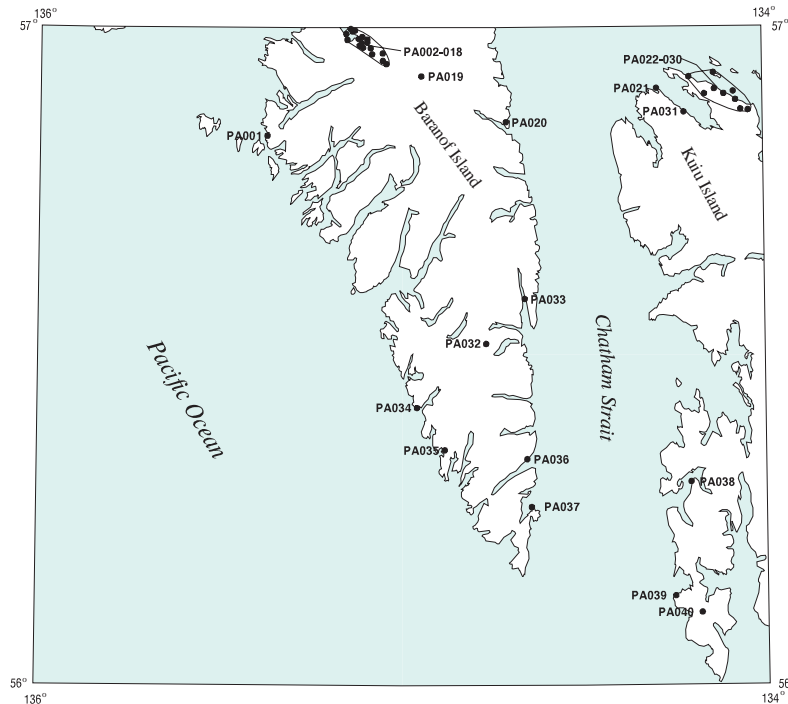


Port Alexander quadrangle

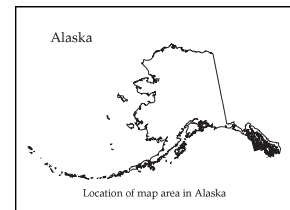
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



*Distribution of mineral occurrences in the Port Alexander
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, telephone (907) 786-7448. This compilation is authored by:

Donald J. Grybeck
Bellingham, WA



This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

OPEN-FILE REPORT 2005-1168

Site name(s): Unnamed (near Goddard Hot Springs)**Site type:** Occurrences**ARDF no.:** PA001**Latitude:** 56.8355**Quadrangle:** PA D-5**Longitude:** 135.3712**Location description and accuracy:**

Several traverses have been made to study the radioactivity in the vicinity of the Goddard Hot Springs (West and Benson, 1955). The springs are at the site of Goddard which is shown on the USGS 1:63,360-scale topographic map. The springs are near the center of the SW1/4 section 17, T. 58 S., R. 63 E. The location is accurate.

Commodities:**Main:** Th, U**Other:****Ore minerals:** Allanite**Gangue minerals:****Geologic description:**

The Goddard Hot Springs have long been known (Knopf, 1912) and there are no known base or precious metal deposits nearby. The rocks in the vicinity are part of a large Tertiary intrusion. Loney and others (1975) call it a hornblende-biotite granodiorite; Reifstuhel (1986) assigns the rocks to the border phase of the Crawfish Pluton which consists mainly of hornblende-biotite granodiorite and tonalite that has been dated as 48.0 plus/minus 1.4 Ma and 48.3 plus/minus 1.3 Ma. Based on the report of radium in the water of the springs, West and Benson (1955) completed three traverses for up to two miles away from the hot springs to assess the radioactivity of the area. The most radioactive sample was of granite slope wash between the Main Spring and the Magnesia Spring; it contained 0.016 percent equivalent uranium. A sample of beach sand at Goddard contained 0.015 percent equivalent uranium, and a sample of sand and gravel about 0.8 mile north of Goddard contained 0.015 percent equivalent uranium. The other samples were lower. In most of the samples, the radioactive is probably due mainly to thorium in allanite which forms up to 7 percent of some of the mineral concentrates.

Alteration:**Age of mineralization:**

Radioactive allanite is an accessory mineral in a Tertiary granitic pluton dated at about 48 Ma.

Deposit model:

Radioactive allanite in granitic rocks.

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

Several traverses were carried out in 1949 by the U.S. Geological Survey in the vicinity of the hot springs to determine the radioactivity of the rocks in the area.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160011.

References:

Knopf, 1912; West and Benson, 1955; Overstreet, 1967; Cobb, 1972; Loney and others, 1975; Cobb, 1978; Reifentstahl, 1986; Bittenbender and others, 1999.

Primary reference: West and Benson, 1955

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

Last report date: January 2, 2005

Site name(s): Baranof Queen**Site type:** Prospect**ARDF no.:** PA002**Latitude:** 56.9981**Quadrangle:** PA D-4**Longitude:** 135.1410**Location description and accuracy:**

There is little information about the Baranof Queen prospect and it was not found by Bittenbender and others (1999). It is probably about 0.9 mile north of Arguello Island at the head of Silver Bay and about 0.1 mile northwest of the center of section 19, T. 56 S., R. 65 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

There is little information about the Baranof Queen prospect other than that it was staked before 1912 (Knopf, 1912). It could not be found by Bittenbender and others (1999) but was shown on their map of the properties in the area. It is probably similar to the other deposits in the Silver Bay area.

Alteration:**Age of mineralization:**

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

Deposit model:

Probably a 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:

No information other than that it was originally staked before 1912.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160026.

References:

Knopf, 1912; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Silver Bay**Site type:** Prospect**ARDF no.:** PA003**Latitude:** 56.9958**Quadrangle:** PA D-4**Longitude:** 135.1291**Location description and accuracy:**

There is little recent information about the Silver Bay prospect and it was not located by Bittenbender and others (1999). It is probably about 0.9 mile northeast of Arguello Island and about 0.6 mile southeast of the center of section 19, T. 56 S., R. 65 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The Silver Bay prospect was first mentioned by Becker (1898) who described it as a quartz vein with pyrite and chalcopyrite in 'pyroclastic diorite' (which is probably graywacke). There was no work in progress then. The prospect was mentioned in several later publications until 1912 but with few details other than that some work was being done on it (Wright and Wright, 1905; Wright and Wright, 1906; Wright, 1907; Knopf, 1912). It could not be found by Bittenbender and others (1999) who listed it in their table of deposits in the area and located it on their map of them. It is probably similar to the other gold-quartz veins in the Silver Bay area.

Alteration:**Age of mineralization:**

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

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:**

A claim or claims active prior to 1912.

Production notes:**Reserves:**

None.

Additional comments:

MAS number: 0021160023.

References:

Becker, 1898; Wright and Wright, 1905; Wright and Wright, 1906; Wright, 1907; Knopf, 1912; Cobb, 1972; Loney and others, 1975; Cobb, 1978; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999**Reporter(s):** Donald J. Grybeck (U.S. Geological Survey)**Last report date:** January 2, 2005

Site name(s): Henrietta**Site type:** Prospect**ARDF no.:** PA004**Latitude:** 56.9942**Quadrangle:** PA D-4**Longitude:** 135.1357**Location description and accuracy:**

There is little information about the Henrietta prospect and it was not found by Bittenbender and others (1999). It is probably about 0.7 mile north-northeast of Arguello Island at the head of Silver Bay and about 0.5 mile south-southeast of the center of section 19, T. 56 S., R. 65 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

There is little information about the Henrietta prospect other than that it was staked before 1912 (Knopf, 1912). It could not be found by Bittenbender and others (1999) but was shown on their map of the properties in the area. It is probably similar to the other deposits in the Silver Bay area.

Alteration:**Age of mineralization:**

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

Deposit model:

Probably a 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:

No report of work other than active before 1912.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160027.

References:

Knopf, 1912; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Edgcumbe Exploration; Bonanza Nos. 21 & 22**Site type:** Prospect**ARDF no.:** PA005**Latitude:** 56.9905**Quadrangle:** PA D-4**Longitude:** 135.1534**Location description and accuracy:**

The Edgcumbe Exploration prospect is about 0.5 mile northwest of Arguello Island at the head of Silver Bay. The prospect is about 0.6 mile northeast of the center of section 25, T. 56 S., R. 64 E.

Commodities:**Main:** Au**Other:** As, Hg**Ore minerals:** Arsenopyrite, gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

Little is known about the early history of this property; it was held by the Edgcumbe Exploration Company in 1930 and they continued to hold the property into the 1940's (Bittenbender and others, 1999). A mill was erected in 1941 to process ore from this and other properties in the area. There is no record of production but there may have been some. The workings include a 120-foot adit with a winze, and a raise to the surface.

The deposit consists of a gold-quartz vein in Sitka Graywacke (Bittenbender and others, 1999). The vein consists mainly of milky white quartz with some bands of ribbon quartz. The quartz contains disseminated pyrite and arsenopyrite and bands of these sulfides also occur adjacent to the vein next to the wallrock. The vein pinches and swells, reaching a maximum thickness of about 5 feet; it pinches out to the southeast and is truncated on the northwest by a fault (Bittenbender and others, 1999, fig. 15). The highest values for gold in samples collected by Bittenbender and others, was 1,810 parts per billion (ppb) in a select sample and 1,170 ppb across 0.7 feet. Samples from the vein typically have elevated arsenic and mercury values.

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 36a).

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Little is known about the early history of this property. It was held by the Edgcumbe Exploration Comp [any in 1930 and they continued to hold the property into the 1940's. A mill was erected in 1941 to process ore from this and other properties in the area. The workings include a 120-foot adit with a winze and a raise to the surface.

Production notes:

A mill was erected in 1941 to process ore from this and other properties in the area. There is no record of production but there may have been some.

Reserves:

None.

Additional comments:**References:**

DeArmond, 1997; Roehm, 1947; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Eureka**Site type:** Prospect**ARDF no.:** PA006**Latitude:** 56.9814**Quadrangle:** PA D-4**Longitude:** 135.1502**Location description and accuracy:**

The Eureka prospect is about 0.4 mile southwest of Arguello Island at the head of Silver Bay. The prospect is about 0.6 mile west-southwest of the center of section 30, T. 56 S., R. 65 E.

Commodities:**Main:** Au**Other:** As, Cu**Ore minerals:** Arsenopyrite?, chalcopyrite, pyrite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

Little is known about the history of the Eureka prospect which was briefly described by Becker (1898) and Knopf (1912). Bittenbender and others (1999) mapped an 85-foot adit on the property and there is a second, caved adit nearby. A quartz vein near a slate-graywacke contact is exposed for about 40 feet in the adit. The vein is about 2 inches thick. A sample across it contained 27.5 parts per million (ppm) gold, 3.2 ppm silver, and 4,060 parts per million arsenic. Becker (1898) noted that chalcopyrite is present and that the pyrite-quartz vein here is in slate near dikes and brecciated masses of diorite (which is probably graywacke in modern terminology).

Alteration:**Age of mineralization:**

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

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 property has a 85-foot adit and another of unknown length that is caved.

Production notes:

Unknown; possibly a small amount.

Reserves:

None.

Additional comments:

MAS number: 0021160009.

References:

Becker, 1898; Knopf, 1912; Cobb, 1972; Loney and others, 1975; Cobb, 1978; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Green Lake**Site type:** Prospect**ARDF no.:** PA007**Latitude:** 56.9860**Quadrangle:** PA D-4**Longitude:** 135.1089**Location description and accuracy:**

The Green Lake prospect is about 0.1 mile southeast of the outlet of Green Lake and about 0.1 mile north-east of the center of section 29, T. 56 S., R. 65 E.

Commodities:**Main:** Au**Other:****Ore minerals:** Gold, pyrite**Gangue minerals:** Calcite, quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

Little is known about the Green Lake prospect beyond what Roehm (1938 [PE 116-2]) reported. The prospect was discovered in 1912 and was explored soon after by a few surface cuts and a short tunnel. It was dormant until 1928 when it was restaked and work was started on a tunnel. The work continued until at least 1938 when Roehm visited the property. The rocks in the vicinity are graywacke and slate that strike about N50W and dip steeply south. There are two parallel 'veins' on the property; they are about 300 feet apart and parallel the bedding of the host rock. However, from the description, the 'veins' probably are fault zones with quartz stringers. The longest tunnel, the one Roehm mapped, is 324 feet long with a then-caved 65-foot crosscut. A fault zone ('vein') with quartz stringers was cut in about the middle of the tunnel. Adjacent to this 'vein', disseminated pyrite and calcite extend a few feet into the wallrock and some of the quartz stringers as well. The fault zone is silicified with small veinlets of quartz. A channel sample across 6 feet of the mineralized zone contained 0.02 ounce of gold per ton. Roehm's map shows quartz stringers and sulfide mineralization at a short crosscut at the end of the tunnel but he provides no details. Roehm also sampled a large trench on one of the veins on the surface above the tunnel; a channel across 5 feet of mineralization contained \$0.50 in gold (0.014 ounce of gold per ton.). Free gold can be seen in samples from some of the trenches. There is no record of further work.

Alteration:

The fault is silicified with quartz stringers; disseminated pyrite and calcite and quartz stringers extend into

the graywacke host rock for a few feet from the fault.

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 36a).

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The prospect has been explored by three tunnels; the longest and most recent is 324 feet long. There are also several trenches.

Production notes:

Probably none.

Reserves:

None.

Additional comments:

MAS number: 0021160030.

References:

Nelson, 1931; Roehm, 1938 (PE 116-2); Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Roehm, 1938 (PE 116-20)

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

Last report date: January 2, 2005

Site name(s): Bonanza #1**Site type:** Prospect**ARDF no.:** PA008**Latitude:** 56.9828**Quadrangle:** PA D-4**Longitude:** 135.1188**Location description and accuracy:**

The Bonanza #1 prospect is about 0.9 mile east-southeast of Arguello Island at the head of Silver Bay. The prospect is about 0.3 mile west-southwest of the center of section 29, T. 56 S., R. 65 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

Little is known of the history of the Bonanza No. 1 prospect other than that it was shown on a 1940's map of the Edgcombe Exploration Company. Bittenbender and others (1999, fig. 17) located a 105-foot adit that was driven along a fault zone in black slate and graywacke. They sampled scattered quartz stringers in the adit, but none had significant metal values except for one sample that contained more than 11 parts per million mercury.

Alteration:**Age of mineralization:**

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

Deposit model:

Quartz vein with anomalous mercury.

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

Site Status: Probably inactive

Workings/exploration:

A 105-foot adit of uncertain age.

Production notes:

Reserves:

None.

Additional comments:

References:

Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Patton**Site type:** Prospect?**ARDF no.:** PA009**Latitude:** 56.9821**Quadrangle:** PA D-4**Longitude:** 135.0947**Location description and accuracy:**

There is little information about the Patton prospect(?) other than that it is shown on a map of the mineral deposits of the Silver Bay area by Bittenbender and others (1999). It is about 0.7 mile east-southeast of the outlet of Green Lake and about 0.4 mile west-southwest of the center of section 28, T. 56 S., R. 65 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

There is little information about the Patton prospect(?) other than that it is shown on a map of the mineral deposits of the Silver Bay area by Bittenbender and others (1999). It is probably similar to the other gold-quartz veins in the Silver Bay area.

Alteration:**Age of mineralization:**

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

Deposit model:

Probably a 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:

Production notes:

Reserves:
None.

Additional comments:
MAS number: 0021160028.

References:
Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): No Name**Site type:** Prospect**ARDF no.:** PA010**Latitude:** 56.9726**Quadrangle:** PA D-4**Longitude:** 135.1166**Location description and accuracy:**

The No Name prospect is shown by symbol on the 1:63,360-scale topographic map. It is 1.3 miles south-east of Arguello Island at the head of Silver Bay and about 0.3 mile northwest of the center of section 32, T. 56 S., R. 65 E. The underground workings were mapped by Bittenbender and others (1999, fig. 25).

Commodities:**Main:** Au**Other:** As, Hg**Ore minerals:****Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

Bittenbender and others (1999) located this prospect which apparently had not been described previously. A 230-foot adit with a 24-foot drift were driven in graywacke and argillite. The drift at the end of the adit is along a brecciated fault zone with quartz stringers at a graywacke-greenstone contact. Samples from the adit contained very low gold values; the highest gold value was 60 parts per billion across 3.5 feet. All of the samples contained anomalous arsenic and several contained anomalous mercury. The highest arsenic value was 632 parts per million (ppm) and two samples contained 1.6 and 2.9 ppm mercury.

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 36a).

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The only workings are a 230-foot adit with a 24-foot drift.

Production notes:

Probably none.

Reserves:

None.

Additional comments:

References:

Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Lower Ledge; Haley and Rogers**Site type:** Prospect**ARDF no.:** PA011**Latitude:** 56.9763**Quadrangle:** PA D-4**Longitude:** 135.1105**Location description and accuracy:**

The location of the Lower Ledge prospect is somewhat uncertain but it is probably at an elevation of about 430 feet along the creek that drains from Pinta Lake to the head of Silver Bay. The prospect is about 0.6 mile north-northeast of the center of section 32, T. 56 S., R. 65 E. The surface and underground workings are shown by Bittenbender and others (1999, figs. 22-24).

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The early history and exact location of this prospect are obscure although it was mentioned in several early reports (Becker, 1898; Knopf, 1912). Bittenbender and others (1999, figs. 22-24) located a 63-foot adit and a flooded shaft that are probably the Lower Ledge prospect. The adit is along a 1.5-foot-thick fault zone that cuts graywacke and contains quartz stringers up to 1/2 inch thick. The shear zone strikes S70W and dips steeply south to vertical. Samples taken in the adit contained no precious metal values. Samples of quartz from a dump near the shaft had very low precious metal values but contained minor pyrite and arsenopyrite, and rare galena. One sample of quartz float in the creek near the shaft contained 2,350 parts per billion gold.

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 36a).

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

36a

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

The prospect was explored by a 63-foot adit and a now-flooded shaft of uncertain age.

Production notes:

No record of production; probably none.

Reserves:

None.

Additional comments:

MAS number: 0021160016.

References:

Becker, 1898; Wright and Wright, 1905; Knopf, 1912; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999**Reporter(s):** Donald J. Grybeck (U.S. Geological Survey)**Last report date:** January 2, 2005

Site name(s): Stewart**Site type:** Mine**ARDF no.:** PA012**Latitude:** 56.9775**Quadrangle:** PA D-4**Longitude:** 135.0949**Location description and accuracy:**

The Stewart Mine is shown by symbol on the topographic map. It is about 1.9 miles east-southeast of Arguello Island at the head of Silver Bay and about 0.7 mile northwest of the center of section 33, T. 56 S., R. 65 E. The location is accurate and the surface and underground working have been mapped by Bittenbender and others (1999, figs. 18-21).

Commodities:**Main:** Au**Other:** As, Hg**Ore minerals:** Arsenopyrite?, pyrite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The quartz vein that was to become the Stewart Mine was found in 1872 and production began in 1877 from 3 adits (Bittenbender and others, 1999). In 1879 a 10-stamp mill was in operation. The mine closed in 1880 and was mired in litigation until 1892 when it again was active under new ownership. There are no production records and apparently no major work has taken place after 1893. The mine is on a patented claim that is owned by the Sheldon Jackson College in Sitka. Becker described the property in 1898 but the mill was already in ruins.

Bittenbender and others (1999, figs. 18-21) mapped and sampled the three adits, the lowest and longest of which is about 190 feet long. The adits were driven along the vein which is exposed in the underground workings for about 200 feet horizontally and 120 feet vertically. The vein is mainly quartz with inclusions of graywacke host rock; the maximum width of the vein is 16 feet and it averages about 5 to 6 feet. The only visible sulfide in the vein is pyrite but arsenopyrite is likely based on the analyses of samples, which generally contained low gold values. The best gold values were 3,130 parts per billion (ppb) over an area of 3 feet by 5 feet and 1,780 ppb across 5 feet of the vein. A sample of the concentrates from the mill contained 57.9 parts per million (ppm) gold, 2,000 ppm lead, more than 1 percent arsenic, and more than 0.1 percent mercury. Wright and Wright (1905) reported that the ore averaged about \$7.50 per ton in gold (about 0.36 ounce of gold per ton).

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 36a).

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

36a

Production Status: Yes; small

Site Status: Undetermined

Workings/exploration:

The quartz vein that was to become the Stewart Mine was found in 1872 and production began in 1877 from 3 adits (Bittenbender and others, 1999). In 1879 a 10-stamp mill was in operation. The mine closed in 1880 and was mired in litigation until 1892 when it again was active under new ownership. There are no production records and apparently no major work has taken place after 1893.

Production notes:

There was probably some production from 1877 to 1880, but no records are available.

Reserves:

None.

Additional comments:

MAS number: 0021160007.

References:

Becker, 1898; Wright and Wright, 1905; Wright and Wright, 1906; Wright, 1907; Knopf, 1912; Cobb, 1972; Loney and others, 1975; Cobb, 1978; DeArmond, 1997; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Bauer; Haley and Rogers**Site type:** Prospect**ARDF no.:** PA013**Latitude:** 56.9697**Quadrangle:** PA D-4**Longitude:** 135.1068**Location description and accuracy:**

The Bauer prospect is shown by symbol on the 1:63,360-scale topographic map. It is 1.7 mile northwest of the center of Pinta Lake and about 0.2 mile east of the center of section 32, T. 56 S., R. 65 E. The underground workings are mapped by Bittenbender and others (1999, fig. 26).

Commodities:**Main:** Au**Other:** As, Hg**Ore minerals:** Arsenopyrite, gold, pyrite, pyrrhotite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The Bauer prospect was staked in 1895 (Becker, 1898) and was active intermittently to 1923. By 1904, at least 850 feet of adit had been driven (Wright and Wright, 1905), and in 1912, 180 feet of drift was driven off the end of the adit Knopf, 1912). Bittenbender and others (1999) mapped and sampled what are probably all of the old workings. Most of the adit is in graywacke and phyllite. The drift at the end of the adit is along a fault zone marked by fine-grained quartz and quartz stringers with minor pyrite, arsenopyrite, and pyrrhotite. Samples contained low precious metal values. The highest value was in a sample across 1.5 feet of the fault zone; it contained 280 parts per billion gold. That sample also contained 716 parts per million (ppm) arsenic and 1.1 ppm mercury. Becker (1898) noted that there was a rich pay streak along the foot-wall of a quartz vein several feet thick. Wright and Wright (1905) said that the main vein averaged about \$4.50 in gold (about 0.22 ounce of gold per ton).

Alteration:**Age of mineralization:**

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

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 an adit at least 850 feet long and a 180-foot drift off the end of the adit; all of the workings were driven before 1912.

Production notes:

No record of production.

Reserves:

None.

Additional comments:

MAS number: 0021160005.

References:

Becker, 1898; Wright and Wright, 1905; Knopf, 1912; Loney and others, 1975; DeArmond, 1997; Bittenbender and others, 1999.

Primary reference: Bittenbender, 1999

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

Last report date: January 2, 2005

Site name(s): Wicked Falls**Site type:** Prospect**ARDF no.:** PA014**Latitude:** 56.9689**Quadrangle:** PA D-4**Longitude:** 135.0855**Location description and accuracy:**

The Wicked Falls prospect is at an elevation of about 970 feet adjacent to the creek between Pinta Lake and the head of Silver Bay. The prospect is about 0.2 mile south of the center of section 33, T. 56 S., R. 65 E. The surface and underground workings are shown on figure 27 of Bittenbender and others (1999).

Commodities:**Main:** Au**Other:** As**Ore minerals:** Arsenopyrite, gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The only record of the Wicked Falls prospect is on a map of the Edgcumbe Exploration Company that is cited in Bittenbender and others (1999). The map shows two tunnels on the property but Bittenbender and others (1999) could find only a 17-foot adit. In the adit, discontinuous quartz veins up to 1.8 feet thick occurs adjacent to a fault between graywacke and slate. The veins pinch and swell and consist mainly of milky quartz. Minor pyrite and arsenopyrite occur along the edge of shale partings in the vein and in sheared slate. The richest sample was hand picked and contained 280 parts per billion gold. There is no indication of production.

Alteration:**Age of mineralization:**

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

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 working is a 17-foot adit.

Production notes:

Probably none.

Reserves:

None.

Additional comments:

MAS number: 0021160029.

References:

Knopf, 1912; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Pinta Lake)**Site type:** Occurrences**ARDF no.:** PA015**Latitude:** 56.9597**Quadrangle:** PA D-4**Longitude:** 135.0816**Location description and accuracy:**

This site consists of three quartz veins that were sampled by Bittenbender and others (1999). The veins occur along a trend that extends for about 1.5 mile northwest of Pinta Lake. The site is plotted in about the middle of these occurrences which is about 0.5 mile northwest the center of section 6, T. 57 S., R. 66 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

There are no prospects known near this site. But Bittenbender and others (1999) found three quartz veins up to 6 feet thick along a trend that extends for about 1.5 miles northwest of Pinta Lake. Most of the veins have no sulfides and low precious metal values, but one sample collected near the outlet of Pinta Lake contained 205 parts per billion gold, 0.4 part per million (ppm) silver, and 2,550 ppm arsenic.

Alteration:**Age of mineralization:**

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

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:

Only surface sampling by government geologists.

Production notes:

Reserves:

None.

Additional comments:

References:

Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Free Gold**Site type:** Occurrences**ARDF no.:** PA016**Latitude:** 56.9610**Quadrangle:** PA D-4**Longitude:** 135.0520**Location description and accuracy:**

The Free Gold prospect is shown by symbol on the 1:63,360-scale topographic map. It is about 0.6 mile east-northeast of Pinta Lake and about 0.4 mile north of the center of section 5, T. 57 S., R. 66 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The Free gold prospect was staked in 1876 and an arrastre and mine buildings were built in 1879 (Becker, 1898); Wright and Wright (1905) and Knopf (1912) described the prospect as active but there apparently has been no later work on the prospect. A map by the Edgecumbe Exploration Company shows an adit in the vicinity, but Bittenbender and others (2002) who cite the map could not find the adit. They did find quartz veins in the area that cut massive graywacke. Samples contained low precious metal values; none of the quartz had visible sulfides. But a piece of float collected near the northwest side of the northern of the Lucky Chance Lakes contained 1,180 parts per billion gold.

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 36a).

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

36a

Production Status: None

Site Status: Undetermined

Workings/exploration:

There was considerable work on this prospect prior to 1912 including the construction of an arrastre and several mine buildings. There is no indication of later work other than sampling by government geologists in the late 1990's.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160010.

References:

Becker, 1898; Wright and Wright, 1905; Knopf, 1912; Cobb, 1972; Loney and others, 1975; Cobb, 1978; DeArmond, 1997; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Lucky Chance**Site type:** Mine**ARDF no.:** PA017**Latitude:** 56.9497**Quadrangle:** PA D-4**Longitude:** 135.0515**Location description and accuracy:**

The Lucky Chance Mine is shown by symbol on the 1:63,360-scale topographic map. It is near the south end of the southern of the Last Chance Lakes and about 0.5 mile south of the center of section 5, T. 57 S., R. 66 E.

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

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

The Last Chance Mine was first staked in 1874 and went through a succession of owners to 1904. By 1885, it was developed by a 25-foot shaft and a 30-foot drift (DeArmond, 1997). By 1887, the property had a 5-stamp mill and 60 tons of ore was produced from two adits. By 1904, there was a 10-stamp mill, a saw-mill, and a waterpower generator, and about 1,200 tons of ore had been produced above the main adit which was called the No. 2 tunnel (Becker, 1898; Wright and Wright, 1905; Roehm, 1940). A 3,000- to 4,000-foot tram was built from the mouth of this adit to the mill below and a corduroy road was built to the mine from the head of Silver Bay. The workings include: a 468-foot adit, the No. 2 Tunnel; a 45-foot adit higher on the hillside; a shaft; a glory hole at the top of a stope about 50 feet wide that extends vertically for about 80 feet; and numerous surface trenches. The property was under new ownership in 1940 (Roehm, 1940) but most of the development and production probably took place before the early 1900's. There are no records but there certainly was some production.

The deposit at the Last Chance Mine is along a prominent fault zone that strikes about N45W, dips 80-85NE, and cuts graywacke and phyllite (Roehm, 1940). Numerous quartz stringers occur in the fault zone, many at nearly right angles to it, and the stope that was mined coincides with the greatest concentration of these stringers. Many of the quartz stringers persist into phyllite in the hanging wall of the fault. The quartz is generally milky white and often includes partings of the graywacke and phyllite country rock. Minor pyrite and arsenopyrite occur as thin seams and irregular masses up to 0.5 inch thick in the quartz which also

carries visible gold. Several samples taken by Roehm (1940) along the hanging wall of the fault/vein contained 0.17 to 1.72 ounces of gold per ton.

In the late 1990's, the underground workings were caved but Bittenbender and others (1999) collected several surface samples. Two hand-selected samples from the dump contained 19.3 and 16.9 parts per million (ppm) gold. A sample of concentrates from the mill site contained 26.5 ppm gold, 13 ppm silver, 1,250 ppm lead, and more than 1 percent arsenic.

Alteration:**Age of mineralization:**

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

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 Last Chance Mine was first staked in 1874 and went through a succession of owners to 1904. By 1885, it was developed by a 25-foot shaft and a 30-foot drift (DeArmond, 1997). By 1887, the property had a 5-stamp mill and 60 tons of ore was produced from two adits. By 1904, there was a 10-stamp mill, a saw-mill, and a waterpower generator, and about 1,200 tons of ore had been produced above the main adit which was called the No. 2 Tunnel (Becker, 1898; Wright and Wright, 1905; Roehm, 1940). A 3,000- to 4,000-foot tram was built from the mouth of this adit to the mill below and a corduroy road was built to the mine from the head of Silver Bay. The workings include: a 468-foot adit, the No. 2 tunnel; a 45-foot adit higher on the hillside; a shaft; a glory hole at the top of a stope about 50 feet wide that extends vertically for about 80 feet; and numerous surface trenches. The property was under new ownership in 1940 (Roehm, 1940) but most of the development and production probably took place before the early 1900's.

Production notes:

By 1887, the property had a 5-stamp mill and 60 tons of ore was produced from two adits. By 1904, there was a 10-stamp mill and about 1,200 tons of ore had been produced above the main adit, the No. 2 tunnel. There are no records but there certainly was some production.

Reserves:

None.

Additional comments:

MAS number: 0021160017.

References:

Becker, 1898; Wright and Wright, 1905; Wright and Wright, 1906; Wright, 1907; Knopf, 1912; Roehm, 1940; Cobb, 1972; Loney and others, 1975; Cobb, 1978; DeArmond, 1997; Bittenbender and others, 1999.

Primary reference: Roehm, 1940; Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Lucky Chance Mountain)**Site type:** Prospects**ARDF no.:** PA018**Latitude:** 56.9447**Quadrangle:** PA D-4**Longitude:** 135.0419**Location description and accuracy:**

This site consists of several previously undocumented workings found by Bittenbender and others (1999). They extend for about a mile along the ridge that extends south and then east from the top of Lucky Chance Mountain. The site is plotted near the center of these workings which is about 0.5 mile northeast of the center of section 8, T. 57 S., R. 66 E.

Commodities:**Main:** Au**Other:** As**Ore minerals:** Arsenopyrite, gold, pyrite**Gangue minerals:** Quartz**Geologic description:**

This deposit is one of many of similar deposits (PA002 to PA018) scattered over an area of about 6 square miles at the head of Silver Bay (Bittenbender and others, 1999). The deposits are gold-quartz veins with sparse sulfides, usually only pyrite and arsenopyrite. Samples that have been analyzed with modern methods usually show anomalous arsenic even if arsenopyrite is not identified in the rocks, and several parts per million mercury. The veins are often parallel to the bedding of the host rock which is graywacke and argillite of the Sitka Graywacke of Cretaceous age (Loney and others, 1975). Many of the so-called veins in the early literature are actually fault zones with lenses of quartz or concentrations of quartz stringers along the fault zone. Prospecting began in the area in 1871. The Stewart Mine (PA012) was located in 1872 and it was the first lode-gold mine in Alaska. The Silver Bay area has been prospected intermittently to the present but the veins are relatively small and most are low grade. The area has produced relatively little gold, many of the properties have not been active since before 1900, and there has been no production since the early 1940's.

This site consists of several previously undocumented workings--4 trenches and a 20-foot adit-- found by Bittenbender and others (1999). The workings extend for about a mile along the ridge that extends south and then east from the top of Lucky Chance Mountain. They expose several quartz veins with rare pyrite and arsenopyrite, in phyllite and graywacke. The veins generally strike northwest and dip steeply to the northeast and southwest. Precious metal values in samples are generally low but two hand-selected samples contained 4,840 and 2,330 parts per billion gold.

Alteration:**Age of mineralization:**

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

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:**

Four undocumented trenches and a 20-adit were found during a study of the area by government geologists in the late 1990's.

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

Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999**Reporter(s):** Donald J. Grybeck (U.S. Geological Survey)**Last report date:** January 2, 2005

Site name(s): Hill**Site type:** Occurrences**ARDF no.:** PA019**Latitude:** 56.9260**Quadrangle:** PA D-3**Longitude:** 134.9450**Location description and accuracy:**

These occurrences are in small bodies of pyroxenite and dunite exposed in the mountains south of the headwaters of the Vodopad River. The occurrences are about 1.6 miles west-northwest of peak 2469 and near the center of section 13, T. 57 S., R. 66 E.

Commodities:**Main:** Cr, Cu, Ni, Pd, Pt**Other:****Ore minerals:** Chalcopyrite, chromite, pyrite, pyrrhotite**Gangue minerals:****Geologic description:**

Dunite and pyroxenite occur in a series of sub-parallel, northwest-trending lenses less than a mile long in a heterogeneous Triassic unit of phyllite with some quartzite, greenstone, graywacke, semischist, and metachert (Loney and others, 1975). The dunite contains thin trains and disseminations of chromite; the pyroxenite contains sparsely disseminated chalcopyrite, pyrite, and pyrrhotite. The deposit was found in 1935; claims were soon staked but were abandoned by 1942 (Guild and Balsley, 1942). Bittenbender and others (1999) collected samples of the pyroxenite for analysis. They contained 12 to 3,050 parts per million (ppm) copper and 7 to 1,100 ppm nickel. One sample, the one with the highest copper value, contained 55 parts per billion (ppb) platinum and 68 ppb palladium; all the other samples contained 5 ppb or less platinum and 10 ppb or less palladium. All the studies of the deposit indicate that the economic potential of the prospect is low (Guild and Balsley, 1942; Kennedy and Walton, 1946; Bittenbender and others, 1999).

Alteration:**Age of mineralization:**

Loney and others (1975) indicate that the ultramafic bodies that contain the economic elements of interest are Mesozoic in age.

Deposit model:

Dunite and pyroxenite with low values of Cu, Cr, Ni, Pd, and Pt.

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

Claims were staked in 1935 or shortly thereafter but were abandoned by 1942. There is no indication of significant workings.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160002.

References:

Guild and Balsley, 1942; Kennedy and Walton, 1946; Berg and Cobb, 1967; Cobb, 1972; Loney and others, 1975; Cobb, 1978; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Red Bluff Bay**Site type:** Prospects**ARDF no.:** PA020**Latitude:** 56.8562**Quadrangle:** PA D-3**Longitude:** 134.7108**Location description and accuracy:**

The Red Bluff Bay mafic-ultramafic complex forms an elliptical outcrop about 4 miles long that is exposed at the mouth and north of the mouth of Red Bluff Bay. The coordinates are at about the center of the body which is near the center of section 9, T. 58 S., R. 68 E.

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

The Red Bluff Bay ultramafic complex forms an elliptical outcrop about 4 miles long that consists mainly of partly serpentinized, dunite and wehrlite in gradational contact (Guild and Balsley, 1942; Holdsworth and Williams, 1953; Himmelberg and Loney, 1995). Irregular masses of clinopyroxenite in sharp contact with the dunite and wehrlite make up a large part of the northwest portion of the complex. The complex is surrounded by greenschist and phyllite with minor amphibolite of the Kelp Bay Group of Late Jurassic and Early Cretaceous age (Loney and others, 1975). There is no indication of contact metamorphism around the complex and it may be largely in fault contact with the surrounding metamorphic rocks. The complex is layered but it is not zoned; Himmelberg and Loney (1995) interpret it as 'Alaskan-type' ultramafic complex.

Chromite was first recognized in the complex in 1933 and 28 claims were staked in 1935 (Smith, 1937 [B 880-A]). The Alaska Juneau Mining Company held the claims until 1940. Subsequently, several government agencies examined the complex but there has been little or no exploration by industry since WWII.

Eight mineralized zones up to 30 feet wide and several hundred feet long have been identified in the dunite. These zones contain disseminated chromite and lenses of chromite up to 3 feet wide and 40 feet long (Guild and Balsley, 1942; Bittenbender and others, 1999). Guild and Balsley identified an inferred resource of 30,000 tons of material in the complex with an average grade of 12 percent Cr₂O₃. There is no indication that the ultramafic rocks have significant concentrations of copper, nickel, or platinum-group elements. The bodies are small and the chrome to iron ratio is low. The deposit is considered too small and too low grade to be a viable resource (Bittenbender and others, 1999). In addition, the complex is now in the South Baranof Wilderness Area which is closed to mineral exploration and mining.

Alteration:

The dunite and wehrlite are largely altered to serpentine.

Age of mineralization:

If the complex is an Alaskan-type body as proposed by Himmelberg and Loney (1995), it is probably about 110 Ma.

Deposit model:

Chromite in Alaska-type ultramafic complex.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Chromite was first recognized in the complex in 1933 and 28 claims were staked in 1935 (Smith, 1937). The Alaska Juneau Mining Company held the claims until 1940. Subsequently, several government agencies examined the complex but there has been little or no exploration by industry since WWII.

Production notes:

Reserves:

Eight mineralized zones up to 30 feet wide and several hundred feet long have been identified in the dunite. These zones contain disseminated chromite and lenses of chromite up to 3 feet wide and 40 feet long (Guild and Balsley, 1942; Bittenbender and others, 1999). Guild and Balsley identified an inferred resource of 30,000 tons of material in the complex with an average grade of 12 percent Cr₂O₃. There is no indication that the ultramafic rocks have significant concentrations of copper, nickel, or platinum-group elements. The bodies are small and the chrome to iron ratio is low. The deposit is considered too small and too low grade to be a viable resource (Bittenbender and others, 1999). In addition, the complex is now in the South Baranof Wilderness Area which is closed to mineral exploration and mining.

Additional comments:

The complex is now in the South Baranof Wilderness Area which is closed to mineral exploration and mining.

MAS number: 0021160001.

References:

Smith, 1937; Smith, 1938; Guild and Balsley, 1942; Nelson, 1942; Kennedy and Walton, 1946; Holdsworth and Williams, 1953; Twenhofel, 1953; Cobb, 1972; Loney and others, 1975; Cobb, 1978; Himmelberg and Loney, 1995; Bittenbender and others, 1999.

Primary reference: Loney and Himmelberg, 1999; Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Allied Group E**Site type:** Prospect**ARDF no.:** PA021**Latitude:** 56.9069**Quadrangle:** PA D-1**Longitude:** 134.2933**Location description and accuracy:**

This prospect is on the point at the south side of the entrance to Saginaw Bay. It is about 1.9 mile south-southwest of Cornwallis Point, near the middle of the southern boundary of section 19, T. 57 S., R. 71 E. The location is accurate.

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

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

The Allied prospect consists of barite in pods and irregular veins 0.1 to 1.4 thick that extend for up to 80 feet (Still and others, 2002). The pod and veins cut volcanic breccia of Devonian to Silurian age. Three samples contained 31 to 41 percent barium. No sulfides occur here.

Alteration:**Age of mineralization:**

Younger than the Silurian or Devonian host rocks.

Deposit model:

Barite in thin veins and pods.

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

Claims were first staked in 1955 but there is no record of extensive work. The site was sampled by the

Bureau of Land Management (Still and others, 2002).

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160022.

References:

Buddington, 1925; Muffler, 1967; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (north side of Cornwallis Peninsula)**Site type:** Prospect**ARDF no.:** PA022**Latitude:** 56.9241**Quadrangle:** PA D-1**Longitude:** 134.2033**Location description and accuracy:**

This prospect is near the shore on the north side of the Cornwallis Peninsula (the peninsula north of Saginaw Bay). It is about 2.8 miles east-southeast of Cornwallis Point and about 0.3 mile east of the center of section 15, T. 57 S., R. 71 E.

Commodities:**Main:** Ba**Other:****Ore minerals:** Barite, galena, pyrite, sphalerite, witherite**Gangue minerals:****Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

This prospect was first staked in 1923 and was restaked periodically until at least 1931 (Buddington, 1925; Still and others, 2002). The mineralization consists of barite veins, veinlets, and pods that cut a sequence that consists mainly of felsic and mafic volcanic rocks of the Keku Volcanics of Triassic age (Muffler, 1967). Some similar veins and veinlets contain witherite. The veins vary from 0.1 to 2.3 feet thick, extend for up to 200 feet along strike, and occur across a zone about 300 feet wide (Still and others, 2002). The veins generally strike northwest and dip steeply to vertically. The rocks in the immediate vicinity of the mineralization consist of a sequence of felsic volcanics, volcanic breccia, limestone, and conglomerate. The volcanics and conglomerate also contain disseminated pyrite and sphalerite. A sample across a vein about 2 feet thick contained 28.3 percent barite. A sample of conglomerate with disseminated sphalerite and pyrite contained 8,382 parts per million (ppm) zinc. A sample of Carboniferous limestone nearby with disseminated pyrite, sphalerite, and galena contained 5.72 percent zinc and 600 ppm lead.

Alteration:**Age of mineralization:**

Younger than the Triassic host rocks.

Deposit model:

Barite-witherite veins; disseminated sulfides.

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

Production Status: None

Site Status: Undetermined

Workings/exploration:

Claims were first staked in 1923 and were restaked until at least 1931. More recently the prospect was examined and sampled by the U.S. Bureau of Land Management (Still and others, 2002).

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160008.

References:

Buddington, 1925; Buddington and Chapin, 1929; Twenhofel and others, 1949; Muffler, 1967; Cobb, 1972; Cobb, 1978; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (on Keku Islands)**Site type:** Prospect**ARDF no.:** PA023**Latitude:** 56.9301**Quadrangle:** PA D-1**Longitude:** 134.1347**Location description and accuracy:**

This prospect is about 1.0 mile south of the center of Payne Island at the northwest end of the unnamed island in section 18, T. 57 S., R. 72 E. The location is accurate.

Commodities:**Main:** W, Zn**Other:****Ore minerals:** Pyrite, sphalerite**Gangue minerals:****Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

This prospect was first described by Buddington (1925). It was examined by the U.S. Bureau of Mines in 1949 when three claims were active (Jermain and Rutledge, 1949). The host rock of the deposit is the Halleck Formation of Permian age; at this site, it consists of limestone, mudstone and conglomerate (Muffler, 1967). The rocks are cut by a set of Tertiary gabbro dikes that strike 10-50NE and dip 18-20SE. The prospect is associated with one of these dikes (Still and others, 2002). The dike is cut at nearly right angles by a set of sphalerite veinlets 0.1 to 2.0 feet thick that form a system of 'ladder veins', some of which also contain pyrite. Calcite veinlets also crosscut the dikes. Still and others (2002) collected chip samples across several of the veinlets. They contained 7,773 parts per million (ppm) to 13.6 percent zinc and 20 to 149 ppm tungsten. A similar deposit occurs about 0.8 mile to the southeast; chip samples from it contained 6.1 to 31.7 percent zinc and 58 to 254 ppm tungsten.

Alteration:**Age of mineralization:**

The sphalerite veinlets cut Tertiary gabbro dikes.

Deposit model:

Sphalerite veinlets.

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Claims have been staked on the deposit but there is no record of exploration beyond surface sampling.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160012.

References:

Buddington, 1925; Jermain and Rutledge, 1949; Berg and Cobb, 1967; Muffler, 1967; Cobb, 1972; Cobb, 1978; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (north of Saginaw Bay)**Site type:** Occurrences**ARDF no.:** PA024**Latitude:** 56.8981**Quadrangle:** PA D-1**Longitude:** 134.1603**Location description and accuracy:**

This site is the center of an area of about two square miles on the peninsula north of Saginaw Bay. More than one hundred claims were staked here in the late 1970's that covered sections 24, 25, and 36 of T. 57 S., R. 71 E. The location used for this site is at about the center of this area which is near the center of section 25.

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

These occurrences are part of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

The rocks in the area include outcrops of the following formations: 1) felsic to mafic volcanic rocks of the Triassic Keku Volcanics; 2) oolitic limestone of the Triassic Cornwallis Limestone; 3) white limestone, dolomite, and chert of the Permian Pybus Formation; and 4) crinoidal limestone of Carboniferous age (Muffler, 1967).

These barite and/or base-metal occurrences were probably discovered in the 1920's but there is little specific information about them and their location is vague (Buddington, 1925). In 1978 and 1979, Mapco Inc. staked 108 claims for lead and zinc; the claims covered about 2 square miles in the center of the peninsula north of Saginaw Bay (Hedderly-Smith, 1993; Still and others, 2002). They drilled one hole in the west-central part of section 24, T. 57 S., R. 71 E., but there is no other information about their work. Still and others (2002) investigated the general area and collected several samples but none has significant metal values.

Alteration:**Age of mineralization:**

The host rocks vary in age from Carboniferous to Triassic and the mineralization is younger.

Deposit model:

Insufficient information on this specific area.

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

These barite and/or base-metal occurrences were probably discovered in the 1920's but there is little specific information about them and their location is vague (Buddington, 1925). In 1978 and 1979, Mapco Inc. staked 108 claims for lead and zinc; the claims covered about 2 square miles in the center of the peninsula north of Saginaw Bay (Hedderly-Smith, 1993; Still and others, 2002). They drilled one hole in the west-central part of section 24, T. 57 S., R. 71 E., but there is no other public information about their work.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160015.

References:

Buddington, 1925; Muffler, 1967; Cobb, 1972; Cobb, 1978; Hedderly-Smith, 1993; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (on 'Little Creek')**Site type:** Prospect**ARDF no.:** PA025**Latitude:** 56.9055**Quadrangle:** PA D-1**Longitude:** 134.1325**Location description and accuracy:**

In 1969, a claim was staked for gold on a small creek locally called 'Little Creek'. The claim was centered about 0.2 mile inland and about 0.4 mile north of hill 815 in about the middle of the north boundary of section 30, T. 57 S., R. 72 E.

Commodities:**Main:** Au?, Ba**Other:****Ore minerals:** Barite**Gangue minerals:****Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

A single claim was staked at this site for gold in 1969 on what is informally called 'Little Creek'; there has apparently been no activity since. Still and others (2002) investigated the area and collected several samples. A sample of altered volcanic rocks contained 1,359 parts per million barium but no gold or other metals. The rocks in the area are rhyolite flows with jasper veinlets and volcanic breccia of the Keku Volcanics of Triassic age.

Alteration:**Age of mineralization:**

The mineralization, if any, is younger than the Triassic, volcanic host rocks.

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

A single claim was staked for gold in 1969; there has apparently been no activity since. Still and others (2002) investigated the area and collected several samples.

Production notes:

Reserves:

None.

Additional comments:

The prospect is on land that has been selected for patent by the Sealaska Native Corporation and the Kake Tribal Corporation.

References:

Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Kuiu**Site type:** Mine**ARDF no.:** PA026**Latitude:** 56.8980**Quadrangle:** PA D-1**Longitude:** 134.1066**Location description and accuracy:**

The Kuiu Mine is at an elevation of about 80 feet, 800 feet inland, and about 0.8 mile east of hill 815. It is about in the center of section 29, T. 57 S., R. 72 E.

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

This mine is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

The deposit at the Kuiu Mine was known prior to 1937 when 32 lode claims were staked on it. They remained active until at least 1951 (Still and others, 2002). In 1937 and 1938, 150 to 200 tons of ore were removed from an open cut and stacked nearby (Roehm, 1938 [PE 116-1]). By 1946 the property had been explored by a 55-foot adit with a winze and a 25-foot sublevel (Roehm, 1946 [PE 116-4]). By 1946, the workings below the adit were flooded and that is no indication that any significant mineralization was found in the underground workings. In addition, 14 diamond drill holes were put down on the property in 1946 but apparently no mineralization was encountered in them.

The rocks at the Kuiu Mine are felsic volcanics and agglomerates overlain by dolomitic limestone, all part of the Keku Volcanics (Roehm, 1946 [PE 116-4]; Muffler, 1967). The deposit consists of small pods and irregular masses of sphalerite and galena that replace limestone. The largest orebody--the orebody mined in a surface pit in 1937 and 1938-- was about 30 feet by 40 feet in section and about 200 feet in length. The ore from it was said by the owners to contain 4-18 percent zinc, 5-6 percent lead, a trace to 0.07 ounce of gold per ton, and 0.6 to 5.9 ounces of silver per ton (Thorne, 1948). However, samples collected by Roehm (1938 [Supplement]) contained only 0.18 to 0.29 percent zinc and a grab sample of the ore pile contained only 2.75 percent zinc. Still and others (2002) sampled a small surface cut with small pods of sphalerite and galena that replace dolomite. The samples contained 313.6 parts per million silver to 21.72 ounces of silver per ton, 10.31 to 20.54 percent lead, and 7.7 to 13.4 percent zinc.

Alteration:**Age of mineralization:**

Galena and sphalerite replace Triassic limestone.

Deposit model:

Lead-zinc replacement deposit in dolomitic limestone.

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

Production Status: Yes; small

Site Status: Undetermined

Workings/exploration:

The deposit at the Kuiu Mine was known prior to 1937 when 32 lode claims were staked on it. They remained active until at least 1951 (Still and others, 2002). In 1937 and 1938, 150 to 200 tons of ore were removed from an open cut and stacked nearby (Roehm, 1938 [PE 116-1]). By 1946 the property had been explored by a 55-foot adit with a winze and a 25-foot sublevel (Roehm, 1946 [PE 116-4]). By 1946, the workings below the adit were flooded and that is no indication that any significant mineralization was found in the underground workings. In addition, 14 diamond drill holes were put down on the property in 1946 but apparently no mineralization was encountered in them.

Production notes:

In 1937 and 1938, 150 to 200 tons of ore were removed from an open cut and stacked nearby (Roehm, 1938 [PE 116-1]).

Reserves:

None.

Additional comments:

The prospect is on land that has been selected by the Sealaska Native Corporation and the Kake Tribal Corporation for patent.

MAS number: 0021160003.

References:

Roehm, 1937; Roehm, 1938 (PE 116-1); Roehm, 1938 (Supplement); Roehm, 1946 (PE 116-4); Thorne, 1948; Williams, 1951; Muffler, 1967; Still and others, 2002.

Primary reference: Roehm, 1946 (PE 116-4); Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Katherine**Site type:** Prospect**ARDF no.:** PA027**Latitude:** 56.9015**Quadrangle:** PA D-1**Longitude:** 134.0803**Location description and accuracy:**

This prospect includes several claims and a test pit on mineralization at the east end of a small island south of the Keku Islands and just north of the peninsula north of Saginaw Bay. The prospect is about 6.8 miles east-southeast of Cornwallis Point; it is in the north half of section 28, T. 57 S., R. 72 E.

Commodities:**Main:** As, Ba, Pb, Zn**Other:****Ore minerals:** Barite, galena, pyrite, witherite**Gangue minerals:** Limestone**Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

This prospect was known before 1925 and was staked intermittently until at least 1953. The only working is a small test pit. The rocks in the area consist of limestone, part of the the Kuiu Limestone of Silurian age, that is cut by gabbro dikes (Muffler, 1967). The limestone is cut by short veins, stringers, and pods of barite, witherite, and pyrite. Still and others (2002) sampled several occurrences on the small island on which the deposits occur. At the northwest end of the island, a barite stringer about 1.5 feet wide contained 3.2 percent zinc, 2,355 parts per million (ppm) lead and 24.22 percent barite. At the northeast end of the island, a mineralized zone 50 feet wide extends for about 50 feet before it disappears under the water. The zone contains stringers of barite and pyrite with rare galena, and pods of pyrite up to 0.6 feet wide and 1.0 feet long. A pod of barite with pyrite contained 1,602 ppm arsenic, and 7,107 ppm barium. A pyrite lens contained 1,725 ppm arsenic and 8,498 ppm barium.

Alteration:**Age of mineralization:**

Younger than the Silurian to Triassic host rocks.

Deposit model:

Stringers and pods of barite, witherite, and pyrite in limestone.

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

This prospect was known before 1925 and was staked intermittently until at least 1953. The only working is a small test pit.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160013.

References:

Buddington, 1925; Twenhofel and others, 1949; Muffler, 1967; Jermain and Rutledge, 1949; Muffler, 1967; Cobb, 1972; Cobb, 1978; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Hungerford**Site type:** Prospect**ARDF no.:** PA028**Latitude:** 56.8887**Quadrangle:** PA D-1**Longitude:** 134.0740**Location description and accuracy:**

The Hungerford prospect is along the shoreline on the north side of the peninsula north of Saginaw Bay. It is about 7.2 miles east-southeast of Cornwallis Point and about 0.5 mile northeast of the center of section 33, T. 57 S., R. 72 E.

Commodities:**Main:** Ag, Ba, Pb, Zn**Other:****Ore minerals:** Barite, galena, sphalerite**Gangue minerals:** Barite, calcite, jasper**Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

The Hungerford prospect was discovered in 1937; it was restaked in 1948 and by 1950, the prospect consisted of a small cabin and several open cuts (Roehm, 1938 [PE 116-1]; Thorne, 1950 [Hungerford]; Thorne, 1950 [Hungerford, Supplementary]). The U.S. Bureau of Mines drilled 5 holes totaling 982 feet in 1949.

The Hungerford prospect is in Keku Volcanics of Triassic age; at this site, the unit consists of a heterogeneous assemblage of conglomerate, basalt, shale, and dolomitic limestone (Muffler, 1967). Detailed mapped by the U.S. Bureau of Mines in 1949 (Thorne, 1950 [Hungerford]; Thorne, 1950 [Hungerford, Supplementary]; Still and others, 2002) defined three types of mineralization: 1) disseminated galena and sphalerite in amygdaloidal basalt; 2) a stockworks of galena-sphalerite veins in fractured green basalt, and 3) galena and sphalerite replacing dolomite.

The main deposit at the Hungerford prospect consists of fine-grained sphalerite and galena in amygdaloidal basalt. A sample contained 84.7 parts per million (ppm) silver, 2.23 percent lead and 7,028 ppm zinc (Still and others, 2002). The Bureau of Mines drilling in 1949 resulted in the definition of an 'ore body' that has an estimated resource of 63,000 tons of 'submarginal ore' with an average grade of 2.4 ounces of silver per ton, 1.35 percent lead, and 0.45 percent zinc (Thorne, 1950 [Hungerford]; Thorne, 1950 [Hungerford, Supplementary]). The ore body is 78 to 93 feet thick and extends for 280 feet along strike. The drilling suggests that the grade decreases with depth.

Galena and sphalerite in barite-jasper gangue occurs in a stockwork of veins in the bed of Hungerford Creek (Still and others, 2002). A sample contained 16.4 ppm silver, 5,625 ppm lead, 6,019 ppm zinc, and 14.6 percent barite. A similar deposit marked by brecciation and open-space filling occurs along the beach

nearby. A sample contained 5.82 ounces of silver per ton, 2.84 percent lead, 2,228 ppm zinc, and 70 ppm barium. Thorne (1948) also reported that sphalerite and galena replace dolomite in bluffs along the beach.

Alteration:**Age of mineralization:**

Younger than the Triassic host rocks.

Deposit model:

Disseminated, vein, and replacement sphalerite and galena in basalt and carbonate rocks.

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

Production Status: None

Site Status: Undetermined

Workings/exploration:

The Hungerford prospect was discovered in 1937; it was restaked in 1948 and by 1950, the prospect consisted of a small cabin and several open cuts (Roehm, 1938 [PE 116-1]; Thorne, 1950 [Hungerford]; Thorne, 1950 [Hungerford, Supplementary]). The U.S. Bureau of Mines drilled 5 holes totaling 982 feet in 1949.

Production notes:**Reserves:**

Bureau of Mines drilling in 1949 resulted in the definition of an 'ore body' that has an estimated resource of 63,000 tons of 'submarginal ore' with an average grade of 2.4 ounces of silver per ton, 1.35 percent lead, and 0.45 percent zinc (Thorne, 1950 [Hungerford]; Thorne, 1950 [Hungerford, Supplementary]). The ore body is 78 to 93 feet thick and extends for 280 feet along strike. The drilling suggests that the grade decreases as depth.

Additional comments:

The prospect is on land that has been selected for patent by the Sealaska Native Corporation and the Kake Tribal Corporation.

MAS number: 0021160004.

References:

Buddington and Chapin, 1929; Roehm, 1938 (PE 116-1); Thorne, 1948; Thorne, 1950 (Hungerford); Thorne, 1950 (Hungerford, Supplementary); Muffler, 1967; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Corn**Site type:** Prospect**ARDF no.:** PA029**Latitude:** 56.8741**Quadrangle:** PA D-1**Longitude:** 134.0602**Location description and accuracy:**

The Corn prospect is on a block of 121 placer and lode claims that were staked in the early 1970's. The center of these claims is about 1.5 mile west-southwest of triangulation station 'Low' which is at the prominent point at the northeast end of the peninsula north of Saginaw Bay. The center of the prospect is in the NW1/4 section 3, T. 58 S., R. 72 E.

Commodities:**Main:** Ba, Zn**Other:****Ore minerals:** Barite**Gangue minerals:****Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

A block of 121 claims was staked here in 1973 by Resource Associates of Alaska (Hedderly-Smith, 1990; Still and others, 2002). The claims were subsequently leased to Cominco American in the mid-1970's and they did detailed sampling, mapping, and geophysical surveys, and diamond drilled 2 or 3 holes. The claims were then leased to Mapco Inc. who drilled at least one hole at or near the property. The claims were allowed to lapse in the 1980's.

Most of the rocks on the claims are light-colored, locally brecciated rhyolite that is part of the the Keku Volcanics of Triassic age (Muffler, 1967; Still and others, 2002) Parts of the claim block are also underlain by Cornwallis Limestone and Carboniferous volcanic rocks.

Little information is available about the industry work in the 1970's and 1980's. Still and others (2002) examined the property and found little more than scattered pods, veins, and stringers of barite in a thick section of rhyolite. One barite boulder contained 28.41 percent barium, 1.5 percent zinc, and traces of copper and lead.

Alteration:**Age of mineralization:**

Younger than the Triassic host rocks.

Deposit model:

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

Production Status:

Site Status:

Workings/exploration:

A block of 121 claims was staked here in 1973 by Resource Associates of Alaska (Hedderly-Smith, 1990; Still and others, 2002). The claims were subsequently leased to Cominco American in the mid-1970's and they did detailed sampling, mapping, and geophysical surveys, and diamond drilled 2 or 3 holes. The claims were then leased to Mapco Inc. who drilled at least one hole at or near the property. The claims were allowed to lapse in the 1980's.

Production notes:

Reserves:

None.

Additional comments:

A portion of the claim block is on land that has been selected for patent by the Sealaska Native Corporation and the Kake Tribal Corporation.

MAS number: 0021160035.

References:

Muffler, 1967; Hedderly-Smith, 1990; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Skate Creek**Site type:** Prospect**ARDF no.:** PA030**Latitude:** 56.8730**Quadrangle:** PA D-1**Longitude:** 134.0396**Location description and accuracy:**

This prospect is on the Corn group of claims (PA029) but is mineralogically distinct. The prospect is centered at an elevation of about 180 feet, 2,000 feet from the mouth of a small stream informally called 'Skate Creek', and about 0.8 mile southwest of triangulation station 'Low', which is at the prominent point at the northeast end of the peninsula north of Saginaw Bay. The Skate Creek prospect is about 0.6 mile west-northwest of the center of section 2, T. 58 S., R. 72 E.

Commodities:**Main:** Cu, Pb, Zn**Other:** Ba**Ore minerals:** Barite, chalcopyrite, galena, pyrite, sphalerite**Gangue minerals:** Calcite**Geologic description:**

This prospect is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

This prospect is along a creek informally named 'Skate Creek' that is covered by the Corn block of claims described separately (PA029). It is unclear how much of the work described at the Corn prospect was along Skate Creek but the mineralization along Skate Creek is distinctly different from that elsewhere on the Corn claims. The rocks along Skate Creek consist of felsic flows, tuffs, and volcanic breccia that are part of the Keku Volcanics of Triassic age (Muffler, 1967).

The volcanic breccia along Skate Creek is commonly silicified and pyritized with the formation of considerable calcite (Still and others, 2002). Pyrite, sphalerite, galena, and chalcopyrite occur in the matrix of the breccia and higher grade portions of the breccia appear to be associated with faults. The breccia is also cut by barite veins with pyrite, sphalerite, chalcopyrite, and galena. Still and others (2002) collected 28 samples along Skate Creek. The best zinc values were 2.2 percent zinc across 2 feet of mineralization, and 4,434 parts per million (ppm) across 16 feet. The best barium values were 2.7 percent across 2 feet and 3.9 percent across 16 feet. The highest copper value was 4,33 ppm, the highest lead value was 1,356 ppm; the highest gold value was 63 parts per billion; and the highest silver value was 32.8 ppm.

Alteration:

The felsic volcanic breccia near the sulfide-bearing veins and breccia fillings is commonly silicified and pyritized.

Age of mineralization:

Younger than the Triassic host rocks.

Deposit model:

Zn-Pb-Ba breccia fillings and veins.

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

There is little information on exploration specifically along Skate Creek. However, the prospect is covered by the Corn group of claims (PA029) that were explored by several companies in the 1970's and 1980's. Some of their work was probably along Skate Creek.

Production notes:**Reserves:**

None.

Additional comments:**References:**

Muffler, 1967; Hedderly-Smith, 1993; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (on Saginaw Bay)**Site type:** Occurrence**ARDF no.:** PA031**Latitude:** 56.8706**Quadrangle:** PA D-1**Longitude:** 134.2178**Location description and accuracy:**

This occurrence is near the middle of the southwest shoreline of Saginaw Bay. It is about 1.8 miles southeast of SACHEM Island and about 0.3 mile north-northwest of the center of section 3, T. 58 S., R. 71 E. The location is accurate.

Commodities:**Main:** Ba**Other:****Ore minerals:** Barite, witherite**Gangue minerals:** Calcite**Geologic description:**

This occurrence is one of a group of similar deposits (PA021 to PA031) that are scattered along the south shore of Saginaw Bay, on the peninsula north of Saginaw Bay, and on the Keku Islands. They occur in a heterogeneous section of unmetamorphosed volcanic, carbonate, and clastic rocks that vary in age from Silurian to Triassic (Muffler, 1967). The mineralization generally consists of veins, veinlets, and irregular pods that contain base metals and barite (Still and others, 2002). There are no plutonic rocks in the immediate vicinity; however, the sedimentary rocks are cut by scattered gabbro dikes. The origin of the deposits is uncertain although most appear to be epigenetic. Various origins have been proposed including that they are remobilized massive-sulfide deposits, that they are related to a buried intrusive, or that they are Mississippi-Valley-type deposits.

This occurrence was first mentioned by Buddington (1925) but there is no indication that claims have ever been staked on it or that it has been explored. The occurrence is in thin-bedded limestone of the Silurian Kuiu Limestone (Muffler, 1967). Barite occurs in widely spaced, subparallel veins that pinch and swell and vary from stringers to 2.5 feet wide (Still and others, 2002). The longest can be traced for 20 feet. The veins are composed of pinkish-white blades of barite with calcite and probably witherite. There are no reports of significant base metals.

Alteration:**Age of mineralization:**

Younger than the Silurian host rock.

Deposit model:

Barite veins.

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

Workings/exploration:

This occurrence was first mentioned by Buddington (1925) but there is no indication that claims have ever been staked on it or that it has been explored.

Production notes:**Reserves:**

None.

Additional comments:

MAS number: 0021160015.

References:

Buddington, 1925; Muffler, 1967; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Mount Muravief)**Site type:** Occurrences**ARDF no.:** PA032**Latitude:** 56.5193**Quadrangle:** PA C-3**Longitude:** 134.7672**Location description and accuracy:**

This deposit consists of several occurrences that are strung out in an arc that extends northwest for about a mile. The center of these occurrences is about 0.4 mile west of Mount Muravief and about 0.5 mile east-southeast of the center of section 3, T. 62 S., R. 68 E. The location is accurate and figures 8 and 9 of Bittenbender and others (1999) show the occurrences in detail.

Commodities:**Main:** Ag, Au, Cu, Zn**Other:****Ore minerals:** Chalcocite?, chalcopyrite, malachite, pyrrhotite**Gangue minerals:****Geologic description:**

These occurrences were first identified in the 1930's but there was little systematic work on them until the late 1990's when Bittenbender and others (1999) examined them. The rocks in the vicinity are graywacke and argillite with minor greenstone and volcanic breccia. Locally bedding can be identified but most of the rocks are metamorphosed and often tightly folded and foliated. The rocks generally strike northwest and dip steeply southwest. Loney and others (1975) maps them as part of the Sitka Graywacke of Cretaceous age.

The mineralization is associated with folded layers of greenstone up to 100 feet thick that extend for up to 1,000 feet along strike. Three such occurrence occur along an arcuate band that extends for about 6,000 feet (Bittenbender and others, 1999, figs. 8 and 9). The mineralization consists of chalcopyrite and pyrrhotite that occur both disseminated in the graywacke and greenstone and in massive lenses up to 3 feet thick and 10 feet long. The lenses are often associated with volcanic breccia. Malachite staining is common. Thirty-two samples were collected by Bittenbender and others (1999). They contained up to 6.33 percent copper, 600 parts per billion gold, 14.5 parts per million (ppm) silver, and 2,200 ppm zinc. A sample across 18 feet of mineralization on the west ridge of Mount Muravief contained 1.63 percent copper, 3.6 ppm silver, and 500 ppm zinc. Work by the Bureau of Mines in the late 1960's (Gnagy, 1969) identified bands of chalcocite in samples collected in this vicinity; these samples may come from other as-yet-unidentified mineralization.

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:** None

Site Status: Probably inactive

Workings/exploration:

These occurrences were discovered in the 1930's but apparently little work was done on them until the late 1990's when they were mapped in detail by the U.S. Bureau of Land Management.

Production notes:

Reserves:

None.

Additional comments:

These occurrences are now in the South Baranof Wilderness Area which is closed to mineral exploration and mining.

References:

Gnagy, 1969; Loney and others, 1975; Bittenbender and Still, 1997; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Unnamed (on Patterson Bay)**Site type:** Occurrences**ARDF no.:** PA033**Latitude:** 56.5874**Quadrangle:** PA C-2**Longitude:** 134.6607**Location description and accuracy:**

There is little information on these occurrences other than that they are on the east side of Patterson Bay and centered about 3.4 miles north-northwest of Patterson Point. The occurrences consist of 8 samples collected for about a mile, at or near the shoreline of the bay. Their center is near the southwest corner of section 9, T. 61 S., R. 69 E. The location is probably accurate to within 0.3 mile.

Commodities:**Main:** Ag, Au, Cu, Mo**Other:** As**Ore minerals:** Chalcopyrite, malachite, pyrrhotite**Gangue minerals:** Quartz**Geologic description:**

There is apparently no record of any mineralization on the east side of Patterson Bay prior to the work of Bittenbender and others (1997, 1999), who collected 8 samples for about a mile along or near the shoreline. These samples, which are variously described as silicified zones in tonalite or mineralized inclusions of metamorphic rocks, contain less than 1 percent chalcopyrite. Disseminated pyrrhotite and copper staining with malachite occurs in some samples. The samples contain up to 970 parts per billion gold, 0.6 part per million (ppm) silver, 1,400 ppm copper, 109 ppm molybdenum, and 4,820 ppm arsenic. Loney and others (1975) map the rocks in the vicinity as Tertiary tonalite and granodiorite with abundant inclusions and septa of metamorphic rocks.

Alteration:

Silicification of tonalite.

Age of mineralization:

Is younger than the Tertiary granitic host rocks.

Deposit model:

Silicified zones in granitic 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:

None.

Additional comments:

The area is now within the South Baranof Wilderness Area and is closed to mineral exploration and mining.

References:

Loney and others, 1975; Bittenbender and Still, 1997; Bittenbender and others, 1999.

Primary reference: Bittenbender and others, 1999

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Snipe Bay)**Site type:** Prospect**ARDF no.:** PA034**Latitude:** 56.4221**Quadrangle:** PA B-3**Longitude:** 134.9575**Location description and accuracy:**

This prospect consists of several claims that were staked over a mineralized area about 125 feet by 265 feet that was explored by several pits and drilled. The prospect is near the mouth of Snipe Bay near Snipe Head and about 0.6 mile southwest of the northeast corner of section 9, T. 63 S., R. 67 E. The location is accurate.

Commodities:**Main:** Cu, Ni**Other:****Ore minerals:** Chalcopyrite, magnetite, nickeliferous pyrrhotite, pentlandite, pyrite**Gangue minerals:** Albite, hornblende**Geologic description:**

The Snipe Bay prospect is associated with a small, poorly exposed elongate body (dike?) of Tertiary gabbro or norite that is largely altered to hornblende, albite, and magnetite (Buddington, 1925; Reed and Gates, 1942). The intrusion is in quartzite and quartz schist in Sitka Graywacke of Cretaceous age (Reed and Gates, 1942; Loney and others, 1975). The mineralization is confined to an area of about 125 by 265 feet. Magnetite, nickeliferous pyrrhotite, chalcopyrite, and pentlandite are disseminated through the altered gabbro or norite and there is one small lense of massive sulfides. The deposit probably is a magmatic segregation deposit (Reed and Gates, 1942; Bittenbender and others, 1999).

The deposit was discovered in 1922 (Buddington, 1925; Buddington and Chapin, 1929) and it was prospected intermittently by trenching until 1942 when it was examined by Reed and Gates (1942). The property was acquired by Inspiration Development Company in 1973; they diamond drilled 21 holes and the claims were abandoned in 1979 (Bittenbender and others, 1999). The U.S. Bureau of Mines collected samples for metallurgical testing in 1981 and 1988 (Foley, 1989).

Reed and Gates (1942) estimated that the deposit has a conservative minimum resource of 430,000 tons of material with no more than 0.3 percent each of copper and nickel. Foley (1989) estimated a resource of 94,000 tons of material with an average grade of 0.97 percent copper and 0.33 percent nickel.

Alteration:

This is a magmatic-segregation deposit in a gabbro or norite that is altered to hornblende, albite, and magnetite.

Age of mineralization:

Probably Tertiary and deposited during the intrusion of a gabbro or norite.

Deposit model:

Cu-Ni magmatic segregation deposit.

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

The deposit was discovered in 1922 (Buddington, 1925; Buddington and Chapin, 1929) and it was prospected intermittently by trenching until 1942 when it was examined by Reed and Gates (1942). The property was acquired by Inspiration Development Company in 1973; they diamond drilled 21 holes and the claims were abandoned in 1979 (Bittenbender and others, 1999). The U.S. Bureau of Mines collected samples for metallurgical testing on 1981 and 1988 (Foley, 1989).

Production notes:

Reserves:

Reed and Gates (1942) estimated that the deposit has a conservative minimum resource of 430,000 tons of material with no more than 0.3 percent each of copper and nickel. Foley (1989) estimated a resource of 94,000 tons of material with an average grade of 0.97 percent copper and 0.33 percent nickel.

Additional comments:

The prospect is in the South Baranof Wilderness Area which is closed to mineral exploration and mining. MAS number: 0021160025.

References:

Brooks, 1925; Buddington, 1925; Buddington and Chapin, 1929; Smith, 1938; Reed and Gates, 1942; Twenhofel, 1953; Cornwall, 1968; Loney and others, 1975; Roberts, 1983; Foley, 1989; Bittenbender and others, 1999.

Primary reference: Reed and Gates, 1942

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Redfish Bay)**Site type:** Occurrence**ARDF no.:** PA035**Latitude:** 56.3577**Quadrangle:** PA B-3**Longitude:** 134.8813**Location description and accuracy:**

This occurrence is a pegmatite about 600 feet in diameter that is about 1.0 mile west of the head of Redfish Bay near the middle of the south boundary of section 36, T. 63 S., R. 67 E. The location is accurate.

Commodities:**Main:** Microcline-perthite, quartz?**Other:** Sn?**Ore minerals:** Microcline-perthite**Gangue minerals:** Feldspar, quartz, mica**Geologic description:**

As described by Sainsbury (1957), this occurrence consists of a circular body of pegmatite about 600 feet in diameter. The pegmatite is in a large composite intrusive body near the contact of monzonite or granite and quartz diorite. Loney and others (1975) map the body as tonalite and granodiorite of Tertiary age. Detailed mapping by Sainsbury indicates that the pegmatite consists of two or more dike-like phases. The pegmatite is zoned with a core of quartz surrounded by a shell of variable mineralogy that includes areas of perthite, quartz, and graphic granite; microcline-perthite; and perthite, mica, and quartz. A border zone is generally quartz and graphic granite. The chief commodity of interest is microcline-perthite that occurs in zones 4 to 10 feet thick; the largest zone is at least 120 feet long and 6 to 8 feet thick. There is some optical-grade quartz. Sainsbury tentatively identified a few grains of cassiterite, but there is no indication of beryllium, columbium, or tantalum minerals. The pegmatite is not radioactive.

Alteration:**Age of mineralization:**

The pegmatite is in a large Tertiary granitic intrusion and is probably the same age.

Deposit model:

Pegmatite.

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

Probably none beyond surface examination and sampling by the U.S. Geological Survey and U.S. Bureau of Mines.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160021.

References:

Sainsbury, 1957; Skow, 1962; Berryhill, 1963; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Sainsbury, 1957

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Port Lucy)**Site type:** Prospect**ARDF no.:** PA036**Latitude:** 56.3439**Quadrangle:** PA B-2**Longitude:** 134.6552**Location description and accuracy:**

The only primary reference to this gold(?) prospect is by Wright (1907). Little is known about it other than that it is near the north side of the mouth of Port Lucy, about 1.0 mile north-northwest of Armstrong Point. It is about 0.3 mile northeast of the southwest corner of section 4, T. 64 S., R. 69 E. There is almost no information on the prospect and the exact location is uncertain.

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

The only primary reference to this gold(?) prospect is by Wright (1907). Little is known about it other than that it is near the north side of the mouth of Port Lucy. It is listed in table A-1 of Bittenbender and others (1999) but it was apparently not visited and they only cite the old Wright reference. The rocks in the area are a thick sequence of Sitka Graywacke of Cretaceous age (Loney and others, 1975).

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

The only record of this prospect is by Wright (1907) and he gives no details.

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

MAS number: 0021160019.

References:

Wright, 1907; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Wright, 1907

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Point Conclusion)**Site type:** Prospects**ARDF no.:** PA037**Latitude:** 56.2711**Quadrangle:** PA B-2**Longitude:** 134.6436**Location description and accuracy:**

The first mention of these prospects is by Wright and Wright (1906) and the claims were soon abandoned (Wright, 1907). The prospects apparently have not been active since and little is known about their location than that they are near Point Conclusion, near the middle of the south boundary of section 33, T. 64 S. R. 69 E.

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

The only primary references to these prospects are by Wright and Wright (1906) and Wright (1907). In 1906, Samples were reported to give good assay values (for gold?) but the prospects were abandoned by 1907. No other information about them is available. The prospects are noted in Table A-1 of Bittenbender and others (1999) but were not visited by them. The rocks in the area are a thick sequence of Sitka Graywacke of Cretaceous age (Loney and others, 1975).

Alteration:**Age of mineralization:**

The presumed mineralization is in graywacke of Jurassic or Cretaceous age.

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

Prospects were active in or before 1906 but were abandoned by 1907; little work apparently has been done on them.

Production notes:**Reserves:**

None.

Additional comments:

MAS number: 0021160018.

References:

Wright and Wright, 1906; Wright, 1907; Loney and others, 1975; Bittenbender and others, 1999.

Primary reference: Wright and Wright, 1906

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

Last report date: January 2, 2005

Site name(s): Unnamed (in Port Malmesbury)**Site type:** Prospects**ARDF no.:** PA038**Latitude:** 56.3087**Quadrangle:** PA B-1**Longitude:** 134.2070**Location description and accuracy:**

Although claims were located in Port Malmesbury from at least 1926 into the 1950's, there is little information on their location and their deposits. However, Still and others (2002) identified one area of mineralization and that location is used here. The location is accurate but the claims and mineralization are probably more extensive as indicated by mineralized float found at the end of the south arm of Port Malmesbury. The occurrence identified by Still and others (2002) is near triangulation station 'Fan' on the west side of the peninsula that bounds the east arm of Port Malmesbury. It is about 0.8 mile northwest of the southeast corner of section 20, T. 64 S., R. 72 E.

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

Although claims were located in Port Malmesbury from at least 1926 into the 1950's (Berg and Cobb, 1967; Still and others, 2002), there is little information on their location and their deposits. However, Still and others (2002) identified one area of mineralization and that location is used here. The location is accurate but the claims and mineralization are probably more extensive.

The rocks in the area are mainly volcanic graywacke of the Bay of Pillers Formation of Late Silurian and Early Ordovician age (Brew and others, 1984). A large Cretaceous granodiorite and diorite stock crops out just to the south.

Mineralization is exposed in the intertidal zone over an area of about 50 feet by 250 feet in tightly folded, silty limestone, mudstone, and graywacke (Still and others, 2002). About 1 percent of the area consists of undeformed quartz veinlets 1 to 6 inches thick that trend northeast and dip northwest. The veinlets contain about 30 percent sulfides, mainly pyrite, sphalerite, and chalcopyrite. Samples contained 7.8 to 10.2 percent zinc with minor copper, silver, and gold. One sample contained 541 parts per million (ppm) bismuth. Another sample contained 1,695 parts per billion gold and 10,000 ppm arsenic.

Still and others (2002) reported old information about occurrences at the head of the southern arm of Port Malmesbury. They could not find them but a piece of quartz float from the area with banded pyrite, arsenopyrite, and minor chalcopyrite contained 0.526 ounce of gold per ton, more than 10,000 ppm arsenic, and 392 ppm bismuth. Samples from the area submitted earlier to the Bureau of Mines consisted of quartz with pyrite, sphalerite, arsenopyrite, galena, and chalcopyrite.

Alteration:**Age of mineralization:**

The quartz-sulfide veinlets cut sedimentary rocks of Late Silurian or Early Ordovician age and may be related to a nearby Cretaceous intrusion.

Deposit model:

Polymetallic quartz veinlets (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:

Claims were staked in the area from the 1920's to the 1950's and there probably was considerable prospecting in the area. However, specific workings could not be located by Still and others (2002).

Production notes:**Reserves:**

None.

Additional comments:

MAS number: 021160020.

The area is now part of the Tebenkof Bay Wilderness which is closed to mineral exploration and mining.

References:

Berg and Cobb, 1967; Brew and others, 1984; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (in Table Bay)**Site type:** Occurrence**ARDF no.:** PA039**Latitude:** 56.1354**Quadrangle:** PA A-1**Longitude:** 134.2520**Location description and accuracy:**

This occurrence was first identified by Still and others (2002) and the location is accurate. It is about 0.2 mile south-southeast of triangulation station 'Bel' near the south end of the mouth of Table Bay. The occurrence is about 0.6 mile southwest of the northeast corner of section 22, T. 66 S., R. 72 E.

Commodities:**Main:** Cu, Fe, Mo, W**Other:****Ore minerals:** Chalcopyrite, pyrite, pyrrhotite**Gangue minerals:** Calcite, epidote, garnet, quartz**Geologic description:**

This occurrence was discovered by Still and others (2002). It is associated with the periphery of a small intrusion less than a mile in diameter of hornblende quartz monzonite of Cretaceous age (Brew and others, 1984). The body intrudes rocks of the Bay of Pillars Formation of Silurian age which here consists of gray-wacke with mudstone and minor limestone. The deposit is associated with epidote-quartz-skarn that is mineralized over an area about 200 by 500 feet. The mineralization consists of irregular masses of pyrrhotite and pyrite with minor chalcopyrite scattered through the skarn and in irregular quartz-calcite veinlets. The skarn generally contains less than 1 percent sulfides and the richest samples collected by Still and others (2002) contained 2,000 parts per million (ppm) tungsten, 3,082 ppm copper, and 112 ppm molybdenum.

Alteration:

The deposit is in an epidote-quartz-garnet skarn.

Age of mineralization:

Skarn developed during intrusion of Cretaceous quartz monzonite.

Deposit model:

Tungsten skarn (Cox and Singer, 1986; model 14a).

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

14a

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

Only sampling by government geologists.

Production notes:

Reserves:

None.

Additional comments:

MAS number: 0021160070.

References:

Brew and others, 1984; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

Site name(s): Unnamed (near Mount Howard)**Site type:** Occurrence**ARDF no.:** PA040**Latitude:** 56.1102**Quadrangle:** PA A-1**Longitude:** 134.1805**Location description and accuracy:**

This occurrence is about 0.8 mile west-northwest of Mount Howard and about 0.3 mile east of the north-west corner of section 31, T. 66 S. R. 73 E. Figure 6 of Still and others (2002) is a map of the deposit; the location is accurate.

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

This occurrence was first described by Roehm (1942) and was recently mapped and sampled by Still and others (2002). The deposit consists of several quartz veins with an aggregate thickness of about 6 feet. The veins are associated with a fault zone and are generally parallel to the bedding of the folded host rocks, which are limestone, silty limestone, and chert. The rocks are part of the Bay of Pillars Formation of Silurian age (Brew and others, 1984). A large Cretaceous hornblende quartz monzonite crops out about a mile to the east. The veins, fault zone, and strata generally strike N60W and dip 75 SW to vertical. The veins contain irregular masses, bands, and disseminations of pyrite with minor sphalerite and galena. The highest grade sample collected by Still and others (2002) across 1.3 feet of a quartz vein contained 134 parts per billion gold, 2,959 parts per million (ppm) zinc, and 1,264 ppm arsenic. Another sample contained 15 ppm silver and 353 ppm lead across 0.7 feet and a sulfide-rich sample collected in the quartz vein contained 25.2 ppm silver, 1,153 ppm copper, 8,692 ppm lead and 14,558 ppm zinc.

Alteration:**Age of mineralization:**

The veins cut Silurian strata and may be related to a nearby Cretaceous quartz monzonite stock.

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:** Undetermined**Workings/exploration:**

Only surface sampling.

Production notes:

Reserves:

Additional comments:

References:

Roehm, 1942; Brew and others, 1984; Still and others, 2002.

Primary reference: Still and others, 2002

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

Last report date: January 2, 2005

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