the Casadepaga River. However, about a mile above its mouth, an exploration shaft went through 97 feet of unconsolidated materials before reaching bedrock (Smith, 1910). This shaft encountered 40 feet of well-rounded creek gravels with some gold colors, 24 feet of yellowish clay, and 29 feet of washed gravel, some colluvium, and bottomed on clay on bedrock. Bedrock is exposed along the creek about 1/4 mile further upstream. A shaft along the Casadepaga River at the mouth of Penelope Creek encountered 57 feet of unconsolidated materials over bedrock; from the surface down these consisted of fine quartz sand, fine gravel, 20 feet of blue clay, 20 feet of sand and gravel, and clay on decomposed mica schist. The mining on Penelope Creek, along the active channel where it crosses the Casadepaga River terraces, did not reach bedrock. Pans along this part of the creek were reported to carry 5 cents in gold (Brooks and others, 1901). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that

more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
At least three exploration shafts were dug in the area, including one along the Casadepaga River at the mouth of Penelope Creek. Small-scale placer mining took place locally along the lower part of the creek.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Mine

ARDF no.: SO080

Latitude: 64.868 **Quadrangle:** SO D-5

Longitude: 164.302

Location description and accuracy:
The Casadepaga River is a major west tributary to the Niukluk River. This location along the river is about half way between the mouths of Goose (SO072) and Canyon Creeks (SO083) at 260 feet elevation. It is locality 54 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in the bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). Smith (1910) reports that bench gravels, in places 30 feet above the active channel of the Casadepaga River, have been prospected at this location. An exploration shaft sunk in 1908 encountered 25 feet of frozen gravel and sand over 5 feet of 'quick sand', a blueish muck with fine sand apparently similar to material found on Banner Creek (SO094).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
This particular locality appears to be an area of prospecting, including at least one 30-foot-deep shaft, rather than mining.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Mine

ARDF no.: SO081

Latitude: 64.855 **Quadrangle:** SO D-5

Longitude: 164.321

Location description and accuracy:
The Casadepaga River is a major west tributary to the Niukluk River. This location is at the mouth of Canyon Creek (SO083) a west tributary. It is at an elevation of 270 feet, 11 miles upstream of the confluence of the Casadepaga and Niukluk Rivers. It is locality 53 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in the bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy-mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). This location is at the mouth of Canyon Creek (SO083) a west tributary. A dredge operated here at least in the years 1927, 1928, and 1929 (Cobb, 1978, OF78-181).

Alteration:

Age of mineralization:

Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Dredge operations took place here from at least 1927 to 1929 and some unkown amount of tailings are present.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Cobb, 1978 (OF 78-181).

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Sunshine Creek

Site type: Mine

ARDF no.: SO082

Latitude: 64.859 **Quadrangle:** SO D-5

Longitude: 164.361

Location description and accuracy:
Sunshine Creek is a north tributary to Canyon Creek (SO083). The mouth of Sunshine Creek is 1.2 miles upstream from the confluence of Canyon Creek and the Casadepaga River. This is locality 52 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The lower part of Sunshine Creek crosses benches of Canyon Creek; Sainsbury and others (1972, OFR 511) show placer tailings along the lower 0.5 mile of the creek. There are reports of placer mining here in 1918 and 1934 (Cobb, 1978, OF 78-181). Smith (1910) notes that placers along north tributaries of Canyon Creek derive ther gold from reworking the bench gravels. Bedrock of the area includes a pelitic schist of possible Cambrian or Precambrian age in contact with a lower Paleozoic metasedimentary assemblage to the west in the headwaters of Canyon Creek (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale open-cut placer mining took place intermittantly from at least 1918 to 1934 along the lower 0.5 mile of the creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Canyon Creek

Site type: Mine

ARDF no.: SO083

Latitude: 64.857 **Quadrangle:** SO D-5

Longitude: 164.375

Location description and accuracy:

Canyon Creek is a large west tributary to the Casadepaga River. The mouth of Canyon Creek is at 270 feet elevation, 11 miles upstream from the confluence of the Casadepaga and Niukluk Rivers. Placer mining took place along the lower 1.5 miles of the creek. This is locality 51 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

The active floodplain of Canyon Creek is incised about 10 feet into terraces that are best developed on the north side of the creek. The terraces are cut into pelitic schist bedrock and mantled by about 12 feet of clean well-rounded gravel. The bench gravels carry gold throughout although it is concentrated on bedrock (Smith, 1910). Some gravels of the active drainage include large schist slabs probably reflecting the proximity of bedrock. The active stream gravels were 3 feet thick about 2 miles upstream of the mouth (Brooks and others, 1901). Although open cut and hydraulic mining was initially undertaken, a dredge operated on Canyon Creek at least in the period 1916-18 (Cobb, 1978, OF 78-181). Sainsbury and others (1972, OFR 511) show placer tailings along the lower 0.5 miles of the creek and Cobb (1972, MF442) shows mining to have been undertaken along the creek between the mouths of Sunshine and Boulder Creeks. Bedrock in the Canyon Creek area is mostly a pelitic schist assemblage of Cambrian or Precambrian age that is contact with a lower Paleozoic metasedimentary assemblage to the west in the headwaters of Canyon Creek (Till and others, 1986).

Alteration:

Age of mineralization:

Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface open cut and some dredging operations took place on the creek from between 1910 to at least 1918. Sainsbury and others (1972) show placer tailings along the lower 0.5 miles of the creek and Cobb (1972, MF442) shows mining to have occurred along the creek between the mouths of Sunshine and Boulder Creeks.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Boulder Creek

Site type: Mine

ARDF no.: SO084

Latitude: 64.862 **Quadrangle:** SO D-5

Longitude: 164.396

Location description and accuracy:
Boulder Creek is a north tributary to Canyon Creek (SO083). Its mouth is 2 miles upstream of the confluence of Canyon Creek and the Casadepaga River. This is locality 50 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Mining took place along the active channel of Boulder Creek where thin, 1.5- to 2-feet thick gravels over bedrock contained gold. Sainsbury and others (1972, OFR 511) show placer tailings along the lower 3/4 mile of the creek. The gold was bright and some was coarse; a 3/4 ounce nugget was recovered (Smith, 1910). It appears that some mining of bench gravels also occurred. The creek was noted as one of the richer in the area; 50 ounces were reported to have been recovered in one day of work in 1899 (Brooks and others, 1901). Bedrock in the area is pelitic schist of possible Cambrian or Precambrian age that is in contact with a lower Paleozoic metasedimentary assemblage in the headwaters of Boulder Creek (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Canyon Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale hand and hydraulic mining was used up to 1907; placer tailings are mapped along the lower 3/4 mile of the creek (Sainsbury and others, 1972,OFR 511).

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Upper Goose Creek

Site type: Mine

ARDF no.: SO085

Latitude: 64.881 **Quadrangle:** SO D-5

Longitude: 164.357

Location description and accuracy:
Goose Creek is a north tributary to the Casadepaga River. The mouth of Goose Creek is 2 miles downstream from the mouth of Canyon Creek at an elevation of about 250 feet. This site is in the headwaters of Goose Creek, about 3 miles upstream of its mouth. This is locality 58 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold mining started on lower Goose Creek in 1900 (Brooks and others, 1901). Dredging started by 1909 and took place intermittantly to 1919 (Cobb, 1978, OF 78-181). The lower part of the creek crosses creek terraces and terraces of the Casadepaga River and some bench mining occurred (see ARDF locality SO072). Smith (1910) reported that some mining took place at this locality (about 3 miles above the mouth) in creek gravels below the mouth of a small tributary. Bedrock of the Goose Creek drainage is pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining occurred here prior to 1910.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): American Creek; Game Creek

Site type: Mine

ARDF no.: SO086

Latitude: 64.931 **Quadrangle:** SO D-5

Longitude: 164.455

Location description and accuracy:
American Creek is the farthest-northwest headwater tributary of the Niukluk River. This location is at the mouth of Game Creek; placer mining occurred for about 0.5 miles up Game Creek and extends for about 0.3 miles on American Creek downstream from the mouth of Game Creek . This is locality 48 of Cobb (1972, MF 445; 1978, OF 78-181). However, the base map used by Cobb (1972, MF 445) appears to have mislocated and mislabeled Game Creek. The locations for Game Creek and Auburn Creek (SO087) shown on on more recent 1:250,000 and 1:63,360 scale topographic maps matches the original descriptions and is used here.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Very little is known about the mining at this location on American Creek. A dredge operated here in 1940 (Smith, 1942) but subsequent work is not reported. The Solomon D-5 topographic map shows about 0.3 miles of placer tailings on American Creek and Sainsbury and others (1972, OFR 511) show about 0.5 miles of tailings on Game Creek. Game Creek heads across a 825 foot-divide to the headwaters of Goose Creek (SO072 and SO085). Bedrock in this area is primarily pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Undetermined

Workings/exploration:
Dredge tailings are present over the lower 0.3 miles of Game Creek and about 0.3 miles of American Creek downstream from the mouth of Game Creek. There is little information available but a dredge operated in 1940.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1942; Cobb, 1972 (MF 445); Sainsbury and others, 1972; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1942

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Auburn Creek (Ravine)

Site type: Mine

ARDF no.: SO087

Latitude: 64.919 **Quadrangle:** SO D-6

Longitude: 164.526

Location description and accuracy:
Auburn Creek is a headwater tributary to American Creek. This is locality 47 of Cobb (1972, MF 445; 1978, OF 78-181). Cobb (1972, MF 445) shows the location to be just upstream of the Solomon D-5 quadrangle boundary but Sainsbury and others (1972, OFR 512) show the location to be further downstream, just inside the Solomon D-6 quadrangle. The location shown by Sainsbury and others (1972, OFR 512) is used here. It is about 0.5 mile upstream from the confluence of Auburn and American Creeks.

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals: Garnet, ilmenite, magnetite

Geologic description:
Smith (1909) reports that the gravels of Auburn Creek carry gold upstream to headwater reaches but Sainsbury and others (1972) show the location of placer workings to be localized about 0.5 miles upstream from the mouth. The gold was coarse, on clay layers rather than bedrock, and had a fineness of 945. Heavy mineral concentrates contained garnet, ilmenite, magnetite, and cinnabar (Smith, 1909). Marble bedrock contained underground channels (karst ?) that captured surface water and solution-etched boulders were present in stream gravels. Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986); marble in this assemblage crops out preferentially along the east side of the Auburn Creek valley.

Alteration:

Age of mineralization:
Quaternary.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale mining occurred here in 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Sainsbury and others, 1972; Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Allgold Creek

Site type: Prospect

ARDF no.: SO088

Latitude: 64.867 **Quadrangle:** SO D-5

Longitude: 164.467

Location description and accuracy:
Allgold Creek is a north tributary to Canyon Creek (SO083). Its mouth is at an elevation of 490 feet about 4.5 miles upstream from the confluence of Canyon Creek and the Casadepaga River. This is locality 49 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Early prospecting found colors in this creek (Smith, 1909) but mining has not been reported (Cobb, 1978, OF 78-181).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: None

Site Status: Inactive

Workings/exploration:

Prospecting by hand took place on this creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Wilson Creek

Site type: Mine

ARDF no.: SO089

Latitude: 64.82 **Quadrangle:** SO D-5

Longitude: 164.49

Location description and accuracy:
Wilson Creek is a north tributary to Lower Willow Creek (SO091). Lower Willow Creek is a west tributary to the Casadepaga River and the mouth of Wilson Creek is about 4.2 miles upstream from the confluence of these streams. The location of mining along Wilson Creek is not certain; it is probably located within 0.5 mile of the coordinates. This is locality 74 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Wilson Creek crosses benches of Lower Willow Creek. Some small-scale mining is reported for this creek early in the history of the area (Brooks and others, 1901) but by 1908, mining activities apparently ceased (Smith, 1909). Wilson Creek flows close to the regional contact between lower Paleozoic metasedimentary rocks (including marble) to the west and pelitic schist of possible Cambrian or Precambrian age to the east (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Lower Willow Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale surface mining occurred here prior to 1908.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Cahill Creek

Site type: Prospect

ARDF no.: SO090

Latitude: 64.819 **Quadrangle:** SO D-5

Longitude: 164.452

Location description and accuracy:
Cahill Creek is a north tributary to Lower Willow Creek. Its mouth is at an elevation of about 500 feet, 3.3 miles upstream of the confluence of Lower Willow Creek and the Casadepaga River. This is locality 75 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Cahill Creek has been prospected and gold was found along the lower 0.5 mile where the creek crosses benches of Lower Willow Creek (Smith, 1910).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Lower Willow Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Surface prospecting took place on this creek prior to 1910.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Lower Willow Creek

Site type: Mine

ARDF no.: SO091

Latitude: 64.816 **Quadrangle:** SO D-5

Longitude: 164.422

Location description and accuracy:

Lower Willow Creek is a major, west tributary to the Casadepaga River. The mouth of Lower Willow Creek is is 0.9 miles downstream from Casadepaga and across from the mouth of Ruby Creek (SO096). This is locality 76 of Cobb (1972, MF 445; 1978, OF 78-181). Cobb (1972, MF 445) shows the lower 5 miles of this creek as having been placer mined but Sainsbury and others (1972, OFR 511) show tailings along 1.6 miles of the drainage starting about 1.2 miles upstream rom the mouth.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

This west tributary of the Casadepaga River, lower Willow Creek, is incised as much as 30 feet into terraces of its drainage and, near its mouth, terraces of the Casadepaga River. Bedrock is exposed at many locations along Lower Willow Creek (Sainsbury and others, 1972, OFR 511) and placer mining has taken place at least locally for a distance of 5 miles upstream from the mouth. Sainsbury and others (1972) show tailings along 1.6 miles of the drainage starting about 1.2 miles upstream from the mouth. Benches are present on both sides of creek but the richest were on the north bank between Cahill and Rocky Creeks where mining is reported (Smith, 1910). The gold from the active drainage was both fine and coarse with nuggets up to about 0.1 ounce. Bedrock in Lower Willow Creek is a pelitic schist assemblage that may be Cambrian or Precambrian in age that is in contact with a lower Paleozoic metasedimentary assemblage to the west (Till and others, 1986).

Alteration:

Age of mineralization:

Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Lower Willow Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Placer mining has taken place at least locally for a distance of 5 miles upstream from the mouth. Sainsbury and others (1972, OFR 511) show tailings along 1.6 miles of the drainage starting about 1.2 miles upstream from the mouth. Most of the mining was between 1900 and 1915 and a dredge was operated between 1911 and 1915 (Cobb, 1972, OF 78-181).

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Ridgeway Creek

Site type: Prospect

ARDF no.: SO092

Latitude: 64.811 **Quadrangle:** SO D-5

Longitude: 164.413

Location description and accuracy:
Ridgeway Creek is a south tributary of Lower Willow Creek (SO091). Its mouth is 2 miles upstream from the mouth of Lower Willow Creek on the Casadepaga River. This is locality 77 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The lower mile of Ridgeway Creek carries gold, including small nuggets (Smith, 1910), but mining has not been reported (Cobb, 1978, 78-191). The regional contact between pelitic schist of possible Cambrian or Precambrian age and a lower Paleozoic metasedimentary assemblage passes through the headwaters of Ridgeway Creek (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Lower Willow Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: None

Site Status: Inactive

Workings/exploration:
Prospecting was done on Ridgeway Creek prior to WW I but the unavailability of water was a handicap to early mining and none has been reported.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Mine

ARDF no.: SO093

Latitude: 64.809 **Quadrangle:** SO D-5

Longitude: 164.342

Location description and accuracy:
The Casadepaga River is a major west tributary to the Niukluk River. This location is at the mouth of Lower Willow Creek (SO091) and Ruby Creek (SO096), 0.9 miles downstream from the old town of Casadepaga and at an elevation of about 320 feet. It is locality 78 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in the bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). Sainsbury and others (1972, OFR 511) show placer tailings along the west side of the river for 0.3 miles downstream from the mouth of Lower Willow Creek (SO091). A dredge operated in the vincinity of Ruby Creek and between Ruby and Banner Creeks in 1913 and in the 1930's (Cobb, 1978, OF 78-181).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries (including Lower Willow Creek) indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 1780 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
A dredge operated along the Casadepaga River in this vicinity as early as 1913 and in the 1930's. Sainsbury and others (1972, OFR 511) show placer tailings along the west side of the river for 0.3 miles downstream from the mouth of Lower Willow Creek.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181)

Primary reference: Cobb, 1978 (OF 78-181)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Banner Creek

Site type: Mine

ARDF no.: SO094

Latitude: 64.823 **Quadrangle:** SO D-5

Longitude: 164.317

Location description and accuracy:
Banner Creek is an east tributary to the Casadepaga River. The mouth of Banner Creek is 1.2 miles downstream from the site of the old Ruby roadhouse at an elevation of about 315 feet. This locality, on lower Banner Creek about 0.2 miles upstream from its mouth, is 72 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale placer mining apparently took place along most of this creek in the early history of the area (Smith, 1910). The gold was mostly coarse, had a fineness of 929, and was present in 8 to 10 feet of gravel but mostly concentrated on bedrock (Brooks and others, 1901). The creek was rich compared to others in the area; 4 men sluiced for 2.5 days in 1899 and recovered $400 or about 20 ounces of gold (Brooks and others, 1901). Bedrock in the lower part of the creek is Paleozoic marble but the headwaters are underlain by pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Mined by small-scale hand methods by 1906. The creek was rich compared to others in the area; 4 men sluiced for 2.5 days in 1899 and recovered $400 or about 20 ounces of gold (Brooks and others, 1901).

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Upper Banner Creek

Site type: Mine

ARDF no.: SO095

Latitude: 64.819 **Quadrangle:** SO D-5

Longitude: 164.297

Location description and accuracy:
Banner Creek is an east tributary to the Casadepaga River. The mouth of Banner Creek is 1.2 miles downstream from the mouth of Ruby Creek at an elevation of about 320 feet. This locality, about 1 mile above the mouth, is 73 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale placer mining apparently took place along most of this creek in the early history of the area (Smith, 1910). In the lower creek, gold was coarse, had a fineness of 929, and was present in 8 to 10 feet of gravel but mostly concentrated on bedrock (Brooks and others, 1901). The creek was rich compared to others in the area; 4 men sluiced for 2.5 days in 1899 and recovered $400 or about 20 ounces of gold (Brooks and others, 1901). Two men were working at this location on upper Banner Creek in 1907 (Smith, 1910). Bedrock in the lower part of the creek is Paleozoic marble but the headwaters and underlain by pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining by hand took place at this location in 1907.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Ruby Creek

Site type: Mine

ARDF no.: SO096

Latitude: 64.799 **Quadrangle:** SO D-5

Longitude: 164.316

Location description and accuracy:
Ruby Creek is an east tributary to the Casadepaga River. Its mouth is 0.9 miles downstream from the old town of Casdepaga and across the river from the mouth of Lower Willow Creek (SO091). Sainsbury and others (1972) show placer tailings to be present over the lower 2 miles of Ruby Creek. This is locality 79 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
Ruby Creek was an important and heavily worked creek in the early history of the area (Brooks and others, 1901). It is incised in its lower reaches and both the active channel and some bench placers have been mined. Some of the gold was coarse (a 1/4 ounce nugget was reported) and had a fineness of 946. The gravels in the lower creek were thin, 2 to 3 feet, and gold-bearing throughout. The creek gets its name from the abundant garnet in heavy mineral concentrates. A large part of this creek was mined by 1907 (Smith, 1910). The headwaters of Ruby Creek are underlain by a lower Paleozoic metasedimentary assemblage (Till and othes, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Almost all the creek gravels had been worked by 1907. Sainsbury and others (1972, OFR 511) show placer tailings to be present over the lower 2 miles of Ruby Creek.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Nugget Gulch

Site type: Prospect

ARDF no.: SO097

Latitude: 64.772 **Quadrangle:** SO D-5

Longitude: 164.286

Location description and accuracy:
Nugget Gulch is a small headwater tributary to the Solomon River. Its mouth is at an elevation of about 490 feet, about 8 miles north of Quigleys Camp on the Solomon River. It is locality 96 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
There is one early report that prospecting for placer gold occurred on Nugget Gulch (Smith, 1909).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Some surface prospecting has occurred on this creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Casadepaga River

Site type: Mine

ARDF no.: SO098

Latitude: 64.795 **Quadrangle:** SO D-5

Longitude: 164.347

Location description and accuracy:
The Casadepaga River is a major west tributary to the Niukluk River. This locality is at the old town of Casadepaga, where Sainsbury and others (1972, OFR 511) show placer tailings to be present. This is about 1.7 miles downstream from locality 81 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
The Casadepaga River is a major west tributary to the Niukluk River. The first 11 miles upstream from the mouth varies from 170 to 270 feet in elevation. The next 8 to 9 miles upstream gains another 150 feet of elevation. The lower 11 miles of the river has a pronouced floodplain over most of its length but in general this river is incised into benches and terraces that have surfaces 30 to 150 feet higher than the present drainage. Gold colors are commonly present in the bench gravels and mining has commonly taken place where tributaries cross the benches and rework these gravels (Collier and others, 1908). Heavy mineral concentrates from various parts of the drainage commonly contain garnet and magnetite. In general, bedrock was not exposed by early mining operations along the lower part of this river. As noted by Smith (1910), the depth to bedrock is known to vary from as much as 57 feet at the mouth of Penelope Creek (SO079) to 17 feet a half mile above the mouth of Big Four Creek (SO066). This location, at an elevation of about 325 feet, is the farthest upstream for which mining is known to have occurred on the river. Sainsbury and others (1972) show placer tailings along about 0.3 miles of the river channel at this location.

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Sainsbury and others (1972, OFR 511) show placer tailings along about 0.3 miles of the river channel at this location.

Production notes:

Reserves:

Additional comments:

References:
Sainsbury and others, 1972; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 511); Cobb, 1978 (OF 78-181)

Primary reference: Sainsbury and others, 1972

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Moonlight Creek

Site type: Mine

ARDF no.: SO099

Latitude: 64.779 **Quadrangle:** SO D-5

Longitude: 164.452

Location description and accuracy:
Moonlight Creek is a small north tributary of the Casadepaga River. Its mouth is at an elevation of 425 feet about 3.5 miles upstream from the old town of Casadepaga. This is locality 80 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Mertie (1918) reports that placer mining took place along this creek in 1916. Moonlight Creek flows close to the contact of pelitic schist of possible Cambrian or Precambrian age to the east with a lower Paleozoic metasedimentary assemblage, that includes marble in this drainage, to the west (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the numerous incised terraces along the Casadepaga River and its major tributaries indicate that more than one cycle of erosion and deposition has developed placer deposits in the area. The low elevations between 170 and 270 feet along the first 11 miles of the river, suggest that Quaternary sea level fluctuations could have influenced placer development.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Some small-scale mining is reported to have taken place in 1916 along this creek.

Production notes:

Reserves:

Additional comments:

References:
Mertie, 1918; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Mertie, 1918

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Moonlight Divide

Site type: Prospect

ARDF no.: SO100

Latitude: 64.795 **Quadrangle:** SO D-5

Longitude: 164.448

Location description and accuracy:
The Moonlight Divide prospect is located on the ridge crest betweeen the headwaters of Moonlight Creek (SO099) and Ridgeway Creek (SO092) at about 1,400 feet elevation. This is locality 14 of Cobb (1972, MF 445; 1978, OF 78-181). Gamble (1988) shows two occurrences of this name farther west and this as his new locality 125.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals: Quartz

Geologic description:
This prospect is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact between marble in a lower Paleozoic metasedimentary assemblage and pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In theTeller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peinin-

sula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777). Gamble (1988) describes rocks near this prospect as an iron-stained quartzite (or silicified marble) within marble with 2 to 3 percent pyrite; a sample contained 400 ppm As.

Alteration:
Silicification? The development of silica-rich rocks at or near the the base of Paleozoic marble overlying metapelitic rocks characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at base of marble overlying metapelitic schist.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
Some shallow prospect pits were dug and claims were staked (Smith, 1908).

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Sainsbury and others, 1969; Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Smith, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Venetia Creek

Site type: Mine

ARDF no.: SO101

Latitude: 64.801 **Quadrangle:** SO D-6

Longitude: 164.831

Location description and accuracy:
Venetia Creek is an east tributary to the Eldorado River in the northeast Nome district. This location includes 1.8 miles of the main channel at elevations of from 490 to 570 feet. It is locality 83 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Gold was discoverd on Venetia Creek in 1900 and production through 1903 was $6,000 or about 290 ounces (Collier and others, 1908). The gold was in thin gravels, 3 to 4 feet thick, in a narrow (10 to 50 feet) pay streak on marble and chloritic schist bedrock. In places, most of the gold was in crevices in the upper 3 to 4 feet of bedrock. The gold was coarse, had a fineness of 938, and was commonly in pumpkin-seed shaped grains (Brooks and others, 1901). The uplands around Venetia Creek are mostly underlain by a schistose marble of probable Ordovician age that structurally overlies a metavolcanic assemblage of possible Ordovician age (Till and others, 1986). The metavolcanic assemblage could be exposed in parts of Venetia Creek.

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale placer workings are present along 1.8 miles of the creek between elevations from 490 to 570 feet.

Production notes:

Gold was discoverd on Venetia Creek in 1900 and production through 1903 was $6,000 or about 290 ounces (Collier and others, 1908).

Reserves:

Additional comments:

References:

Brooks and others, 1901; Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dividend Creek

Site type: Mine

ARDF no.: SO102

Latitude: 64.857 **Quadrangle:** SO D-6

Longitude: 164.567

Location description and accuracy:
Dividend Creek is a short tributary extreme headwaters of Telegram Creek (SO108); it is about 2,000 feet long and not identified by name on the current USGS topographic maps. It is locality 44 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that mining took place on this creek before 1908. The small tributaries to Telegram Creek were all placer mined by small-scale methods in the early history of the Iron Creek area. The gravels are probably thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Oversight Creek

Site type: Mine

ARDF no.: SO103

Latitude: 64.86 **Quadrangle:** SO D-6

Longitude: 164.56

Location description and accuracy:
Oversight Creek is a short tributary to the extreme headwaters of Telegram Creek (SO108); it is about 3,000 feet long. It and Dividend Creek (SO102) merge to form Telegram Creek. Oversight Creek is not identified by name on the Solomon D-6 quadrangle. It is locality 44 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that profitable mining took place on this creek before 1908. The small headwater tributaries to Telegram Creek were all placer mined by small-scale methods during early mining in the Iron Creek area. The gravels are probably thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Adventuress Creek

Site type: Mine

ARDF no.: SO104

Latitude: 64.864 **Quadrangle:** SO D-6

Longitude: 164.572

Location description and accuracy:
Adventuress Creek is a short east tributary to the headwaters of Telegram Creek (SO108); it is about 3,000 feet long. It is not identified by name on the Solomon D-6 quadrangle. It is locality 42 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that mining took place on this creek before 1908. The small tributaries to Telegram Creek were all placer mined by small-scale methods during early mining of the Iron Creek area. The gravels are thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Penny Creek

Site type: Mine

ARDF no.: SO105

Latitude: 64.869 **Quadrangle:** SO D-6

Longitude: 164.584

Location description and accuracy:
Penny Creek is a small northeast tirbutary to the headwaters of Telegram Creek (SO108). It is not identified by name on the Solomon D-6 quadrangle. It is locality 41 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that mining took place on this creek before 1908. The small tributaries to the headwaters of Telegram Creek were all placer mined by small-scale methods during early mining of the Iron Creek area. The gravels are probably thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Shoal Creek

Site type: Mine

ARDF no.: SO106

Latitude: 64.871 **Quadrangle:** SO D-6

Longitude: 164.599

Location description and accuracy:
Shoal Creek is a small northeast tributary to the headwaters of Telegram Creek (SO108). It is not identified by name on the Solomon D-6 quadrangle. It is locality 40 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that mining took place on this creek before 1908. The small tributaries to the headwaters of Telegram Creek were all placer mined by small-scale methods during early mining of the Iron Creek area. The gravels are thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Ready Bullion Creek

Site type: Mine

ARDF no.: SO107

Latitude: 64.863 **Quadrangle:** SO D-6

Longitude: 164.592

Location description and accuracy:
Ready Bullion Creek is a south tributary to the headwaters of Telegram Creek (SO108). It is locality 45 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Smith (1909) reports that mining took place on this creek before 1908. The small tributaries to the headwaters of Telegram Creek were all placer mined by small-scale methods during early mining of the Iron Creek area. The gravels are thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale surface mining occurred here before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Telegram Creek

Site type: Mine

ARDF no.: SO108

Latitude: 64.868 **Quadrangle:** SO D-6

Longitude: 164.606

Location description and accuracy:
Telegram Creek is the upstream continuation of Dome Creek (SO113). It is in the headwaters of the Iron Creek (SO127) drainage. It is included as part of locality 33 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A large part of Telegram Creek, at least the 1.3 miles downstream from the mouth of Ready Bullion Creek, has been placer mined. As the north and east headwater tributaries of Telegram Creek (SO102-SO106) were also mined (Smith, 1909), it is possible that the entire active channel has been worked. This mining was by small-scale methods in the early history of the Iron Creek area. The gravels were probably thin, locally derived, and lay on lower Paleozoic metasedimentary rocks that comprise the bedrock in the area (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining occurred along a large part, if not all, of the active channel of Telegram Creek, probably before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Hardluck Gulch

Site type: Mine

ARDF no.: SO109

Latitude: 64.878 **Quadrangle:** SO D-6

Longitude: 164.621

Location description and accuracy:
Hardluck Gulch is a south-flowing drainage that merges with Telegram Creek (SO108) and Eldorado Creek to become Dome Creek (SO113). It is in the headwaters of the Iron Creek (SO127) drainage. This is locality 39 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining recovered coarse, well-rounded gold from a thin, clay layer on bedrock, mostly before 1908 (Smith, 1909) although mining was taking place near the mouth in 1909 (Henshaw, 1910). Bedrock is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining took place on this creek before WW I.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Henshaw, 1910; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Chickamin Gulch

Site type: Prospect

ARDF no.: SO110

Latitude: 64.881 **Quadrangle:** SO D-6

Longitude: 164.649

Location description and accuracy:
Chickamin Gulch is a short, south tributary to Dome Creek (SO113). It is 0.5 miles downstream from the upper end of Dome Creek at the confluence of Eldorado and Telegram Creeks. This is locality 38 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A bench deposit along lower Chickamin Gulch contains fine, bright gold in sand (with some pebbles) that overlies solution-pitted marble (Smith, 1909). The sand is overlain by angular debris, possibly colluvium. Bedrock in the area is part of a lower Paleozic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Surface prospecting has occurred here but no mining is reported.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Left Fork Dome Creek

Site type: Mine

ARDF no.: SO111

Latitude: 64.886 **Quadrangle:** SO D-6

Longitude: 164.651

Location description and accuracy:
Left Fork Dome Creek is a north tributary to Dome Creek (SO113). It is not labeled on the Soloman D-6 topographic map. The mouth of Left Fork is 1.3 miles upstream from the confluence of Canyon and Dome Creek. This is locality 37 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Most of the lower parts of Left Fork Dome Creek were placer mined during the first few years of mining in the area. Production was estimated to be about $20,000 or almost 1,000 ounces of gold by 1908 (Smith, 1909). Surface water was lost to underground channels (karst ?) in the marble of bedrock. Bedrock rock is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Extensive, small-scale placer mining was carried out on this creek by 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Dome Creek)

Site type: Prospect

ARDF no.: SO112

Latitude: 64.893 **Quadrangle:** SO D-6

Longitude: 164.617

Location description and accuracy:
This prospect is north of Dome Creek at an elevation of about 1,500 feet. It is locality 4 of Asher (1969, DGGS R18) and locality 8 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, malachite

Gangue minerals: Quartz

Geologic description:
Several small showings of malachite- and azurite-bearing quartz-rich zones were exposed in open cuts prior to 1908 (Smith, 1908). The copper minerals occur as fracture coatings and drusy fillings in quartz. This deposit is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact of marble in a lower Paleozoic metasedimentary assemblage with pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite, and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and simi-

lar occurrences elsewhere on Seward Peininsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:
Silicification (?) and oxidation; the development of silica-rich rocks at or near the base of Paleozoic marble characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Several open cuts and shallow prospect pits are present in area.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1908; Sainsbury and others, 1969; Asher, 1969 (DGGS R18); Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Smith, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dome Creek

Site type: Mine

ARDF no.: SO113

Latitude: 64.885 **Quadrangle:** SO D-6

Longitude: 164.669

Location description and accuracy:
Dome Creek is the principal headwater tributary of Iron Creek (SO127). Dome Creek merges with Canyon Creek to form Iron Creek. Dome Creek is included in locality 33 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The entire 2.5 mile length of Dome Creek has been placer mined. The creek was worked by small-scale methods for several years after gold discovery about 1900 and a dredge worked a considerable amount of the creek in 1939 and 1940 (Sainsbury and others, 1972, OFR 512; Cobb, 1978, OF 78-181). Some very coarse gold has been recovered, at least one nugget was over 32 ounces, and heavy mineral concentrates contained magnetite, garnet, and ilmenite (Smith, 1909). Cinnabar is also reported to be present in Dome Creek (Sainsbury and others, 1972). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The entire 2.5 mile length of Dome Creek has been placer mined. The creek was worked by small-scale methods for several years after gold discovery in about 1900 and a dredge worked a considerable amount of the creek in 1939 and 1940 (Sainsbury and others, 1972; Cobb, 1978, OF 78-181).

Production notes:

Some of the gold from Dome Creek was very coarse; one nugget weighed over 32 ounces.

Reserves:

Additional comments:

References:

Smith, 1909; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 512); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Discovery Creek

Site type: Mine

ARDF no.: SO114

Latitude: 64.884 **Quadrangle:** SO D-6

Longitude: 164.697

Location description and accuracy:
Discovery Creek is the first south tributary on Dome Creek (SO113); it is 0.6 miles upstream from the confluence with Canyon Creek. This is locality 34 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A small amount of mining took place near the mouth of the creek prior to 1909 (Smith, 1909). Some placer gold was reported on upstream tributaries but there is no record of mining above the lower part of the creek. Bedrock in the immediate area is part of a lower Paleozic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining took place near the mouth of the creek prior to 1909.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Canyon Creek

Site type: Occurrence

ARDF no.: SO115

Latitude: 64.863 **Quadrangle:** SO D-6

Longitude: 164.769

Location description and accuracy:
Canyon Creek merges with Dome Creek (SO113) to form Iron Creek (SO127). This location is very approximate, perhaps within 1.5 miles of the coordinates. It is locality 28 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Gold colors are reported to be present in this creek but mining has apparently not occurred.

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: None

Site Status: Inactive

Workings/exploration:

No workings are known but prospecting has occurred.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): El Patron Creek

Site type: Mine

ARDF no.: SO116

Latitude: 64.858 **Quadrangle:** SO D-6

Longitude: 164.786

Location description and accuracy:
El Patron Creek is a small north tributary to Canyon Creek. It is not labeled on the current Solomon D-6 topographic map. Canyon Creek (SO115) and Dome Creek (SO113) merge 3.8 miles below El Patron Creek to form Iron Creek (SO127). This is locality 27 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, ilmenite, magnetite

Geologic description:
A small, one-person operation recovered coarse, angular gold with ilmenite, magnetite, and garnet in 1906-1908 (Smith, 1909). This mining was near a bedrock contact between schist and marble. The regional bedrock around El Patron Creek includes schistose marble and metavolcanic rocks of possible Ordovician age (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39A

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale placer mining took place locally along this creek in 1906-1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Wheeler

Site type: Mine

ARDF no.: SO117

Latitude: 64.894 **Quadrangle:** SO D-6

Longitude: 164.749

Location description and accuracy:
This mine is in the headwaters of Rabbit Creek (SO118) a small west tributary of Iron Creek. It appears to be at about 1,000 feet elevation but it is not well located. This is locality 2 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite, malachite

Gangue minerals: Quartz

Geologic description:
This mine is on the west side of Iron Creek; many similar deposits are exposed east of Iron Creek (e.g., SO124 and SO125). It is generally located; Mertie (1918) comments that several claims have been staked in the headwaters of small west tributaries of Iron Creek. Exploration work included an 80-foot-deep shaft and a 60-foot-long tunnel. Dump material contained chalcopyrite and bornite, but outcrops contained malachite. Up to 9 feet of quartz-rich rocks with malachite stains and stringers are exposed in outcrop (Merite, 1918). Several tons of ore were reportedly shipped from this mine.

This deposit is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact between marble in a lower Paleozoic metasedimentary assemblage and pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust over underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae

and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peininsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:
Silicification (?) and oxidation; the development of silica-rich rocks at or near the the base of Paleozoic marble characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Exploration work included an 80-foot-deep shaft and a 60-foot-long tunnel.

Production notes:
Several tons of ore were reportedly shipped from this mine prior to 1918.

Reserves:

Additional comments:

References:
Mertie, 1918; Sainsbury and others, 1969; Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Mertie, 1918

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Rabbit Creek

Site type: Mine

ARDF no.: SO118

Latitude: 64.897 **Quadrangle:** SO D-6

Longitude: 164.714

Location description and accuracy:
Rabbit Creek is a small headwater tributary to Iron creek (SO127). The mouth of Rabbit Creek is close to the confluence of Canyon Creek and Dome Creek, where Iron Creek starts. This is locality 30 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Rabbit Creek was staked and some placer mining occurred prior to 1909. The recovered gold was fine, flaky, and bright (Smith, 1909). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Some small-scale placer mining or exploration took place prior to 1909.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Willow Creek

Site type: Mine

ARDF no.: SO119

Latitude: 64.907 **Quadrangle:** SO D-6

Longitude: 164.809

Location description and accuracy:
Willow Creek is a south tributary to Pilgrim River. The mouth of Willow Creek is 4.7 miles downstream from the head of Pilgrim River on Salmon Lake. It is the next south tributary to the Pilgram downstream from Slate Creek (SO138); it is not identified by name on the Solomon D-6 quadrangle. This is locality 26 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
There was some small scale placer mining on this creek prior to 1909 (Collier and others, 1908). The lower part of the creek flows through bench gravels (Brooks and others, 1901) and some bench gravels between Slate Creek (SO138) and Willow Creek are reported to be gold-bearing (Collier and others, 1908). Bedrock in the area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining took place here for a few years before 1909.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Collier and others, 1908; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Slate Creek)

Site type: Prospect

ARDF no.: SO120

Latitude: 64.896 **Quadrangle:** SO D-6

Longitude: 164.844

Location description and accuracy:
Slate Creek is a south tributary to the Pilgrim River. The mouth of Slate Creek is about 3.5 miles downstream from the head of the Pilgrim River on Salmon Lake. This location is on the west side of Slate Creek about 1.5 mile upstream from its mouth. It is locality 1 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Calcite, kaolin, quartz, sericite

Geologic description:
Greenstone is cut by altered, fine-grained, felsic (?) dikes in this area; the feldspars in the dikes has been replaced by sericite and kaolin. A 3-foot-wide altered dike contains ferruginous calcite in fracture fillings and replacements that are in turn cut by quartz-calcite veinlets; free gold has been panned from crushed vein material (Chapin, 1914). Another 10-feet-wide dike nearby contains quartz, epidote, chlorite, albite, calcite, and tremolite(?). The greenstone host rock is completely recrystallized and contains hornblende, chlorite, epidote, garnet, pyrite, albite, rutile and sphene. Bedrock in this area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:
Clay and carbonate replacement of host rocks and quatz-calcite veining.

Age of mineralization:
Cretaceous? Mineralization postdates regional mid-Cretaceous metamorphism. The host dikes may be Cretaceous in age like many felsic intrusive rocks in the Kigluaik Mountains to the north or possibly younger.

Deposit model:

Auriferous carbonate and quartz-carbonate veins and replacements in felsic (?) dikes.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:
A small surface open cut was used to explore this prospect in 1913 (Chapin, 1914).

Production notes:

Reserves:

Additional comments:

References:
Chapin, 1914; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Chapin, 1914

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Rock Creek

Site type: Mine

ARDF no.: SO121

Latitude: 64.903 **Quadrangle:** SO D-6

Longitude: 164.856

Location description and accuracy:
Rock Creek is west tributary to Slate Creek (SO138); Slate Creek is a south tributary to the Pilgrim River. The mouth of Slate Creek is about 3.5 miles downstream from the head of the Pilgrim River on Salmon Lake. This location is at the mouth of Rock Creek. It is included with locality 25 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining on Rock Creek reportedly took place before 1908 (Smith, 1909). Additional information is not available but mining was probably in conjunction with activities on Slate Creek (SO138). Bedrock in this area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Some small-scale placer mining took place on this creek before 1908.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Bobs Creek; Babs Creek

Site type: Mine

ARDF no.: SO122

Latitude: 64.918 **Quadrangle:** SO D-6

Longitude: 164.721

Location description and accuracy:
This creek is a small west tributary to Iron Creek (SO127). The mouth of the creek is about 2 miles downstream from the origin of Iron Creek at the confluence of Canyon Creek and Dome Creek. The Solomon D-6 quandrangle map shows this creek as 'Babs' Creek rather than Bobs Creek. This is locality 31 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Garnet, magnetite

Geologic description:
Some mining is reported from a claim in the headwaters of the creek (Smith, 1907). Fine gold with magnetite and garnet have been recovered but the gold-bearing gravels were all frozen (Smith, 1909). Bedrock in this area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Some placer mining on a headwater claim took place in 1906.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1907; Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Benson Creek

Site type: Mine

ARDF no.: SO123

Latitude: 64.912 **Quadrangle:** SO D-6

Longitude: 164.683

Location description and accuracy:
Benson Creek is an east tributary of Iron Creek (SO127). Its mouth is 1.3 miles downstream from the head of Iron Creek at the confluence of Canyon and Dome Creeks. This is locality 36 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold mining occurred intermittantly on Benson Creek between 1900 and 1938. Gold could be panned to the headwaters but most of the production was from the lower part of the creek where it crosses bench deposits of Iron Creek (Smith, 1909). Copper-bearing lode mineralization is present in the headwaters (SO125). Bedrock of the area is a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; presence of gold-bearing bench deposits indicates two or more cycles of erosion and deposition.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer gold mining took place along lower Benson Creek intermittantly from 1900 to 1938.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Peak 2069)

Site type: Prospect

ARDF no.: SO124

Latitude: 64.904 **Quadrangle:** SO

Longitude: 164.629

Location description and accuracy:
This prospect is on the ridge at the headwaters of the West Branch of Sherrette Creek on an east-facing slope at an elevation of about 1,650 feet. It is locality 7 of Cobb (1972, MF 445; 1978, OF 78-181) and locality 3 of Asher (1969, DGGS R18).

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals: Quartz

Geologic description:
Three prospect pits expose copper-bearing silica-rich rocks in marble; the deposit is similar to the Wheeler mine (SO172), 1 mile to the northwest (Cathcart, 1922). This deposit is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact between marble in a lower Paleozoic metasedimentary assemblage and pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact over underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a

stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peininsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:
Silicification (?) and oxidation; the development of silica-rich rocks at or near the the base of Paleozoic marble overlying characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Shallow prospect pits have been dug here.

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Sainsbury and others, 1969; Asher, 1969 (DGGS R18); Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (on upper Benson Creek)

Site type: Prospect

ARDF no.: SO125

Latitude: 64.913 **Quadrangle:** SO D-6

Longitude: 164.641

Location description and accuracy:
This lode prospect is in the headwaters of Benson Creek (SO123) at an elevation of about 1,000 feet. This is locality 6 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Chalcopyrite, malachite

Gangue minerals: Iron oxides, quartz

Geologic description:
An adit at this location exposed two, 3- to 5-foot-wide, silica-rich zones in marble that contained chalcopyrite, malachite, and iron oxides (Cathcart, 1922). Mineralization was banded, discontinuous, and appeared to follow layering in the highly folded host rocks. Wimmler (1926, in Asher, 1969, DGGS R18) collected a sample of copper-rich material from what appears to be this locality that assayed 0.04 ounces gold per ton, 0.20 ounces silver per ton, and 1.75 % copper. In places, the contact of the mineralized rocks seems to extend into marble suggesting replacement. This deposit is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact between marble in a lower Paleozoic metasedimentary assemblage and pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986). This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The

summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peininsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:
Silicification (?) and oxidation; the development of silica-rich rocks at or near the the base of Paleozoic marble overlying characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:
A short adit was driven to explore this prospect before 1920.

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Wimmler, 1926; Sainsbury and others, 1969; Asher, 1969 (DGGS R18); Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Eagle Creek; Easy Creek

Site type: Mine

ARDF no.: SO126

Latitude: 64.921 **Quadrangle:** SO D-6

Longitude: 164.681

Location description and accuracy:
Eagle Creek, a small east tributary to Iron Creek (SO127), was originally named Easy Creek. The mouth of Eagle Creek is about 1.8 miles downstream from the origin of Iron Creek at the confluence of Canyon and Dome Creeks. This is locality 35 (Easy Creek) of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Sulfides

Geologic description:
Placer mining on lower Eagle Creek took place before 1910. This part of Eagle Creek cuts through a bench of Iron Creek that contains some gold but successful mining was on the active drainage. Bedrock includes marble with many sulfide veinlets and the placer concentrates contained sulfides (Smith, 1909). Bedrock in the area is a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; presence of gold-bearing bench deposits indicates two or more cycles of erosion and deposition.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale placer mining along the lower part of the creek took place before 1910.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Iron Creek

Site type: Mine

ARDF no.: SO127

Latitude: 64.933 **Quadrangle:** SO D-6

Longitude: 164.682

Location description and accuracy:
Iron Creek is a major south tributary to the upper Pilgrim River. The mouth of Iron Creek is about 11 miles downstream from the origin of the Pilgrim River on Salmon Lake. The 5.5-mile-long Iron Creek starts at the confluence of Canyon (SO115) and Dome (SO113) Creeks; the coordinates are at about the center of the mined length of the creek. Iron Creek is included in locality 33 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals: Garnet, ilmenite, magnetite

Geologic description:
Iron Creek has been placer mined over about 90 percent of its 5.5 mile length. Most of this mining was by small-scale methods from discovery in 1899 or 1900 to 1914. A dredge operated in 1939 and 1940 but this was probably upstream on Dome Creek (Sainsbury and others, 1972, OFR 512). Much of the placer on Iron Creek was of low tenor. The gold was bright and in both the active drainage and benches, particularly along the east side near Eagle (Easy) Creek (SO126). Mining along the lower part of the creek tried unsuccessfully to use sluices in a tunnel driven between Iron Creek and the Pilgrim River (Henshaw, 1910). The coarse gold and cinnabar recovered from the Iron Creek area appears to be from deposits upstream in the Iron Creek drainage (Smith, 1909). Bedrock in the area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; presence of gold-bearing bench deposits indicates two or more cycles of erosion and deposition.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Iron Creek has been placer mined over about 90 percent of its 5.5 mile length. Most of this mining was by small-scale methods from discovery in 1899 or 1900 to 1914. A dredge operated in 1939 and 1940 but this was probably upstream on Dome Creek (Sainsbury and others, 1972, OFR 512). Mining along the lower part of the creek tried unsuccessfully to use sluices in a tunnel driven between Iron Creek and the Pilgrim River. Water was lost to subsurface flow in areas of carbonate bedrock.

Production notes:
The grade of the placer deposits was reported to be low but considerable mining and remining took place intermittantly from 1899 to 1940.

Reserves:

Additional comments:

References:
Smith, 1909; Henshaw, 1910; Cobb, 1972 (MF 445); Sainsbury and others, 1972 (OFR 512); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Barney Creek

Site type: Mine

ARDF no.: SO128

Latitude: 64.931 **Quadrangle:** SO D-6

Longitude: 164.699

Location description and accuracy:
Barney Creek is a west tributary to Iron Creek (SO127). The mouth of Barney Creek is about 3.5 miles upstream from the confluence of Iron Creek and the Pilgrim River. This is locality 32 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A small amount of placer mining occurred on this creek prior to 1909 (Smith, 1909). Small flakes of gold were recovered with considerable magnetite and garnet. The report of exotic rocks in the gravels probably reflects glacially related erratics from the Kigluaik Mountains. Bedrock in the area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Some small-scale placer mining took place on the creek prior to 1909.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): West Branch Sherrette Creek

Site type: Prospect

ARDF no.: SO129

Latitude: 64.942 **Quadrangle:** SO D-6

Longitude: 164.581

Location description and accuracy:
The West Branch Sherrette Creek heads in the marble uplands on the east side of Iron Creek (SO127). It flows north and east to lowlands where it joins American Creek. This location is about 3 miles downstream from the head of the creek. This is locality 46 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Prospecting has taken place on the upper and lower parts of this creek and some gold colors are present locally in gravels (Smith, 1909) but there is no record of mining (Cobb, 1978, OF 78-181). The stream heads in a marble upland with numerous copper-bearing quartz-rich zones (e.g., SO124 and SO125; see Gamble, 1988). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:
Surface prospecting has occurred along this creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Gamble, 1988

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (east of Iron Creek)

Site type: Occurrence

ARDF no.: SO130

Latitude: 64.945 **Quadrangle:** SO D-6

Longitude: 164.626

Location description and accuracy:
This occurrence is on the ridge between lower Iron Creek (SO127) and the West Branch of Sherrette Creek (SO129), at an elevation of 950 feet. It was originally located by Asher (1969, DGGS R18, Figure 2). It is locality 5 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Cu, Pb

Other:

Ore minerals: Chalcopyrite, galena, malachite

Gangue minerals: Quartz

Geologic description:
Asher (1869, DGGS R18) reported surface float of finely crystalline galena in quartz at this locality. Briskey (1983) identified stringers and disseminations of chalcopyrite and malachite in schist and in quartz bands in schist here. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:
Oxidation and silicification.

Age of mineralization:

Deposit model:
Chalcopyrite and galena in quartz-rich rocks.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Probably inactive

Workings/exploration:
No exploration activities are known for this locality.

Production notes:

Reserves:

Additional comments:

References:
Asher, 1969 (DGGS R18); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Briskey, 1983; Till and others, 1986

Primary reference: Asher, 1969 (DGGS R18)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Iron Creek)

Site type: Prospect

ARDF no.: SO131

Latitude: 64.949 **Quadrangle:** SO D-6

Longitude: 164.663

Location description and accuracy:
This prospect is on the third small, east tributary upstream from the mouth of Iron Creek (SO127). This location is locality 4 of Cobb (1972, MF 445; 1978, OF 78-181). The original reference to this prospect is Cathcart (1922, p. 217) who notes that it is about a mile above Bertha Creek. It is very approximately located.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals:

Geologic description:
A 3-foot-wide zone of silicified marble contains copper sulfide and some malachite stain (Cathcart, 1922). A nearby calcite vein is cut by quartz veinlets and pyrite is present in both. Bedrock is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986). Also see other copper prospects in the Iron Creek area such as SO124 and SO125.

Alteration:
Oxidation and silicification.

Age of mineralization:

Deposit model:
Copper sulfides and malachite in quartz-rich rock.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
This lode mineralization was exposed at the surface by a small open cut.

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Cathcart, 1922

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Wheeler

Site type: Mine

ARDF no.: SO132

Latitude: 64.977 **Quadrangle:** SO D-6

Longitude: 164.644

Location description and accuracy:
This prospect has two parts, one on each side of the Pilgrim River just below the mouth of Iron Creek (SO127). The location used here is on the northwest side of the river; it is locality 3 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Ag, Au, Pb, Zn

Other:

Ore minerals: Boulangerite (?), galena, pyrite, sphalerite

Gangue minerals: Ankerite (?), calcite, quartz

Geologic description:
This locality has two parts, one on each side of the Pilgrim (Kruzgamepa) River, just downstream from the mouth of Iron Creek (SO127). They are separated by 1,000 feet of the Pilgrim River floodplain. The deposits on the northwest side of the river contain lenses of massive galena in marble near a contact with schist (Smith, 1908). One lense exposed over a distance of 3 feet in a prospect trench contained pyrite, finely crystalline galena, and minor sphalerite. A 2-foot sample across the highest grade part contained 0.30 ounces Au per ton, 2.3 ounces Ag per ton, and 2.95 percent Pb (Wimmler, 1926, in Asher, 1969, DGGS R18). Two assays reported by the owner ran 22.87 percent Pb and 20.0 ounces Ag per ton and 14.2 percent Pb and 14.5 ounces Ag per ton. The deposits on the southeast side of the river also include discontinuous lenses of massive galena. A 8- to 10-foot long, 6-foot wide,and 1.5-foot thick lense of pyrite, fine galena, and heavy limonite with siliceous marble, calcite,and quartz gangue was removed from a short, 25-foot-long adit. Some boulangerite may also be present (Sainsbury and others, 1972). Pb-isotope analysis of one galena sample from this locality gave results identical to samples from the Red Dog and Drench Water Creek deposits of the western Brooks Range (Church and others, 1985). The mineralization is preferentially developed in the marble but nearby quartz mica schist contains pyrite. The schist/marble contacts appear sheared (Cathcart, 1922) but the massive galena is described as a replacement of the host marble (Smith, 1908). The host rocks are part of a lower Paleozoic metasedimentary assemblage

(Till and others, 1986).

Alteration:
Oxidation with abundant limonite, and possible silicification.

Age of mineralization:
Not known; deposits seem to be deformed or at least partly localized along shears; host rocks are lower Paleozoic in age.

Deposit model:
Lenses of galena, pyrite, some sphalerite, and possibly boulangerite in marble near contacts with schist.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
On the northwest side of the Pilgrim River, an adit, prospect trenches, and a short 2-foot-deep shaft were dug. On the southeast side of the river, a 25-foot-long adit and numerous prospect pits explored the deposits. Some diamond drilling appears to have occurred in 1971 or 1972 (Sainsbury and others, 1972, OFR 512).

Production notes:
A few tons of ore were apparently mined and shipped.

Reserves:

Additional comments:

References:
Smith, 1908; Cathcart, 1922; Wimmler, 1926; Asher, 1969 (DGGS R18); Sainsbury and others, 1972 (OFR 512); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Church and others, 1985; Till and others, 1986

Primary reference: Wimmler, 1926 (in Asher, 1969, DGGS R18)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Swede Creek

Site type: Prospect

ARDF no.: SO133

Latitude: 64.566 **Quadrangle:** SO C-4

Longitude: 163.695

Location description and accuracy:
Swede Creek (Gulch) is a small, 0.4 mile long drainage that flows south to its mouth on Norton Sound, 1.7 miles east of Bluff. This locality is 400 feet east of the mouth of Swede Creek. It is part of locality 111 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Hg

Other:

Ore minerals: Cinnabar

Gangue minerals: Hematite

Geologic description:
Cinnabar was reported in the placer gold deposits of Swede Creek in 1922 (Cathcart, 1922) and lode prospecting took place by 1929 (Smith, 1932). Two short adits and a shaft explore cinnabar-bearing lodes exposed in the seacliff 400 feet east of the mouth of Swede Creek (Anderson, 1944; Mulligan, 1971). Cinnabar occurs in two, thin iron-stained fault zones, 70 feet apart stratigraphically, that are subparallel to layering in marble and dip 10 to 15 degrees north. The cinnabar-bearing lenses are 5-10 inches thick and a few feet long in the upper fault; the longest dimension observed for an individual lode was 7 feet (Anderson, 1944). Samples of hematite-stained zones contained form 0.04 to 0.14 percent Hg; an 18-inch chip sample across a cinnabar-bearing lens contained 6.76 percent Hg; and a 7-foot chip sample across the same lens and adjacent lower grade mineralized rock contained 2.36 percent Hg (Anderson, 1947, p. 33). Mulligan (1971) sampled iron-stained zones here and did not detect mercury. Bedrock in the area is Paleozoic marble and a band of intercalated metsedimentary schist (Herried, 1965; Mulligan, 1971; Till and others, 1986).

Alteration:
Oxidation and possibly silicification as Malone (1962) reports this mercury deposit to be in quartzite.

Age of mineralization:
Unknown; Cretaceous or Tertiary (postdate mid-Cretaceous deformation and metamorphism in the region).

Deposit model:
Cinnabar in lenses along shallow-dipping fault in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
The portals to the two adits are on the sea cliff about 30 or 40 feet below the top. The adits are short, one was 70 feet long and one 20 feet long (Malone, 1962). A 55-foot-deep vertical shaft is located about 50 feet inland from the sea cliff (Malone, 1962; Mulligan, 1971).

Production notes:

Reserves:

Additional comments:

References:
Cathcart, 1922; Smith, 1932; Anderson, 1947; Malone, 1962; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Mulligan, 1971

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Bluff

Site type: Mine

ARDF no.: SO134

Latitude: 64.571 **Quadrangle:** SO C-4

Longitude: 163.756

Location description and accuracy:

Marine sands have been placer mined for gold offshore the mouth of Daniels Creek. Daniels Creek is a 1-mile drainage that flows south to its mouth on Norton Sound at Bluff. This is included as a part of locality 110 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals:

Geologic description:

A rich gold placer was discovered on the beach at Bluff in 1899 and by 1900 placers on Daniels Creek were also being exploited (Brooks and others, 1901). The beach deposit here, reworked from the ancestral Daniels Creek channel, produced 29,000 ounces from about 1,000 feet of the shoreline in 1900. Brooks and others (1901) reported that the heavy minerals with the gold included magnetite, ilmenite, and much cinnabar. In the 1930's, a modified high-line dragline was used to mine gold-bearing material on the nearby seafloor (Mulligan, 1971). The offshore pay zone was defined by a self-propelled 6-inch churn drill that worked on sea ice during the winter. The gold-bearing channel of Daniels Creek is below sea level for several hundred feet upstream from its mouth. This channel is on marble and is very irregular as karst-related features such as solution channels, potholes, and tunnels are well developed. These features developed at a former time of lower sea level and extensions of the irregular channel and pay zone are to be expected offshore. The offshore dragline mining of the 1930's was probably inefficient at exploiting the channel-controlled pay streak and may have preferentially mined sea bottom sands. Subsequent attempts during the 1970's at offshore mining using suction technology were unsuccessful. Bedrock along the coastline here is Paleozoic marble with some intercalated metasedimentary schist (Herreid, 1965; Mulligan, 1971; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; medium

Site Status: Active?

Workings/exploration:
Equipment for dragline operations were erected onshore but the workings were on the seafloor offshore. The modern beach was mined at the turn of the century primarily by hand methods. Diggings associated with the beach mining were only locally preserved in 1966 (Mulligan, 1971).

Production notes:
The beach gold placer, reworked from the ancestral Daniels Creek channel, produced 29,000 ounces from about 1,000 feet of the shoreline in 1900. Total placer production from the Bluff area (Daniels Creek, modern beaches, and offshore submerged channels or beaches; see ARDF locality SO006) is estimated to be about 90,000 ounces (Mulligan, 1971, p. 7).

Reserves:
Some ancestral Daniels Creek channel deposits are probably remain unexpoited off-shore.

Additional comments:

References:
Brooks and others, 1901; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Mulligan, 1971

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Bluff

Site type: Mine

ARDF no.: SO135

Latitude: 64.571 **Quadrangle:** SO C-4

Longitude: 163.749

Location description and accuracy:
The Bluff lode gold deposits are located in the seacliffs just east of the mouth of Daniels Creek and inland about 4,700 feet to the north. Daniels Creek is a 1-mile drainage that flows south to its mouth on Norton Sound at Bluff. This is locality 21 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Arsenopyrite, chalcopyrite, gold, pyrite, scheelite

Gangue minerals: Clay, quartz

Geologic description:
The lode gold deposits at Bluff are preferentially developed in metasedimentary schist that is intercalated in Paleozoic marble (Collier and others, 1908; Cathcart, 1922; Herried, 1965; Mulligan, 1971; Till and others, 1986). The quartz mica (+/- graphite and chlorite) schist is locally iron-stained, sulfide impregnated (especially with arsenopyrite and pyrite), and cut by small, irregular quartz veins and veinlets. Exposures of the mineralization occur in the seacliffs 1,000 feet east of the mouth of Daniels Creek; also locally in old prospect pits and shafts, for a distance of 4,700 feet inland from the coast, and in a few dozer trenches. The seacliff exposures include a subhorizontal, massive arsenopyite-pyrite lens 4 feet wide and 20 feet long that pinches down to a foot or less at its ends. The east end of this lens becomes a foot-wide quartz vein. Elsewhere in this area, the schist is iron-stained and contains disseminated sulfides; a 100-foot-long chip sample across a sulfide-bearing part of this outcrop contained 0.045 ounces Au per ton and 0.08 ounces Ag per ton (Mulligan, 1971). A 4-foot chip sample across the massive sulfide lens contained 0.18 ounces Au per ton and 0.35 ounces per Ag ton (Herried, 1965). Other grab samples from the seacliff exposures contained 0.02 to 0.42 ounces Au per ton and 0.16 to 0.55 ounces Ag per ton (Herried, 1965). A sample of oxidized arsenopyrite-rich dump material beside an old shaft inland from the beach contained 2.76 ounces Au per ton and 1.49 ounces Ag per ton; eight other samples of dump materials contained 0.03 to 0.23 ounces

Au per ton and 0.03 to 1.57 ounces Ag per ton (Herried, 1965). Herried (1965) reports that scheelite can be panned from some dump materials. Composite chip samples from four dozer trenches cut across the north-trending schist belt inland from the beach were locally mineralized and included some 10-foot intervals with up to 0.04 ounces Au per ton (Mulligan, 1971). Quartz-clay veinlets were common in the mineralized parts of the trench exposures.

The nearby Saddle prospect (SO175) is probably similar to the lode gold deposits at Bluff. The Saddle prospect is known from the work of Ford (1993) and Ford and Snee (1996). A large gold and arsenic anomaly in soils led to its discovery. Gold-bearing quartz veins are localized in extensional joints in quartz-muscovite schist that strike easterly and dip moderately to the south. The veins are discontinuous and commonly less than 3 inches thick. Gold grades are irregularly distributed; vein intersections up to 3.3 feet across have contained up to 1.8 ounces Au per ton. Minerals identified in the veins include arsenopyrite, biotite, carbonate, chlorite, fluorite, marcasite, plagioclase, pyrite, pyrrhotite, quartz, titanite, and white mica. Alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline. The white mica in the veins is muscovite and that in the schist is phengite. A sample of vein white mica gave a Ar/Ar plateau age of 109.3 +/- 0.3 Ma and metamorphic white mica in the host schist gave Ar/Ar plateau ages of 122.6 +/- 0.4 Ma and 122.4 +/- 0.2 Ma (Ford and Snee, 1996). The host schist is similar to that at the nearby Bluff (SO135), Swede Creek (SO133) and Koyana Creek (SO136) lode prospects. This schist is a band intercalated in Paleozoic marble (Herried, 1965; Mulligan, 1971; Till and others, 1986).

This deposit is also probably mid-Cretaceous, the age of some other lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

The surface and near-surface gold-bearing rocks are oxidized, iron-staining is common, clay in quartz veins and veinlets is developed, and remnants of more massive arsenopyrite and pyrite are locally preserved. Quartz veining apparently accompanied gold mineralization. At the nearby Saddle prospect, alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline.

Age of mineralization:

Mid-Cretaceous; at the nearby Saddle prospect (SO175) which is probably of the same age, a sample of vein white mica gave a Ar/Ar plateau date of 109.1 +/- 0.2 Ma and metamorphic white mica in the host schist gave Ar/Ar total-gas dates of 122.6 +/- 0.4 Ma and 122.4 +/- 0.2 Ma (Ford and Snee, 1996).

Deposit model:

Discontinuous, irregular quartz veins and veinlets with disseminated arsenopyrite and pyrite in metasedimentary schist; low sulfide-Au quartz vein (Cox and Singer, 1986;

model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Over 50 small prospect pits and shafts are scattered northward for 4,700 feet inland from the coast. This prospecting started in the early 1900's as the first lode claims were staked in 1900. Mulligan (1971) exposed bedrock in four dozer trenches totalling 3,300 feet in length. A short, adit, not caved, was driven in the seacliff exposures. Diamond drilling has probably occurred on this property since the 1970's but the operator and results are not known.

Production notes:
Mulligan (1971) notes that the small volume of waste dumps scattered about the area suggests that very little ore was mined and processed. However, an old mill here indicates that some production probably took place.

Reserves:

Additional comments:

References:
Collier and others, 1908; Cathcart, 1922; Herried, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Ford, 1993

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Koyana Creek

Site type: Prospect

ARDF no.: SO136

Latitude: 64.569 **Quadrangle:** SO C-4

Longitude: 163.662

Location description and accuracy:
Lode gold mineralization has been prospected for about 500 feet east of lower Koyana Creek. Koyana Creek is a small drainage that flows south to its mouth on Norton Sound, 2.6 miles east of Bluff. This is locality 22 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Arsenpyrite, gold

Gangue minerals: Quartz

Geologic description:
Metasedimentary schist intercalated in Paleozoic marble forms the bedrock of lower Koyana Creek and exposures along the coast for several hundred feet east of its mouth. Gold-bearing mineralization was prospected here in the early 1900's (Collier and others, 1908). Three short adits and a shallow shaft were developed (Mulligan, 1971). Exposures at the face of a 30-foot-long adit showed an 8-inch-wide quartz vein, a foot-wide iron-stained gouge zone along the vein, and an arsenopyrite and pyrite in the vein and enclosing schist (Cathcart, 1922). The schist contains quartz segregations and boudins with oxidized iron-stained spots in addition to crosscutting, at least partly joint-controlled, quartz veins and veinlets. The latter locally contain both pyrite and arsenopyrite (Herried, 1965). The largest crosscutting quartz vein observed by Herried (1965) was 4 inches wide and 10 feet long. Seven grab and chip samples from this area contained 0.01 to 0.32 ounces Au per ton and 0.16 to 0.65 ounces Ag per ton (Herried, 1965). One composite chip sample of schist, collected every 10 feet over a distance of 700 feet, contained 0.07 ounces Au per ton .

This prospect if probably similar to the nearby Saddle prospect (SO175). The Saddle prospect is known from the work of Ford (1993) and Ford and Snee (1996). A large gold and arsenic anomaly in soils led to its discovery. Gold-bearing quartz veins are localized in extensional joints in quartz-muscovite schist that strike easterly and dip moderately to the south. The veins are discontinuous and commonly less than 3 inches thick. Gold

grades are irregularly distributed; vein intersections up to 3.3 feet across have contained up to 1.8 ounces Au per ton. Minerals identified in the veins include arsenopyrite, biotite, carbonate, chlorite, fluorite, marcasite, plagioclase, pyrite, pyrrhotite, quartz, titanite, and white mica. Alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline. The white mica in the veins is muscovite and that in the host schist is phengite. A sample of vein white mica gave a Ar/Ar plateau age of 109.3 +/- 0.3 Ma and metamorphic white mica in the host schist gave Ar/Ar plateau ages of 122.6 +/- 0.4 Ma and 122.4 +/- 0.2 Ma (Ford and Snee, 1996). The host schist is similar to that at the nearby Bluff (SO135) and Swede Creek (SO133) lode prospects. This schist is a band intercalated in Paleozoic marble (Herried, 1965; Mulligan, 1971; Till and others, 1986).

This deposit is also probably mid-Cretaceous, the age of some other lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

Quartz veining and sulfide dissemination; oxidation is probably present although not described. At the nearby Saddle prospect (SO175), alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline.

Age of mineralization:

Mid-Cretaceous; white mica from quartz veins in the Koyana Creek area gave Ar/Ar plateau dates of 109.1 +/- 0.7 Ma and 109.6 +/- 0.2 Ma (Ford and Snee, 1996).

Deposit model:

Discontinuous, irregular to joint-contolled quartz veins and veinlets with dissemminated arsenopyrite and pyrite in metasedimentary schist; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

36a

Production Status: None

Site Status: Active?

Workings/exploration:

Three short adits and a shallow shaft are noted in the area (Mulligan, 1971). One of the adits was 30-feet long (Cathcart, 1922).

Production notes:

A few tons of ore were reported to have been sacked but it is not known if this was

shipped (Smith and Eakin, 1911).

Reserves:

Additional comments:

References:

Collier and others, 1908; Smith and Eakin, 1911; Cathcart, 1922; Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Herried, 1965

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Solomon River

Site type: Mine

ARDF no.: SO137

Latitude: 64.738 **Quadrangle:** SO C-5

Longitude: 164.321

Location description and accuracy:
A 2,000 foot-long segment of the Solomon River has been placer mined from the mouth of Coal Creek downstream for 500 feet past the mouth of Johns Creek. This is locality 97 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Stream gravels about 4-feet thick in the flood plain of Solomon River were dredged between 1929 and 1932; the paystreak was up to 700-800 feet wide (Smith, 1933). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Small-scale hydraulic and dredging operations took place along this segment of the Solomon river from 1929 to 1932.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1933; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1933

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Slate Creek

Site type: Mine

ARDF no.: SO138

Latitude: 64.902 **Quadrangle:** SO D-6

Longitude: 164.848

Location description and accuracy:
Slate Creek is a south tributary to the Pilgrim River. The mouth of Slate Creek is about 3.5 miles downstream from the head of the Pilgrim River on Salmon Lake. This location is the 0.5 mile of the active channel upstream from the mouth of Rock Creek, a west tributary to Slate Creek. It is locality 25 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer mining of the main channel of Slate Creek, for about 0.5 mile upstream from the mouth of Rock Creek, took place prior to 1908 (Collier and others, 1908). Mining recovered bright, flat gold from thin, 3- to 4-foot-thick gravels but there was probably only a few thousand dollars worth of total production (Smith, 1909). Gold-bearing altered dikes (SO120) have been located upstream from this mining. Bedrock in this area is mostly part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Placer mining took place along about 0.5 mile of the active channel above the mouth of Rock Creek, prior to 1908.

Production notes:

There was probably only a few thousand dollars worth of total gold production (Smith, 1909).

Reserves:

Additional comments:

References:

Collier and others, 1908; Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Wheeler

Site type: Mine

ARDF no.: SO139

Latitude: 64.917 **Quadrangle:** SO D-6

Longitude: 164.641

Location description and accuracy:

This is a copper mine located on an east-facing marble slope in the headwaters of West Branch Sherrette Creek, at an elevation of about 1,350 feet. The location used by Cobb (1972, MF 445, locality 6) is closer to the upper Benson Creek occurrence (SO125). Cobb (1978, OF 78-181) referred to this site as Wheeler (Sherrette Cr.). This is Asher's (1969, DGGS R18) locality 1.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Azurite, chalcopyrite, malachite

Gangue minerals: Limonite, quartz

Geologic description:

The Wheeler mine has received more work than any other similar copper-bearing deposit in the area. The mine was explored by several prospecting pits, a 200-foot-long adit in barren marble, and a 90-foot-deep shaft that did not intersect the adit (Cathcart, 1922). The shaft was sunk on a 8-foot-wide exposure of malachite and encountered 30 feet of copper-bearing silica-rich rock, 5 feet of schist, and barren marble below. The copper-bearing zone conforms with layering in the host rock. Material on the shaft dump consists of seams of limonite and malachite to 3 inches wide and remnants of chalcopyrite. High grade malachite-azurite ore was handpicked and shipped to the Tacoma, Washington smelter in 1917 or 1918 (Wimmler, 1926, in Asher, 1969, DGGS R18). This ore was from the upper 20 feet of the shaft and assayed 0.33 ounces Ag per ton, 35.68 percent Cu, 7.60 percent Fe, and 15.40 percent silica. Another shipment, primarily from the schist zone in the shaft, assayed 1.82 ounces Au per ton, 5.16 ounces Ag per ton, and 17.18 percent Cu (Wimmler, 1926, in Asher, 1969, DGGS R18). A total of 24.5 tons of ore were shipped before 1920 (Cathcart, 1922).

This deposit is one of many occurrences of copper mineralization in silica-rich rocks near the regional contact between marble in a lower Paleozoic metasedimentary assemblage and pelitic schist of possible Cambrian or Precambrian age (Till and others, 1986).

This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peninsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777).

Alteration:

Silicification (?) and oxidation; the development of silica-rich rocks at or near the the base of Paleozoic marble overlying characterizes this type of copper occurrence.

Age of mineralization:

Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:

Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Wheeler mine has received more work than any other similar copper-bearing deposit in the area. The deposit was explored by several propecting pits, a 200-foot long adit in barren marble, and a 90-foot-deep shaft that did not intersect the adit (Cathcart, 1922).

Production notes:

High grade malachite-azurite ore was handpicked and shipped to the Tacoma, Washington smelter in 1917 or 1918 (Wimmler, 1926, in Asher, 1969, DGGS R18). This ore was from the upper 20 feet of the shaft and assayed 0.33 ounces Ag per ton, 35.68 percent Cu, 7.60 percent Fe, and 15.40 percent silica. Another shipment, primarily from the schist zone in the shaft, assayed 1.82 ounces Au per ton, 5.16 ounces Ag per ton, and 17.18 per-

cent Cu (Wimmler, 1926, in Asher, 1969, DGGS R18). A total of 24.5 tons of ore were shipped before 1920 (Cathcart, 1922).

Reserves:

Additional comments:

References:

Cathcart, 1922; Wimmler, 1926; Asher, 1969 (DGGS R18); Sainsbury and others, 1969; Cobb, 1972 (MF 445); Sainsbury, 1975; Cobb, 1978 (OF 78-181); Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Wimmler, 1926 (in Asher, 1969, DGGS R18)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Rocky Creek

Site type: Prospect

ARDF no.: SO140

Latitude: 64.902 **Quadrangle:** SO D-6

Longitude: 164.709

Location description and accuracy:
Rocky Creek is a small west tributary to Iron Creek (SO127). The mouth of Rocky Creek is 0.2 miles downstream from the mouth of Rabbit Creek (SO118); it is not identified by name on the Solomon D-6 quadrangle. This is locality 29 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Claims were staked on this creek and exploration undertaken prior to 1909 but reports of valuable placer apparently did not occur (Smith, 1909). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Prospecting for placer gold deposits took place on this creek prior to 1909.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Johns Creek

Site type: Occurrence

ARDF no.: SO141

Latitude: 64.739 **Quadrangle:** SO C-5

Longitude: 164.324

Location description and accuracy:
This occurrence is in bedrock near the mouth of Johns Creek. Johns Creek is a west tributary to Solomon River; its mouth is 1,500 feet downstream from the mouth of Coal Creek. This is locality 10 of Asher (1969, DGGS R33) who shows it to be on the north side of the mouth of Johns Creek. Asher (1969, DGGS R33) also shows undefined disseminated mineralization to be present in bedrock on the south side of the mouth of Johns Creek.

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals: Quartz

Geologic description:
The metasedimentary schist bedrock is highly fractured and jointed. Quartz lenses and stringers containing pyrite and minor chalcopyrite fill fractures. A sample from a 1- by 5-foot quartz lense contained 0.18 percent Cu and traces of Pb, Zn, and Au (Asher, 1969, DGGS R33, p. 20). Bedrock in the area is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Cretaceous or younger; the quartz veins apparently fill fractures that postdate mid-Cretaceous regional metamorphism.

Deposit model:
Quartz lenses and stringers along fractures in schist.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: No

Site Status: Inactive

Workings/exploration:
No workings are known.

Production notes:

Reserves:

Additional comments:

References:
Asher, 1969 (DGGS R33); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Asher, 1969 (DGGS R33)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Dutch Creek

Site type: Mine

ARDF no.: SO142

Latitude: 64.976 **Quadrangle:** SO D-4

Longitude: 163.631

Location description and accuracy:
The early reports for the Ophir Creek area identify Dutch Creek as an east tributary to Ophir Creek; its mouth is about 5 miles upstream of the confluence of Ophir Creek and the Niukluk River (Collier and others, 1908). However, the modern topographic map of the area (Solomon D-4 quadrangle) identifies this creek as Snowball Creek and Dutch Creek as its east headwater tributary. Originally Snowball Creek (SO143) was the west headwater tributary of Dutch Creek. Dutch Creek is locality 120 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals:

Geologic description:
Placer mining, mostly between 1900 and 1918, took place on lower Dutch Creek (now shown as Snowball Creek on the Solomon D-4 quadrangle) near its confluence with Ophir Creek (Smith and Eakin, 1911). These were various small-scale hydraulic and open-cut operations. Gold was reported from the active drainage and from benches. Bedrock in the area is part of lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale hydraulic and open-cut operations took place along lower reaches of the creek near its confluence with Ophir Creek prior to 1918.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Smith and Eakin, 1911; Cobb, 1972 (MF 445); Cobb, 1975 (MR-66); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith and Eakin, 1911

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Snowball Creek

Site type: Prospect

ARDF no.: SO143

Latitude: 64.997 **Quadrangle:** SO D-4

Longitude: 163.601

Location description and accuracy:
The current topographic map of the Ophir Creek area shows Snowball Creek as an east tributary whose mouth is about 5 miles upstream of the confluence of Ophir Creek and the Niukluk River. However, this creek was originally referred to as Dutch Creek and Snowball Creek was its west headwater tributary (Collier and others, 1908). Cobb (1972, MF 445; 1978, OF 78-181) included references to Snowball Creek with Dutch Creek (SO142).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The original Snowball Creek (the west headwater tributary in this drainage) has been prospected but it is not clear if gold has been discovered and produced (Collier and others, 1908). Bedrock in the area is part of lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Undetermined

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Collier and others, 1908;Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Big Hurrah Creek)

Site type: Prospect

ARDF no.: SO144

Latitude: 64.652 **Quadrangle:** SO C-5

Longitude: 164.261

Location description and accuracy:
This prospect is on the south side of Big Hurrah Creek (SO022) about 0.2 miles upstream of the mouth of Linda Vista Creek, a south tributary. This is locality 2 of Asher (1969, DGGS R33).

Commodities:

Main: Au

Other:

Ore minerals: Arsenpyrite, gold, marcasite (?), pyrite

Gangue minerals: Quartz

Geologic description:
Two short adits explore quartz veins at this locality. The lower adit is reported to have exposed a 7- to 8-foot-wide, vertical but faulted, quartz vein (Smith, 1910, p. 147). The upper adit, a few hundred feet to the south of the lower one, is on a 1-foot-wide quartz vein with arsenopyrite, pyrite, and possibly marcasite (Asher, 1969, DGGS R33). A grab sample of this vein assayed 0.003 ounces Au per ton (Asher, 1969, DGGS R33). The country rock is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

These quartz veins may be similar in age to some other gold-quartz veins of southern Seward Peninsula. The other southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Quartz veining in metamorphic rocks.

Age of mineralization:

Mid-Cretaceous?; possibly same age as some other gold-quartz veins of southern Seward Peninsula.

Deposit model:
Gold-quartz vein in metamorphic rocks; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: No

Site Status: Inactive

Workings/exploration:
Two short adits explored quartz veins at this site.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Asher, 1969 (DGGS R33)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Penny Creek)

Site type: Prospect

ARDF no.: SO145

Latitude: 64.677 **Quadrangle:** SO C-5

Longitude: 164.386

Location description and accuracy:
This occurrence is on the low ridge, at about 650 feet elevation, between the headwaters of Penny Creek (SO018) and Minnesota Creek. It is locality 11 of Asher (1969, DGGS R33).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Malachite

Gangue minerals: Quartz

Geologic description:
This occurrence is one of several in the area where sparse disseminated copper minerals, mainly malachite, occur in silica-rich rocks along the contact between marble and schist. Grab samples of these rocks contain 0.13 to 0.78 percent Cu but generally only traces of gold. However, samples from this specific locality contained 0.02 to 0.08 ounces Au per ton and 0.02 to 0.04 ounces Ag per ton (Asher, 1969, DGGS R33). This type of copper occurrence is present at several localities in the western Solomon quadrangle (Gamble, 1988) and has similarities to several in the Kougarok area of the northeastern Teller quadrangle. In the Teller quadrangle, the Ward mine (TE071) is an example of this type of copper mineral occurrence. The Ward mine has been described as a zone of silicification in marble above a thrust contact with underlying metapelitic schist (Sainsbury and others, 1969; Sainsbury, 1975, p. 90-94). The silica-rich rocks have been metamorphosed and commonly have a laminar fabric. Copper-bearing minerals, mostly malachite but also including azurite and in places chalcopyrite and possibly bornite, are disseminated in the silica-rich rocks. The minor sulfides tend to be along faint laminae and joints (Sainsbury and others, 1969, p. 22). Malachite and azurite also occur in small veins and veinlets in the silica-rich rocks. The summary characterization of this type of Seward Peninsula mineral deposit by Sainsbury (1975, p. 90-94) contains inconsistencies with some descriptions of these deposits. Their origin is uncertain and other possibilities should be considered. One possiblity is that the silica-rich rocks are quartzites and that

there is a stratigraphic control to the Ward deposit and similar occurrences elsewhere on Seward Peininsula. Quarzite at the base of the regional carbonate assemblage is recognized elsewhere in the Kougarok Mountain area (Puchner, 1986, p. 1777). Bedrock in the area of this occurrence is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:
Silicification (?) and oxidation; the development of silica-rich rocks at or near the the base of Paleozoic marble overlying characterizes this type of copper occurrence.

Age of mineralization:
Unknown; if stratigraphic controls are important then it is probably Paleozoic in age.

Deposit model:
Copper-bearing mineralization in silica-rich zones at or near base of marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
No exploration or development work is reported for this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Asher, 1969 (DGGS R33); Sainsbury and others, 1969; Sainsbury, 1975; Till and others, 1986; Puchner, 1986; Gamble, 1988

Primary reference: Asher, 1969 (DGGS R33)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Mt. Kachauik)

Site type: Occurrence

ARDF no.: SO146

Latitude: 64.825 **Quadrangle:** SO D-2

Longitude: 162.904

Location description and accuracy:
This occurrence is at about 1,250 feet elevation on the southeast side of Peak 1408. It is 4.2 miles northwest of Mt. Kachauik and probably located within 0.25 mile. This is locality 69 of Gamble (1988).

Commodities:

Main: W

Other: Be

Ore minerals:

Gangue minerals: Calc-silicates, fluorite

Geologic description:
This occurrence is along the north contact of the Kachauik pluton with schistose Ordovician chlorite marble (Till and others, 1986). The plutonic rock at this location is described as a hybrid diorite with abundant biotite (Till and others, 1986). Other parts of the Kachauik pluton to the south are leucocratic, granodiorite to quartz monzonite (Miller and others, 1972). A composite sample of iron-stained intrusive rocks and fluorite-bearing calc-silicate hornfels contained 100 ppm W and 20 ppm Be (Gamble, 1988). The Kachauik pluton is mid-Cretaceous; a K/Ar date for the pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Alteration:
Calc-silicate minerals are developed in the impure marble country rocks adjacent to the Kachauik pluton. Oxidation of iron-bearing minerals in the intrusive rocks is indicated by iron-oxide staining.

Age of mineralization:
Mid-Cretaceous; a K/Ar date for the Kachauik pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Deposit model:

W skarn (Cox and Singer, 1986; model 14a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
14a

Production Status: None

Site Status: Inactive

Workings/exploration:
No workings or exploration acitivities are known but regional stream sediment geochemistry and airborne radiometric surveys may have been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Miller and others, 1972; Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Etchepuk River)

Site type: Occurrence

ARDF no.: SO147

Latitude: 64.865 **Quadrangle:** SO D-2

Longitude: 162.968

Location description and accuracy:
This occurrence, locality 70 of Gamble (1988), is on the south side of a west headwater tributary to the Etchepuk River at an elevation of about 250 feet. It is 7.5 miles northwest of Mt. Kachauik.

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:
An altered quartz latite porphyry dike contains anomalous amounts of Au, Bi, and As; a grab sample of the dike contained 2,000 ppm As, 15 ppm Bi, and 0.35 ppm Au (Miller and Grybeck, 1973). Country rocks of the intrusive are impure Ordovician chlorite marble (Till and others, 1986). The quartz latite prophyry is probably mid-Cretaceous in age, the age of the composite Kachauik pluton to the southeast (Miller and others, 1972; Till and others, 1986). A K/Ar age for the Kachauik pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Alteration:
The intrusive rocks are described as altered but the nature of alteration is not defined.

Age of mineralization:
Mid-Cretaceous ?; felsic intrusive rocks in the area may be similar in age to the Kachauik pluton which has K/Ar date of 86.1 +/- 3 Ma (Miller and others, 1972).

Deposit model:
Felsic intrusive rocks are altered and contain anomalous levels of gold.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
No workings or exploration acitivities are known but regional stream sediment geochemistry and airborne radiometric surveys may have been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Miller and others, 1972; Miller and Grybeck, 1973; Till and others, 1986; Gamble, 1988

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Horton Creek)

Site type: Occurrence

ARDF no.: SO148

Latitude: 64.735 **Quadrangle:** SO C-5

Longitude: 164.037

Location description and accuracy:
This occurrence is at about 1,600 feet elevation on the ridge crest between the headwaters of Horton Creek and Coal Creek. It is locality 98 of Gamble (1988).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Malachite

Gangue minerals:

Geologic description:
Gamble (1988) collected a sample of quartz-mica schist with malachite that contained 700 ppm Cu and 1.5 ppm Ag. Bedrock here is part of a metavolcanic assemblage thought to be Ordovician in age (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Quartz-mica schist with malachite.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
None.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Surprise Creek)

Site type: Occurrence

ARDF no.: SO149

Latitude: 64.799 **Quadrangle:** SO D-5

Longitude: 164.127

Location description and accuracy:
This occurrence is on the ridgecrest between the headwaters of Surprise Creek (a tributary to Big Four Creek) and Military Creek (a tributary to Birch Creek), at an elevation of 1,675 feet. This is locality 97 of Gamble (1988).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Chalcopyrite, malachite

Gangue minerals: Carbonate, chlorite

Geologic description:
A sample of iron-stained carbonate-chorite schist contained 1 percent Cu, 5 ppm Ag, 200 ppm Zn, and 12 ppm Bi (Gamble, 1988). Bedrock is part of a metavolcanic assemblage thought to be Ordovician in age (Till and others, 1986).

Alteration:
Oxidized; iron-stained.

Age of mineralization:

Deposit model:
Chalcopyrite-bearing carbonate-chlorite schist; volcanogenic massive sulfide?; Kuroko massive sulfide (Cox and Singer, 1986; model 28a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
28a

Production Status: None

Site Status: Inactive

Workings/exploration:
No exploration work is reported for this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1896; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (at head of Gold Run Creek)

Site type: Occurrence

ARDF no.: SO150

Latitude: 64.874 **Quadrangle:** SO D-5

Longitude: 164.045

Location description and accuracy:
This occurrence is located on the ridge crest at the head of Gold Run Creek, an east tributary to Big Four Creek, at an elevation of about 1,325 feet. This is locality 93 of Gamble (1988).

Commodities:

Main: Cu

Other:

Ore minerals: Malachite, pyrite

Gangue minerals: Quartz

Geologic description:
Silicified marble with malachite and pyrite contains 2,000 ppm Cu and 200 ppm As (Gamble, 1988). Bedrock in this area is mostly part of a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Malachite and pyrite in silicified marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
Exploration activities are not reported for this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (at head of Castle Creek)

Site type: Occurrence

ARDF no.: SO151

Latitude: 64.877 **Quadrangle:** SO D-5

Longitude: 164.103

Location description and accuracy:
This occurrence is on the divide between Castle Creek, an east tributary to Big Four Creek, and an unnamed south tributary to No Mans Creek, at an elevation of 1,125 feet. This is locality 94 of Gamble (1988).

Commodities:

Main: Zn

Other: Cu, Sb

Ore minerals:

Gangue minerals: Iron-oxides

Geologic description:
A sample of gossan localized along a fault in marble contained 720 ppm Zn, 600 ppm As, 130 ppm Sb, 130 ppm Cu, and 100 ppm Mo (Gamble, 1988). Bedrock in this area is Paleozic marble and a pelitic schist assemblage of possible Cambrian or Precambrian age (Till and others, 1986).

Alteration:
Oxidation; gossan development.

Age of mineralization:
Cretacous or younger? Appears to post-date regional mid-Cretaceous metamorphism.

Deposit model:
Fault-controlled gossan in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
Exploration activities are not reported for this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near lower Banner Creek)

Site type: Occurrence

ARDF no.: SO152

Latitude: 64.828 **Quadrangle:** SO D-5

Longitude: 164.311

Location description and accuracy:
This occurrence is on a low ridge crest on the north side of lower Banner Creek, an east tributary to the Casadepaga River, at an elevation of about 600 feet. It is about 1.5 miles north-northeast of the site of the old Ruby roadhouse. It is locality 96 of Gamble (1988).

Commodities:

Main: Sb

Other:

Ore minerals:

Gangue minerals: Iron-oxides

Geologic description:
A sample of gossan float from marble terrain contained 4,400 ppm Sb, 740 ppm As, 300 ppm Zn, and 1 ppm Ag (Gamble, 1988). Bedrock in this area is Paleozoic marble (Till and others, 1986).

Alteration:
Oxidation; gossan development.

Age of mineralization:

Deposit model:
Gossan in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

Exploration activities are not reported for this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (Topnotch Creek)

Site type: Occurrence

ARDF no.: SO153

Latitude: 64.709 **Quadrangle:** SO C-5

Longitude: 164.397

Location description and accuracy:
This occurrence is located on the ridge between Topnotch and Lost Creeks, tributaries to Kasson Creek (SO028). It is about 6 miles north of Lees Camp on the Solomon River. This is locality 115 of Gamble (1988).

Commodities:

Main: Ag

Other:

Ore minerals: Pyrite

Gangue minerals: Quartz

Geologic description:
Quartzite or silicified marble layers in marble contain as much as 2 percent pyrite and 15 ppm Ag (Gamble, 1988). The occurrence is within a lower Paleozoic metasedimentary assemblage but near a regional fault contact with metavolcanic rocks thought to be Ordovician in age (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Pyrite-bearing quartz-rich zone with Ag values in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

None.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (West Creek)

Site type: Prospect

ARDF no.: SO154

Latitude: 64.679 **Quadrangle:** SQ C-5

Longitude: 164.495

Location description and accuracy:
This prospect is located on the south side of West Creek (SO029) about 1.8 miles upstream from the confluence with Shovel Creek (SO017). It is just west of the West Creek lode prospect (SO030). This is locality 118 of Gamble (1988).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Gamble (1988) reports geochemical results for a sample of limonitic pelitic schist from a shaft dump; this sample contained 0.1 ppm Au and 100 ppm As. Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:
Oxidation.

Age of mineralization:
Not known; Cretaceous?

Deposit model:
Sulfide-bearing pelitic schist?

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
A small shaft or adit was driven to explore the prospect.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference:

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (at head of Willow Creek)

Site type: Occurrence

ARDF no.: SO155

Latitude: 64.724 **Quadrangle:** SO C-6

Longitude: 164.505

Location description and accuracy:
This occurrence is on the ridge crest between Willow and Johnson Creeks. It is at an elevation of 1,250 feet and locality is 120 of Gamble (1988).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite

Gangue minerals:

Geologic description:
Limonitic chlorite-actinolite schist with disseminated chalcopyrite is reported to contain 0.05 ppm Au (Gamble, 1988). Bedrock in the area is the Ordovican Casadepaga Schist, a mafic metavolcanic assemblage (Till and others, 1986).

Alteration:
Oxidation; limonitic staining is noted here.

Age of mineralization:

Deposit model:
Disseminated chalcopyrite in chlorite-actinolite schist.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
No known workings or exploration are known at this locality.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (at head of Johns Creek)

Site type: Occurrence

ARDF no.: SO156

Latitude: 64.737 **Quadrangle:** SO C-5

Longitude: 164.426

Location description and accuracy:
This occurrence is located on the ridge crest at the head of Johns Creek at about 1,050 feet elevation. It is about 8 miles north-northwest of Lees Camp on the Solomon River and is locality 122 of Gamble (1988).

Commodities:

Main: Zn

Other:

Ore minerals: Pyrite

Gangue minerals: Mica, quartz

Geologic description:
A sample of pyritic micaceous quartzite in marble (or silicified marble) contained 1,100 ppm Zn (Gamble, 1988). Bedrock in the area is part of lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:

Age of mineralization:

Deposit model:
Pyritic micaceous quartzite or silicified marble with Zn values.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
None.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Lower Willow Creek)

Site type: Occurrence

ARDF no.: SO157

Latitude: 64.842 **Quadrangle:** SO D-6

Longitude: 164.531

Location description and accuracy:
This occurrence is on the ridge between the headwaters of Lower Willow Creek and its north tributary Wilson Creek. It is at a elevation of about 1,125 feet. This is locality 127 of Gamble (1988).

Commodities:

Main: Sb

Other: Cu

Ore minerals:

Gangue minerals: Limonite

Geologic description:
A sample of boxwork gossan contained 2,000 ppm As, 100 ppm Sb, and 100 ppm Cu (Gamble, 1988). The hostrock is marble within a lower Paleozoic metasedimentary assemblage (Till and others, 1986).

Alteration:
Oxidation; limonite boxwork gossan is developed.

Age of mineralization:

Deposit model:
Limonite boxwork gossan in marble with Sb and Cu values.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

No exploration or other work is known at this site.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (north of Cape Darby)

Site type: Occurrence

ARDF no.: SO158

Latitude: 64.399 **Quadrangle:** SO B-2

Longitude: 162.799

Location description and accuracy:
This occurrence is on the west coast of the Darby Peninsula; 2.3 miles south of Golovin Mission, 5.1 miles north of Cape Darby, and 1 mile north of ARDF locality SO001. It is locality 67 of Gamble (1988).

Commodities:

Main: Ag, Pb, Sn

Other:

Ore minerals:

Gangue minerals:

Geologic description:
A highly altered, 5-foot-wide fault zone cuts intrusive rocks of the Darby pluton at this location. A grab sample from the altered fault zone contained 50 ppm Ag, 30,000 ppm As, 300 ppm Pb, and 500 ppm Zn (Miller and Grybeck, 1973). The gold concentration was not determined in this sample. The Darby pluton is a composite mid-Cretaceous granodiorite and granite (Miller and others, 1972; Till and others, 1986); K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Alteration:
The nature of the alteration in the 5-foot-wide fault zone here is not described.

Age of mineralization:
Not known. K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976); this occurrence is younger.

Deposit model:
Altered fault zone in granitic rocks with Ag, As, Pb, and Zn values.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment geochemical and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Till and others, 1986; Gamble, 1988

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (east of Eagle Creek)

Site type: Occurrence

ARDF no.: SO159

Latitude: 64.703 **Quadrangle:** SO C-2

Longitude: 162.761

Location description and accuracy:
This occurrence is on Peak 2109, 3.2 miles east of Eagle Creek, a northeast tributary to the Kachauik River. It is locality 68 of Gamble (1988).

Commodities:

Main: REE, Th, U

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Syenite of the Kachauik pluton (Miller and others, 1972; Miller, 1972; Till and others, 1986) is anomalously radioactive adjacent to crosscutting alkaline dikes (Miller and others, 1976) here. The Kachauik pluton is a composite syenite, monzonite, granodiorite, quartz monzonite body that is mid-Cretaceous in age; a K/Ar age for the Kachauik pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Alteration:

Age of mineralization:
Mid-Cretaceous; a K/Ar age for the Kachauik pluton is 86.1 +/- 3 Ma (Miller and others, 1972).

Deposit model:
Disseminated ?; hydrothermal alteration and mineralization is possible adacent to alkaline dikes.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

There are no known workings; exploration in the region may have included reconnaissance stream sediment geochemical and radiometric surveys.

Production notes:

Reserves:

Additional comments:

References:

Miller and others, 1972; Miller, 1972; Miller and others, 1976; Till and others, 1986; Gamble, 1988

Primary reference: Miller and others, 1976

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (west of Walla Walla Creek)

Site type: Prospect

ARDF no.: SO160

Latitude: 64.581 **Quadrangle:** SO C-2

Longitude: 162.511

Location description and accuracy:
This prospect is in the west side of Walla Walla Creek valley at an approximate elevation of 500 feet. Walla Walla Creek is a drainage on the east side of Darby Peninsula. The prospect is 2 miles west of Mt. Kwiniuk. This is locality 64 of Gamble (1988).

Commodities:

Main: Au, Sb

Other:

Ore minerals: Stibnite

Gangue minerals: Quartz

Geologic description:
Exploration workings have been dug on quartz-stibnite veinlets at this locality. This prospecting was first reported by Smith and Eakin (1911) who noted this as a small occurrence with a trace of gold; limonite staining on joints and fractures was idenitified but no distinct vein or lode was observed. Sampling of dump materials by Miller and Grybeck (1973) confirmed the presence of stibnite (greater than 10,000 ppm Sb) but gold was not detected. The early exploration workings prior to1909 included a 25-foot-long trench and a 100-foot-long adit (Smith and Eakin, 1911). Bedrock is metasedimentary rocks that include lower Paleozoic calc-schist (Till and others, 1986). The metasedimentary rocks are on the east flank and within 0.4 miles of the Darby pluton but thermal metamorphism has not been described. High angle faults may be important structural elements in this area.

Alteration:
Small amounts of limonite staining on joints and fratures was described by Smith and Eakin (1911).

Age of mineralization:
Not known; probably mid-Cretaceous, the age of the nearby Darby pluton (K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma, Berry and others, 1976), or

younger.

Deposit model:
Quartz-stibnite veinlets (?) in metasedimentary rocks.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
The early exploration workings prior to 1909 included a 25-foot-long trench and a 100-foot-long adit (Smith and Eakin, 1911).

Production notes:

Reserves:

Additional comments:

References:
Smith and Eakin, 1911; Miller and others, 1972; Miller and Grybeck, 1973; Berry and others, 1976; Till and others, 1986; Gamble, 1988

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (northeast of mouth of Walla Walla Creek)

Site type: Occurrence

ARDF no.: SO161

Latitude: 64.561 **Quadrangle:** SO C-1

Longitude: 162.448

Location description and accuracy:
This occurrence is on the coast of Norton Bay, 1 mile northeast of the mouth of Walla Walla Creek. Walla Walla Creek is on the east side of Darby Peninsula. It is locality 65 of Gamble (1988).

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals: Tourmaline

Geologic description:
A tourmaline-bearing skarn was noted at this location (Gamble, 1988). Bedrock here is Paleozoic marble and the Darby pluton is exposed about 2.4 miles to the northwest (Till and others, 1986).

Alteration:
Calc-silicate development may be present.

Age of mineralization:
Not known; probably mid-Cretaceous or younger. K/Ar ages for the nearby Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:
Tourmaline-bearing skarn in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
There are no known workings or exploration activities at this locality.

Production notes:

Reserves:

Additional comments:

References:
Till and others, 1986; Gamble, 1988

Primary reference: Gamble, 1988

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Kwiniuk River)

Site type: Occurrence

ARDF no.: SO162

Latitude: 64.711 **Quadrangle:** SO C-1

Longitude: 162.373

Location description and accuracy:
This occurrence is on a marble knob overlooking the Kwiniuk River. It is 0.5 miles east of the confluence of the Kwiniuk River and a major unnamed south tributary (the Corral Creek of West, 1953, Plate 1), and about 7 miles north-northeast of the village of Elim. The occurrence appears to be on Peak 673 but it may only be located within 0.5 mile. It is locality 63 of Gamble (1988).

Commodities:

Main: Ba, Cu, Pb, Zn

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Miller and Grybeck (1973) report a small gossan in limestone; a grab sample of this gossan contained 500 ppm Cu, 300 ppm Pb, greater than 10,000 ppm Zn, and greater than 5,000 ppm Ba. Bedrock here is Paleozoic marble that is about 1.5 miles east of the Darby pluton (Till and others, 1986).

Alteration:
Oxidation; the occurrence is described as a gossan.

Age of mineralization:
Not known; probably mid-Cretaceous or younger. K/Ar ages for the nearby Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:
Base-metal sulfide veins or replacements in marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
There are no known workings or exploration activities at this locality.

Production notes:

Reserves:

Additional comments:

References:
West, 1953; Miller and Grybeck, 1973; Till and others, 1986; Gamble, 1988

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Dry Canyon Creek)

Site type: Occurrence

ARDF no.: SO163

Latitude: 64.863 **Quadrangle:** SO D-1

Longitude: 162.455

Location description and accuracy:
This occurrence is near the crest of the Darby Mountains at approximately 2,675 feet elevation in the extreme eastern headwaters of Dry Canyon Creek. This locality is 0.7 miles north of Peak 2,883 and 1 mile southwest of Peak 3,273. It is locality 62 of Gamble (1988).

Commodities:

Main: Cu, Pb, Zn

Other:

Ore minerals: Chalcopyrite, galena, pyrite, sphalerite

Gangue minerals:

Geologic description:
This prospect occurs in feldspathic schist near the western contact of Darby pluton granite. Sphalerite, galena, chalcopyrite, and pyrite have been identified (Miller and Grybeck, 1973). Stream sediment samples from the two drainages flowing west from this occurrence contained anomalous amounts of Pb in one case, and Pb and Zn in the other. The Darby pluton is a mid-Cretaceous granodiorite and granite; K/Ar ages for the Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976). The country rocks to the pluton here are high-grade metasedimentary rocks of Paleozoic or Precambrian age (Till and others, 1986).

Alteration:

Age of mineralization:
Not known; probably mid-Cretaceous or younger. K/Ar ages for the nearby Darby pluton are 88.3 +/- 1.5 and 92.8 +/- 2.6 Ma (Berry and others, 1976).

Deposit model:
Base-metal sulfide veins or replacements in metasedimentary rocks.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:
No workings or exploration acitivities are known but regional stream sediment geochemical and airborne radiometric surveys may have been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Miller and Grybeck, 1973; Berry and others, 1976; Till and others, 1986; Gamble, 1988

Primary reference: Miller and Grybeck, 1973

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (near Pajara Creek)

Site type: Occurrence

ARDF no.: SO164

Latitude: 64.695 **Quadrangle:** SO C-6

Longitude: 164.835

Location description and accuracy:
This occurrence is on the ridge crest between Pajara and Mulligan Creeks, east tributaries to the Eldorado River. It is at an elevation of 1,375 feet and locality 119 of Gamble (1988).

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Hummel (1975) notes the presence of sulfides in silicified marble at this location. Bedrock in the area is the Ordovican Casadepaga Schist, a mafic metavolcanic assemblage (Till and others, 1986).

Alteration:
Silicification of marble is indicated.

Age of mineralization:

Deposit model:
Sulfides in silicified marble.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

Production Status: None

Site Status: Inactive

Workings/exploration:

No known workings or exploration activities are recorded in the area.

Production notes:

Reserves:

Additional comments:

References:
Hummel, 1975; Till and others, 1986; Gamble, 1988

Primary reference: Hummel, 1975

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Ryan Creek

Site type: Mine

ARDF no.: SO165

Latitude: 64.579 **Quadrangle:** SO C-4

Longitude: 163.797

Location description and accuracy:
Ryan Creek is a small creek that flow south to its mouth on Norton Sound, 1.5 miles west of Bluff. This is locality 105 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Some placer gold mining took place on Ryan Creek before 1907 (Collier and others, 1908). However, only a few small placer pits are present on the creek and probably less than 100 ounces of gold were produced (Mulligan, 1971). Bedrock in the area is Paleozoic marble wioth some intercalated metasedimentary schist as on Daniels Creek, 1.5 miles to the east. Sinkholes are developed in the marble (Mulligan, 1971). Panned concentrates from the creek and overburden above bedrock schist did not contain gold (Mulligan, 1971).

Alteration:

Age of mineralization:
Quaternary; any placer deposits here are at low enough elevation, 50 to 100 feet, to have been influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
A few small placer pits are present on the creek.

Production notes:
Based on the extent of the placer workings, Mulligan (1971) estimates that less than 100 ounces of gold were produced.

Reserves:

Additional comments:

References:
Collier and others, 1908; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181)

Primary reference: Mulligan, 1971

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Jerome Creek

Site type: Mine

ARDF no.: SO166

Latitude: 64.613 **Quadrangle:** SO C-5

Longitude: 164.398

Location description and accuracy:
Jerome Creek is an eastern tributary to the lower Solomon River. Its mouth is 4 miles upstream from Solomon. This location was included as part of locality 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Gold was discovered and some developments took place on Jerome Creek as early as 1900 (Brooks and others, 1901). Both fine and coarse gold were found in irregularly distributed pay (Smith, 1910). At least part of the mining was near the mouth of the creek as early as 1907, but most of the mining was probably between 1932 and 1934 (Cobb, 1978, OF 78-181). The upper reaches of Jerome Creek cut coastal plain gravels but intercalated schist and marble bedrock is present along middle and lower parts of the drainage (Smith, 1910; Sainsbury and others, 1972, OFR 511). Beach deposits were apparently identified at elevations of 130 and 150 feet (Eakin, 1915). Bedrock of the area is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the location and elevation of less than 150 feet indicate that this area was influenced by Quaternary sea level fluctuations.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked coastal plain de-

posits.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Prospecting pits and some open-cut placer workings are present on this creek. The workings prior to 1907 were on the lower part of the creek near the mouth. The Solomon River (SO015) at the mouth of Jerome Creek has been extensively dredged.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Eakin, 1915; Sainsbury and others, 1972; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Moran Creek (Gulch)

Site type: Mine

ARDF no.: SO167

Latitude: 64.622 **Quadrangle:** SO C-5

Longitude: 164.373

Location description and accuracy:
Moran Creek is a small east tributary to the lower Solomon River. This location on Moran Creek is 0.5 mile northeast of Lees Camp. It was included as part of locality 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Early placer mining on Moran Creek (1908) was on gravel benches of the Solomon River (Smith, 1909) and the deposits may be reworked alluvial deposits. This part of the Solomon River is at low enough elevations to have been affected by Quaternary sea level fluctuations and the gold probably went through several cycles of erosion and redeposition. The gravels that were mined included at least some that were 3- to 4-feet thick on decomposed schist bedrock. Bedrock here is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; this part of the Solomon River is at low enough elevations to have been affected by Quaternary sea level fluctuations and the gold probably went through several cycles of erosion and redeposition.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked alluvial and coastal plain deposits by more than one cycle of deposition.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Small scale open cut placer workings are present on this creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1909; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1909

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Quartz Creek (tributary to lower Solomon River)

Site type: Mine

ARDF no.: SO168

Latitude: 64.646 **Quadrangle:** SO C-5

Longitude: 164.328

Location description and accuracy:
This Quartz Creek is a south tributary to the lower Solomon River; its mouth is about 1,000 feet downstream from Quigleys Camp. The headwaters of Quartz Creek are across a low divide from Uncle Sam Creek. This was included as part of locality 101 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The lower 1,000 feet of Quartz Creek flows across a bench along the south side of the Solomon River valley. Placer mining along this part of the creek took place as early as 1906-07 (Smith, 1910). Subsequent mining may have also taken place in this area but it has not been described. Bedrock here is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; this part of the Solomon River is at low enough elevations to have been affected by Quaternary sea level fluctuations and the gold may have been through several cycles of erosion and redeposition.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a); possibly reworked alluvial and coastal plain deposits.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Early workings were probably by hand.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Puzzle Creek (Gulch)

Site type: Mine

ARDF no.: SO169

Latitude: 64.647 **Quadrangle:** SO C-5

Longitude: 164.445

Location description and accuracy:
Puzzle Creek is a 3,500-foot-long, north tributary to Mystery Creek (SO016). The mouth of Puzzle Creek is about a mile upstream of the confluence of Mystery Creek and Shovel Creek and about 2.5 miles-northwest of Lees Camp on the Solomon River. It was included as part of locality 86 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale mining took place here in the early 1900's (Smith, 1910). The area is one where both bench deposits and ancestral channels can be present (see Mystery Creek, SO016). The gold recovered here was very coarse, some with attached quartz, and partly wiry. Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the elevation (200 feet) of this area indicates it may have been affected by Quaternary sea level fluctuations (see Problem Creek, SO170).

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale hand and hydraulic operations probably took place in the early 1900s.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Problem Creek (Gulch)

Site type: Mine

ARDF no.: SO170

Latitude: 64.646 **Quadrangle:** SO C-5

Longitude: 164.465

Location description and accuracy:
Problem Creek is a 3,000-foot-long west tributary to Mystery Creek (SO016). The mouth of Problem Creek is about 1.7 miles upstream from the confluence of Mystery Creek and Shovel Creek (SO017) and about 2.8 miles north-northwest of Lees Camp on the Solomon River. Placer mining took place on lower Problem Creek at an elevation of about 250 feet. It was included as part of locality 86 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Mining on the lower part of this creek started in 1900 (Brooks and others, 1901). Thin gravels, 2- to 3-feet thick, overlie metasedimentary schist in the active drainage; bench deposits are present on both sides of the creek. A 45-foot shaft on the south side of the creek encountered washed gravel above 40 feet of very fine stratified sand with a general easterly dip (Smith, 1910). Smith (1910) notes that this shaft is at 450 feet elevation but recent topographic maps indicate that it was probably at an elevation of about 250 to 300 feet. Bedrock here is part of a lower Paleozoic metasedimentary assemblage (Sainsbury and others, 1972; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary; the elevation (250 feet) of this area indicates it may have been affected by Quaternary sea level fluctuations.

Deposit model:

Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small-scale mining took place prior to WW I. This was originally by hand but probably also by hdraulic methods.

Production notes:

Reserves:

Additional comments:

References:
Brooks and others, 1901; Smith, 1910; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Smith, 1910

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Lion Creek

Site type: Mine

ARDF no.: SO171

Latitude: 64.641 **Quadrangle:** SO C-5

Longitude: 164.195

Location description and accuracy:
Lion Creek is a small headwater tributary of Big Hurrah Creek (SO022). it is the up-stream limit of placer minig in the Big Hurrah Creek drainage. It is included in locality 100 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Small-scale placer mining took place on Lion Creek prior to 1908. Gold was present in 4 feet of gravel over bedrock and at least locally on benches to the active drainage (Collier and others, 1908). The early mining recovered $1.70 to $2.00 per cubic yard (about 0.1 ounce of gold); the best grades were on bedrock. The bedrock in this drainage is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Small -scale, probably mostly hand operations, took place on the lower part of this creek prior to 1908.

Production notes:

Reserves:

Additional comments:

References:
Collier and others, 1908; Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986

Primary reference: Collier and others, 1908

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (north of Big Hurrah Creek)

Site type: Prospect

ARDF no.: SO172

Latitude: 64.654 **Quadrangle:** SO C-5

Longitude: 164.278

Location description and accuracy:
This prospect is on the north side of Big Hurrah Creek (SO022) about one mile upstream from its mouth. It is locality 3 of Asher (1969, DGGS R33).

Commodities:

Main: Au, Sb

Other:

Ore minerals: Gold, stibnite

Gangue minerals: Quartz

Geologic description:
A 10-foot-wide silicified and brecciated zone in very fine-grained graphitic schist contains disseminated sulfides, mostly pyrite. However, along the footwall side, stibnite is disseminated and forms blades to 3 inches long (Asher, 1969, DGGS R33). The zone strikes N 12 E and dips 44 W. A prospect trench upslope to the north has dump material with abundant stibnite. A sample across the 10-foot-wide silicified zone contained 0.07 ounces Au per ton (Asher, 1969, DGGS R33). The country rock is part of a lower Paleozoic metasedimentary assemblage that includes a distinctive black, very fine-grained, graphitic schist (Sainsbury and others, 1972, OFR 511; Till and others, 1986).

These veins may be similar in age to some lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:
Silicification.

Age of mineralization:
Mid-Cretaceous?

Deposit model:
Gold-quartz vein; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a) or quartz-stibnite vein in graphitic schist; simple Sb deposits (Cox and Singer, 1986; model 27d).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
27d or 36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
The mineralization is exposed in outcrop. A prospect trench exposes some mineralization upslope to the north.

Production notes:

Reserves:

Additional comments:

References:
Asher, 1969 (DGGS R33); Sainsbury and others, 1972 (OFR 511); Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Asher, 1969a

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Unnamed (in headwaters of Camp Creek)

Site type: Prospect

ARDF no.: SO173

Latitude: 64.849 **Quadrangle:** SO D-5

Longitude: 164.009

Location description and accuracy:
This prospect is in the headwaters of Camp Creek (SO057), a west tributary to the Niukluk River. It is very poorly located (possibly within a few miles) as an early report only noted that a gold-quartz vein was present in the head of the creek (Smith, 1907). This is locality 13 of Cobb (1972, MF 445; 1978, OF 78-181).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:
Smith (1907) reports that a quartz vein carrying free gold was found in the head of Camp Creek.

Alteration:
Silicification.

Age of mineralization:
Mid-Cretaceous?; possibly the same age as some lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that accompanied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Deposit model:
Gold-quartz vein; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
No workings or exploration activities have been reported.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1907; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Smith, 1907

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): American Creek

Site type: Mine

ARDF no.: SO174

Latitude: 64.961 **Quadrangle:** SO D-5

Longitude: 164.403

Location description and accuracy:
This placer mine is located on the main channel of American Creek (SO086) where the tractor trail crosses to the Casadepaga River drainage. Sainsbury and others (1972, OFR 511) show about 1/4 mile of placer tailings at this location.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Sainsbury and others (1972, OFR 511) show about 1/4 mile of placer tailings at this location. Bedrock here is Paleozoic marble (Till and others, 1986).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; model 39a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Sainsbury and others (1972, OFR 511) show about 1/4 mile of placer tailings on the active channel of American Creek at this location.

Production notes:

Reserves:

Additional comments:

References:

Sainsbury and others, 1972 (OFR 511); Till and others, 1986

Primary reference: Sainsbury and others, 1972 (OFR 511)

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

Site name(s): Saddle

Site type: Prospect

ARDF no.: SO175

Latitude: 64.576 **Quadrangle:** SO C-4

Longitude: 163.711

Location description and accuracy:

This prospect is 1.3 miles northeast of Bluff, 0.6 miles north of Norton Sound, and at 360 feet elevation on the saddle between Daniels Creek (SO006) and Swede Creek (SO005).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, marcasite, pyrite, pyrrhotite

Gangue minerals: Biotite, carbonate, chlorite, fluorite, plagioclase, quartz, titanite, white mica

Geologic description:

The Saddle prospect is known from the work of Ford (1993) and Ford and Snee (1996). A large gold and arsenic anomaly in soils led to its discovery. Gold-bearing quartz veins are localized in extensional joints that strike easterly and dip moderately to the south in quartz-muscovite schist. The host schist is similar to that at the nearby Bluff (SO135), Swede Creek (SO133) and Koyana Creek (SO136) lode prospects. This schist is a band intercalated in Paleozoic marble (Herried, 1965; Mulligan, 1971; Till and others, 1986). The veins are discontinuous and commonly less than 3 inches thick. Gold grades are irregularly distributed; vein intersections up to 3.3 feet across contain up to 1.8 ounces Au per ton. Minerals identified in the veins include arsenopyrite, biotite, carbonate, chlorite, fluorite, marcasite, plagioclase, pyrite, pyrrhotite, quartz, titanite, and white mica. Alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline. The white mica in the veins is muscovite and that in the host schist is phengite. A sample of vein white mica gave a Ar/Ar plateau date of 109.1 +/- 0.2 Ma and metamorphic white mica in the host schist gave Ar/Ar total gas dates of 122.6 +/- 0.4 Ma and 122.4 +/- 0.2 Ma (Ford and Snee, 1996). This age is similar to that for some other lode gold deposits on southern Seward Peninsula. The southern Seward Peninsula lode gold deposits formed as a result of mid-Cretaceous metamorphism (Apodoca, 1994; Ford, 1993, Ford and Snee, 1996; Goldfarb and others, 1997) that ac-

companied regional extension (Miller and Hudson, 1991) and crustal melting (Hudson, 1994). This higher temperature metamorphism was superimposed on high pressure/low temperature metamorphic rocks of the region.

Alteration:

Quartz veining; alteration minerals in the host schist include plagioclase, chlorite, carbonate, white mica, biotite, titanite, and tourmaline.

Age of mineralization:

Mid-Cretaceous, the age of some other lode gold deposits on southern Seward Peninsula. At this prospect, a sample of vein white mica gave a Ar/Ar plateau date of 109.1 +/- 0.2 Ma and metamorphic white mica in the host schist gave Ar/Ar total gas dates of 122.6 +/- 0.4 Ma and 122.4 +/- 0.2 Ma (Ford and Snee, 1996).

Deposit model:

Gold-bearing quartz veins along extension joints in quartz-mica schist; low sulfide-Au quartz vein (Cox and Singer, 1986; model 36a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):

36a

Production Status: None

Site Status: Active?

Workings/exploration:

Surface soil sampling and some diamond drilling by BHP-Utah International was done here about 1990.

Production notes:

Reserves:

Additional comments:

References:

Herreid, 1965; Mulligan, 1971; Cobb, 1972 (MF 445); Cobb, 1978 (OF 78-181); Till and others, 1986; Miller and Hudson, 1991; Ford, 1993; Apodoca, 1994; Hudson, 1994; Ford and Snee, 1996; Goldfarb and others, 1997

Primary reference: Ford and Snee, 1996

Reporter(s): Travis L. Hudson (Applied Geology)

Last report date: 08/19/99

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