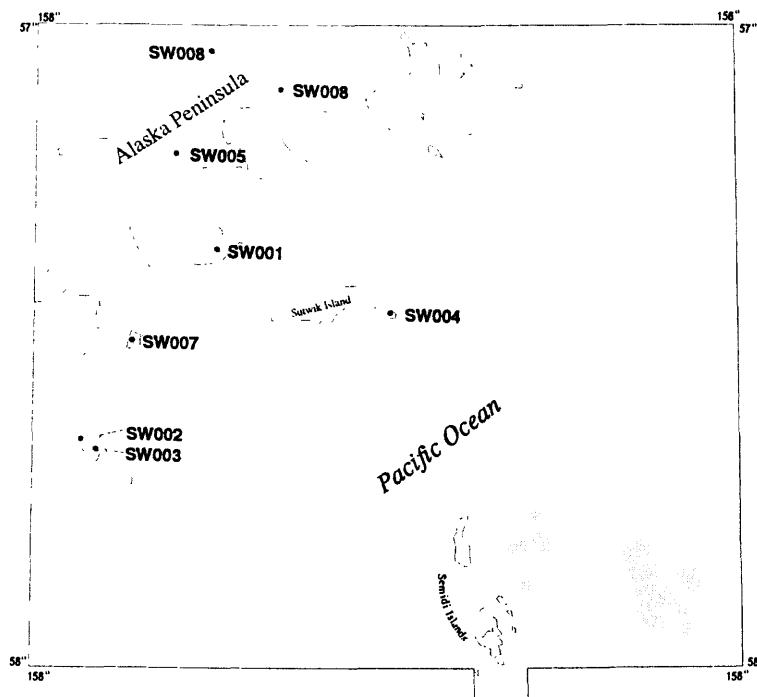


## Sutwik Island quadrangle

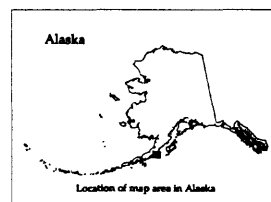
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



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

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

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*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.*

**Site name(s):** Unnamed (on Cape Kumlik)

**Site type:** Occurrence

**ARDF no.:** SW001

**Latitude:** 56.63

**Quadrangle:** SW C-5

**Longitude:** 157.48

**Location description and accuracy:**

This occurrence is located on the east coast of the mainland between Kujulik and Aniakchak Bays. The map site is about 1 mile inland from the easternmost tip of Cape Kumlik (MacKevett and Holloway, 1977, localities 3 and 7; Cox and others, 1981, locality 1). The site location is accurate to within 1/2 mile.

**Commodities:**

**Main:** Cu

**Other:** Ag, Au, Mo

**Ore minerals:** Chalcopyrite, molybdenite?, pyrite

**Gangue minerals:** Quartz?, barite?

**Geologic description:**

At this site a quartz diorite stock has intruded volcanic rocks of the Oligocene and Eocene Meshik Formation (Detterman and others, 1981). The occurrence is marked by a large color anomaly covering about 1 section. Chalcopyrite and pyrite occur in quartz(?) veinlets and as disseminations in both the intrusive and in the surrounding volcanic rocks (Hedderly-Smith, 1977). Barite has been noted in many stream-sediment samples.

Numerous rock-chip samples collected by Bear Creek Mining Company returned copper values in the 400 ppm to 1000 ppm range and several contained 1000 ppm to 2000 ppm copper (Hedderly-Smith, 1977). The highest value was 5600 ppm copper from a sample of the mineralized intrusive. Molybdenum and silver were indicated as low-order anomalies. Gold was detected in the 0.07ppm 0.31 ppm range. The higher gold values generally coincided with the higher copper values. Of 7 rock samples collected here in 1978 by the U.S. Geological Survey, only 1 contained strongly anomalous values in copper (2200 ppm) (Yount and others, 1978). Cox and others (1981) estimate a small tonnage of low grade mineralization.

The rocks at the center of the mineralized area exhibit potassic alteration (Hedderly-Smith, 1977). Quartz-sericite alteration and silicification occur to the east, south, and west of the central area in both intrusive and volcanic rocks. An outer zone of propylitization is present.

**Alteration:**

The rocks exhibit a zoned alteration pattern, with a central potassic core grading outward to quartz-sericite and silicification, and to peripheral propylitization.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

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

Resource Associates of Alaska did a stream-sediment geochemical survey in 1975 (Hedderly-Smith, 1977). Bear Creek Mining Company geochemically sampled and mapped the occurrence in 1977 (Hedderly-Smith, 1977). Most samples returned copper values in the 400 to 1000 ppm range. One sample of mineralized intrusive contained 5600 ppm copper. Low order molybdenum and silver anomalies were also detected. The U.S. Geological Survey (Yount and others, 1978) took 7 samples in 1978. The highest copper value obtained was 2200 ppm.

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

This occurrence is estimated to have a small tonnage of low grade (Cox and others, 1981).

**Additional comments:**

This site is located on land selected by the Koniag Native Corporation.

**References:**

MacKevett and Holloway, 1977; Hedderly-Smith, 1977; Yount and others, 1978; Cox and others, 1981; Detterman and others, 1981.

**Primary reference:** Hedderly-Smith, 1977**Reporter(s):** S.H. Pilcher (Anchorage)**Last report date:** 1/31/00

**Site name(s):** Unnamed (on western Nakchamik Island)

**Site type:** Prospect

**ARDF no.:** SW002

**Latitude:** 56.34

**Quadrangle:** SW B-6

**Longitude:** 157.88

**Location description and accuracy:**

This site is on the western part of Nakchamik Island which is located approximately 10 miles south of Cape Kumliun in Chignik Bay (MacKevett and Holloway, 1977, locality 8; Cox and others, 1981, locality 5). Site location is at an elevation of about 700 feet and is accurate to within 1/2 mile.

**Commodities:**

**Main:** Cu

**Other:** Pb, Zn

**Ore minerals:** Chalcopyrite, galena?, pyrite, sphalerite?

**Gangue minerals:** Quartz?, barite?

**Geologic description:**

On Nakchamik Island, dacite plug domes intrude Oligocene and Eocene volcanic rocks of the Meshik Formation (Detterman and others, 1981). The prospect is marked by a large color anomaly. Closely-spaced quartz(?) veinlets containing abundant pyrite and chalcopyrite have been noted. Stream-sediment samples contain anomalous values in copper, lead, silver, and zinc and many contain barite. Cox and others (1981) report the grade of surface samples at <0.2 percent copper. Sixteen rock samples were collected in the 1970's by the U.S. Geological Survey (Yount and others, 1978). The highest values obtained were 1600 ppm copper, 130 ppm lead, and 260 ppm zinc.

**Alteration:**

Country rocks are propylitically and sericitically altered. The area is marked by a large color anomaly.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

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

Remnants of old mining equipment have been found at this prospect, indicating early exploration. The U.S. Geological Survey collected 16 rock samples in the 1970's (Yount and others, 1978). The highest metal values obtained were 1600 ppm copper, 130 ppm lead, and 260 ppm zinc. Cox and others (1981) report surface copper values at <0.2 per cent.

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

This site is on land selected by the Koniag Native Corporation.

**References:**

Yount and others, 1978; Wilson, 1980; Cox and others, 1981; Detterman and others, 1981; Young and others, 1997.

**Primary reference:** Cox and others, 1981**Reporter(s):** S.H. Pilcher (Anchorage)**Last report date:** 1/31/00

**Site name(s):** Unnamed (southeast Nakchamik Island)

**Site type:** Occurrence

**ARDF no.:** SW003

**Latitude:** 56.32

**Quadrangle:** SW B-6

**Longitude:** 157.82

**Location description and accuracy:**

This site is located near the southeast coast of Nakchamik Island (MacKevett and Holloway, 1977, locality 1). The island is approximately 10 miles south of Cape Kumliun in Chignik Bay. Site location is accurate to within 1 mile.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite?, pyrite?

**Gangue minerals:** Quartz?

**Geologic description:**

This site is marked by a color anomaly which coincides with a dacite plug dome that has intruded volcanics of the Oligocene and Eocene Meshik Formation (Detterman and others, 1981; Cox and others, 1981). This mineral occurrence has been described as a porphyry copper deposit consisting of disseminated sulfides in strongly altered intrusive and surrounding volcanic rocks (MacKevett and Holloway, 1977). No mention is made of ore or gangue minerals present.

**Alteration:**

The alteration is unknown but probably includes propylitic and sericitic types.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Apparently this occurrence has had post-1950 activity (U.S. Bureau of Mines, 1973).

**Production notes:**

**Reserves:**

**Additional comments:**

This site is located on land selected by the Koniag Native Corporation.

**References:**

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; Cox and others, 1981; Determan and others, 1981.

**Primary reference:** MacKevett and Holloway, 1977

**Reporter(s):** S.H. Pilcher (Anchorage)

**Last report date:** 1/31/00

**Site name(s):** Unnamed (east tip of Sutwik Island)

**Site type:** Occurrence

**ARDF no.:** SW004

**Latitude:** 56.5

**Quadrangle:** SW C-4

**Longitude:** 156.9

**Location description and accuracy:**

This site is located on the eastern tip of Sutwik Island near Foggy Cape (MacKevett and Holloway, 1977, locality 6). Site location is accurate to within 2 miles.

**Commodities:**

**Main:** Cu?

**Other:**

**Ore minerals:** Chalcopyrite?, pyrite?

**Gangue minerals:** Quartz?

**Geologic description:**

The rocks at this site consist of basaltic plug domes intruding sedimentary strata of the Meshik Formation (Detterman and others, 1981). The site has been described as a porphyry-type occurrence consisting of a strongly altered zone in Tertiary hypabyssal and volcanic rocks (MacKevett and Holloway, 1977). No mention is made of ore or gangue minerals present.

**Alteration:**

The alteration is unknown but it probably includes propylitic and sericitic types.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This site is on land selected by the Koniag Native Corporation.

**References:**

MacKevett and Holloway, 1977; Cox and others, 1981; Detterman and others, 1981.

**Primary reference:** MacKevett and Holloway, 1977

**Reporter(s):** S.H. Pilcher (Anchorage)

**Last report date:** 1/31/00

**Site name(s):** Unnamed (on Aniakchak River)

**Site type:** Prospect

**ARDF no.:** SW005

**Latitude:** 56.8

**Quadrangle:** SW D-5

**Longitude:** 157.6

**Location description and accuracy:**

This site represents placer claims located on the Aniakchak River approximately 3 miles upstream from Aniakchak Bay (MacKevett and Holloway, 1977, locality 2). Site location is accurate to within 3 miles.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

This site represents gold placer claims shown on 1973 U.S. Bureau of Mines maps.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer gold-PGE (Cox and Singer, 1986, model 39a)

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

39a

**Production Status:** Undetermined.

**Site Status:** Inactive

**Workings/exploration:**

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

This site is located within the Aniakchak National Monument and Preserve.

**References:**

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977.

**Primary reference:** U.S. Bureau of Mines, 1973

**Reporter(s):** S.H. Pilcher (Anchorage)

**Last report date:** 1/31/00

**Site name(s):** Unnamed (east of Yantarni Creek)

**Site type:** Occurrence

**ARDF no.:** SW006

**Latitude:** 56.9

**Quadrangle:** SW D-4

**Longitude:** 157.3

**Location description and accuracy:**

This occurrence is in T. 37 S., R. 50 W., of the Seward Meridian, east of Yantarni Creek (MacKevett and Holloway, 1977, locality 5). Site location is accurate to within 2 miles.

**Commodities:**

**Main:** Cu?

**Other:**

**Ore minerals:** Chalcopyrite?, pyrite?

**Gangue minerals:** Quartz?

**Geologic description:**

This site is marked by a color anomaly which coincides with a diorite stock (Detterman and others, 1981; Cox and others 1981). The stock, dated at 32-40 million years, intrudes the Jurassic Naknek and the Eocene and Paleocene Tolstoi Formations (Detterman and others, 1981). The diorite is reported to be altered and to contain disseminated porphyry-type mineralization (MacKevett and Holloway, 1977). The main drainage in the area is anomalous in zinc (Cox and others, 1981). No mention is made of ore or gangue minerals.

**Alteration:**

Color anomaly associated with diorite stock.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This site is located on land selected by the Koniag Native Corporation.

**References:**

MacKevett and Holloway, 1977; Cox and others, 1981; Detterman and others, 1981.

**Primary reference:** MacKevett and Holloway, 1977

**Reporter(s):** S.H. Pilcher (Anchorage)

**Last report date:** 1/31/00

**Site name(s): Unnamed (on Unavikshak Island)****Site type:** Occurrence**ARDF no.:** SW007**Latitude:** 56.49**Quadrangle:** SW B-6**Longitude:** 157.72**Location description and accuracy:**

This occurrence is located on Unavikshak Island which is approximately 5 miles east of Cape Kumliun. No specific sites are described, however the location as plotted is accurate to within 1 mile.

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

The entire island has been mapped as a color anomaly (Cox and others, 1981). A mineralization system on the island has been classified by Wilson (1980) as a volcanic porphyry deposit, although no mention is made of ore or gangue minerals present. Rocks consist of andesite flows and sills of Oligocene to Pliocene age and sedimentary rocks of the Paleocene and Eocene Tolstoi Formation (Detterman and others, 1981). A hornblende andesite sill has been dated at approximately 36 m.y. and sericitic alteration at approximately 30 m.y. (Wilson, 1980).

**Alteration:**

A small zone of sericitic alteration in undescribed rocks lies near the northern part of the island (Wilson, 1980). Propylitic and argillic types may also be present.

**Age of mineralization:**

Tertiary.

**Deposit model:**

Porphyry copper (Cox and Singer, 1986, model 17)

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

17

**Production Status:** None**Site Status:** Inactive**Workings/exploration:****Production notes:****Reserves:****Additional comments:**

This site is on land selected by the Koniag Native Corporation.

**References:**

Wilson, 1980; Cox and others, 1981; Detterman and others, 1981.

**Primary reference:** Wilson, 1980**Reporter(s):** S.H. Pilcher (Anchorage)**Last report date:** 1/31/00

**Site name(s):** Unnamed (near headwaters of Main Creek)

**Site type:** Occurrence

**ARDF no.:** SW008

**Latitude:** 56.9

**Quadrangle:** SW D-5

**Longitude:** 157.5

**Location description and accuracy:**

This site is located near the headwaters of Main Creek in T. 37 S., R. 51 or 52 W., of the Seward Meridian (MacKevett and Holloway, 1977, locality 4). Site location is accurate to within 4 miles.

**Commodities:**

**Main:** Cu?

**Other:**

**Ore minerals:** Quartz?

**Gangue minerals:**

**Geologic description:**

At this site hydrothermal alteration is associated with a Tertiary subvolcanic pluton and Tertiary volcanic rocks (MacKevett and Holloway, 1977). No mention is made of ore or gangue minerals present).

**Alteration:**

Hydrothermal alteration of unknown type.

**Age of mineralization:**

**Deposit model:**

Porphyry copper? (Cox and Singer, 1986, model 17)

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

17?

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This occurrence is located on land selected by the Koniag Native Corporation.

**References:**

MacKevett and Holloway, 1977; Detterman and others, 1981.

**Primary reference:** MacKevett and Holloway, 1977

**Reporter(s):** S.H. Pilcher (Anchorage)

**Last report date:** 1/31/00

## References

- Alaska Division of Natural Resources, 1997, State of Alaska General Land Status with Mineral Resources and Mining Claims, Alaska Peninsula, 1 map sheet, scale 1:1,000,000.
- Cox, D.P., Detra, D.E., and Detterman, R.L., 1981, Mineral resource maps of the Chignik and Sutwik Island quadrangles, Alaska: U.S. Geological Survey Map MF- 1053K, 2 map sheets, scale 1:250,000.
- Cox, D.P., and Singer, D.A., eds., 1986, Mineral deposit models: U.S. Geological Survey Bulletin 1693, 379 p.
- Detterman, R.L., Miller, T.P., Yount, M.E., and Wilson, F.H., 1981, Geologic map of the Chignik and Sutwik Island quadrangles: U.S. Geological Survey Map I-1229, 1 map sheet, scale 1:250,000.
- Hedderly-Smith, 1977, 1977 Annual report, Alaska search, Koniag Inc. region: Bear Creek Mining Company, Spokane Office, 23 p. (held by Kennecott Alaska, Anchorage).
- MacKevett, E.M., and Holloway, C.D., 1977, Table describing metalliferous mineral deposits in the western part of southern Alaska: U.S. Geological Survey Open-File Report 77-0169F, 38 p., 1 map sheet, scale 1:1,000,000.
- Ransome, A.L., and Kerns, W.H., 1954, Names and definitions of regions, districts, and subdistricts in Alaska: U. S. Bureau of Mines Information Circular 7679, 91 p.
- U.S. Bureau of Mines, 1973, Quadrangle map overlays showing mineral deposit locations in Alaska: U.S. Bureau of Mines Open-File Report 20-73, 95 map sheets, scale 1:250,000.
- Wilson, F.H., 1980, Late Mesozoic and Cenozoic tectonics and age of porphyry copper prospects, Chignik and Sutwik Island quadrangles, Alaska Peninsula: U.S. Geological Survey Open-File Report 80-543, 94 p., 4 map sheets, scales 1:250,000 and 1000 feet to the inch.
- Young, L.E., St. George, P., and Bouley, B., 1997, Porphyry copper deposits in relation to the magmatic history and palinspastic restoration of Alaska, *in* Goldfarb, R.J., and Miller, L.D., eds., Mineral Deposits of Alaska: Economic Geology Monograph 9, 482 p.
- Yount, M.E., Cooley, E.F., and O'Leary, R.M., 1978, Sample location map, analytical data, and statistical summary of analyses of rock samples, Chignik and Sutwik Island quadrangles, Alaska: U.S. Geological Survey Open-File Report 78-0557, 1 map sheet, scale 1:250,000.