



# Alaska Resource Data File, Sumdum quadrangle, Alaska

By Donald J. Grybeck<sup>1</sup>

Open-File Report 2005-1044

2005

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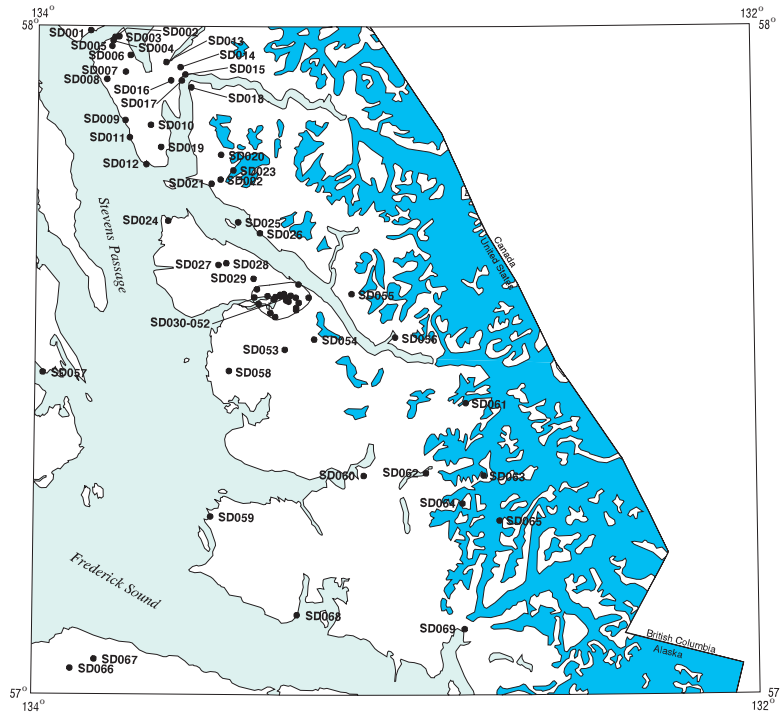
**U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY**

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<sup>1</sup> Bellingham, Washington

## Sumdum quadrangle

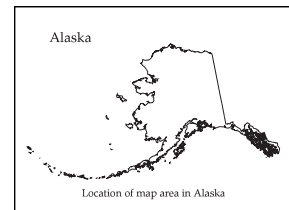
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



*Distribution of mineral occurrences in the Sumdum  
1:250,000-scale quadrangle, Alaska*

This and related reports are accessible through the USGS World Wide Web site <http://ardf.wr.usgs.gov>. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to: Frederic Wilson, USGS, 4200 University Dr., Anchorage, AK 99508-4667, e-mail [fwilson@usgs.gov](mailto:fwilson@usgs.gov), telephone (907) 786-7448. This compilation is authored by:

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**OPEN-FILE REPORT 2005-1044**

**Site name(s): Mist Creek****Site type:** Prospect**ARDF no.:** SD001**Latitude:** 57.9933**Quadrangle:** SD D-6**Longitude:** 133.8536**Location description and accuracy:**

A group of 19 placer claims was staked near the mouth of Mist Creek in 1980. They are in the SW1/4 section 1, T. 45 S., R. 71 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Redman and others (1989) took a sample on a group of 19 placer claims that were staked in 1980 and allowed to lapse two years later. Only a trace of gold was in the sample.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer gold (Cox and Singer, 1989; model 39a).

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

39a

**Production Status:** Undetermined.**Site Status:** Probably inactive**Workings/exploration:**

A group of placer claims was staked in 1980 and allowed to lapse two years later. Redman and others (1989) found no trace of workings.

**Production notes:**

Doubtful but possibly minor.

**Reserves:****Additional comments:****References:**

Redman and others, 1989.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Minehaha; Finale****Site type:** Mine**ARDF no.:** SD002**Latitude:** 57.9835**Quadrangle:** SD D-6**Longitude:** 133.7853**Location description and accuracy:**

The Minehaha and Finale adits are just south of the abandoned town of Snettisham, at or near the adit symbols shown on the USGS 1:63,360-scale topographic map. The adits are about 0.2 mile north of the center of section 8, T. 45 S., R. 72 E. The underground workings at the two adits are shown on Figures D-217 and D-218 of Redman and others (1989).

**Commodities:****Main:** Ag, Au**Other:** Cu, Pb**Ore minerals:** Chalcopyrite, pyrite**Gangue minerals:** Quartz**Geologic description:**

Gold was discovered here in the 1880's and work started at this mine in 1898. By 1899, there were 400 feet of workings in this vicinity either in these adits or at the nearby Friday Mine (SD004) (Spencer, 1906; Redman and others, 1989). A 10-stamp mill was erected in 1900 and 10 more stamps were added in 1901 to process the ore from the Friday Mine and the nearby Minnehaha and Finale adits which were being operated by the same company. By 1903, the company had produced a few hundred tons of ore from these adits and the Friday Mine. However, mining was not profitable and the property closed in 1905 after an attempt to reopen it. Redman and others (1989) were able to map 430 feet of the underground workings at the Finale the adit but the Minnehaha adit was caved and inaccessible. The Minnehaha adit produced some gold but the quantity is uncertain.

The deposit is similar to the nearby Friday Mine (SD004) and consists of a quartz vein in the Snettisham biotite-magnetite pyroxenite of Cretaceous age (Gehrels and Berg, 1992). The vein is associated with two stages of tabular, trondhjemite dikes that at the Finale adit vary from flat laying to steep (Redman and others, 1989). The early trondhjemite dikes are barren of mineralization. The later dikes vary laterally from trondhjemite to massive quartz with borders of trondhjemite aplite. There are several sets of faults in the Finale adit. Most strike E-W and dip 45-65N; a subordinate set trends about S30E and dips NE. The vein contains up to 25 percent pyrite and is bordered by up to 2 feet of serpentinized pyroxenite.

Redman and others (1989) collected seven samples from the Finale adit. They averaged 3.1 parts per million (ppm) silver, 541 ppm copper, and 1,637 ppm lead. The gold content varied from 0.1 to 1.5 ppm gold. A dump sample from the Minnehaha adit contained 7.6 ppm silver and 0.4 ppm gold.

**Alteration:**

The mineralized quartz vein is bordered by up to 2 feet of serpentinized pyroxenite.

**Age of mineralization:**

Cretaceous or younger based on the age of the host rocks.

**Deposit model:**

Gold-pyrite vein in pyroxenite.

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

**Production Status:** Yes; small

**Site Status:** Undetermined

**Workings/exploration:**

Gold was discovered here in the 1880's and work started in 1898. By 1899, there were 400 feet of workings in this vicinity either in these adits or at the nearby Friday Mine (SD004) (Spencer, 1906; Redman and others, 1989). A 10-stamp mill was erected in 1900 and 10 more stamps were added in 1901 to process the ore from the Friday Mine and the nearby Minnehaha and Finale adits which were being operated by the same company. By 1903, the company had produced a few hundred tons of ore from these adits and the Friday Mine. However, mining was not profitable and the property closed in 1905 after an attempt to re-open it. Redman and others (1989) were able to map 430 feet of the underground workings at the Finale adit but the Minnehaha adit was caved and inaccessible.

**Production notes:**

The Minnehaha adit produced some gold from 1898 to 1903 but the quantity is unknown and is probably small.

**Reserves:**

**Additional comments:**

**References:**

Spencer, 1906; Thorne and Wells, 1956; Berg and Cobb, 1967; Redman, 1988; Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Snettisham Iron****Site type:** Prospect**ARDF no.:** SD003**Latitude:** 57.9845**Quadrangle:** SD D-6**Longitude:** 133.7740**Location description and accuracy:**

The large pyroxenite body that makes up much of the northern end of the Snettisham Peninsula was known to contain abundant magnetite locally as early as the 1890's. This site is the center of an area about 2000 feet by 1000 feet in size in which the U.S. Bureau of Mines diamond drilled more than 5,000 feet of hole in 1953 and was subsequently explored by private industry. The center of the area is about 0.5 mile east of the abandoned town of Snettisham and about 0.6 mile west-northwest of the center of section 9, T. 45 S., R. 72 E.

**Commodities:****Main:** Fe, PGE, Ti, V**Other:****Ore minerals:** Ilmenite, magnetite**Gangue minerals:****Geologic description:**

The Snettisham iron deposit is one of the larger bodies in a belt of Alaska-type ultramafic-mafic intrusions that are spread along the length of southeastern Alaska (Taylor and Noble, 1960; Taylor, 1967; Himmelberg and Loney, 1995; Foley and others, 1997). The body in Port Snettisham is an elliptical intrusion about 2 miles in maximum outcrop that is mainly composed of hornblende-magnetite clinopyroxenite, biotite-magnetite pyroxenite, and hornblende-biotite-magnetite clinopyroxenite. The pyroxenite locally grades into diorite. As in several other such bodies in southeastern Alaska, the magnetite content is locally high enough to be considered as a source of iron, titanium, vanadium, and possibly platinum-group element (Buddington, 1925; Thorne and Wells, 1956; Page and others, 1973). The magnetite is titaniferous. The body is cut by numerous thrust and normal faults (Redman and others, 1989). Although there are several episodes of the intrusion of Alaska-type complexes in southeastern Alaska, the Snettisham body is probably 100-118 million years old (Brew and Morell, 1983; Himmelberg and Loney, 1995).

Although there was a small test shipment of magnetite ore to Juneau in about 1917 (Buddington, 1925), the first major effort to explore the iron potential of the deposit was in the 1950's by the U.S. Bureau of Mines who drilled at least 9 holes totaling 6,543 feet, did a geophysical survey over the body, and had beneficiation tests done on the ore (Thorne and Wells, 1956). The work outlined a magnetite-rich area of the pyroxenite about 2,400 feet by 9,600 feet in area with a vertical extent of 1,000 feet. The Bureau identified 450,000 tons of material that contained 19 percent iron, 2.6 percent titanium, and 0.05 percent vanadium, and these figures have been cited numerous times since in other publications (e.g. Carr and Dutton, 1959; Berg and Cobb, 1967; Fischer, 1975). In 1969, the Marcona Corporation optioned the Snettisham iron deposit and carried out extensive exploration, including diamond drilling and metallurgical tests. In addition, Page and others (1973) identified a resource of 4.55 million troy ounces of platinum-group metals in the orebody defined by Thorne and Wells that has an average grade of 0.0027 ounce of platinum-group-elements per ton. They also cite the potential for more platinum-group elements at a similar grade in extensions of the ore body.

**Alteration:**

The magnetite is a primary constituent of the pyroxenite.

**Age of mineralization:**

The magnetite-bearing clinopyroxenite is probably 110-118 Ma.

**Deposit model:**

Magnetite in clinopyroxenite.

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

**Production Status:** None

**Site Status:** Undetermined

**Workings/exploration:**

Although there was a small test shipment of magnetite ore to Juneau in about 1917 (Buddington, 1925), the first major effort to explore the iron potential of the deposit was in the 1950's by the U.S. Bureau of Mines who drilled at least 9 holes totaling 6,543 feet, did a geophysical survey over the body, and had beneficiation tests done on the ore (Thorne and Wells, 1956). The work outlined a magnetite-rich area of the pyroxenite about 2,400 feet by 9,600 feet in area with a vertical extent of 1,000 feet. In 1969, the Marcona Corporation optioned the Snettisham iron deposit and carried out extensive exploration, including diamond drilling and metallurgical tests.

**Production notes:****Reserves:**

The first major effort to explore the iron potential of the deposit was in the 1950's by the U.S. Bureau of Mines (Thorne and Wells, 1956). The work outlined a magnetite-rich area of the pyroxenite about 2,400 feet by 9,600 feet in area with a vertical extent of 1,000 feet. The Bureau identified 450,000 tons of material that contained 19 percent iron, 2.6 percent titanium, and 0.05 percent vanadium, and these figures have been cited numerous times since in other publications (e.g. Carr and Dutton, 1959; Berg and Cobb, 1967; Fischer, 1975). In addition, Page and others (1973) identified a resource of 4.55 million troy ounces of platinum-group metals in the orebody defined by Thorne and Wells that has an average grade of 0.0027 ounce of platinum-group-elements per ton. They also cite the potential for more platinum-group elements at a similar grade in extensions of the ore body.

**Additional comments:****References:**

Buddington, 1925; Buddington and Chapin, 1929; Fowler, 1950 (MI 115-1); Williams, 1952 (PE 115-3); Williams, 1953 (PE 115-5); Twenhofel, 1953; Thorne and Wells, 1956; Carr and Dutton, 1959; Taylor and Noble, 1960; MacKevett and Blake, 1964; Noel, 1966; Berg and Cobb, 1967; Taylor, 1967; Page and others, 1973; Fischer, 1975; Brew and Morell, 1983; Kimble and others, 1984; U.S. Geological Survey and U. S. Bureau of Mines, 1984; Redman and others, 1989; Himmelberg and Loney, 1995; Foley and others, 1997.

**Primary reference:** Thorne and Wells, 1956

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Friday****Site type:** Mine**ARDF no.:** SD004**Latitude:** 57.9784**Quadrangle:** SD D-6**Longitude:** 133.7904**Location description and accuracy:**

The Friday Mine is shown by name on the USGS 1:63,360-scale topographic map. It is about 0.3 mile southwest of the center of section 18, T. 45 S., R. 72 E. The underground workings of the Friday Mine are shown on Figure D-218 of Redman and others (1989).

**Commodities:****Main:** Au**Other:** Cu**Ore minerals:** Chalcopyrite, pyrite**Gangue minerals:** Quartz**Geologic description:**

The Friday Mine was discovered in the 1880's and work started in 1898. By 1899, there were 400 feet of workings (Spencer, 1906; Redman and others, 1989). A 10-stamp mill was erected in 1900 and 10 more stamps were added in 1901 to process the ore from the Friday Mine and from the nearby Minnehaha and Finale adits (SD002) which were being operated by the same company. By 1903, the company had produced a few hundred tons of ore from the Friday and Minnehaha adits. However, mining was not profitable and the mine closed in 1905 after an attempt to reopen it. The Friday Mine has three adits: a 20-foot adit at an elevation of about 500 feet, an upper adit at an elevation of about 425 feet, and a lower adit with about 725 feet of workings. There is also a stope that extends from the upper adit at an elevation of about 425 feet to the surface at an elevation of about 500 feet. The Friday Mine produced about 350 tons of ore that contained 75-150 ounces of gold.

The deposit at the Friday Mine consists of a quartz vein in the Snettisham biotite-magnetite pyroxenite of Cretaceous age (Gehrels and Berg, 1992). The vein is associated with two stages of tabular, trondhjemite dikes that at the Friday Mine are generally steeply dipping (Redman and others, 1989). The early trondhjemite dikes are barren of mineralization. The later dikes vary laterally from trondhjemite to massive mineralized quartz with borders of trondhjemite aplite. The veins, dike, and host rocks are cut by 3 or 4 flat-lying faults which to the southeast coalesce into a single large thrust fault at the Crystal Mine (SD005). The quartz vein in the Friday adits is up to 4 feet thick and extends laterally for several hundred feet. It contains up to 25 percent pyrite and minor chalcopyrite. The trondhjemite dikes in the workings contain about 0.5 to 5 percent pyrite. The vein is bordered by up to 2 feet of serpentinized pyroxenite.

Redman and others (1989) collected 12 samples from the stope of the upper adit. The samples contained a weighted average of 7.4 parts per million gold across an average vein thickness of 1.6 feet. Six samples from the lower Friday adit contained a weighted average of 1.0 ppm gold across an average vein thickness of 1.0 feet. From these data, they estimated an indicated resource of 600 short tons of material with a grade of 0.22 ounce of gold per ton.

**Alteration:**

The mineralized quartz vein is bordered by up to 2 feet of serpentinized pyroxenite.

**Age of mineralization:**

Cretaceous or younger based on the age of the host rock.

**Deposit model:**

Gold-pyrite vein in pyroxenite.

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

**Production Status:** Yes; small

**Site Status:** Undetermined

**Workings/exploration:**

The Friday Mine was discovered in the 1880's and work started in 1898. By 1899, there were 400 feet of workings (Spencer, 1906; Redman and others, 1989). A 10-stamp mill was erected in 1900 and 10 more stamps were added in 1901 to process the ore from the Friday Mine and from the nearby Minnehaha and Finale adits (SD002) which were being operated by the same company. By 1903, the company had produced a few hundred tons of ore from the Friday and Minnehaha adits. However, mining was not profitable and the mine closed in 1905 after an attempt to reopen it. The Friday Mine has three adits: a 20-foot adit at an elevation of about 500 feet, an upper adit at an elevation of about 425 feet, and a lower adit with about 725 feet of workings. There is also a stope that extends from the upper adit at an elevation of about 425 feet to the surface at an elevation of about 500 feet.

**Production notes:**

The Friday Mine produced about 350 tons of ore that contained 75-150 ounces of gold.

**Reserves:**

Redman and others (1989) estimated an indicated resource of 600 short tons of material with a grade of 0.22 ounce of gold per ton.

**Additional comments:****References:**

Spencer, 1906; Thorne and Wells, 1956; Berg and Cobb, 1967; Redman, 1988; Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Crystal****Site type:** Mine**ARDF no.:** SD005**Latitude:** 57.9701**Quadrangle:** SD D-6**Longitude:** 133.7936**Location description and accuracy:**

The Crystal Mine is about about 0.5 mile east-northeast of where it is shown on the USGS 1:63,360-scale topographic map. The mine is actually about 0.3 mile west-northwest of the center of section 17, R.45 S. R., 72 E. The mine workings are shown on figure D-221 of Redman and others (1989).

**Commodities:****Main:** Au**Other:** Cu**Ore minerals:** Chalcopyrite, gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

The Crystal Mine was discovered in 1895 and in 1901, a ten-stamp mill was installed (Spencer, 1906; Redman and others, 1989). By 1905, there were 1,000 feet of underground workings and about 1,210 ounces of gold had been mined. In 1909, the mill processed about 750 tons of ore. Work continued intermittently until 1925. When operations ceased, the mine had 2,350 feet of underground workings, 5 stopes, and a 175-foot upper adit with a stope. There are no production data after 1905 but some additional amount of gold was produced.

The deposit at the Crystal Mine is a quartz vein that lays along a low-angle fault. The fault is 1 to 10 feet thick and cuts amphibolite near the Snettisham ultramafic complex. The fault strikes S30-50E and dips 8-35E. The quartz vein undulates and varies in character along the plane of the fault. Where the fault does not contain quartz, it consists of sheared and altered amphibolite. Orange-weathering calcite is common as stringers and as a major component of the fault zone. Much of the fault contains a few inches to 10 feet of quartz. Some portions of the vein may have up to 60 percent silicified amphibolite associated with the quartz; some portions may be entirely quartz. Gouge zones 1 to 4 inches thick are common in the vein structure. The amphibolite host rock is commonly silicified and chloritized for 1 inch to 2 feet from the vein. The vein contains numerous open spaces which are often filled with quartz and calcite crystals up to 6 inches long. Pyrite is common in the quartz and may comprise up to 60 percent of the vein. Locally pyrite cubes up to 2 inches across are common and Spencer (1906) reported euhedral gold crystals growing on the pyrite. The Smithsonian Institution had or has on display a stunning cubic, pyrite crystal from the Crystal Mine that is about 3 inches on a side and has abundant terminated crystals of gold growing on the surface of the pyrite (Donald Grybeck, personal observation, 1983). Chalcopyrite is the only other sulfide and it is rare.

Based on similarity with other gold deposits in the Juneau Gold Belt, the mineralization at the Crystal Mine is probably about 54 to 56 Ma and the hydrothermal fluids were generated by metamorphic processes. (Goldfarb and others, 1997).

Redman and others (1989) collected 45 samples of the vein. A weighted average of the samples is 7.2 parts per million gold across an average width of 1.7 feet. They calculated an indicated resource of 9,000 tons of material with 0.21 ounce of gold per ton.

**Alteration:**

The amphibolite host rock is commonly silicified and chloritized for 1 inch to 2 feet from the vein.

**Age of mineralization:**

Based on similarity with other gold deposits in the Juneau Gold Belt, the mineralization at the Crystal Mine is probably about 54 to 56 Ma and the hydrothermal fluids were generated by metamorphic processes. (Goldfarb and others, 1997).

**Deposit model:**

Gold-quartz vein in amphibolite.

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

**Production Status:** Yes; small

**Site Status:** Undetermined

**Workings/exploration:**

The Crystal Mine was discovered in 1895 and in 1901 a ten-stamp mill was installed (Spencer, 1906; Redman and others, 1989). By 1905, there were 1,000 feet of underground workings and about 1,210 ounces of gold had been mined. In 1909, the mill processed about 750 tons of ore. Work continued intermittently until 1925. When operations ceased, the mine had 2,350 feet of underground workings, 5 stopes, and a 175-foot upper adit with a stope. There are no production data after 1905 but some additional amount of gold was produced.

**Production notes:**

In 1909, the mill processed about 750 tons of ore. Work continued intermittently until 1925. There is no production data after 1905 but some addition amount of gold was produced.

**Reserves:**

Redman and others (1989) collected 45 samples of the vein. A weighted average of the samples is 7.2 parts per million gold across an average width of 1.7 feet. They calculated an indicated resource of 9,000 tons of material with 0.21 ounce of gold per ton.

**Additional comments:****References:**

Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Wright, 1907; Wright, 1908; Wright, 1909; Knopf, 1911; Knopf, 1912; Brooks, 1913; Martin, 1920; Brooks, 1923; Thorne and Wells, 1956; Berg and Cobb, 1967; Stone and Stone, 1980; Redman, 1988; Redman and others, 1989; Gehrels and Berg, 1992; Goldfarb and others, 1997.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near Gilbert Bay)****Site type:** Prospect**ARDF no.:** SD006**Latitude:** 57.9566**Quadrangle:** SD D-6**Longitude:** 133.7415**Location description and accuracy:**

This old prospect is at an elevation of about 200 feet near an unnamed creek. It is about 2.6 miles south-southeast of the the abandoned town of Snettisham on the northern Snettisham Peninsula. The prospect is about 0.4 mile north-northwest of the center of section 22, T. 45 S., R. 72 E.

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

Little detail is available on the deposits on the west side of Gilbert Bay and in the basin of what is informally called Argenta Creek which heads near peak 1651. However, Redman and others (1989) found an open cut near the shore of Gilbert Bay and a sample that they collected of chlorite phyllite contained 400 ppm copper. Black phyllite about 1.5 miles upstream contained 0.6 ppm gold; a black phyllite in lower Argenta Basin contained 1.4 ppm Ag. (Also see SD007 for prospects at the head of Argenta Basin.) The rocks in this area on the Snettisham Peninsula are part of the Permian to Cretaceous metavolcanic unit of Gehrels and Berg (1992).

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:**

At least one open cut.

**Production notes:****Reserves:****Additional comments:**

**References:**

Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Argenta****Site type:** Prospects**ARDF no.:** SD007**Latitude:** 57.9317**Quadrangle:** SD D-6**Longitude:** 133.7549**Location description and accuracy:**

These old prospects are probably about 0.1 mile northwest of peak 1651 and about 4 miles south of the abandoned town of Snettisham in what is locally called the Argenta Basin. The prospect is about 0.6 mile south-southeast of the center of section 28, T. 45 S., R. 72 E.

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:** Pyrite, pyrrhotite**Gangue minerals:****Geologic description:**

Little is known about the prospects in the Argenta Basin other than that copper, silver, and gold deposits were located there in 1889 (Redman and others, 1989). Work continued through 1892 and two adits were driven, one 150 feet long and the other 125 feet long. There is no record of work after 1901. The rocks in the basin are mafic volcanic rocks and black phyllite, part of the Permian to Cretaceous metavolcanic unit of Gehrels and Berg (1992). Concordant quartz veins with pyrite and pyrrhotite are common.

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

Two adits, one 125 feet long and the other 150 feet long.

**Production notes:****Reserves:****Additional comments:****References:**

Redman, 1988; Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Anmer Creek****Site type:** Occurrence**ARDF no.:** SD008**Latitude:** 57.9205**Quadrangle:** SD D-6**Longitude:** 133.8072**Location description and accuracy:**

Redman and others (1989) panned minor amounts of gold from what is locally called Anmer Creek. The site is plotted at about the middle of the creek in the SE1/4 section 31, T. 45 S., R. 72 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer gold was panned from what is locally called Anmer Creek in the 1980's (Redman and others, 1989). There is no record of earlier work. The rocks in this area consist of black phyllite with scattered, concordant quartz veins; it is part of the Cretaceous to Permian metavolcanic unit of Gehrels and Berg (1992).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer gold (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:**

None other than sampling by government geologists.

**Production notes:****Reserves:****Additional comments:****References:**

Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Carroll Creek****Site type:** Mine**ARDF no.:** SD009**Latitude:** 57.8593**Quadrangle:** SD D-6**Longitude:** 133.7548**Location description and accuracy:**

In the early 1980's, there was placer mining on the lower part of what is locally called Carroll Creek, which is about 2 miles west of Meigs Peak. The mining probably took place about 0.3 mile west of the northeast corner of section 28, T. 46 S., R. 72 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer gold may have been discovered in the 1880's on what is locally called Carrol Creek (Redman and others, 1989). But there was apparently no production until the early and middle 1980's, when a small portable dredge mined in the lower part of the creek. There is no information on the amount of gold that was recovered but it was probably small. The rocks in the area are black phyllite, part of the Permian to Cretaceous metavolcanic unit of Gehrels and Berg (1992).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer gold (Cox and Singer, 1986; model 39a).

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

39a

**Production Status:** Yes**Site Status:** Undetermined**Workings/exploration:**

Small-scale placer mining in the early and middle 1980's.

**Production notes:**

Some, but probably small.

**Reserves:**

**Additional comments:**

**References:**

Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near Meigs Peak)****Site type:** Prospect**ARDF no.:** SD010**Latitude:** 57.8523**Quadrangle:** SD D-6**Longitude:** 133.6830**Location description and accuracy:**

In the early 1980's, Mapco Exploration flew a geophysical survey over an area east of Meigs Peak and staked a large block of claims. The center of the activity was near the center of section 25, R. 46 S., R. 72 E.

**Commodities:****Main:** Ag, Au, Pb, Zn**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

In 1981, Mapco Exploration flew an airborne EM geophysical survey in the vicinity of Meigs Peak (Redman and others, 1989). They subsequently staked a large block of claims over the stream and ridge east of Meigs Peak. There is no public information on the results of their work. The rocks in the area consist of mafic volcanic rocks and black phyllite that locally has conformable quartz veins. They are part of the Permian to Cretaceous metavolcanic unit of Gehrels and Berg (1992). Kimble and other (1984) collected stream-sediment samples in the area that were anomalous in silver, gold, lead, and zinc, but there is no information on mineralization in place in the area.

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:**

Mapco Exploration flew an airborne geophysical survey in the area in 1981 and staked claims but there is no information about the amount and results of their ground exploration.

**Production notes:****Reserves:****Additional comments:**

**References:**

Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Boulder Creek****Site type:** Mine**ARDF no.:** SD011**Latitude:** 57.8335**Quadrangle:** SD D-6**Longitude:** 133.7421**Location description and accuracy:**

A small amount of placer gold was produced in the early 1980's from what is locally called Boulder Creek. The placer is about 0.5 mile north of VABM 'Coke' which is shown on the 1:63,360-scale USGS topographic map. The mine is about about 0.5 mile southwest of the center of section 34, T. 46 S., R. 72 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Gold may have been discovered on what is locally called Boulder Creek as early as 1881 but it was apparently not mined until 1980, when a small cut was worked near the mouth of the creek with a tractor and sluice box (Redman and others, 1989). There is no record of the amount of production but it is probably small. The rocks in the area are mafic volcanic rocks and black phyllite, part of the Permian to Cretaceous metavolcanic unit of Gehrels and Berg (1992).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer gold (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:**

A small amount of placer gold was mined in 1980 with a tractor and sluice box.

**Production notes:**

Some gold was produced in 1980 and perhaps for some years after.

**Reserves:**

**Additional comments:**

**References:**

Redman and others, 1989; Gehrels and Berg, 1992.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Unnamed (near Point Coke)****Site type:** Occurrence**ARDF no.:** SD012**Latitude:** 57.7934**Quadrangle:** SD D-6**Longitude:** 133.6951**Location description and accuracy:**

Several claims were staked near Point Coke where Kimble and others (1984) collected a sample that contained anomalous copper. The site is about 0.5 mile east-southeast of the center of section 14, T. 47 S., R. 72 E.

**Commodities:****Main:** Cu**Other:****Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

At least 5 claims were staked near Point Coke from about 1900 to 1920. Their exact location is unknown but Kimble and others (1984) sampled a 240-foot thick section of schist with quartz veins and minor sulfides at this occurrence. Of the 24 samples, only one, a 2.5-foot-long channel sample across a quartz-feldspar vein has any metal content of significance--300 ppm copper. The rocks in the area are part of the Cretaceous biotite-schist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Probably Cretaceous or younger based on the age of the host rocks.

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:****Production notes:****Reserves:****Additional comments:****References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines,

1984; Redman and others, 1989.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Cook****Site type:** Prospect**ARDF no.:** SD013**Latitude:** 57.9464**Quadrangle:** SD D-5**Longitude:** 133.6410**Location description and accuracy:**

A likely location for this prospect is near the southwest end of Lower Sweetheart Lake near the southeast corner of section 19, T. 45 S., R. 73 E. However, this prospect dates to before 1906 and has apparently not been located since; it may be a mile or so away from the location given here.

**Commodities:****Main:** Au, Pb**Other:****Ore minerals:** Galena**Gangue minerals:** Quartz**Geologic description:**

Spencer (1904, 1906) reported a gold-quartz prospect with galena northwest of Lower Sweetheart Lake near its outlet. Three claims were staked on it in 1902 by Frank Cook. There is no additional information on the prospect and Kimble and others (1984) could not locate it. The rocks in the area are Cretaceous hornblende schist and biotite schist (Brew and Grybeck, 1984).

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

Three claims were staked in 1902.

**Production notes:****Reserves:****Additional comments:****References:**

Spencer, 1904; Spencer, 1906; Wright and Wright, 1906; Berg and Cobb, 1967; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Gold Nest****Site type:** Prospect**ARDF no.:** SD014**Latitude:** 57.9390**Quadrangle:** SD D-5**Longitude:** 133.6013**Location description and accuracy:**

The Gold Nest prospect is at an elevation of about 2,900 feet southeast of the saddle that is about 1.4 miles southeast of the southwest end of Lower Sweetheart Lake. The prospect is near the center of section 28, T. 45 S., R. 73 E.

**Commodities:****Main:** Ag, As, Au, Cu, Pb, Zn**Other:****Ore minerals:** Arsenopyrite, pyrite**Gangue minerals:** Quartz**Geologic description:**

Claims were staked on the Gold Nest prospect in 1912 (Kimble and others, 1984). The deposit consist of a brecciated pyrite-quartz vein 30 inches thick that is exposed in a short open cut. The vein strikes N30E and dips steeply northwest. A chip sample across the vein contained 1.5 part per million (ppm) silver, 0.10 ppm gold, 70 ppm copper, 70 ppm lead, and 130 ppm zinc. Boulders of a quartz vein with arsenopyrite were found about 200 feet above the breccia vein. A select sample of the boulder contained 0.5 ppm silver, 7.0 ppm gold, 40 ppm copper, 950 ppm lead, and 75 ppm zinc. The rocks in the area are part of the Cretaceous biotite-schist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Cretaceous or younger based on the age of the host rock.

**Deposit model:**

Pyrite-quartz vein.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

The only working is a short open cut on a claim.

**Production notes:****Reserves:**

**Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to prospecting and mining.

**References:**

Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Arm****Site type:** Prospect**ARDF no.:** SD015**Latitude:** 57.9280**Quadrangle:** SD D-5**Longitude:** 133.5876**Location description and accuracy:**

The Arm Group of claims is in the lower part of the steep gorge that drains southeast into the sharp elbow of Tracy Arm. The site is plotted near the shoreline, about 2.1 miles southeast of the southwest end of Lower Sweetheart Lake. It is in the NE1/4 section 33, T. 45 S., R. 73 E.

**Commodities:****Main:****Other:****Ore minerals:** Chalcopyrite, pyrrhotite**Gangue minerals:****Geologic description:**

The Arm Group of claims was active as of 1974. Conspicuous iron-stained gneiss occurs along a steep gully. Samples of float from the gully contained up to 3 parts per million (ppm) silver, 230 ppm copper and 400 ppm zinc. Some pieces of the float contained visible, sparsely disseminated pyrrhotite and microscopic chalcopyrite. The rocks in the area are part of the Cretaceous biotite schist and gneiss unit of Brew and Grybeck (1984).

**Alteration:**

None defined; rocks are iron stained, probably due to weathering of pyrrhotite.

**Age of mineralization:**

In Cretaceous metamorphic rocks; the age of the protolith is uncertain.

**Deposit model:**

Gneiss with sparsely disseminated sulfides.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

No workings; claims were active in 1974 and possibly later.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman and others, 1989.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Sweetheart Ridge****Site type:** Prospect**ARDF no.:** SD016**Latitude:** 57.9192**Quadrangle:** SD D-5**Longitude:** 133.6274**Location description and accuracy:**

The center of the Sweetheart Ridge prospect is at an elevation of about 2,800 feet about 1.9 miles south of the southwest end of Lower Sweetheart Lake. The mineralization extends for more than 2,000 feet in a north-northwest direction. The center is about 0.4 mile south of the center of section 32, T. 45 S., R. 73 E. Figure D-222 of Redman and others (1989) is a map of the deposit.

**Commodities:****Main:****Other:****Ore minerals:** Chalcopyrite, galena, pyrite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

Claims were staked on or near the Sweetheart Ridge prospect in the 1890's but little was known about the deposit until it was rediscovered during a Wilderness study by the U.S. Bureau of Mines and U.S. Geological Survey in 1974 (Kimble and others, 1984; Redman and others, 1989). The deposit consists of stratiform mineralization in a zone about 200 feet wide and 10,000 feet long that strikes about N20W and dips about 65-85W. The host rocks have been variously described. Kimble and others (1984) describe them as iron-stained schist and gneiss with gray chlorite schist, part of the Cretaceous hornblende schist unit of Brew and Grybeck (1984). Redman and others (1989) describe the host rocks as mainly greenstone interlayered with felsic schist, quartz-sericite schist, and biotite-feldspar schist. Newberry and others (1997) suggest that the deposit is Devonian but query that age.

Redman and others (1989) defined four types of mineralization: 1) lenses of massive sulfides, mainly chalcopyrite and sphalerite with subordinate galena; 2) disseminated pyrite and chalcopyrite outward from the massive sulfide lenses; 3) chalcopyrite in concordant quartz veins and veinlets; and 4) stringer and blebs of chalcopyrite. The massive sulfide lenses occur in a distinct horizon near the top of a muscovite-schist unit. The massive sulfides occur in lenses, the largest of which is about 0.75 by 6 feet in section that can be traced for 200 feet. Drilling indicates that the massive-sulfide mineralization increases at depth. For instance, the best mineralized zone sampled by Kimble and others (1984) is 5.5 feet thick at the the surface; it contained 0.93 percent copper, 0.52 percent zinc, 0.23 percent lead, and 10.3 parts per million gold. Later drilling by Mapco Exploration cut the same lens at a depth of 150 feet where it contained 1.1 percent copper, 1.58 percent zinc, 0.63 percent lead, and 9.3 ppm gold. The chalcopyrite-quartz veins are thin--typically less than 1 inch thick--and usually are associated with chalcopyrite stringers. The chalcopyrite stringers are extensive through the length and width of the zone.

The Sweetheart Ridge prospect was staked by Mapco Exploration in 1978 and they explored the deposit until 1982. They drilled several thousand feet of hole in the belt. (Redman and others (1989) show the location of two holes; Newberry and others (1997) refer to 14 holes.) As a result of the Mapco drilling and surface sampling, Redman and others (1989) estimate an inferred resource for the prospect of 45,000 tons of material that contain an average of 0.22 ounce of gold per ton, 0.9 percent zinc, 0.9 percent copper, and 0.45 percent lead.

**Alteration:****Age of mineralization:**

Brew and Grybeck (1984) place the deposit in Cretaceous metamorphic rocks; Newberry and others (1997) suggest that the deposit and the age of the protolith of the host rocks is 'Devonian?'

**Deposit model:**

Metamorphosed volcanogenic massive-sulfide deposit.

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

**Production Status:** None

**Site Status:** Undetermined

**Workings/exploration:**

Some open cuts and pits; several thousand feet of hole were diamond drilled from 1978 to 1982.

**Production notes:****Reserves:**

As a result of the Mapco drilling and surface sampling, Redman and others (1989) estimate an inferred resource for the prospect as 45,000 tons of material that contain an average of 0.22 ounce of gold per ton, 0.9 percent zinc, 0.9 percent copper, and 0.45 percent lead.

**Additional comments:**

The prospect is along the boundary of the Tracy Arm-Ford Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman and others, 1989; Newberry and others, 1997.

**Primary reference:** Kimble and others, 1984; Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (west side of Tracy Arm)****Site type:** Occurrence**ARDF no.:** SD017**Latitude:** 57.9190**Quadrangle:** SD D-5**Longitude:** 133.5976**Location description and accuracy:**

Kimble and others (1984) sampled several altered zones along the west side of Tracy Arm west of its prominent elbow. The sample sites are centered about 0.4 mile south of the center of section 33, T. 45 S., R. 73 E.

**Commodities:****Main:** Ag**Other:** Mo**Ore minerals:** Pyrite**Gangue minerals:** Quartz**Geologic description:**

This occurrence consists of several areas of weathered, iron-stained schist with disseminated pyrite and irregular quartz stringers that were sampled by Kimble and others (1984). Several claims were reported in the area before 1900 and several others were staked between 1915 and 1920, but their locations are obscure. Kimble and others (1984) collected two samples across 40 feet of iron-stained schist; both contained 0.5 part per million silver and 20 ppm molybdenum.

**Alteration:**

Iron staining, probably due to weathering of disseminated pyrite.

**Age of mineralization:****Deposit model:**

Iron-stained schist with disseminated pyrite and barely anomalous silver and molybdenum.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Only sampling by government engineers.

**Production notes:****Reserves:****Additional comments:**

The occurrence is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration

and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Tracy Arm; Jingle-Jangle; Neglected Prize****Site type:** Prospect**ARDF no.:** SD018**Latitude:** 57.9089**Quadrangle:** SD D-5**Longitude:** 133.5704**Location description and accuracy:**

The center of the Tracy Arm prospect is at an elevation of about 820 feet , about 0.7 mile south of the southeast point at the elbow of Tracy Army. It is near the center of section 3, T. 46 S., R. 73 E. The mineralization forms a narrow belt that extends at least 800 feet in a south-southeast direction.

**Commodities:****Main:** Ag, Au, Cu, Zn**Other:****Ore minerals:** Chalcopyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Jingle Jangle prospect is a narrow band of massive-sulfide mineralization that extends for at least 1,100 feet (Buddington, 1925; Roehm, 1942 [PE 115-1]; Gault and Fellows, 1943; Kimble and others, 1984). The deposit was discovered in 1916 and has been explored by 22 shallow pits and a 16-foot shaft. The deposit is parallel to the foliation of the host rock which is hornblende-plagioclase and hornblende-biotite gneiss which strikes N20-30W and dips nearly vertically. The rocks are part of the Cretaceous biotite-schist unit of Brew and Grybeck (1984). The massive-sulfide layer varies from about 0.5 to 6 feet thick and consists mainly of banded pyrrhotite, sphalerite, and chalcopyrite in a quartz matrix. Kimble and others (1984) collected 17 channel samples across the band along its length. The samples contain 0.2 to 5.7 percent copper and 0.02 to 12.0 percent zinc. The highest grade portion of the band extends for about 300 feet and has an average width of 5.2 feet. The grade of this portion is 1.42 percent copper, 3.42 percent zinc, 0.43 ounce of silver per ton, and 0.008 ounce of gold per ton. Kimble and others (1984) calculated that this portion contained about 187,000 tons of material with a 'gross in-place value of between \$1 million and \$10 million' (at 1976 metal values).

**Alteration:****Age of mineralization:**

The deposit is a band of mineralization in Cretaceous gneiss; however, the age of the protolith is uncertain.

**Deposit model:**

Metamorphosed, volcanogenic massive-sulfide deposit.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

This prospect has been explored by 22 shallow cuts and a 16-foot shaft. In addition, a succession of government geologists have examined the prospect since 1925.

**Production notes:****Reserves:**

The highest grade portion of the band extends for about 300 feet and has an average width of 5.2 feet. The grade of this portion is 1.42 percent copper, 3.42 percent zinc, 0.43 ounce of silver per ton, and 0.008 ounce of gold per ton. Kimble and others (1984) calculated that this portion contained about 187,000 tons of material with a 'gross in-place value of between \$1 million and \$10 million' at 1976 metal prices.

**Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to prospecting and mining.

**References:**

Chapin, 1916; Buddington, 1925; Buddington and Chapin, 1929; Roehm, 1942 (PE 115-1); Gault and Fellows, 1953; Twenhofel, 1953; Herreid, 1962; Race, 1962; MacKevett and Blake, 1964; Berg and Cobb, 1967; Eakins, 1975; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Newberry and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near southeast tip of Snettisham Peninsula)****Site type:** Occurrences**ARDF no.:** SD019**Latitude:** 57.8193**Quadrangle:** SD D-5**Longitude:** 133.6542**Location description and accuracy:**

Redman and others (1989) sampled several creeks about 2 miles north-northwest of the southeast tip of the Snettisham Peninsula and panned minor amount of gold. The occurrences are about 0.3 mile south of the center of section 6, T. 47 S., R. 73 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Redman and others(1989) identify the rocks in the area as marble cut by quartz veins, and argillite and mafic metavolcanic rocks. They collected 7 samples; the highest gold value was 0.1 part per million and there were no other metals of note in the samples. However, they did pan small amounts of gold from several of the small creeks in the area.

**Alteration:****Age of mineralization:**

Placer gold is probably Quaternary.

**Deposit model:**

Gold placer (Cox and Singer, 1986; model 39a).

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

39a

**Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

Only sampling of rocks and panning of creeks by government geologists.

**Production notes:****Reserves:****Additional comments:**

**References:**

Redman and others, 1989.

**Primary reference:** Redman and others, 1989

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Unnamed (west of Mount Sumdum)****Site type:** Occurrence**ARDF no.:** SD020**Latitude:** 57.8081**Quadrangle:** SD D-5**Longitude:** 133.4858**Location description and accuracy:**

This occurrence is about 1.8 miles west of Mount Sumdum at an elevation of about 4,000 feet. It is about 0.2 mile east of the center of section 7, T. 47 S., R. 74 E.

**Commodities:****Main:** Ag**Other:****Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

This occurrence consists of a quartz vein in Cretaceous gneiss near its contact with Tertiary or Cretaceous tonalite (Brew and Grybeck, 1984; Kimble and others, 1984). A 0.8-foot channel sample across the vein contained 30 parts per million silver.

**Alteration:****Age of mineralization:**

Probably Cretaceous or younger based on the age of the host rock.

**Deposit model:**

Silver in quartz vein.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:****Production notes:****Reserves:****Additional comments:**

The occurrence is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines,

1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Powers Creek****Site type:** Mine**ARDF no.:** SD021**Latitude:** 57.7647**Quadrangle:** SD D-5**Longitude:** 133.5121**Location description and accuracy:**

Powers Creek has been intermittently mined for placer gold from 1869 to at least 1950 and has probably produced small amounts of gold. There is no record of where the mining took place and the site is arbitrarily plotted about 0.4 mile above the mouth of the creek, near the middle of the E1/2 section 25, T. 47 S., R. 73 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Powers Creek has been intermittently mined for placer gold from 1869 to at least 1950 and has probably produced small amounts of gold (Spencer, 1906; Kimble and others, 1984). There is no record of where the mining took place or how much gold was produced, and there is little evidence of workings along the creek. The total production was probably very small.

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (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 has been mined intermittently from Powers Creek from 1869 to at least 1950. The location of the mining is uncertain.

**Production notes:**

There is no record of the amount of gold produced from Powers Creek but it is probably small.

**Reserves:**

**Additional comments:**

The mine is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Spencer, 1906; Cobb, 1973; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (on upper Powers Creek)****Site type:** Occurrence**ARDF no.:** SD022**Latitude:** 57.7710**Quadrangle:** SD D-5**Longitude:** 133.4868**Location description and accuracy:**

This altered zone is at an elevation of about 800 feet, about 0.4 mile southwest of the terminus of the Sumdum Glacier. It is about 0.5 mile north-northeast of the center of section 30, T. 47 S., R. 74 E.

**Commodities:****Main:** Ag**Other:** Mo, Zn**Ore minerals:** Chalcopyrite, pyrite, pyrrhotite**Gangue minerals:****Geologic description:**

This occurrence is an zone of rusty, siliceous, chlorite schist that is southwest of the toe of the Sumdum Glacier; Brew and Grybeck (1984) assign the schist a Cretaceous metamorphic age. Kimble and others (1984) systematically sampled the zone with a series of 11 samples that extended for 1,150 feet perpendicular to the layering of the metamorphic rocks. All 11 samples contained 0.5 to 1.0 part per million (ppm) silver; 3 contained 15-30 ppm molybdenum, and 2 contained 150-380 ppm zinc. Many of the rocks in the iron-stained zone have sparse disseminated sulfides. The sulfides are mainly pyrrhotite although trace chalcopyrite also occurs. The iron staining is probably due to the weathering of the pyrrhotite.

**Alteration:**

Iron-staining probably due to weathering of pyrrhotite.

**Age of mineralization:**

Occurs in schist of Cretaceous (metamorphic) age.

**Deposit model:**

Sparse pyrrhotite and rare chalcopyrite in gneiss.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

None beyond sampling by government geologists.

**Production notes:****Reserves:**

**Additional comments:**

The occurrence is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Sumdum****Site type:** Prospect**ARDF no.:** SD023**Latitude:** 57.7848**Quadrangle:** SD D-5**Longitude:** 133.4513**Location description and accuracy:**

The Sumdum copper-zinc prospect consists of a belt of massive-sulfide mineralization that extends northwest for more than 2 miles. Much of the belt is under the Sumdum and other nearby glaciers. The center of the belt is near the northeast corner of section 20, T. 47 S., R. 74 E. (under the Sumdum Glacier).

**Commodities:****Main:** Ag, Cu, Zn**Other:** Pb**Ore minerals:** Azurite, bornite, chalcocite, chalcopyrite, galena, malachite, pyrite, pyrrhotite, sphalerite**Gangue minerals:****Geologic description:**

The Sumdum copper-zinc deposit consist of bands of disseminated and massive sulfide mineralization scattered along a belt 10,000 or more feet long and 2,000 feet wide (MacKevett and Blake, 1964; Kimble and others, 1984). The host rocks are interlayered biotite-quartz-plagioclase gneiss and hornblende-plagioclase gneiss. This belt of gneiss is bordered to the northeast by the contact of the Tertiary or Cretaceous tonalite sill that marks the edge of the Coast Plutonic complex in southeastern Alaska; it is bordered to the southwest by Cretaceous schist (Brew and Grybeck, 1984).

The mineralized bands generally strike northwest and dip steeply, and vary from 1 foot to 50 feet thick. The ore minerals consist mainly of disseminated and massive layers of pyrrhotite and pyrite with chalcopyrite and sphalerite and small amounts of bornite, chalcocite, malachite, azurite, and galena. The gneiss is isoclinally folded with numerous small folds on the limbs of the large folds and some of the mineralization is localized on the crests of the small folds.

The deposit was discovered in 1958; 62 lode claims were staked in 1958 and 1959 by City Services Minerals, who dug 300 feet of open cuts and drilled 14 diamond drill holes totaling 5,400 feet (Seraphim, 1959; MacKevett and Blake, 1964; Kimble and others, 1984). The deposit is on patented claims.

The bands of mineralization are only discontinuously exposed on the surface and much of the intervals between the outcrops of mineralization is covered by glacial ice and rubble. However, the diamond drilling indicates that at least several of the bands can be traced for several hundred feet in the subsurface.

Kimble and others (1984) identify a total inferred resource of 26,700,000 tons of material with an average width of 31.4 feet and an average grade of 0.57 percent copper, 0.37 percent zinc, and 0.30 ounce of silver per ton. However, there are smaller, higher grade portions. One block of indicated ore mineralization extends for 575 feet along strike, has an average width of 12.7 feet, and contains 1.18 percent copper, 0.15 percent zinc, and 0.25 ounce of silver per ton. Another block of inferred ore extends for 600 feet along strike, has an average width of 12.5 feet, and contains 1.15 percent copper and 0.37 percent zinc.

**Alteration:****Age of mineralization:**

Remobilized during Cretaceous metamorphism of the gneiss host rock; the age of the protolith uncertain but the deposit may have originally been syngenetic.

**Deposit model:**

Metamorphosed, volcanogenic Ag-Cu-Zn massive sulfide deposit?

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

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

The deposit was discovered in 1958; 62 lode claims were staked in 1958 and 1959 by City Services Minerals who dug 300 feet of open cuts and drilled 14 diamond drill holes totaling 5,400 feet (Seraphim, 1959; MacKevett and Blake, 1964; Kimble and others, 1984). The deposit is on patented claims.

**Production notes:****Reserves:**

Kimble and others (1984) identify a total inferred resource of 26,700,000 tons of material with an average width of 31.4 feet and an average grade of 0.57 percent copper, 0.37 percent zinc, and 0.30 ounce of silver per ton. However, there are smaller, higher grade portions. One block of indicated ore extends for 575 feet along strike, has an average width of 12.7 feet, and contains 1.18 percent copper, 0.15 percent zinc, and 0.25 ounce of silver per ton. Another block of inferred ore extends for 600 feet along strike, has an average width of 12.5 feet, and contains 1.15 percent copper and 0.37 percent zinc.

**Additional comments:**

The Sumdum deposit is covered by patented claims but the surrounding area is part of the Tracy Arm-Fords Terror Wilderness Area which is closed to prospecting and mining.

**References:**

Seraphim, 1959; Race, 1962; MacKevett and Blake, 1964; Noel, 1966; Berg and Cobb, 1967; Eakins, 1975; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Newberry and others, 1997.

**Primary reference:** MacKevett and Blake, 1964; Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Point Astley****Site type:** Prospect**ARDF no.:** SD024**Latitude:** 57.7091**Quadrangle:** SD C-5**Longitude:** 133.6328**Location description and accuracy:**

The mineralization and workings of what is commonly called the Point Astley prospect occur discontinuously for about 1,500 feet near the shoreline southeast of Point Astley. The center of the workings is near the mine shown on the USGS 1:63,360 scale topographic map about a mile southeast of Point Astley. The location is accurate. The location of the workings and the mineral occurrences are shown on Figures 24 and 25 of Kimble and others (1984).

**Commodities:****Main:** Ag, Cu, Pb, Zn**Other:****Ore minerals:** Bornite, chalcocite, chalcopyrite, covellite, digenite, galena, pyrite, silver, sphalerite**Gangue minerals:****Geologic description:**

The Point Astley prospect has been known since about 1900 (Spencer, 1906). It was intermittently explored by a succession of companies through 1984 (for details, see Spencer, 1906; Buddington, 1925; Herreid, 1962; Race, 1962; Kimble and others, 1984; Redman, 1988). There are two centers of mineralization separated by 700 feet, but much of the area is heavily vegetated and the continuity or extension of the known mineralization is uncertain. The prospect has been developed by 4, now-flooded shafts, one of which probably has a crosscut at depth, and 2 short adits. All of the workings date from before 1925. There has been no production but there was a test shipment to a smelter in about 1925.

The deposit consists of disseminated sulfides and small lenses of massive sulfides oriented along the foliation of the host rock. The massive sulfide lenses are no more than 3 feet long and 1 foot thick. The main sulfides are pyrite and sphalerite with minor galena and chalcopyrite. Locally in the richer portions of the deposit, bornite, chalcocite, covellite and digenite occur; native silver is reported. The host rock is green chloritic phyllite and black slaty phyllite, part of the Cretaceous greenschist unit of Brew and Grybeck (1984). Locally the sulfides have been remobilized and concentrated at the noses of small folds in the metamorphic rocks.

The northwest zone of mineralization has been explored by two shafts and a short the adit. Kimble and others (1984) sampled a 10-foot section of the mineralized rocks along the shoreline. A sample contained 0.48% copper, 0.11 percent lead, 1.65 percent zinc, and 0.2 ounces of silver per ton. A select sample from a lens of pyrite and sphalerite about 1.1 foot thick contained 0.44 per cent copper, 0.31 percent lead, 9.0 percent zinc, 0.17 ounce of gold per ton, and 1.45 ounces of silver per ton.

The other zone of mineralization is about 700 feet to the southeast near the shoreline. It has been explored by a shaft and two adits, only one of which was accessible to Kimble and others (1984). They collected a 30-foot sample that contained 0.07 percent copper, 1.72 percent zinc, and 0.18 percent silver. (The 1984 work by Kimble and others was restricted to the mineralization that could be seen then; few of the workings were accessible and they may have exposed higher grade mineralization.)

**Alteration:**

**Age of mineralization:**

Unclear. The primary mineralization was remobilized during the Cretaceous event that formed the metamorphic host rocks. The age of the protolith is uncertain, as is whether the primary mineralization was syngenetic or epigenetic.

**Deposit model:**

Metamorphosed, volcanogenic massive sulfide deposit?

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

**Production Status:** None

**Site Status:** Probably inactive

**Workings/exploration:**

The prospect has been developed by 4, now-flooded shafts, one of which probably has a crosscut at depth, and 2 short adits. All of the workings date from before 1925. A succession of companies have looked at or owned the property into the 1980's but there probably has been no substantial exploration since the 1920's.

**Production notes:**

No recorded production; there was a test shipment to a smelter in 1925.

**Reserves:****Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Spencer, 1906; Wright, 1909; Martin, 1920; Buddington, 1925; Buddington and Chapin, 1929; Wedow and others, 1952; Houston and others, 1958; Herreid, 1962; Race, 1962; MacKevett and Blake, 1964; Berg and Cobb, 1967; Eakins, 1975; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (on Bushy Islands)****Site type:** Occurrence**ARDF no.:** SD025**Latitude:** 57.7073**Quadrangle:** SD C-5**Longitude:** 133.4369**Location description and accuracy:**

This occurrence is on the small island at the northwest end of the Bushy Islands; it is near the center of section 16, T. 48 S., R. 74 E.

**Commodities:****Main:** Ag, Cu, Zn**Other:****Ore minerals:** Chalcopyrite**Gangue minerals:** Quartz**Geologic description:**

Copper staining and minor chalcopyrite are in quartz stringers that follow the foliation of Cretaceous phyllite (Brew and Grybeck, 1984; Kimble and others, 1984). A 5.2-foot chip sample across the mineralization contained 700 ppm copper, 1,600 ppm zinc, and 0.015 ounce of silver per ton.

**Alteration:****Age of mineralization:**

Cretaceous or younger based on the age of the host rock.

**Deposit model:**

Quartz stringers with chalcopyrite in phyllite.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Inactive**Workings/exploration:**

None other than sampling by government geologists.

**Production notes:****Reserves:****Additional comments:**

The occurrence is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Portland****Site type:** Prospect**ARDF no.:** SD026**Latitude:** 57.6909**Quadrangle:** SD C-5**Longitude:** 133.3761**Location description and accuracy:**

The Portland prospect is at an elevation of about 175 feet; it is about 2.5 miles east-southeast of the south tip of Sumdum Island and 0.3 mile north of VABM 'Not' which is shown on the USGS 1:63,360-scale topographic map. The prospect is about 0.2 mile south of the center of section 23, T. 48 S., R. 74 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Portland prospect was discovered before 1906 (Spencer, 1906; Kimble and others, 1984) and three adits were driven on it between 1890 and 1910. There is a total of 305 feet of workings in the three adits that are 7, 109, and 189 feet long. The deposit is in muscovite-quartz schist and phyllite with numerous quartz stringers and lenses parallel to the foliation. The schist contains pyrite and pyrrhotite with minor galena, sphalerite, and chalcopyrite, as disseminations and in thin stringers parallel to the foliation. The schist and phyllite are part of the Cretaceous phyllite unit of Brew and Grybeck (1984).

Kimble and others (1984) systematically sampled the adits in a series of 23 channel samples that were collected perpendicular to the trend of the mineralization. The best was a sample 8 foot long that contained 0.10 part per million (ppm) gold, 10 ppm silver, 930 ppm copper, 1,800 ppm lead, and 3,400 ppm zinc. Most samples were much leaner.

**Alteration:**

None mentioned but schist is iron stained probably due to weathering.

**Age of mineralization:**

In schist and phyllite of Cretaceous (metamorphic) age; the age of the protolith is uncertain.

**Deposit model:**

Metamorphosed volcanogenic massive sulfide?

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

The Portland prospect was discovered before 1906 (Spencer, 1906; Kimble and others, 1984) and three adits were driven on it between 1890 and 1910. There is a total of 305 feet of workings in the three adits

that are 7, 109, and 189 feet long.

**Production notes:**

**Reserves:**

**Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Spencer, 1906; Wright and Wright, 1906; Herreid, 1962; Race, 1962; Berg and Cobb, 1967; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Croney****Site type:** Prospect**ARDF no.:** SD027**Latitude:** 57.6433**Quadrangle:** SD C-5**Longitude:** 133.4916**Location description and accuracy:**

The Croney the adit is about 0.1 mile south of peak 2770 or about 2 miles south of the abandoned town of Sumdum at the head of Sanford Cove. The adit is about 0.6 mile south-southeast of the center of section 2, T. 49 S., R. 74 E.

**Commodities:****Main:** Ag**Other:****Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

The Croney claim, which adjoins the Sumdum Chief Mine (SD028) was patented in 1900 and consists of an open cut and a 27-foot adit (Kimble and others, 1984). The deposit consists of a stringer zone of quartz that strikes N83E and dips 78N. The zone is parallel to the bedding of the host rock, which is Cretaceous graphitic limestone (Brew and Grybeck, 1984). Several samples were devoid of substantial metal values but all contained 1 to 3 parts per million silver.

**Alteration:****Age of mineralization:**

Cretaceous or younger based on the age of the host rock.

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:**

The only workings are a trench and a 27-foot adit.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Sumdum Chief****Site type:** Mine**ARDF no.:** SD028**Latitude:** 57.6459**Quadrangle:** SD C-5**Longitude:** 133.4697**Location description and accuracy:**

This site is plotted at the portal of the main the adit of the Sumdum Chief Mine but the underground workings extend for about 4,000 feet to the southwest. The portal is about 1.8 mile south-southeast of the abandoned town of Sumdum at the head of Sanford Cove. The portal is about 0.3 mile south of the center of section 1, T. 49 S., R. 74 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, gold, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Sumdum Chief Mine was discovered in 1889 and there was a small test shipment in 1890 (Becker, 1898; Spencer, 1906; Roppel, 1971; Kimble and others, 1984). The deposit consists of two veins, the Bald Eagle and the Sumdum Chief. Originally these were separate properties but were consolidated into a single mine in 1899. Most of the mining took place from 1895 to 1903 when the ore bodies were exhausted and diamond drilling was unsuccessful in finding additional ore. There has been no mining since 1903 although there was some exploration from the main haulage level in 1907 to exploit other claims nearby. A 10-stamp mill was erected in 1895 and the mine was serviced by an aerial tramway and a corduroy road from the community of Sumdum on Sanford Cove to the mill. The veins were mined from a 3,500 haulage drift with an the adit at about 750 feet elevation. Both veins were stoped from this haulage drift to the surface. From 1895 to 1903, the mine produced 24,000 ounces of gold and about the same amount of silver; the average grade of the ore was about 0.39 ounce of gold per ton.

The Bald Eagle vein was intersected by the main haulage level at a depth of about 500 feet where it was about 20 feet wide and contained 0.5 to 1.0 ounce of gold per ton (Spencer, 1906; Buddington, 1925; Kimble and others, 1984). The Sumdum Chief vein was intersected at a depth of about 1,200 feet where it was only a narrow vein; however, on the surface it was 3 feet wide. Both deposits consist of quartz veins and stringers with minor amount of pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, and gold. The best values occurred in pockets and where small transverse veins intersected the main veins. The overall trend of the workings indicate that the veins strike about N80E and dip steeply. The veins generally were parallel to the foliation of the host rocks which were variously described as green slate, black bituminous slate, slate, and graphitic limestone; all are part of the Cretaceous green schist unit of Brew and Grybeck (1984). The deposit at the Sumdum Chief Mine has been dated at 55.1 plus/minus 0.2 million years by Goldfarb and others (1997); like others in the Juneau Gold Belt it is thought to have been formed by fluids generated by Cretaceous metamorphism that were then forced to the site of deposition by the emplacement of the Coast Range Batholith.

When Kimble and others (1984) did their mineral survey of the area, almost all of the old workings were caved and the area was heavily timbered. However, at an elevation of about 1,600 feet, they discovered the top of a stope on what is probably the Sumdum Chief vein. A 1-foot chip sample across the vein contained 0.88 ounce of silver per ton, 0.70 ounce of gold per ton, 940 parts per million (ppm) copper, 1,900 ppm

lead, and 3,100 ppm zinc.

**Alteration:**

**Age of mineralization:**

The deposit at the Sumdum Chief Mine has been dated at 55.1 plus/minus 0.2 million years by Goldfarb and others (1997).

**Deposit model:**

Low-sulfide, gold-quartz vein (Cox and Singer, 1986; model 36a).

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

36a

**Production Status:** Yes; medium

**Site Status:** Probably inactive

**Workings/exploration:**

The Sumdum Chief Mine was discovered in 1889 and there was a small test shipment in 1890 (Becker, 1898; Spencer, 1906; Roppel, 1991; Kimble and others, 1994). The deposit consists of two veins, the Bald Eagle and the Sumdum Chief. Originally these were separate properties but they were consolidated into a single mine in 1899. Most of the mining took place from 1895 to 1903 when the ore bodies were exhausted and diamond drilling was unsuccessful in finding additional ore. There has been no mining since 1903 although there was some exploration from the main haulage level in 1907 to exploit other claims nearby. A 10-stamp mill was erected in 1895 and the mine was serviced by an aerial tramway and a corduroy road from the community of Sumdum on Sanford Cove to the mill. The veins were mined from a 3,500 haulage drift with an adit at about 750 feet in elevation. Both veins were stoped from this haulage drift to the surface.

**Production notes:**

From 1895 to 1903, the mine produced 24,000 ounces of gold and about the same amount of silver; the average grade of the ore was about 0.39 ounce of gold per ton.

**Reserves:**

**Additional comments:**

The Sumdum Chief Mine is on patented ground but the surrounding area is part of the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Becker, 1898; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Wright, 1907; Wright, 1908; Buddington, 1925; Buddington and Chapin, 1929; Herreid, 1962; Race, 1962; Berg and Cobb, 1967; Roppel, 1971; Eakins, 1975; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Spencer, 1906; Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (northeast of Taylor Lake)****Site type:** Occurrence**ARDF no.:** SD029**Latitude:** 57.6229**Quadrangle:** SD C-5**Longitude:** 133.3933**Location description and accuracy:**

This occurrence is about 1.1 mile north-northeast of the north end of Taylor Lake. It is about 0.2 mile northwest of the center of section 16, T. 49 S., R. 75 E.

**Commodities:****Main:****Other:****Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

A 2- to 3-foot-thick quartz vein is exposed on a cliff on the bank of a stream. The vein appears to crosscut the foliation of the graphitic schist host rock (Kimble and others, 1984). A representative sample of the vein contained 15 ppm silver, 0.15 ppm gold, 1,300 ppm lead, and 250 ppm zinc. The host rocks are part of the Cretaceous hornblende schist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Cretaceous or younger based on the age of the host rock.

**Deposit model:**

Low-sulfide, gold-quartz vein (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:**

No work other than sampling by government geologists.

**Production notes:****Reserves:****Additional comments:**

The occurrence is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Bluebird****Site type:** Prospect**ARDF no.:** SD030**Latitude:** 57.6070**Quadrangle:** SD C-5**Longitude:** 133.3841**Location description and accuracy:**

The Bluebird prospect is at an elevation of about 480 feet, about 0.2 mile southeast of the north end of Taylor Lake and near the center of section 21, T. 49 S., R. 75 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, pyrite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Bluebird claim was located in 1903 on a quartz vein 2 feet thick. The only workings on the prospect are an open cut about 5 feet by 5 feet in size on the bank of a creek and a flooded shaft about 180 feet east-southeast of the open cut (Kimble and others, 1984). The open cut exposes a 1.6-foot-thick quartz vein that strikes N40W and dips 70SW in calcareous schist that strikes N22W and dips 70SW. There is abundant pyrite, sphalerite, chalcopyrite, and galena in the hanging wall of the vein. A 1.5-foot-long channel sample across the vein contained 17.1 parts per million (ppm) silver, 20 ppm gold, 2,000 ppm lead, and 1,300 ppm zinc. A 0.3-foot channel sample through the sulfide-rich hanging wall contained 296.5 ppm silver, 2.1 ppm gold, 1,300 ppm copper, 3,300 ppm lead, and 2,900 ppm zinc. The shaft does not expose mineralization but the size of its dump indicates about 400 feet of underground workings. A select sample of quartz-rich material from the dump contained 3 ppm silver, 400 ppm copper, 840 ppm lead, and 2,800 ppm zinc. The rocks in the area are part of the Cretaceous green schist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Cretaceous or younger based on the age of the host rocks.

**Deposit model:**

Polymetallic vein (Cox and Singer, 1986; model 22c).

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

22c

**Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

The prospect was explored by a small open cut and a flooded shaft that had about 400 feet of underground workings.

**Production notes:**

**Reserves:**

**Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Walhalla****Site type:** Prospect**ARDF no.:** SD031**Latitude:** 57.5949**Quadrangle:** SD C-5**Longitude:** 133.3910**Location description and accuracy:**

This site is at an elevation of about 500 feet where the Walhalla claim was once staked on a prominent iron-stained zone. It is about 0.9 mile east of the mouth of Taylor Creek and about 0.5 mile southeast of the northwest corner of section 28, T. 49 S., R. 75 E.

**Commodities:****Main:** Ag, Mo**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

The Walhalla claim was staked over a prominent red-stained cliff of altered diorite in 1930 (Brew and Grybeck, 1984; Kimble and others 1984). Kimble and others (1984) collected a 28-foot chip sample at the base of this cliff. It contained only 30 parts per million (ppm) molybdenum and 0.7 ppm silver.

**Alteration:**

Red staining on diorite.

**Age of mineralization:**

Cretaceous or younger based on the age of the diorite host rock.

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

None, other than surface sampling.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Mildred****Site type:** Prospect**ARDF no.:** SD032**Latitude:** 57.5970**Quadrangle:** SD C-5**Longitude:** 133.3543**Location description and accuracy:**

The Mildred prospect is about 0.7 mile west-northwest of the mouth of Spruce Creek at the head of Windham Bay. It is about 0.2 mile southwest of the northeast corner of section 27, T. 49 S., R. 75 E. Figure 28 of Kimble and others (1984) is a map of the Mildred adit.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Mildred prospect was active between about 1895 and 1905 when a 545-foot adit was driven on the property (Spencer, 1906; Kimble and others, 1984). The adit cut a 50-foot-wide quartz stringer zone and a short quartz vein about 0.3 feet thick. The vein strikes N23W and dips 45SW. The host rock is muscovite schist of Cretaceous age (Brew and Grybeck, 1984). Kimble and others (1984) sampled the adit but most samples showed only traces of gold. Their best sample was a 5.0-foot-long chip sample that contained 0.01 part per million gold.

**Alteration:****Age of mineralization:**

Quartz veins cut Cretaceous schist.

**Deposit model:**

Low-sulfide gold-quartz vein (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:**

The prospect was explored by a 545-foot adit driven before 1906. There has apparently been little or no work on the property since then, other than passing examinations by private industry and the government work as part of a Wilderness survey in the 1970's.

**Production notes:**

**Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Gertrude****Site type:** Prospect**ARDF no.:** SD033**Latitude:** 57.5919**Quadrangle:** SD C-5**Longitude:** 133.3373**Location description and accuracy:**

The Gertrude prospect is about 0.3 mile south of the mouth of Spruce Creek at the head of Windham Bay. It is at or near the adit symbol shown on the USGS 1:63,360-scale topographic map about 0.5 mile south-east of the northwest corner of section 26, T. 49 S., R. 75 E. There is another adit on the Gertrude prospect nearby at an elevation of about 400 feet. Figures 29 and 30 of Kimble and others (1984) are maps of the two adits.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Gertrude prospect consists of two adits; one is just above sea level and the other is nearby at an elevation of about 400 feet (Kimble and others, 1984). The adits were driven about 1920 and there has been little work on the property since. The lower adit is 160 feet long. A quartz pod and irregular vein less than 10 feet long is exposed. A 6.0-foot channel sample contained 0.30 part per million gold. The upper adit is at an elevation of about 400 feet; it exposes a short quartz pod that strikes N50W and dips 35NE. A random sample of the pod contained 0.40 ppm gold. The host rock in both adits is phyllitic schist, part of the Cretaceous hornblende schist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Quartz veins cut Cretaceous schist.

**Deposit model:**

Low-sulfide gold-quartz vein (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:**

The prospect has two adits driven about 1920; one is 160 feet long and the other is 55 feet long. There has been little work on the property since the 1920's.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (in upper Windham Bay)****Site type:** Occurrence**ARDF no.:** SD034**Latitude:** 57.5852**Quadrangle:** SD C-5**Longitude:** 133.3789**Location description and accuracy:**

This site is located in about the middle of a ultramafic pluton about 2-square-miles in area that outcrops on both sides of the east half of the east basin of Windham Bay. The center of the body is near the northeast corner of section 33, T. 49 S., R. 75 E.

**Commodities:****Main:** Fe**Other:****Ore minerals:** Magnetite**Gangue minerals:****Geologic description:**

This site is a Cretaceous, Alaska-type or zoned ultramafic body that is exposed along the shoreline of upper Windham Bay (Kimble and others, 1984; Brew and Grybeck, 1984). The body is distinctly magnetic and much of it is a magnetite-rich hornblende pyroxenite. A 320-foot chip sample of the magnetite pyroxenite on the north side of Windham Bay contained 13.2 percent iron. This is lower than other similar bodies in southeastern Alaska and the body is not a viable iron resource under any reasonable economic conditions. Samples did not contain significant copper or nickel.

**Alteration:****Age of mineralization:**

This Alaska-type ultramafic body is Cretaceous in age.

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Inactive**Workings/exploration:****Production notes:****Reserves:****Additional comments:**

The occurrence is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near Chuck River)****Site type:** Prospect**ARDF no.:** SD035**Latitude:** 57.5716**Quadrangle:** SD C-5**Longitude:** 133.3463**Location description and accuracy:**

This prospect is a short adit on an old claim on the east side of the Chuck River about 0.5 mile north of the mouth of Sylvia Creek. The prospect is near the southwest corner of section 35, T. 49 S., R. 75 E.

**Commodities:****Main:** Ag, Pb**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

This unnamed prospect was explored by a 25-foot adit; it may be related to claims staked in 1905 (Kimble and others, 1984). A 23-foot-long channel sample taken along the length of the adit contained 0.05 part per million (ppm) silver and 70 ppm lead (i.e., barely above background). The host rock is schist, part of the Cretaceous greenschist unit of Brew and Grybeck (1984).

**Alteration:****Age of mineralization:**

Questionable whether there is a mineral deposit here.

**Deposit model:**

Questionable whether there is a mineral deposit here.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

A 25-foot adit was probably driven well before WW I.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): First Basin****Site type:** Mine**ARDF no.:** SD036**Latitude:** 57.5957**Quadrangle:** SD C-4**Longitude:** 133.3322**Location description and accuracy:**

Spruce Creek has been explored for placer gold for most of its length and some parts of it have been mined. Probably the most extensive workings are in what is called the 'First Basin', about one-quarter mile upstream from the mouth of Spruce Creek. The mine is about 0.3 mile north of the center of section 26, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer gold was discovered near Windham Bay in 1869, probably in Spruce Creek (Spencer, 1906; Kimble and others, 1984). There was placer mining intermittently on Spruce Creek until the 1950's but most of the production took place before 1900 and in the early part of the 20th century. Most of the mining took place in what are called the First and Second Basins. There are no records but the total production from Spruce Creek is probably small.

The First Basin is about a quarter mile from tidewater where a bedrock ridge dammed a considerable amount of auriferous gravel. The basin is probably of glacial origin and the basin was originally filled with more than 50 feet of coarse-grained gravel and boulders deposited over blue clay with marine fossils. A mine plant was installed in the First Basin in 1888 and considerable gravel was sluiced through a tunnel through the bedrock dam at the mouth of the basin. Small-scale mining probably continued intermittently for years and the claims in the First Basin were patented before 1900.

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (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 mine plant was installed in the First Basin in 1888 and considerable gravel was sluiced through a tunnel through the bedrock dam at the mouth of the basin. Small scale mining probably continued intermittently for years and claims in First Basin were patented before 1900.

**Production notes:**

There are no records but the total production from Spruce Creek is probably small.

**Reserves:****Additional comments:**

Although placer claims along Spruce Creek were patented as early as 1900, the surrounding area is now part of the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Cobb, 1973; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Jenny Reed****Site type:** Prospect**ARDF no.:** SD037**Latitude:** 57.5988**Quadrangle:** SD C-4**Longitude:** 133.3193**Location description and accuracy:**

The Jenny Reed prospect is about 0.7 mile northeast of the mouth of Spruce Creek at the head of Windham Bay. It is about 0.7 mile northwest of the center of section 25, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:** Cu, Zn**Ore minerals:** Chalcopyrite, pyrite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Jenny Reed prospect is one of many auriferous lodes at the head of Windham Bay, most of which have been known since at least 1904 (Wright and Wright, 1906; Kimble and others, 1984). The prospect consists of two adits: the longest is about 165 feet long and the other is about 20 feet long (Kimble and others, 1984). The host rocks are muscovite schist and phyllite of Cretaceous age (Brew and Grybeck, 1984). The deposit trends along the long adit (Kimble and others, 1984; figure 32); it consists of a quartz-stringer zone with disseminated pyrite, sphalerite, and chalcopyrite. The zone is parallel to the foliation of the schist and phyllite. The richest sample collected by Kimble and others (1984) was a 7.4-foot-long channel sample that contained 1.0 part per million gold.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:** Probably inactive

**Workings/exploration:**

The workings consist of two adits, one about 165 feet long and the other about 20 feet long. There was some exploration in the area in the 1970's but the workings date from before WW I.

**Production notes:****Reserves:****Additional comments:**

There may be patented claims or private holdings on this and other properties at the head of Windham Bay but most of the area is part of the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Red Wing****Site type:** Prospect**ARDF no.:** SD038**Latitude:** 57.5962**Quadrangle:** SD C-4**Longitude:** 133.3173**Location description and accuracy:**

The Red Wing prospect is about 0.7 mile east of the mouth of Spruce Creek at the head of Windham Bay; it is about 0.4 mile northwest of the center of section 25, T. 49 S., R. 75 E. The location is accurate.

**Commodities:****Main:** Au**Other:** Cu, Pb, Zn**Ore minerals:** Chalcopyrite, galena, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Red Wing prospect is one of many auriferous lodes at the head of Windham Bay, most of which have been known since at least 1904 (Wright and Wright, 1906; Kimble and others, 1984). The prospect consists of a caved adit at least 75 feet long that extends to a stope that has been mined vertically for less than 10 feet (Kimble and others, 1984). There is also the remains of a small mill on the property. The deposit consists of several thin quartz veins that contain pyrite, pyrrhotite, sphalerite, galena, and chalcopyrite. Kimble and others (1984) sampled veins in the old stope. A channel sample across a 1-foot-long quartz vein contained 30 parts per million (ppm) silver and 0.70 ppm gold.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:** Undetermined

**Workings/exploration:**

An adit at least 75 feet long and a small stope.

**Production notes:**

The presence of a small stope and a mill on the property suggests that there was production of a small amount of gold.

**Reserves:****Additional comments:**

There may be patented claims or private holdings on this and other properties at the head of Windham Bay but most of the area is part of the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Second Basin****Site type:** Mines**ARDF no.:** SD039**Latitude:** 57.5985**Quadrangle:** SD C-4**Longitude:** 133.3116**Location description and accuracy:**

Spruce Creek has been explored for placer gold for most its length and some parts of it have been mined. One of the areas of activity is what is commonly referred to as the 'Second Basin' at an elevation of about 750 feet. The placer is about 0.5 mile north-northwest of the center of section 25, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer gold was discovered near Windham Bay in 1869, probably in Spruce Creek (Spencer, 1906; Kimble and others, 1984). There was placer mining intermittently on Spruce Creek until the 1950's but most of the production took place before 1900 and in the early part of the century. Most of the mining took place in what are called the First and Second Basins. There are no records but the total production from Spruce Creek is probably small.

There was considerable small-scale mining in the Second Basin, most prior to 1900 or in the early part of the 20th century. Details are lacking and there is now little sign of the mine workings (Kimble and others, 1984).

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (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 Second Basin was mined beginning in the 1880's and probably into the first decade of the 20th century but details are lacking.

**Production notes:**

Some but probably small.

**Reserves:**

**Additional comments:**

Placer claims on Spruce Creek were patented by 1900 and these--as well as one or more patented lode claims, may cover part or all of the Second Basin. However, the surrounding area is now part of the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Cobb, 1973; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Fries; Falls Quartz****Site type:** Prospects**ARDF no.:** SD040**Latitude:** 57.6001**Quadrangle:** SD C-4**Longitude:** 133.3086**Location description and accuracy:**

The Fries and Falls Quartz adits are at an elevation of about 900 feet on the north side of Spruce Creek about 1.1 mile east-northeast of its mouth at the head of Windham Bay. They are about 0.4 mile south of the center of section 24, T. 49 S., R. 75 E. The location is accurate.

**Commodities:****Main:****Other:****Ore minerals:** Gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

The Fries and Falls Quartz prospects as described here are part of a group of 35 claims and properties that were consolidated under the name Marty Group in the 1920's and fell under the control of the Alaska Windham Gold Mining Company in 1930 (Kimble and others, 1984). As defined in this data base, the properties in the claim block include the Fries and Falls Quartz prospects; the Marty adit (SD041); the Yates and nearby unnamed prospect (SD042); the Yellow Jacket prospect (SD043); and the Jackson prospect, Keith prospect, and the Jensen Mine (SD044). These properties are often referred to collectively as the Second Zone as defined by Spencer(1906). The early history of these properties is described in detail by Redman (1988). A small stamp mill was erected on the south side of Spruce Creek in 1900 and fed by a 3,000 foot aerial tram to the Yellow Jacket prospect; in 1927, a Lane mill--the Marty mill-- was erected on the north side of Spruce Creek and tied to the Jensen adit by a 4,400-foot aerial tram. There may have been small test runs of ore through the early stamp mill from one or more of the prospects but the only significant production in the Second Zone is apparently from the Jensen Mine which produced 18 tons of hand-sorted ore in 1927 that contained about 50 ounces of gold. In general, the deposits in the Second Zone are gold-quartz veins with few sulfides; the best values are in veins that crosscut muscovite schist of Cretaceous age that generally trends about N30W (Brew and Grybeck, 1984). Although the mines at the head of Windham Bay were examined by various companies from the 1930's to the establishment of the Chuck River Wilderness Area, there has been little substantial work and no new underground workings.

This record describes only the Fries and the Falls Quartz prospects. The workings of both properties were extensively sampled by Kimble and others (1984) but there were few significant gold values. The Fries prospect was active from 1895 to 1930 but there apparently was no production. The workings consist of a 300-foot crosscut and a 30-foot raise. The deposit consists of quartz stringers that parallel the foliation in the schist host rock. The stringers and schist strike N15-30W and dip 75-85W. The best sample was a 10-foot chip sample that contained 0.10 part per million (ppm) gold. The Falls Quartz prospect consists of quartz veins and quartz stringers that strike about N50W and dip 65N; they crosscut the schist host rock that strikes about N18W and dips 65SW. The prospect was active in 1915; the only workings are a 36-foot adit. The best sample was a 3.9-foot channel sample that contained 0.10 ppm gold. Both the Fries and Falls Quartz prospects are on patented claims and the underground workings are shown on figures 34 and 35 of Kimble and others(1984).

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been

dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:**

The only underground workings are a 300-foot crosscut and a 30-foot winze on the Fries prospect and a 36-foot adit on the Falls Quartz prospect.

**Production notes:**

Apparently none.

**Reserves:****Additional comments:**

The Fries and Falls Quartz prospects are on patented ground but the area surrounding it is part of the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Marty****Site type:** Prospect**ARDF no.:** SD041**Latitude:** 57.5986**Quadrangle:** SD C-4**Longitude:** 133.3085**Location description and accuracy:**

The Marty adit is on the south side of Spruce Creek about 1.1 mile east-northeast of its mouth at the head of Windham Bay. It is about 0.4 mile north of the center of section 25, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Marty adit is part of a group of 35 claims and properties that were consolidated under the name Marty Group in the 1920's and fell under the control of the Alaska Windham Gold Mining Company in 1930 (Kimble and others, 1984). As defined in this data base, the properties in the claim block include the Fries and Falls Quartz prospects (SD040); the Marty adit; the Yates and nearby unnamed prospects (SD042); the Yellow Jacket prospect (SD043); and the Jackson prospect, Keith prospect, and the Jensen Mine (SD044). These properties are often referred to collectively as the Second Zone as defined by Spencer (1906). The early history of these properties is described in detail by Redman (1988). A small stamp mill was erected on the south side of Spruce Creek in 1900 and fed by a 3,000-foot aerial tram to the Yellow Jacket prospect; in 1927, a Lane mill--the Marty mill-- was erected on the north side of Spruce Creek and tied to the Jensen adit by a 4,400-foot aerial tram. There may have been small test runs of ore through the early stamp mill from one or more of the prospects but the only significant production in the Second Zone is apparently from the Jensen Mine which produced 18 tons of hand sorted ore in 1927 that contained about 50 ounces of gold. In general, the deposits in the Second Zone are gold-quartz veins with few sulfides; the best values are in veins that crosscut muscovite schist of Cretaceous age that generally trends about N30W (Brew and Grybeck, 1984). Although the mines at the head of Windham Bay were examined by various companies from the 1930's to the establishment of the Chuck River Wilderness Area, there has been little substantial work and no new underground workings.

The underground workings here consist of a 540-foot adit with a 490-foot crosscut, and 3 raises (Kimble and others, 1984). Several quartz veins are exposed in the adit and the crosscut was systematically sampled. But few of the samples contained significant amounts of gold and the best sample, a 10-foot channel sample, contained about 0.4 part per million gold. The prospect was active from 1904 to 1936 but apparently produced no ore. Kimble and others (1984) mapped the geology and located their sampling on their Figure 36. The deposit at the Marty prospect has been dated at 55.8 million years by Goldfarb and others (1997); like others in the Juneau Gold Belt, they thought it was formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposit at the Marty prospect has been dated at 55.8 million years by Goldfarb and others, (1997).

**Deposit model:**

Low sulfide gold-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:**

The underground workings consist of a 540-foot adit with a 490-foot crosscut, and 3 raises (Kimble and others, 1984).

**Production notes:**

Probably none.

**Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area and other than a few patented or current claims(?), the area is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Willis, 1926; Smith, 1929; Smith, 1930 (B 810); Smith, 1930 (B 813); Smith, 1934 (B 864-A); Smith, 1936; Smith, 1937; Smith, 1938; Smith, 1939; Berg and Cobb, 1967; Williams, 1955 (PE 115-6); Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984**Reporter(s):** Donald Grybeck (U.S. Geological Survey)**Last report date:** October 8, 2004

**Site name(s): Yates****Site type:** Prospect**ARDF no.:** SD042**Latitude:** 57.5959**Quadrangle:** SD C-4**Longitude:** 133.3049**Location description and accuracy:**

The Yates adit and another unnamed adit included in this site are at an elevation of about 1,300 feet, about 1.2 miles east of the mouth of Spruce Creek at the head of Windham Bay. They are about 0.3 mile north-east of the center of section 25, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Yates prospect is part of a group of 35 claims and properties that were consolidated under the name Marty Group in the 1920's and fell under the control of the Alaska Windham Gold Mining Company in 1930 (Kimble and others, 1984). As defined in this data base, the properties in the claim block include the Fries and Falls Quartz prospects (SD040); the Marty adit (SD041); the Yates and nearby unnamed prospect; the Yellow Jacket prospect (SD043); and the Jackson prospect, Keith prospect, and the Jensen Mine (SD044). These properties are often referred to collectively as the Second Zone as defined by Spencer (1906). The early history of these properties is described in detail by Redman (1988). A small stamp mill was erected on the south side of Spruce Creek in 1900 and fed by a 3,000-foot aerial tram to the Yellow Jacket prospect; in 1927, a Lane mill--the Marty mill-- was erected on the north side of Spruce Creek and tied to the Jensen adit by a 4,400-foot aerial tram. There may have been small test runs of ore through the early stamp mill from one or more of the prospects but the only significant production from the Second Zone is apparently from the Jensen Mine which produced 18 tons of hand-sorted ore in 1927 that contained about 50 ounces of gold. In general, the deposits in the Second Zone are gold-quartz veins with few sulfides; the best values are in veins that crosscut muscovite schist of Cretaceous age that generally trends about N30W (Brew and Grybeck, 1984). Although the mines at the head of Windham Bay have been examined by various companies from the 1930's to the establishment of the Chuck River Wilderness Area, there has been little substantial work and no new underground workings.

This record describes only the Yates prospect and a small unnamed adit nearby (Kimble and others, 1984). The Yates prospect consists of 35-foot drift with a 50-foot crosscut. Several veins are cut by the Yates adit. One strikes N45W and dips 75 NE; another strikes N25W and dips 72SW, parallel to the layering in the host rocks. The highest value was 0.05 part per million gold in a 90-foot-long channel sample. The prospect was active from 1917 to 1937; it was restaked in the early 50's and was active in a minor way for a few years (Williams, 1955 [PE 115-6]).

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-quartz veins (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:**

The Yates prospect consists of 35-foot drift with a 50-foot crosscut; there is a short unnamed adit nearby.

**Production notes:**

Apparently none.

**Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area and other than a few patented or current claims(?), the area is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Palmer, 1937; Williams, 1955 (PE 115-6); Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Yellow Jacket****Site type:** Prospect**ARDF no.:** SD043**Latitude:** 57.5904**Quadrangle:** SD C-4**Longitude:** 133.3027**Location description and accuracy:**

The Yellow Jacket adit is at an elevation of about 2,300 feet, about 1.3 miles east-southeast of the mouth of Spruce Creek at the head of Windham Bay. It is about 0.2 mile southeast of the center of section 25, T. 49 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Yellow Jacket prospect is part of a group of 35 claims and properties that were consolidated under the name Marty Group in the 1920's and fell under the control of the Alaska Windham Gold Mining Company in 1930 (Kimble and others, 1984). As defined in this data base, the properties in the claim block include the Fries and Falls Quartz prospects (SD040); the Marty adit (SD041); the Yates and nearby unnamed prospect (SD042); the Yellow Jacket prospect; and the Jackson prospect, Keith prospect, and the Jensen Mine (SD044). These properties are often referred to collectively as the Second Zone as defined by Spencer (1906). The early history of these properties is described in detail by Redman (1988). A small stamp mill was erected on the south side of Spruce Creek in 1900 and fed by a 3,000-foot aerial tram to the Yellow Jacket prospect; in 1927, a Lane mill--the Marty mill--was erected on the north side of Spruce Creek and tied to the Jensen adit by a 4,400-foot aerial tram. There may have been small test runs of ore through the early stamp mill from one or more of the prospects but the only significant production in the Second Zone is apparently from the Jensen Mine which produced 18 tons of hand-sorted ore in 1927 that contained about 50 ounces of gold. In general, the deposits in the Second Zone are gold-quartz veins with few sulfides; the best values are in veins that crosscut muscovite schist of Cretaceous age that generally trends about N30W (Brew and Grybeck, 1984). Although the mines at the head of Windham Bay have been examined by various companies from the 1930's to the establishment of the Chuck River Wilderness Area, there has been little substantial work and no new underground workings.

This record only describes the Yellow Jacket prospect. The deposit consists of irregular quartz veins and stringers that strike and dip approximately parallel to the foliation. There are two sets of veins; one is N15W-70SW and the other N55W-55NE. The only workings are 25-foot and 15-foot adits, a 15-foot cross-cut, and a 15-foot trench. The only activity on the prospect was in 1917 and there has apparently been no production. Most recently, the workings have been mapped by Kimble and others (1984, figure 41).

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:**

**Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:**

The only workings are 25-foot and 15-foot adits, a 15-foot crosscut, and a 15-foot trench. Most recently, the workings have been mapped by Kimble and others (1984, figure 41).

**Production notes:**

The only activity on the prospect was in 1917 and there has apparently been no production.

**Reserves:****Additional comments:**

The prospect is in the Chuck River Wilderness Area and other than a few patented or current claims(?), the area is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Jensen; Jackston; Keith****Site type:** Mine**ARDF no.:** SD044**Latitude:** 57.5888**Quadrangle:** SD C-4**Longitude:** 133.2957**Location description and accuracy:**

The site is plotted at the adit of the Jensen Mine, which was the most productive lode mine in the Windham Bay area. It is at an elevation of about 2,750 feet, about 1.6 mile east-southeast of the mouth of Spruce Creek at the head of Windham Bay. The mine is about 0.6 mile east-southeast of the center of section 25, T. 49 S., R. 75 E. The Keith adit is just northwest at an elevation of about 2,330 feet; the Jackson adit is northwest at an elevation of about 2,160 feet.

**Commodities:****Main:** Au**Other:** Pb, Zn**Ore minerals:** Galena, gold, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

The Jensen mine, and the Jackson and Keith prospects as described here are part of a group of 35 claims and properties that were consolidated under the name Marty Group in the 1920's and fell under the control of the Alaska Windham Gold Mining Company in 1930 (Kimble and others, 1984). As defined in this data base, the properties in the claim block include the Fries and Falls Quartz prospects (SD040); the Marty adit (SD041); the Yates and nearby unnamed prospect (SD042); the Yellow Jacket prospect (SD043); and the Jackson prospect, Keith prospect, and the Jensen Mine. These properties are often referred to collectively as the Second Zone as defined by Spencer (1906). The early history of these properties is described in detail by Redman (1988). A small stamp mill was erected on the south side of Spruce Creek in 1900 and fed by a 3,000-foot aerial tram to the Yellow Jacket prospect; in 1927, a Lane mill--the Marty mill-- was erected on the north side of Spruce Creek and tied to the Jensen adit by a 4,400-foot aerial tram. There may have been small test runs of ore through the early stamp mill from one or more of the prospects but the only significant production in the Second Zone is apparently about 50 ounces of gold from the Jensen Mine. In general, the deposits in the Second Zone are gold-quartz veins with few sulfides; the best values are in veins that crosscut muscovite schist of Cretaceous age that generally trends about N30W (Brew and Grybeck, 1984).

The Jackson prospect was active intermittently from 1915 to 1939 (Kimble and others, 1984). The main working is a 58 foot adit. The deposit is a quartz vein that strikes N30W and dips 65SW. The best sample collected by Kimble and others (1984) was a 0.3-foot channel sample that contained 2.5 parts per million (ppm) gold.

The Keith adit was intermittently active from 1915 to 1938. The main working is a 125 foot adit. The deposit is a quartz vein N30W that dips 80NE. The best sample collected by Kimble and others (1984) was a 10-foot channel sample with 2.4 ppm gold.

The Jensen Mine was active in 1927 (and possibly a few more years) and produced most of the lode gold in the Windham Bay area. The main working is a 275-foot drift along the veins, and 50-foot crosscut off the drift. There is a small stope about 30 feet long that was mined for about 30 feet vertically. The Jensen Mine produced 118 tons of hand-sorted ore in 1927. The ore was transported to the Marty mill on Spruce Creek by aerial tram and yielded \$1,100 in gold (about 50 ounces). The deposit consists of a series of

quartz veins 0.5- to 1.5-feet thick along the main drift. The quartz veins contain pyrrhotite, pyrite, galena, and sphalerite. The main vein is oriented about N55W-60W; others are about N45W-60SW and N45W-70NE. Kimble and others sampled extensively in the Jensen Mine. Eight samples of the main vein averaged about 0.05 ounce of gold per ton. The best sample was a 0.65-foot channel sample that contained 17.8 ounces of gold per ton.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:** Undetermined

**Workings/exploration:**

The Jensen Mine was active in 1927 (and possibly a few more years) and produced most of the lode gold in the Windham Bay area. The main working is a 275-foot drift along the veins, and 50-foot crosscut off the drift. There is a small stope about 30 feet long that was mined about 30 feet vertically. The Jackson and Keith prospects were active intermittently from 1915 to 1939.

**Production notes:**

The Jensen mine produced 118 tons of hand-sorted ore in 1927. The ore was transported to the Marty mill on Spruce Creek by aerial tram and yielded \$1,100 in gold (about 50 ounces).

**Reserves:****Additional comments:**

The mine is in the Chuck River Wilderness Area and other than a few patented or current claims(?), the area is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Kloss (no date); Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Upper Spruce Creek****Site type:** Mines**ARDF no.:** SD045**Latitude:** 57.5976**Quadrangle:** SD C-4**Longitude:** 133.2899**Location description and accuracy:**

Spruce Creek has been explored for placer gold for most its length and some parts of it have been mined. There is little specific information about the mining in upper Spruce Creek, but Kimble and others (1984) found workings and evidence of exploration or mining along Spruce Creek between about 1,600 and 2,500 feet in elevation. This site is plotted at about the center of that activity. It is about 0.6 mile northwest of the center of section 30, T. 49 S., R. 76 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer gold was discovered near Windham Bay in 1869, probably in Spruce Creek (Spencer, 1906; Kimble and others, 1984). There was intermittent placer mining on Spruce Creek until the 1950's although much of the production took place before 1900 and in the early part of the 20th century. Most of the mining took place at what are called the First and Second Basins (SD036 and SD039). However, Kimble and others (1984) found considerable signs of small-scale mining on Spruce Creek above the Second Basin between elevations of 1,600 and 2,500 feet. They include placer pipe, old cuts, cabins, and a diversion ditch. There was probably no great accumulation of gravel in the upper part of Spruce Creek, but some gold was probably mined from potholes and thin stream gravels by hand methods. There are no records of mining on Spruce Creek even in the areas where placer mining was concentrated, let alone in upper Spruce Creek. The total gold production from Spruce Creek is probably small.

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (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:**

There is evidence of some probably small-scale or hand mining on upper Spruce Creek.

**Production notes:**

A small amount of placer gold was probably produced on upper Spruce Creek.

**Reserves:****Additional comments:**

There may be old patented claims that cover parts of upper Spruce Creek. If so, they are surrounded by the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Apache; Navajo****Site type:** Prospect**ARDF no.:** SD046**Latitude:** 57.5946**Quadrangle:** SD C-4**Longitude:** 133.2757**Location description and accuracy:**

The Apache and Navajo adits are at an elevation of about 2,700 feet, about 2.3 miles east of the mouth of Spruce Creek at the head of Windham Bay. The adits are about 0.3 mile northeast of the center of section 30, T. 49 S., R. 76 E.

**Commodities:****Main:** Ag, Au**Other:****Ore minerals:** Gold**Gangue minerals:** Quartz**Geologic description:**

The Apache-Navajo prospect is one of several prospects and mineral occurrences (SD046-049) in what is often referred to as the Third Zone of Spencer (1906; Kimble and others (1984). They are generally gold-quartz veins and veinlets in muscovite schist of Cretaceous age (Brew and Grybeck, 1984).

The Apache-Navajo prospect was explored by two adits, one 60 feet long and the other 80 feet long (Kimble and others, 1984). The prospect was active from 1900 to 1903 but there has been little work since. The claims were patented in 1909. The deposit consists of irregular quartz veinlets and veins that generally parallel the foliation of the host rocks. They are oriented in several directions, notably N35-45W, 55-75SW and N04-08W, 70W. The veins were sampled by Kimble and others (1984); the highest grade sample they collected contained a trace of gold (less than 0.15 part per million (ppm) and up to 0.07 ppm silver.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:**

The Apache-Navajo prospect was explored by two adits, one 60 feet long and the other 80 feet long (Kimble and others, 1984). The prospect was active from 1900 to 1903 but there has been little work since. The claims were patented in 1909.

**Production notes:**

**Reserves:**

**Additional comments:**

Although the Apache-Navajo prospect is on patented claims, the area around it is in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near 'Spruce Mountain')****Site type:** Occurrences**ARDF no.:** SD047**Latitude:** 57.5870**Quadrangle:** SD C-4**Longitude:** 133.2674**Location description and accuracy:**

These occurrences identified by Kimble and others (1984) are part of a large altered zone with metal values (1984). The occurrences are scattered along a zone about 5,000 feet long oriented north-northwest. The center of the area is about 0.4 mile north of hill 4330 which is locally called 'Spruce Mountain'. It is about 0.5 mile southwest of the center of section 29, T. 49 S., R. 76 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

These occurrences are part of a band of prospects and mineral occurrences (SD046-049) in what is often referred to as the Third Zone of Spencer (1906; Kimble and others (1984). These are generally gold-quartz veins and veinlets in muscovite schist of Cretaceous age (Brew and Grybeck, 1984). However, this deposit is notably different from many of the prospects in the Windham Bay area in that the mineralization is stratiform.

This site is a narrow zone that trends north-northwest for about 5,000 feet. Numerous occurrences along the zone consist of weathered, limonite-stained bands parallel to the foliation of the muscovite schist (Kimble and others, 1984). There are no workings. Of the 18 samples collected by Kimble and others (1984) along the zone, four have notable metal values: 1) a 100-foot chip sample contained 5 parts per million (ppm) silver, 1,300 ppm lead, and 7,600 ppm zinc; 2) a 17-foot chip sample contained 3 ppm silver, 0.05 ppm gold, and 1,900 ppm zinc; 3) a 105-foot chip sample contained 3 ppm silver, 0.05 ppm gold, 390 ppm copper, 60 ppm lead, and 2,100 ppm zinc; and 4) a 50-foot chip sample contained 2 ppm silver, 170 ppm lead, and 1,000 ppm zinc.

**Alteration:**

The occurrences are in iron-strained schist with limonite.

**Age of mineralization:**

In schist of Cretaceous (metamorphic) age; the age of the protolith is unknown.

**Deposit model:**

Unclear; may be syngenetic or epigenetic and related to the numerous gold-quartz veins in the area.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

The occurrences are in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Spencer, 1906; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Gold****Site type:** Prospect**ARDF no.:** SD048**Latitude:** 57.5794**Quadrangle:** SD C-4**Longitude:** 133.2744**Location description and accuracy:**

The Gold prospect is about 0.3 mile south of hill 4330 which is locally called 'Spruce Mountain'. The shaft at the prospect is about 0.5 mile east-northeast of the center of section 31, T. 49 S., R. 76 E.

**Commodities:****Main:** Ag, Au, Pb**Other:****Ore minerals:** Galena**Gangue minerals:** Quartz**Geologic description:**

The Gold prospect is one of several prospects and mineral occurrences (SD046-049) in what is often referred to as the Third Zone of Spencer (1906; Kimble and others, 1984). These are generally gold-quartz veins and veinlets in muscovite schist of Cretaceous age (Brew and Grybeck, 1984).

The Gold prospect was known as early as 1915 and the claims on it were restaked in the 1930's and early 1940's (Kimble and others, 1984). The workings consist of a 20-foot shaft and a 156-foot trench. Of the samples collected by Kimble and others, the most notable was a 3.8-foot channel sample across a quartz vein that contained 2 parts per million (ppm) silver, 8 ppm gold, and 390 ppm lead. All of the samples contained 0.5 to 2 ppm silver. Nearby, on the Gold Shaft claim, an 8-foot thick quartz veins that strikes N24W and dips 80SW is exposed in the talus. Samples across the vein contained only traces of gold and silver. However, a select sample from a pod of galena about 0.1 foot long in the quartz vein contained 30 ppm silver, 0.25 ppm gold, and 8,000 ppm lead.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age.

**Deposit model:**

Low-sulfide gold-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:**

The Gold prospect was known as early as 1915 and the claims on it were restaked in the 1930's and early 1940's (Kimble and others, 1984). The workings consist of a 20-foot shaft and a 156-foot trench. Sampled by government geologists in the early 1980's (Kimble and others, 1984).

**Production notes:**

**Reserves:**

**Additional comments:**

The prospect is in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (southwest of 'Spruce Mountain')****Site type:** Occurrence**ARDF no.:** SD049**Latitude:** 57.5761**Quadrangle:** SD C-4**Longitude:** 133.2744**Location description and accuracy:**

This site is an altered zone identified by Kimble and others (1984). It is about 0.4 mile southwest of hill 4330 which is locally called 'Spruce Mountain'. The altered zone is about 0.3 mile east-southeast of the center of section 31, T. 49 S, R. 76 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, pyrite, pyrrhotite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

These occurrences are part of a band of prospects and mineral occurrences (SR046-049) in what is often referred to as the Third Zone of Spencer (1906; Kimble and others, 1984). These are generally gold-quartz veins and veinlets in muscovite schist of Cretaceous age (Brew and Grybeck, 1984). However, the deposits at this site are notably different from many of the prospects in the Windham Bay area, in that they are stratiform.

This site is a altered (weathered and iron-stained?) zone that strikes north-northwest for about 1,500 feet (Kimble and others, 1984). There were claims staked in the area in 1900 but there are no workings. The host rocks consist mainly of muscovite schist with white and yellow bands. The schist locally contains disseminated sulfides and occasional pods of quartz. The sulfides are mainly pyrite with minor pyrrhotite, sphalerite, chalcopyrite, and galena. The zone is about 120 feet thick at its south end and about 50 feet thick at its north end; it disappears under talus at both ends. Kimble and others (1984) collected 8 samples. The best was a 0.25-foot-thick channel sample that contained 150 parts per million (ppm) silver, 0.05 ppm gold, 2,100 ppm copper, 21,000 ppm lead, and 4,800 ppm zinc. Most samples contained much less and the next best sample was a 50-foot chip sample that contained 10 ppm silver, 10 ppm gold, 60 ppm copper, 1,100 ppm lead, and 140 ppm zinc.

**Alteration:**

Schist that hosts the mineralization is altered but details not given; perhaps the alteration is mainly weathering of sulfides to limonite.

**Age of mineralization:**

In schist of Cretaceous (metamorphic) age; the age of the protolith is unknown.

**Deposit model:**

Unclear; may be syngenetic or epigenetic and related to the numerous gold-quartz veins in the area.

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

**Site Status:****Workings/exploration:**

There were claims staked in the area in 1900 but there are no workings. Sampling by government geologists in the early 1980's (Kimble and others, 1984).

**Production notes:****Reserves:****Additional comments:**

The occurrence is in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Spencer, 1906; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Sulphide****Site type:** Prospect**ARDF no.:** SD050**Latitude:** 57.6144**Quadrangle:** SD C-4**Longitude:** 133.2682**Location description and accuracy:**

The Sulphide prospect is near the cabin shown on the USGS 1:63,360-scale topographic map, about 3.2 miles west of the center of the mouth of Fords Terror. It is near the northwest corner of section 20, T. 49 S., R. 76 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Chalcopyrite, galena, marcasite, pyrrhotite, sphalerite**Gangue minerals:****Geologic description:**

The Sulphide prospect was originally staked in 1928 and subsequently restaked in 1939, 1955, 1969 and 1970, and 1975 (Roehm, 1942 [IR 195-33]; Kimble and others, 1984). The deposit consists of a zone 5 to 15 feet wide with disseminated and banded massive-sulfide minerals. The zone can be traced for at least 830 feet in five trenches. The host rock is iron-stained feldspathic gneiss and quartzite, part of the Cretaceous biotite-schist unit of Brew and Grybeck (1984). The sulfides include sphalerite, galena, chalcopyrite, pyrrhotite, and marcasite. The sulfides are both disseminated and in bands up to 0.4 foot thick parallel to the foliation of the metamorphic host rocks. Locally the sulfides are remobilized and concentrated in the noses of small folds. Kimble and others (1984) collected 21 channel samples across the zone in 4 trenches. The five with the highest metal values varied from 4.4 to 7.0 feet in length and contained 0.02-0.25 percent copper, 0.65-1.30 percent lead, 1.25-1.90 percent zinc, 0.02-0.88 ounce of silver per ton, and nil to 0.004 ounce of gold per ton.

**Alteration:****Age of mineralization:**

In gneiss and quartzite of Cretaceous (metamorphic) age; the age of the protolith is unknown.

**Deposit model:**

Metamorphosed, volcanogenic massive-sulfide deposit?

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

The deposit has been explored by 5 short trenches.

**Production notes:****Reserves:****Additional comments:**

The prospect is in the Tracy Arm-Fords Terror Wilderness Area which is closed to mineral exploration and mining.

**References:**

Roehm, 1942 (IR 195-33); Cobb, 1978; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Holkham Bay****Site type:** Mine**ARDF no.:** SD051**Latitude:** 57.5948**Quadrangle:** SD C-4**Longitude:** 133.2397**Location description and accuracy:**

This site is plotted at the upper workings of the Holkham Bay Mine at an elevation of about 2,085 feet. The mine is about 0.5 mile west-northwest of the center of section 28, T. 49 S. R. 76 E. The lower workings of the property are about 900 feet northwest at an elevation of about 1,715 feet.

**Commodities:****Main:** Ag, Au, Cu, Pb**Other:****Ore minerals:** Chalcopyrite, galena, gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

The Holkham Bay Mine was discovered about 1900 and was being explored underground by 1906 (Spencer, 1906; Kimble and others, 1984). The deposit consists of three quartz veins in Cretaceous graphitic or siliceous schist, part of the biotite schist unit of Brew and Grybeck (1984).

One vein has been explored by a 170-foot drift and three stopes to the surface. This vein is 1-2 feet thick and can be traced underground and in surface pits for 400 feet. It strikes about N30W and dips 40-45W. The vein contains minor free gold, galena, pyrite, and chalcopyrite. Kimble and others (1984) collected 50 samples in the workings. The best contained 4.89 ounces of gold per ton across 0.9 feet. The rest contained nil to 0.61 ounce of gold per ton and average about 0.09 ounce of gold per ton. Most samples contained a trace to a few parts per million silver. None of the samples, however, contained any other metals of significance other than a few that showed slightly anomalous zinc or lead. A small Gibson mill was put in operation in 1940 and milled a small amount of ore (Kloss, 1940). From the size of the stopes, Kimble and others (1984) estimate that about 20 to 50 ounces of gold was produced. There has been little if any activity on the property since the early 40's.

There is another parallel, near-vertical quartz vein about 500 feet to the east that can be traced for about 400 feet. It is about 6 feet thick and was traced in a series of shallow shafts and open cuts. A crosscut was started to intersect it at depth but stopped short of doing so. Downhill to the southeast, there is a third vein that may be the extension of the second vein that can be traced for about 400 feet. It trends N40W and dips 60NE to vertical.

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and probably of the same age. Goldfarb and others (1997) also propose that most gold-quartz vein deposits along the Juneau Gold Belt such as this one were formed from fluids generated by Cretaceous metamorphism and then forced to the site of deposition by the emplacement of the Coast Range Batholith.

**Alteration:****Age of mineralization:**

The deposits at the nearby Marty prospect (SD041) and the Sumdum Chief Mine (SD028) have been dated at about 55 million years (Goldfarb and others, 1997). This prospect is geologically similar and

probably of the same age.

**Deposit model:**

Low-sulfide, gold-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:** Probably inactive

**Workings/exploration:**

One vein has been explored with a 170-foot drift and three stopes to the surface.

**Production notes:**

A small Gibson mill was put in operation in 1940 and milled a small amount of ore (Kloss, 1940). From the size of the stopes, Kimble and others (1984) estimate that about 20 to 50 ounces of gold was produced. There has been little if any activity on the property since the early 40's.

**Reserves:****Additional comments:**

The mine is in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Spencer, 1906; Kloss, 1940; Berg and Cobb, 1967; Brew and Grybeck, 1984; Kimble and others, 1984; U. S. Geological Survey and U.S. Bureau of Mines, 1984; Goldfarb and others, 1997.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Sylvia Creek****Site type:** Mine**ARDF no.:** SD052**Latitude:** 57.5656**Quadrangle:** SD C-4**Longitude:** 133.3330**Location description and accuracy:**

Near the turn of the century, Sylvia Creek was mined about 0.5 mile above its mouth on the Chuck River. The site is about 0.2 mile north of the center of section 2, T. 50 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Sylvia Creek is a tributary to the Chuck River (SD053). About 20 placer claims were staked on Sylvia Creek about 1900 (Kimble and others, 1984). Spencer (1906) reported placer mining on a group of three claims about 0.5 mile from the Chuck River. There is no record of gold production but there probably was some.

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (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:**

About 20 placer claims were staked on Sylvia about 1900 (Kimble and others, 1984). Spencer (1906) reported placer mining on a group of three claims about 0.5 mile from the Chuck River.

**Production notes:**

There is no record of production but there probably was some.

**Reserves:****Additional comments:**

The mine is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Budington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Chuck River****Site type:** Mines**ARDF no.:** SD053**Latitude:** 57.5167**Quadrangle:** SD C-4**Longitude:** 133.3060**Location description and accuracy:**

Near the turn of the century, the Chuck River was explored for placer gold and mined at several locations scattered for about 10 miles above its mouth. There is little specific information where this mining took place and the site is plotted about 5 miles above its mouth, in section 24, T. 50 S., R. 75 E.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

In about 1900, the Chuck River was extensively prospected for placer gold and about 25 claims were staked (Spencer, 1906; Kimble and others, 1984). Most of the claims were about 3, 5, and 10 miles above its mouth and a diversion tunnel was driven about 8 miles above its mouth to mine a horseshoe bend in the river. There are no records of production and if there was any, it was probably small.

**Alteration:****Age of mineralization:**

Probably Quaternary.

**Deposit model:**

Placer gold (Cox and Singer, 1986; model 39a).

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

39a

**Production Status:** Yes?**Site Status:** Inactive**Workings/exploration:**

In about 1900, the Chuck River was extensively prospected for placer gold and about 25 claims were staked (Spencer, 1906; Kimble and others, 1984). Most of the claims were about 3, 5, and 10 miles above its mouth and a diversion tunnel was reportedly driven about 8 miles above its mouth to mine a horseshoe bend in the river.

**Production notes:**

There are no records of production and if there was any, it was probably small.

**Reserves:**

**Additional comments:**

The Chuck River is now in the Chuck River Wilderness Area which is closed to prospecting and mining.

**References:**

Brooks, 1904; Spencer, 1904; Wright and Wright, 1905; Spencer, 1906; Wright and Wright, 1906; Buddington, 1925; Moffit, 1927; Smith, 1929; Berg and Cobb, 1967; Cobb, 1973; Kimble and others, 1984; U. S. Geological Survey and U.S. Bureau of Mines, 1984; Redman, 1988.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Placer Lakes****Site type:** Mine?**ARDF no.:** SD054**Latitude:** 57.5320**Quadrangle:** SD C-4**Longitude:** 133.2244**Location description and accuracy:**

This site is shown as a placer mine shown on the USGS 1:63,360-scale topographic map on the north side of the larger of the Placer Lakes. It is in the SE1/4 of section 16, T. 50 S., R. 76 W. However, it is doubtful that mining ever took place.

**Commodities:****Main:****Other:****Ore minerals:****Gangue minerals:****Geologic description:**

Placer claims were staked near the outlet of the Placer Lakes in 1898 (Kimble and others, 1984). In the 1930's, there was a proposal to drain the lakes through a tunnel and mine the placer gold in the lake sediments. As part of this activity, a road was built from Sylvia Creek to the lakes. This was probably a promotional scheme; there is no record of gold production and there probably was none.

**Alteration:****Age of mineralization:**

Quaternary, if there is a placer here.

**Deposit model:**

Placer gold (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:**

Placer claims were staked near the outlet of the Placer Lakes in 1898 (Kimble and others, 1984). In the 1930's, there was a proposal to drain the lakes through a tunnel and mine the placer gold in the lake sediments. As part of this activity, a road was built from Sylvia Creek to the lakes. This was probably a promotional scheme; there is no record of gold production and there probably was none.

**Production notes:**

There is no record of gold production and there probably was none.

**Reserves:**

**Additional comments:**

The area is in the Chuck River Wilderness Area which is closed to mineral exploration and mining.

**References:**

Smith, 1942; Redman, 1988; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (southeast of Fords Terror)****Site type:** Occurrence**ARDF no.:** SD055**Latitude:** 57.6001**Quadrangle:** SD C-4**Longitude:** 133.1202**Location description and accuracy:**

This occurrence is about 2.4 miles east-southeast of the center of the mouth of Ford Terror and about 0.5 mile south of the center of section 19, T. 49 S., R. 77 E.

**Commodities:****Main:****Other:** As, Be, Cu, Pb, W**Ore minerals:** Chalcopyrite, galena, pyrrhotite**Gangue minerals:****Geologic description:**

A stream-sediment sample at this site contained 1,000 parts per million (ppm) tungsten, 2,000 ppm arsenic, and 30 ppm beryllium (Kimble and others, 1984). A search for the source of this anomaly was unsuccessful other than that a float sample collected nearby contained traces of galena, pyrrhotite, and chalcopyrite. The site is at or near the contact between Cretaceous biotite schist and Tertiary or Cretaceous tonalite (Brew and Grybeck, 1984).

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:****Site Status:****Workings/exploration:****Production notes:****Reserves:****Additional comments:****References:**

Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): BBH****Site type:** Prospect**ARDF no.:** SD056**Latitude:** 57.5351**Quadrangle:** SD C-3**Longitude:** 132.9991**Location description and accuracy:**

This prospect is on the west shore of the small bay about 2 miles south of the terminus of the North Dawes Glacier. The prospect is about 0.7 mile south-southeast of the head of the bay and about 0.4 mile west of the center of section 13, T. 50 S., R. 77 E. The location is accurate.

**Commodities:****Main:** U**Other:****Ore minerals:** Uraninite?**Gangue minerals:****Geologic description:**

In 1955, a claim was staked for uranium associated with several small albite pegmatite lenses (Williams, 1955 [PE 115-7]; Eakins, 1975). Two samples contained 35 to 45 parts per million (ppm) uranium. Kimble and others (1984) identified four radioactive pegmatite zones; the largest is about 20 feet by 120 feet in area, the smallest about 35 by 45 feet in area. A geiger-counter traverse over the area indicated background values of uranium to about twice background. Several chip samples 5 to 13 feet long contained 0.2 to 16.1 ppm uranium. The rocks in the vicinity are foliated biotite-hornblende tonalite of Tertiary or Cretaceous age (Brew and Grybeck, 1984).

**Alteration:**

Uranium mineralization related to albite pegmatite.

**Age of mineralization:**

Pegmatite is probably Cretaceous or Tertiary in age.

**Deposit model:**

Uranium in pegmatite.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Probably only surface sampling.

**Production notes:****Reserves:**

**Additional comments:**

This prospect is in the Tracy Arm-Fords Terror Wilder Area which is closed to prospecting and mining.

**References:**

Williams, 1955 (PE 115-7); Eakins, 1975; Brew and others, 1977; Brew and Grybeck, 1984; Kimble and others, 1984; U.S. Geological Survey and U.S. Bureau of Mines, 1984.

**Primary reference:** Kimble and others, 1984

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Kloss****Site type:** Prospect**ARDF no.:** SD057**Latitude:** 57.4815**Quadrangle:** SD B-6**Longitude:** 133.9783**Location description and accuracy:**

This prospect is near the shoreline about 0.4 mile northwest of triangulation station 'Kan' on the north side of the mouth of Gambier Bay; it is near the center of section 2, T. 51 S., R. 71 E. This is an old, little-known prospect but the location is probably accurate to within a mile or less.

**Commodities:****Main:** Cu, Ni**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

Little is known about this prospect other than Herman Kloss reported that a trench across a shear zone 150 to 200 feet thick that contained some copper and nickel oxides (Herbert and Race, 1964; Race and Rose, 1967, Cobb, 1978). The deposit is probably in the Hyd Group of Triassic age (Loney, 1964).

**Alteration:****Age of mineralization:**

Probably in rocks of the Hyd Group of Triassic age.

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Workings consist of at least a trench.

**Production notes:****Reserves:****Additional comments:****References:**

Herbert and Race, 1964; Loney, 1964; Berg and Cobb, 1967; Race and Rose, 1967; Cobb, 1978.

**Primary reference:** Herbert and Race, 1964

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): K & D****Site type:** Mine**ARDF no.:** SD058**Latitude:** 57.4847**Quadrangle:** SD B-5**Longitude:** 133.4611**Location description and accuracy:**

The K & D Mine is labeled on the USGS 1:63,360-scale topographic map. It is about 2.1 mile northeast of the mouth of Libby Creek and about 0.6 mile north-northeast of the center of section 1, T. 51 S., R. 74 E. The location is accurate.

**Commodities:****Main:** As, Au, Pb, Sb, Zn**Other:****Ore minerals:** Antimony, arsenopyrite, galena, gold, jamesonite, sphalerite, stibnite**Gangue minerals:** Quartz**Geologic description:**

The K & D Mine was discovered in about 1936 by Herman Kloss and Jack Davis. By 1939, there was a 2-ton Gibson mill on the property and a 90-foot drift (Nelson, 1935; Williams, 1951[PE 115-02]; Still and others, 2002). From 1939 to 1948, about 58 tons of ore was produced that contained 25 ounces of gold and 10 ounces of silver. The prospect consists of two short adits, the longest about 120 feet long with a 38 foot winze. The vein generally follows Libby Creek and Kloss noted that the vein could be followed upstream for nearly 2,000 feet in a series of small pits. Many companies looked at the property prior to 1980 (Herman Kloss, oral communication, 1979) and Aspen Exploration, Phillips Petroleum, and WGM, Inc. examined and sampled the property from the early 1980's to 1992. The property was active to at least 1994. Both Williams (1951 [PE 115-02]) and Still and others (2002, figure 25) provide maps of the surface and underground workings.

The deposit consists of a quartz vein 25 to 30 feet thick that strikes N60E and dips 45-50NW (Williams, 1951 [PE 115-02]; Still and others, 2002). The vein is conformable to the layering of the host rock, a graphitic, gray schist of Cretaceous to Permian age (Gehrels and Berg, 1992). The vein is fractured and the quartz occurs in parallel layers ('ribbons') 1 to 6 inches thick across the full width of the composite vein structure. The vein contains native antimony, stibnite, galena, sphalerite, arsenopyrite, jamesonite, and gold, mostly in small grains disseminated through the quartz. The native antimony is unusual because of its rarity; it occurs in masses up to 6 inches or more in diameter. A few samples collected by the Bureau of Mines in 1950 contained 1.95, 0.71, and 0.50 ounces of gold per ton; sample collected by Aspen Exploration and Phillips Petroleum in the early 1980's contained up to 5 ounces of gold per ton. In 1991 and 1992, samples collected by WGM, Inc. (1992), across the width of the vein contained up to 0.079 ounce of gold per ton, 0.63 ounce of silver per ton, 0.403 percent lead, and 0.208 percent zinc. Of the 16 samples collected by Still and others (2002), the richest contained 0.747 ounce of gold per ton, more than 50 parts per million silver, and 1.27 percent arsenic.

**Alteration:****Age of mineralization:**

Quartz vein is younger than the Permian to Cretaceous host rock.

**Deposit model:**

Polymetallic gold vein with native antimony.

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

**Production Status:** Yes; small

**Site Status:** Probably inactive

**Workings/exploration:**

The K & D Mine was discovered in about 1936 by Herman Kloss and Jack Davis. By 1939, there was a 2-ton Gibson mill on the property and a 90-foot drift (Nelson, 1935; Williams, 1951[PE 115-02]; Still and others, 2002). From 1939 to 1948, about 58 tons of ore was produced that contained 25 ounces of gold and 10 ounces of silver. The prospect consists of two short adits, the longest about 120 feet long with a 38 foot winze. The vein generally follows Libby Creek and Kloss noted that the vein could be followed upstream for nearly 2,000 feet in a series of small pits. Many companies looked at the property prior to 1980 (Herman Kloss, oral communication, 1979) and Aspen Exploration, Phillips Petroleum, and WGM, Inc. examined and sampled the property from the early 1980's to 1992. The property was active to at least 1994. Both Williams (1951 [PE 115-02]) and Still and others (2002, figure 25) provide maps of the surface and underground workings.

**Production notes:**

From 1939 to 1948, about 58 tons of ore was produced that contained 25 ounces of gold and 10 ounces of silver.

**Reserves:****Additional comments:****References:**

Nelson, 1935; Williams, 1951 (PE 115-02); Clark and others, 1970 (OF 70-75); WGM, 1991; Cobb, 1978; Gehrels and Berg, 1992; WGM, 1992; Bittenbender and others, 2000; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Islander****Site type:** Prospect**ARDF no.:** SD059**Latitude:** 57.2669**Quadrangle:** SD B-5**Longitude:** 133.5107**Location description and accuracy:**

The Islander prospect is on a small peninsula near the center of the head of Steamboat Bay; it is near the northwest corner of section 21, T. 53 S., R. 75 E.

**Commodities:****Main:** Au, Zn**Other:** As, Cd, Cu, Hg**Ore minerals:** Pyrite, sphalerite**Gangue minerals:** Carbonates**Geologic description:**

The Islander prospect was first staked in 1952 and there has been intermittent work on it since (Williams, 1952 [PE 115-04]). The deposit is in graywacke of Cretaceous or Jurassic age (Gehrels and Berg, 1992). The graywacke is cut by thin, discontinuous carbonate stringers that locally contain abundant pyrite and sphalerite. The stringers vary in strike from N55W to N85W and dip from 24 to 79S. The better gold values tend to be in the stringers with steeper dips. Williams (1952 [PE 115-04]) collected five samples of carbonate stringers 3 to 12 inches thick. They contained 0.16 to 0.48 ounce of gold per ton, and 1.19 to 7.5 percent zinc. One sample of a 11-foot-long veinlet collected by Still and others (2002) contained 7.352 parts per million (ppm) gold, more than 5 percent zinc, and anomalous copper, cadmium, and mercury. Another sample 19 feet long contained 1.077 ounces of gold per ton, 7 percent zinc, and more than 10,000 ppm arsenic.

There is a similar prospect about 0.5 mile northwest on the northeast side of Foot Island and another just to the south on the southeast shore of Steamboat Bay.

**Alteration:****Age of mineralization:**

The auriferous carbonate veinlets are younger than the Jurassic to Cretaceous host rock.

**Deposit model:**

Carbonate veinlets in graywacke with gold and zinc.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

Apparently only surface prospecting or small pits by private interests and sampling by government geologists.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Williams, 1952 (PE 115-04); Gehrels and Berg, 1992; Bittenbender and others, 2000; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Louise****Site type:** Prospect**ARDF no.:** SD060**Latitude:** 57.3280**Quadrangle:** SD B-4**Longitude:** 133.0866**Location description and accuracy:**

This prospect is about 1.3 miles south-southeast of the middle of the narrows between the head of Port Houghton and the Salt Chuck east of it. It is about 1.1 mile west of hill 2015 and 0.5 mile southeast of the center of section 29, T. 52 S., R. 77 E. The location is accurate.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Chalcopyrite, magnetite, pyrite, pyrrhotite**Gangue minerals:****Geologic description:**

The Louise prospect was found considerably before 1925 (Wright and Wright, 1906; Buddington, 1925); there has probably been no work since, although it has been claimed several times (Still and others, 2002). The workings consist of three open cuts and two short adits. The main adit has 248 feet of drift and cross-cuts; it was mapped by Still and others (2002, Figure 26).

The deposit occurs in undifferentiated garnet-quartz-biotite gneiss and amphibolite of Cretaceous to Permian age (Gehrels and Berg, 1992; Still and others, 2002.) The mineralization consists of lenses and disseminations of pyrrhotite and chalcopyrite, with some pyrite and magnetite. The best mineralization is associated with a secondary fault zone that strikes N20W and dips 66W, but the sulfides are also disseminated through the gneiss. The richest sample collected by Still and others (2002) contained 4,899 parts per million copper, but Buddington (1925) reports a sample with 1.34 percent copper.

**Alteration:****Age of mineralization:**

In gneiss and amphibolite of Cretaceous to Permian age.

**Deposit model:**

Chalcopyrite in gneiss and amphibolite.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

The workings consist of three open cuts and two short adits. The main adit has 248 feet of drift and cross-cut.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Wright and Wright, 1906; Buddington, 1925; Berg and Cobb, 1967; Gehrels and Berg, 1992; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near south arm of Dawes Glacier)****Site type:** Occurrence**ARDF no.:** SD061**Latitude:** 57.4367**Quadrangle:** SD B-4**Longitude:** 132.8035**Location description and accuracy:**

This occurrence is on peak 5010, which is about 7.7 miles north-northeast of the east end of Glory Lake. It is about 0.3 mile north of the center of section 19, T. 51 S., R. 79 E.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Chalcopyrite, pyrite**Gangue minerals:****Geologic description:**

This occurrence consists of biotite-quartz gneiss with disseminated pyrite and chalcopyrite (Clark and others, 1970 [OF 70-74]). The gneiss is part of the Coast Plutonic complex of Tertiary or Cretaceous age (Gehrels and Berg, 1992). A sample contained 70 ppm copper.

**Alteration:****Age of mineralization:**

Sulfides disseminated in gneiss of probably Tertiary or Cretaceous (metamorphic) age; the age of the protolith is unknown.

**Deposit model:**

Disseminated pyrite and chalcopyrite in gneiss.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Only sampling by government geologists.

**Production notes:****Reserves:****Additional comments:****References:**

Clark and others, 1970 (OF 70-74); Gehrels and Berg, 1992.

**Primary reference:** Clark and others, 1970 (OF 70-74)

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Sun; Admiral****Site type:** Prospect**ARDF no.:** SD062**Latitude:** 57.3318**Quadrangle:** SD B-3**Longitude:** 132.9143**Location description and accuracy:**

This prospect is 1.5 mile west of the east end of Glory Lake near the mouth of a stream that flows south into the lake. It is about 0.3 mile west of the center of section 28, T. 52 S., R. 78 E.

**Commodities:****Main:** Ag, Au, Hg, Pb, Zn**Other:****Ore minerals:** Galena, sphalerite**Gangue minerals:****Geologic description:**

The Sun prospect was probably known as early as 1929 when it was staked under the name Admiral Group (Unpublished report held by the Bureau of Land Management, Mineral Information Center, Juneau, Alaska). However, this location is somewhat uncertain, although certainly nearby, and the Sun prospect is best described by Still and others (2002). It was restaked in 1974. The prospect consists of a small cut blasted in a cliff face. The deposit consists of a band of galena and sphalerite about 0.1 foot thick and 11 feet long that is conformable to the gneiss country rock. The rocks in the vicinity are part of a Cretaceous tonalite pluton (Gehrels and Berg, 1992). The best of six samples collected by Still and others (2002) contained 1.411 part per million (ppm) gold, 1,245 ppm silver, 9.99 percent lead, 7.1 percent zinc, and 2.54 ppm mercury.

**Alteration:****Age of mineralization:**

Uncertain; the deposit is a band of sulfides in a gneiss that may or may not be part of a large nearby Cretaceous tonalite pluton.

**Deposit model:**

Galena-sphalerite band in gneiss.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

The only workings are a small cut blasted in a cliff face.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Gehrels and Berg, 1992; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (near head of North Baird Glacier)****Site type:** Occurrence**ARDF no.:** SD063**Latitude:** 57.3284**Quadrangle:** SD B-3**Longitude:** 132.7552**Location description and accuracy:**

This occurrence is in the saddle between peaks 5919 and 5765, about 5.2 miles east of the east end of Glory Lake. It is 0.3 mile southwest of the center of section 28, T. 52 S., R. 79 E.

**Commodities:****Main:** Ag, Cu**Other:****Ore minerals:** Bornite**Gangue minerals:** Epidote, quartz**Geologic description:**

This occurrence consists of bornite that occurs in an aplite dike, in a quartz vein, in a pegmatite dike, and along an epidotized fracture in hornblende-biotite quartz diorite (Clark and others, 1970 [OF 70-73]). The area is largely unmapped but the age of the rocks is probably Tertiary or Cretaceous (Gehrels and Berg, 1992). Samples contained up to 7,000 parts per million (ppm) copper and 30 ppm silver.

**Alteration:**

Bornite in thin quartz veins and along epidotized fractures.

**Age of mineralization:**

Younger than what are probably Tertiary or Cretaceous plutonic rocks.

**Deposit model:**

Bornite disseminated in plutonic rocks and along fractures.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Only surface sampling by government geologists.

**Production notes:****Reserves:****Additional comments:****References:**

Clark and others, 1970 (OF 70-73); Gehrels and Berg, 1992.

**Primary reference:** Clark and others, 1970 (OF 70-73)

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Unnamed (east of Farragut Lake)****Site type:** Occurrence**ARDF no.:** SD064**Latitude:** 57.2864**Quadrangle:** SD B-3**Longitude:** 132.8136**Location description and accuracy:**

This occurrence is near the top of peak 5150, which is about 6.0 miles east of the north end of Farragut Lake. It is about 0.3 mile southwest of the center of section 11, T. 53 S., R. 79 E.

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:** Bornite**Gangue minerals:** Epidote, quartz**Geologic description:**

This occurrence consists of bornite in quartz-epidote veinlets in biotite-hornblende quartz diorite, probably of Tertiary or Cretaceous age (Clark and others, 1970 [OF 70-73]). A sample contained 100 parts per million (ppm) copper, 10 ppm silver, and 0.6 ppm gold.

**Alteration:**

Deposit consist of veinlets of quartz and epidote with bornite in quartz diorite.

**Age of mineralization:**

Veinlets are younger than the quartz-diorite host rock, which is probably of Tertiary or Cretaceous age.

**Deposit model:**

Bornite veinlets in quartz diorite.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Only sampling by government geologists.

**Production notes:****Reserves:****Additional comments:****References:**

Clark and others, 1970 (OF 70-73).

**Primary reference:** Clark and others, 1970 (OF 70-73)

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (east side Baird Glacier)****Site type:** Occurrence**ARDF no.:** SD065**Latitude:** 57.2607**Quadrangle:** SD B-3**Longitude:** 132.7111**Location description and accuracy:**

This occurrence is on hill 3730 on the east side of the Upper Baird Glacier and about 7.1 miles east of Maury Peak; it is about 0.2 mile northwest of the center of section 21, T. 53 S., R. 80 E. The location is accurate.

**Commodities:****Main:** Ag, Cu**Other:****Ore minerals:** Bornite**Gangue minerals:** Epidote, quartz**Geologic description:**

This occurrence consists of bornite in quartz-epidote veinlets in an unstated rock type that is probably similar to the quartz diorite of Tertiary or Cretaceous age at a nearby similar deposit (SD064) (Clark and others, 1970 [OF 70-73]). A sample contained 1,000 parts per million (ppm) copper and 20 ppm silver.

**Alteration:****Age of mineralization:**

The occurrence is in Tertiary or Cretaceous plutonic rocks.

**Deposit model:**

Bornite-epidote-quartz veinlets in plutonic rocks.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

Only sampling by government geologists.

**Production notes:****Reserves:****Additional comments:****References:**

Clark and others, 1970 (OF 70-73).

**Primary reference:** Clark and others, 1970 (OF 70-73)

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (southwest of Turn Mountain)****Site type:** Occurrence**ARDF no.:** SD066**Latitude:** 57.0389**Quadrangle:** SD A-6**Longitude:** 133.8946**Location description and accuracy:**

This occurrence is about 2.8 miles southwest of Turn Mountain along a logging road. It is about 0.5 mile north of the center of section 12, T. 56 S., R. 72 E.

**Commodities:****Main:** Ba, Pb, Zn**Other:****Ore minerals:** Barite, galena, sphalerite**Gangue minerals:****Geologic description:**

This occurrence was discovered by Still and others (2002). A lens of massive barite about 2 feet thick and 6 feet long is exposed in soil above a logging road. The barite contains scattered galena and sphalerite. A select sample contained 13.1 parts per million silver, 1.02 percent lead, 2.0 percent zinc, and 48.37 percent barium. The rocks in the area are mainly argillite of the Hyd Group of Triassic age (Karl and others, 1999).

**Alteration:****Age of mineralization:**

Unclear but associated with rocks of Triassic age.

**Deposit model:**

Volcanogenic massive sulfide deposit? (Cox and Singer, 1986, model 28a).

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

28a?

**Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

None; the only work has been surface sampling by government geologists.

**Production notes:****Reserves:****Additional comments:**

**References:**

Karl and others, 1999; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Unnamed (south-southeast of Turn Mountain)****Site type:** Occurrence**ARDF no.:** SD067**Latitude:** 57.0530**Quadrangle:** SD A-6**Longitude:** 133.8288**Location description and accuracy:**

This occurrence is about 1.0 mile south-southeast of Turn Mountain in a borrow pit along a logging road. It is about 0.5 mile southwest of the center of section 33, T. 55 S., R. 73 E.

**Commodities:****Main:** Ag, Cu, Mo**Other:****Ore minerals:** Chalcopyrite, pyrite**Gangue minerals:** Epidote, potassium feldspar, quartz**Geologic description:**

This occurrences was first identified by Still and others (2002). It consists of a shear zone that cuts an intrusive body of Cretaceous black hornblendite that varies to dark gray hornblende gabbro (Karl and others, 1999). The shear zone contains quartz, potassium feldspar, and epidote, with pyrite and chalcopyrite. A layer of weathered pyrite about 1 to 3 inches thick with lenses of chalcopyrite is exposed along the shear zone for about 15 feet in the wall of a borrow pit. A select sample contained 30.6 parts per million (ppm) silver, 11.2 percent copper, and 1,253 ppm molybdenum (Still and others, 2002).

**Alteration:****Age of mineralization:**

The deposit is along a shear zone in Cretaceous hornblendite to gabbro.

**Deposit model:**

Shear zone with copper and molybdenum values.

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Undetermined**Workings/exploration:**

Only surface sampling by government geologists.

**Production notes:****Reserves:****Additional comments:**

**References:**

Karl and others, 1999; Still and others, 2002.

**Primary reference:** Still and others, 2002

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004



**Site name(s): Unnamed (near Bay Point)****Site type:** Prospect**ARDF no.:** SD068**Latitude:** 57.1196**Quadrangle:** SD A-4**Longitude:** 133.2710**Location description and accuracy:**

This prospect is within a block of 57 mining claims; the site is here located about 1.9 mile east-northeast of Bay Point where Still and others (2002) collected their richest samples. It is about 0.3 mile southeast of the northwest corner of section 12, T. 55 S., R. 76 E.

**Commodities:****Main:** Ag, Au, Cu, Pb, Zn**Other:****Ore minerals:** Galena, pyrite, pyrrhotite, sphalerite**Gangue minerals:****Geologic description:**

The property was discovered by Hecla Mining Company in 1990 and they staked 57 claims on it (Jones, 1990; Anderson, 1991). Their work consisted of geologic mapping, and rock, stream-sediment, and soil sampling. They abandoned the claims in 1992.

The prospect is a volcanogenic massive-sulfide deposit that consists of disseminations, layers, and pods of pyrite, pyrrhotite, sphalerite, and galena in a stratigraphic unit about 1,000 feet thick that extends for about 1.5 miles (Jones, 1990, Anderson, 1991; Still and others, 2002). The rocks in the area consist of graywacke, mudstone, and andesitic and basaltic rocks of the Gravina Formation of Jurassic or Cretaceous age (Gehrels and Berg, 1992). The rocks have been metamorphosed to greenschist grade and the most of the sulfides have been remobilized and concentrated in the noses of folds and in layers oblique to the foliation, probably during the metamorphic process. Samples collected by Hecla contained up to 0.2 ounce of gold per ton, 1.4 ounce of silver per ton, 4.1 percent copper, 2.3 percent lead, and 4.68 percent zinc (Anderson, 1991).

**Alteration:**

Alteration noted but without details. The sulfides were remobilized and concentrated during greenschist-grade metamorphism.

**Age of mineralization:**

The host rocks are of Jurassic or Cretaceous age.

**Deposit model:**

Volcanogenic massive sulfide deposit (Cox and Singer, 1986; model 28a).

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

28a

**Production Status:** None**Site Status:** Probably inactive

**Workings/exploration:**

The property was discovered by Hecla Mining Company in 1990 and they staked 57 claims on it (Jones, 1990; Anderson, 1991). Their work consisted of geologic mapping, and rock, stream sediment, and soil sampling. They abandoned the claims in 1992.

**Production notes:****Reserves:****Additional comments:****References:**

Jones, 1990; Anderson, 1991; Gehrels and Berg, 1992; Still and others, 2002.

**Primary reference:** Still and others, 1992

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

**Site name(s): Colp and Lee****Site type:** Prospect**ARDF no.:** SD069**Latitude:** 57.0985**Quadrangle:** SD A-3**Longitude:** 132.8089**Location description and accuracy:**

As described by Buddington (1929), this prospect is about 1.5 mile north-northeast of the mouth of Scenery Cove and just east of the tidal flat below the toe of the Baird Glacier. It is described as in a steep gully in this vicinity by Roehm (1945 [IR 195-37]). It is in the SE1/4 section 14, T. 55 S., R. 79 E. The prospect could not be found by Still and others (2002).

**Commodities:****Main:** Ag, As, Au, Cu, Pb, Zn**Other:****Ore minerals:** Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite**Gangue minerals:** Quartz**Geologic description:**

As described by Roehm (1945 [IR 195-37]), this prospect is a fracture zone over 100 feet wide that strikes N 70 W along a steep gully. It is intersected by another fracture zone that strikes N 80 E. The rocks in the vicinity consist of Paleocene or Cretaceous quartz diorite (Gehrels and Berg, 1992). The fracture zones contain small quartz masses and veins up to 12 inches thick with pyrite, galena, sphalerite, chalcopyrite, arsenopyrite, and free gold. Roehm (1945 [IR 195-37]) noted that while the veins and quartz masses are locally rich, they are probably too few and too far apart to be an economic deposit. One sample contained 0.02 ounce of gold per ton and 1.50 ounces of silver per ton. Buddington (1923) indicated that fracture zone was 140 feet wide and averaged about 0.145 ounce of gold per ton; the richest part was about 5 feet wide and contained about 0.774 ounce of gold per ton. The prospect could not be found by Still and others (2002).

**Alteration:****Age of mineralization:**

Quartz veins cut Paleocene or Cretaceous quartz diorite.

**Deposit model:**

Polymetallic quartz vein (Cox and Singer, 1986; model 22c).

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

22c

**Production Status:** None**Site Status:** Probably inactive**Workings/exploration:**

None noted other than surface prospecting.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Buddington, 1923; Roehm, 1945 (IR 195-37); Still and others, 2002.

**Primary reference:** Roehm, 1945 (IR 195-37)

**Reporter(s):** Donald Grybeck (U.S. Geological Survey)

**Last report date:** October 8, 2004

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