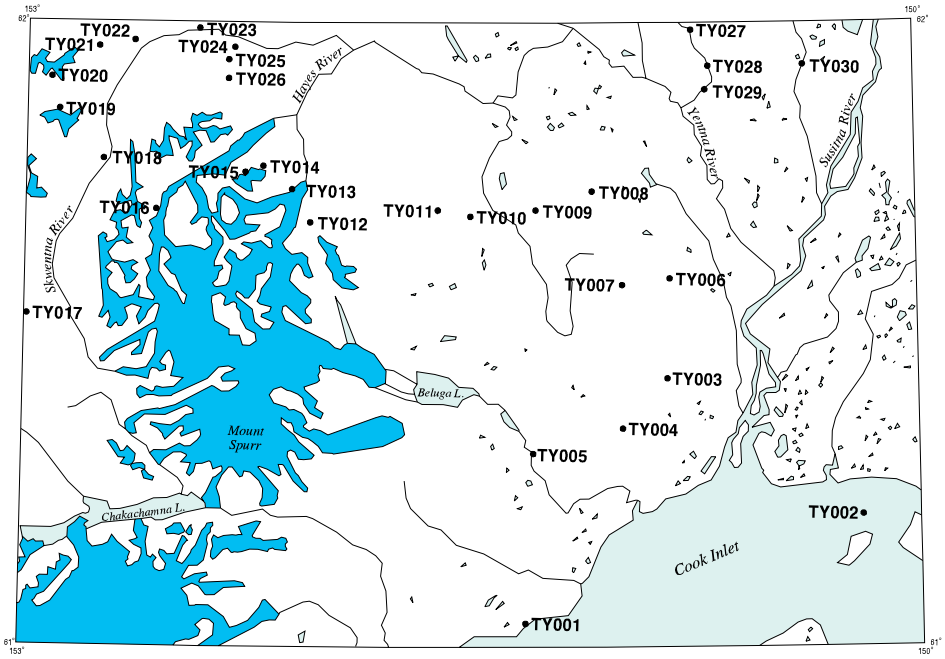
Alaska Resource Data File

U.S. Department of the Interior - U.S. Geological Survey

Tyonek 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.



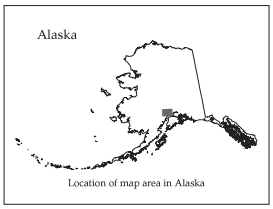
Distribution of mineral occurrences in the Tyonek 1:250,000-scale quadrangle, southcentral Alaska

This and related reports are accessible through the USGS World Wide Web site http://www-mrs-ak.wr.usgs.gov/ardf. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to Donald Grybeck, USGS, 4200 Unversity Dr., Anchorage, AK 99508-4667, email dgrybeck@usgs.gov, telephone (907) 786-7424. This compilation is authored by:

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OPEN-FILE REPORT 98-525

Site name(s): Unnamed (near Tyonek)

Site Type: Occurrence

ARDF no.: TY001

Latitude: 61.03 **Quadrangle:** TY A-4

Longitude: 151.3

Location description and accuracy:
Ilmenite beach sands occur for several miles along the west side of Cook Inlet south of the village of Old Tyonek in Section 19, T.11 N., R. 11 W. (U.S. Bureau of Mines, 1998, MAS # 0020840009). Location approximate within one mile.

Commodities:

Main: Fe, Ti, Zr

Other: Co, Ta, Th

Ore minerals: Euxenite, ilmenite, magnetite, zircon

Gangue minerals:

Geologic description:
Ilmenite beach sands occur for several miles along the west side of Cook Inlet between the village of Old Tyonek and Shirleyville. Cook (1969, p. 99-105) evaluated this occurrence by concentrating the heavy minerals in a -48 mesh fraction. He noted potentially valuable minerals to be magnetite, ilmenite and zircon. Minor amounts of euxenite, a source of columbium, tantalum and thorium were also noted. Very limited descriptive information is published on this prospect.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Placer Ti (Cox and Singer, 1986; model 39c)

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

Production Status None

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Very limited descriptive information is published on this prospect.

References:
Cook, 1969; U.S. Bureau of Mines, 1998.

Primary reference: Cook, 1969

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Unnamed (near Cook Inlet Shoals)

Site Type: Occurrence

ARDF no.: TY002

Latitude: 61.21 **Quadrangle:** TY A-1

Longitude: 150.17

Location description and accuracy:
Offshore mining lease for titanium in Cook Inlet, north of Fire Island (U.S. Bureau of Mines, 1998, MAS # 0020840010). Location approximate within one mile.

Commodities:

Main: Fe, Ti

Other:

Ore minerals: Ilmenite, magnetite

Gangue minerals:

Geologic description:
This occurence has been reported as an offshore mining lease for titanium in Cook Inlet, north of Fire Island. Cook (1969, p. 89-99) evaluated this occurrence by concentrating the heavy minerals in a -48 mesh fraction. Concentrates yielded 15.9 pounds of magnetite and 5.2 pounds of ilmenite per cubic yard. He reported that the amount of heavy minerals was too low to be of economic value at that time. Very limited descriptive information is published on this occurrence.

Alteration:

Age of mineralization:
Quaternary

Deposit model:
Placer Ti (Cox and Singer, 1986; model 39c)

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

Production Status None

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Very limited descriptive information is published on this occurrence.

References:
Cook, 1969; U.S. Bureau of Mines, 1998.

Primary reference: Cook, 1969

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Lewis River

Site Type: Mine

ARDF no.: TY003

Latitude: 61.43 **Quadrangle:** TY B-3

Longitude: 150.84

Location description and accuracy:
MacKevett and Holloway (1977, locality 9) describe mined areas extending three to six miles downstream from the landing strip located near the head of Lewis River on the west side of Mt. Susitna in T. 14, 15 and 16 N., R. 9 W. (U.S. Bureau of Mines, 1998, MAS # 0020840026; Cobb, 1972, MF 385, locality 9; and U.S. Bureau of Mines, 1973).

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
MacKevett and Holloway (1977, locality 9) describe mined areas extending three to six miles downstream from the landing strip located near the head of the Lewis River on the west side of Mt. Susitna. Stream gravel carry coarse angular gold with attached quartz. Cobb (1979, OFR 80-86, p. 17-18) reports that gold is probably derived from quartz veins in local Jurassic or Cretaceous granitic bedrock or from reworked Tertiary conglomerate. Drilling for possible dredging was done in the early 1900's. Placer mining was active mostly before 1918. Bedrock is 12 to 22 feet below surface. According to Brooks (1918, p. 45-47), seven small placer operations operated in 1916 in the canyon between upper basin and the flats and produced over $2,000 in gold (worth $18.66 an ounce). One $2 nugget was found. An unknown but probably small amount of gold recovered in 1956-57 (Cobb, 1973, B 1374, p. 17).

Alteration:

Age of mineralization:
Quaternary

Deposit model:

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

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

Production Status Yes; small

Site Status: Probably inactive

Workings/exploration:
Placer mining was active mostly before 1918. Drilling for possible dredging was done in the early 1900's. Bedrock is 12 to 22 feet below surface.

Production notes:
According to Brooks (1918, p. 45-47), seven small placer operations operated in 1916 in the canyon between upper basin and the flats and produced over $2,000 in gold (worth $18.66 an ounce). One $2 nugget was found. Unknown but probably small amount of gold recovered in 1956-57 (Cobb, 1973, B 1374, p. 17).

Reserves:

Additional comments:

References:
Brooks,1918; Cobb, 1972 (MF385); Cobb, 1973 (B 1374); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 80-86); U.S. Bureau of Mines, 1998.

Primary reference: Cobb, 1973 (B 1374)

Reporter(s): Madelyn A. Millholland (Anchorage), James Reihle (USGS)

Last report date: 06/01/98

Site name(s): Theodore River

Site Type: Prospects

ARDF no.: TY004

Latitude: 61.35 **Quadrangle:** TY B-3

Longitude: 150.99

Location description and accuracy:
MacKevett and Holloway (1977, locality 10) locate these placer prospects in the Theodore River and tributaries draining the south end of Little Mt. Susitna. Placer occurrences are noted in T.15 and16 N., R.9 and 10 W. for about ten miles along the Theodore River and tributaries to the northeast (U.S. Bureau of Mines, 1998, MAS # 0020840025 and U. S. Bureau of Mines, 1973, localities 25, 55a-e, and 73). Location is approximated in the mid section of the Theodore River.

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
Placer prospects; very little descriptive information is available.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:
Surface workings included prospecting and small scale mining.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Beluga River

Site Type: Prospect

ARDF no.: TY005

Latitude: 61.31 **Quadrangle:** TY B-4

Longitude: 151.29

Location description and accuracy:
This placer prospect is located approximately four and one-half miles down stream from Lower Beluga Lake in the Beluga River in T.14N., R. 11W., Section 17 (U.S. Bureau of Mines, 1998, MAS # 00208400030). Location is approximate within one mile.

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
Very limited descriptive information is published on this prospect. Brooks (1909, p. 42) makes a very general reference to prospecting on the Beluga River, but does not provide a precise location.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:

Very limited descriptive information is published on this prospect. Brooks (1909, p. 42) makes a very general reference to prospecting on the Beluga River, but does not provide a precise location.

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1909; U.S. Bureau of Mines, 1998.

Primary reference:

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Wolverine Creek

Site Type: Prospect

ARDF no.: TY006

Latitude: 61.59 **Quadrangle:** TY C-3

Longitude: 150.83

Location description and accuracy:
MacKevett and Holloway (1977, locality 11) show this placer prospect in T. 17 N., R. 9 W. along a seven mile stretch of the Wolverine Creek drainage between Little Mt. Sustina and Mt.Susitna (U.S. Bureau of Mines, 1998, MAS # 0020840027 and U.S. Bureau of Mines, 1973, locality 54). Location is approximated at the northern end of the placer occurrence.

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
Placer prospect. There is no descriptive information published on this prospect.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Beaver Creek; Upper Sucker Creek

Site Type: Prospect

ARDF no.: TY007

Latitude: 61.58 **Quadrangle:** TY C-3

Longitude: 150.99

Location description and accuracy:
Alaska Department of Natural Resources unpublished claim records show the location of this prospect in Upper Sucker Creek, Sections 5,7,18 and 19, T. 17 N., R. 9 W. and Sections 11, 12, and 13, T. 17 N., R. 10 W., approximately four miles north of Little Mt. Susitna. Location given is in the the northern part of the claim block.

Commodities:

Main: Au, Cu

Other: Fe

Ore minerals: Chalcopyrite, gold, pyrite, pyrrhotite

Gangue minerals: Magnetite

Geologic description:
A variety of lithologies, including marble, clastic sedimentary rocks, and intrusive and volcanic rocks, have been mapped on the property. Copper-gold-magnetite occurs as skarns developed in the carbonate-rich rocks (K. Adler, Rev. Michael Hornick, personal communication, 1998).

Alteration:

Age of mineralization:

Deposit model:
Cu skarn; unknown if porphyry-related (Cox and Singer, 1986; models 18a or 18b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18a or 18b

Production Status None

Site Status: Active

Workings/exploration:

Work on the property included mapping; airborne magnetic, ground magnetic and VLF geophysical surveys; rock and stream silt geochemical surveys. Thick cover precludes meaningful soil sampling surveys.

Production notes:

Reserves:

Additional comments:

References:

Primary reference:

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Texas Creek; Beluga Mountain

Site Type: Prospect

ARDF no.: TY008

Latitude: 61.73 **Quadrangle:** TY C-3

Longitude: 151.09

Location description and accuracy:
MacKevett and Holloway (1997, locality 8) show this placer prospect in Texas Creek in T. 19 N., R. 10 W., Sections 16, 17,and 20 on the northeast side of Beluga Mountain (U. S. Bureau of Mines, 1998, MAS # 0020840018 and Cobb, 1979, MF 385, locality 8). Location is approximated at the eastern end of the placer where Texas Creek leaves Beluga Mountain.

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
Glacio-fluvial deposits of probably Tertiary age contain fine gold, probably reconcentrated from glacial deposits, although some may be from bedrock sources. Smith (1934, p. 31-32; 1936, p. 33) reported that gold is found in blue clay false bedrock along stream benches and that the placer is difficult to mine because of numerous glacial boulders. The gold tenor is low (Cobb,1973, B1374, p. 23).

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Probably inactive

Workings/exploration:
Explored by a shallow 200 foot trench cut in 1933.

Production notes:

Reserves:

Additional comments:
Referred to as Beluga Mountain by Smith, 1934.

References:
Smith, 1934; Smith, 1936; Cobb, 1972 (MF385); Cobb, 1973 (B1374); MacKevett and Holloway, 1977; Cobb, 1979 (OFR 80-86); U.S. Bureau of Mines, 1998.

Primary reference: Smith, 1934

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Unnamed (west of Beluga Mountain)

Site Type: Prospect

ARDF no.: TY009

Latitude: 61.7 **Quadrangle:** TY C-4

Longitude: 151.28

Location description and accuracy:
MacKevett and Holloway (1977, locality 19) show this placer prospect on three and one half mile stretch of an unnamed creek that drains west side from the top of Beluga Mountain in T. 11 W., R.19 N., Sections 26, 27,28, 32 and 33 (U.S. Bureau of Mines, 1998, MAS# 0020840017 and U.S. Bureau of Mines, 1973, locality 16). Location is shown at the mid point of the placered portion of the stream.

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Other than said to be a gold placer, no other information has been published on the propect (MacKevett and Holloway, 1977).

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:

Other than said to be a gold placer, no other information has been published on the propect (MacKevett and Holloway, 1977).

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Friday Creek

Site Type: Prospect

ARDF no.: TY010

Latitude: 61.69 **Quadrangle:** TY C-5

Longitude: 151.5

Location description and accuracy:
MacKevett and Holloway (1977, locality 17) show this placer prospect in Friday Creek just above the confluence with the Talachulitna River in T. 19 N., R. 13 W., Section 30 (U.S. Bureau of Mines, 1973, locality 47). Location is approximate to within one mile.

Commodities:

Main: Au, Fe, Pt

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Beyond the location of the placer prospect (MacKevett and Holloway, 1977) and the commodities listed in the 1973 U.S. Bureau of Mines report, there is no other information published on this site.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:

Beyond the location of the placer prospect (MacKevett and Holloway, 1977) and the commodities listed in the 1973 U.S. Bureau of Mines report, there is no other information published on this site.

Production notes:

Reserves:

Additional comments:

No descriptive information is published on this prospect.

References:

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

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Alder Creek; Upper Friday Creek

Site Type: Prospects

ARDF no.: TY011

Latitude: 61.7 **Quadrangle:** TY C-5

Longitude: 151.61

Location description and accuracy:
MacKevett and Holloway (1977, locality 16) show these placer prospects in the creeks above a small landing strip at the confluence of Friday and Alder Creeks in T. 19 N., R. 13 W., Sections 17, 18, 19, 20, 21, 27, 33 and 34 (U.S. Bureau of Mines, 1998, MAS # 002840015 and U.S. Bureau of Mines, 1973, over localities 8a, 8b and 61). Location is given at the confluence of Alder with Friday Creek. The placers occur upstream from this location .

Commodities:

Main: Au

Other:

Ore minerals: Native gold

Gangue minerals:

Geologic description:
Other than indentified as a placer by MacKevett and Holloway (1977), no other published information is available.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Undetermined.

Site Status: Undetermined

Workings/exploration:

Other than indentified as a placer by MacKevett and Holloway (1977), no other published information is available.

Production notes:

Unknown.

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Unnamed (near the South Branch of Trimble Glacier)

Site Type: Occurrence

ARDF no.: TY012

Latitude: 61.68 **Quadrangle:** TY C-6

Longitude: 152.04

Location description and accuracy:
Prospect is located off the southeast end of hill #4180 along an unnamed creek; one mile east of the south branch of the Trimble Glacier in about the center of the west half of Section 6, T. 18 N., R. 15 W. (U.S. Bureau of Mines, 1998, MAS # 0020840005 and U.S. Bureau of Mines, 1973, locality 49).

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite

Gangue minerals:

Geologic description:
No other published information is available for this site.

Alteration:

Age of mineralization:

Deposit model:
Vein?

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

Production Status None

Site Status: Inactive

Workings/exploration:
Surface prospecting.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973; U.S. Bureau of Mines, 1998.

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

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle, (USGS)

Last report date: 06/01/98

Site name(s): Miss Molly

Site Type: Prospect

ARDF no.: TY013

Latitude: 61.73 **Quadrangle:** TY C-6

Longitude: 152.07

Location description and accuracy:

Fernette and Cleveland (1984) locate the Miss Molly prospect on the north side of the Trimble River near the toe of the Trimble Glacier in Section 18, T. 19 N., R. 15 W. The area is mostly covered by glacial debris and dense vegetation, with good bedrock exposures along the Trimble River and in stream valleys (U.S. Bureau of Mines, 1998, MAS # 0020840031 and U.S. Bureau of Mines, 1973, localites 26 and 46). Location is known to within 100 yards.

Commodities:

Main: Mo, Pb, Zn

Other: F

Ore minerals: Galena, molybdenite, pyrite, sphalerite

Gangue minerals: Fluorite, quartz

Geologic description:

Fernette and Cleveland (1984) described the mineralization at Miss Molly as quartz veins with medium to coarse-grained molybdenite, pyrite, and local fluorite. Veins are regularly spaced, sub parallel, vary from 2 to 10 cm wide, and are spaced 2 to 10 m apart. Veins occur in two zones about 545 m long and up to 150 m wide in a leucocratic, equigranular biotite granite stock. Veins locally fill joints and less commonly shears. Hydrothermal alteration up to 0.3 m wide to sericite and pyrite, occurs adjacent to veins. Grab and chip samples contain up to 0.38% Mo, 0.16% Zn and 100 ppb Au. The granite stock intrudes Mesozoic marine sediments (KJs) of the Kahlitna terrane (Fernette and Cleveland, 1984 and Nokleberg and others, 1987). Reed and Lanphere (1972) report nearby granitic plutons with K-Ar ages of 56-59 m.y. and is probably the same age as the intrusion hosting the veins.

Alteration:

Quartz, sericite, clay, alunite? (Fernette and Cleveland, 1984).

Age of mineralization:

Possibly related to dated Tertiary (59 - 56 m.y.) intrusions nearby. (Reed and Lanphere, 1972)

Deposit model:
Mo-bearing quartz veins

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

Production Status No

Site Status: Probably inactive

Workings/exploration:
Exploration work included prospecting, rock chip geochemical sampling.

Production notes:

Reserves:
Moderate size and grade (Fernette and Cleveland, 1984).

Additional comments:
The Miss Molly prospect is not a classic stockwork molybdenum- type occurrence.

References:
Berg and Cobb, 1967; Reed and Lanphere, 1972; MacKevett and Holloway, 1977; Hollister, 1978; Nokleberg and others, 1987; Fernette and Cleveland, 1984; U.S. Bureau of Mines, 1998.

Primary reference: Fernette and Cleveland, 1984

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Unnamed

Site Type: Occurrence

ARDF no.: TY014

Latitude: 61.77 **Quadrangle:** TY D-6

Longitude: 152.2

Location description and accuracy:
The occurrence is located near the toe of a hanging glacier on the ridge between the Hayes and Trimble Glaciers at the northwest corner of Section 4, T. 19 N., R. 16 W. The location of this occurrence is approximated within a one mile radius from U.S. Bureau of Mines, 1998 (MAS # 0020840003) and U.S. Bureau of Mines, 1973 (locality 44).

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite

Gangue minerals:

Geologic description:
No published descriptive information is available. Given the proximity to the Miss Molly prospect, ARDF TY0013, mineralization could be of similar style and tenor.

Alteration:

Age of mineralization:

Deposit model:
Mo-bearing veins and disseminations?

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

Production Status No

Site Status: Probably inactive

Workings/exploration:
Surface prospecting.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1973; U.S. Bureau of Mines, 1998.

Primary reference: U.S. Bureau of Mines, 1998

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Unnamed (near Hayes Glacier)

Site Type: Prospect

ARDF no.: TY015

Latitude: 61.76 **Quadrangle:** TY D-7

Longitude: 152.26

Location description and accuracy:
Berg and Cobb (1967, locality 2) show this prospect on the south side of the Hayes Glacier approximately 8 miles southwest of the confluence of the Hayes and Trimble Rivers in Section 1, T.19 N. R. 17 W. (U.S. Bureau of Mines, 1998, MAS # 0020840042; MacKevett and Holloway, 1977, locality 23; Cobb, 1972, OFR 80-86, p. 28; Cobb, 1972, MF 385, locality 6; and U.S. Bureau of Mines, 1973, locality 42). Location is approximate within a one mile radius.

Commodities:

Main: Au, Mo, Pb

Other: As, Fe

Ore minerals: Arsenopyrite, galena, molybdenite, pyrite

Gangue minerals: Quartz

Geologic description:
A three to four mile long zone of molybdenite-bearing quartz lenses and stringers cutting Tertiary granite (Reed and Lanphere, 1972 and MacKevett and Holloway, 1977, p. 77). Galena, pyrite and arsenopyrite are reported by Berg and Cobb (1967, p. 36-37). Published descriptions of this locality are very similar to the Miss Molly prospect (ARDF TY013). It is possible that the location was inaccurately reported and this is actually the Miss Molly prospect.

Alteration:
Silicification

Age of mineralization:
May be related to Tertiary (56-59 m.y.) intrusions nearby. (Reed and Lanphere, 1972)

Deposit model:
Dilatant, structurally controlled quartz-molybdenite vein sets

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

Production Status No

Site Status: Inactive

Workings/exploration:
Surface prospecting

Production notes:

Reserves:
Small tonnage reported by Berg and Cobb (1967).

Additional comments:
Published descriptions of this locality are very similar to the Miss Molly prospect (ARDF TY0013). It is possible that the location was inaccurately reported and this is actually the Miss Molly prospect.

References:
Berg and Cobb,1967; COBB, 1972 (MF 385); Reed and Lanphere, 1972; MacKevett and Holloway, 1977; COBB, 1979 (OFR-80-86); U.S. Bureau of Mines, 1985.

Primary reference: Berg and Cobb, 1967

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Unnamed

Site Type: Prospect

ARDF no.: TY016

Latitude: 61.7 **Quadrangle:** TY C-7

Longitude: 152.56

Location description and accuracy:
MacKevett and Holloway (1977, locality 12) show this lode prospect on the west side of the Hayes River approximately 28 miles up from the confluence with the Skwentna River; in about the center of the west half of Section 33, T. 19 N., R. 18 W at about 5100 feet elevation (U.S. Bureau of Mines, 1998, MAS # 0020840006 and 0020840032 and U.S. Bureau of Mines, 1973, locality 50).

Commodities:

Main: Au, Cu, Mo

Other:

Ore minerals:

Gangue minerals:

Geologic description:
Lode claim located by St. Eugene Mining Corp. in the 1970s for gold (USBM, 1998). Occurrence is probably near the contact between lower Tertiary granitic rocks and Jura-Cretacous flysch of the Kahiltna Group. (MacKevett and Holloway, 1977, p. 77). No other published information is available.

Alteration:

Age of mineralization:

Deposit model:
Unknown

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

Production Status None

Site Status: Undetermined

Workings/exploration:
Surface prospecting.

Production notes:

Reserves:

Additional comments:
No descriptive information is published on this prospect.

References:
U.S. Bureau of Mines, 1973; MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Unnamed (near upper Crystal Creek)

Site Type: Occurrence

ARDF no.: TY017

Latitude: 61.53 **Quadrangle:** TY C-8

Longitude: 152.99

Location description and accuracy:
Reed and Elliott (1970, S-30, p.21) collected a float sample with visible base metal sulfides from a tributary to Upper Crystal Creek, near the western boundary of the Tyonek Quadrangle at about the center of the north side of sec. 25, T. 17 N., R. 21 W. (Cobb, 1972, MF 385, locality 3 and U.S. Bureau of Mines, 1998, MAS # 0020840003). Location is approximate to within a one mile radius.

Commodities:

Main: Pb, Zn

Other: As, Fe

Ore minerals: Arsenopyrite, galena, pyrite, sphalerite

Gangue minerals:

Geologic description:
Boulder of altered, sheared, fine-grained igneous rock contains 2% disseminated pyrite, 1% to 2% galena, and traces of sphalerite and arsenopyrite (Reed and Elliott, 1970, S-30, p.21).

Alteration:

Age of mineralization:

Deposit model:
Unknown.

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

Production Status None

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Reed and Elliott, 1970; Cobb, 1972 (MF385); Cobb, 1979 (OFR 80-86); USBM, 1998.

Primary reference: Reed and Elliott, 1970

Reporter(s): Madelyn Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Island Mountain

Site Type: Prospects

ARDF no.: TY018

Latitude: 61.78 **Quadrangle:** TY D-8

Longitude: 152.74

Location description and accuracy:
Alaska Department of Natural Resources unpublished claim records locate these prospects on the west side of the Skwentna River, one to one-and-one half miles south of the confluence of Emerald Creek and the Skewntna River. The site covers an area of about eight square miles in Sections 28, 29, 31,32, and 33, T. 20 N., R. 19 W. Location given is in the northeast corner of the area.

Commodities:

Main: Au, Cu, Mo, Zn

Other: As, Fe

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

Gangue minerals: Magnetite, quartz

Geologic description:
Reed and Elliott (1970) show this locality to be underlain by Mesozoic sediments (KJs) of the Kahlitna terrane that are intruded by a small body of granite and quartz monzonite (TKig). Detailed mapping in the late 1980's by Cominco American Incorporated identified veins and disseminations of pyrite-chalcopyrite and arsenopyrite-gold and stockwork quartz veins with magnetite and trace amounts of molybdenite cutting fine- to medium-grained plagioclase-hornblende porphyritic andesite and medium-grained monzonitic plutonic rocks at this site. Carbonate-rich beds in the sedimentary country rocks are locally replaced with pyrrhotite, pyrite, and sphalerite. Numerous occurrences are reported over an 8 square mile area. (Cominco American Incorporated, unpublished reports, 1987and 1988.) Host rocks are most likely Late Cretaceous or Early Tertiary(?) based on nearby K-Ar ages published by Reed and Lanphere (1972). Mineralization is probably related to these intrusions.

Alteration:
Propylitic (chlorite-epidote-carbonate +/- magnetite); argillic/sericitic; silicic.

Age of mineralization:
Host rocks are late Cretaceous or Early Tertiary(?) based on K-Ar ages published by Reed and Elliott (1970). The deposit is probably related to these intrusions.

Deposit model:
Porphyry copper(?); porphyry copper-gold(?); polymetallic vein; replacement

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

Production Status None

Site Status: Inactive

Workings/exploration:
Exploration included silt sampling, mapping, rock and contour soil sampling, soil grid geochemical surveys, magnetic and VLF geophysical surveys and diamond drilling by Cominco America in mid-1980's.

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970.

Primary reference: Reed and Elliott, 1970.

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Mt. Estelle

Site Type: Prospects

ARDF no.: TY019

Latitude: 61.85 **Quadrangle:** TY D-8

Longitude: 152.89

Location description and accuracy:
Numerous occurrences are within the area from Mt. Estelle on the west to Timber Creek on the south and 2 miles to the east of Mt. Estelle, all within T. 20 N., R. 20 W., T. 21 N., R., 19 W., and T. 21 N., R. 20 W. (U.S. Bureau of Mines, 1998, MAS # 0020840011; Alaska Department of Natural Resources claim records, 1987; MacKevett and Holloway, 1977, p. 76, locality 1; Cobb, 1972, MF 385, localities 1 and 2; and Reed and Elliott, 1970, p. 15, 21-22). The site covers about 10 square miles and the coordinates are at the center of the site.

Commodities:

Main: Au, Cu

Other: As, Mo, Pb, Sb, Zn

Ore minerals:
Arsenopyrite, chalcopyrite, galena, malachite, molybdenite, native gold, pentlandite, pyrrhotite, pyrite, sphalerite, stibnite

Gangue minerals: Carbonate, chlorite, limonite, quartz, sericite

Geologic description:
The Mount Estelle pluton, dated at 65 to 66 m.y. by Reed and Lanphere (1972), is the southern most Late Cretaceous/early Tertiary composite pluton (Tcp) of the Yentna trend. This trend is described by Reed and Nelson (1980) as a 65-km-long curvilinear belt extending from Mount Estelle in the south to Cascade Creek in the northeast. These plutons primarily intrude Mesozoic marine sedimentary rocks (KJs) of the Kahiltna terrane. The Mount Estelle pluton (Tme; Reed and Elliott, 1970) is zoned from a granite core to marginal phases of quartz monzonite, quartz monzodiorite, augite monzodiore, diorite and lamprophyric mafic and ultramafic rocks (Millholland,1995; Crowe and others, 1991; Crowe and Millholland, 1990). Xenoliths of the KJs country rocks and of the various intrusive phases are noted throughout the pluton. Sheeted joint sets and unusual spherical, onion skin-like features occur primarly within the core of the pluton. Tourmaline and beryl are noted in and adjacent to the pluton. Foley and others (1997) note that the composite plutons at the southwestern end of the Yentna trend are more granitic and probably

have not been as deeply eroded as the more mafic and ultramafic bodies to the northeast in the Talkeetna quadrangle. Adjacent to the Mount Estelle pluton the KJs is hornfelsed and locally exhibits red staining and sercite-clay-pyrite alteration as disseminations and fracture coatings. The altered sediments do not contain elevated gold values.

Float and stream sediment samples from the Mount Estelle pluton indicate widespread polymetallic mineralization. Stream sediments indicate consistently positive anomalous amounts of gold, copper, arsenic, and silver. Mineralized rock samples, both disseminated and vein type, typically give high values for gold and copper and some contain anomalous amounts of silver, arsenic, molybdenum, bismuth, boron, lead, antimony, tin, zinc and manganese. Cominco American Incorporated's work (unpublished reports, 1985-1989) show gold values ranging from ppm-level to one or more ounces per ton in select samples. Native gold occurs with chalcopyrite, pyrite, arsenopyrite, and pyrrhotite associated with sericite, carbonate and chlorite alteration in sheeted joints, stockwork veinlets, and circular structures that range from 1 inches to more than 15 feet in diameter (Millholland,1995; Crowe and others, 1991; Crowe and Millholland, 1990). These structures are localized in the felsic and intermediate phases of the pluton. Gold associated with pyrrhotite, chalcopyrite, pentlandite and molybdenite also occurs in ultramafic rocks on the south side of the pluton. Mineralization is less common in the sedimentary rocks. In Muddy Creek one zone of coarse galena, pyrrhotite, sphalerite and chalcopyrite replaces carbonate-rich horizons in the hornfelsed sedimentary rocks.

Anomalous gold, platinum-group elements, copper, chrome, nickel and arsenic are reported from many of the composite plutons of the Yentna trend (Reed and others, 1978; Reed and Nelson, 1980; Nelson and others 1992). Gold and platinum group element placers have been worked at sites downstream from these bodies (Mertie, 1919; Cobb, 1973). See also ARDF numbers TL001, TL 002, TL003, TL020, TL023, TL051, TL052, TL053.

There are notable similarities between the Mount Estelle pluton and the Kohlsaat pluton described by Reiners and others (1997). Kohsaat is a concentrically zoned body with a biotite-granite-porphyry core that intruded seriate and porphyritic intermediate composition rocks. The latter include olivine-, pyroxene-, and biotite-bearing quartz syenite, quartz monzonite, and monzonite. Lamprophyric mafic and ultramafic rocks that range in composition from peridotite to alkali gabbro and monzonite are found as large xenoliths at the northeastern margin of the pluton. The granite- porphyry core is altered to sericite, quartz, carbonate and tourmaline assemblages, with minor enrichments of copper, gold, lead, molybdenum, and zinc. They have postulated that the composite pluton at Kohlsaat formed from depleted mantle melts that were contaminated during several stages of mafic magma generation by crustal components. See also ARDF number TL052.

Alteration:

Alteration is weak and restricted to vein and joint selvages. Carbonate, chlorite, sericite, and quartz are commonly associated with the sulfide and gold mineralization (Millholland,1995; Crowe and others, 1991; Crowe and Millholland, 1990; Cominco American Incorporated, unpublished reports, 1985 -1989).

Age of mineralization:

Late Cretacous to Early Tertiary based on 65 to 66 m.y. intrusions that are probably re-

lated to the mineralization (Reed and Lanphere,1972).

Deposit model:
Intrusive-hosted gold-copper

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

Production Status None

Site Status: Active

Workings/exploration:
Prospecting in the area has been conducted by several private companies since the 1970's. From 1980 to 1985 the ground was held for placer potential, however it was never worked because the large glacial boulders in the stream gravels hampered recovery efforts. Work on the property included: silt and rock geochemistry, mapping, magnetic, VLF, IP and radar geophysical surveys, and diamond drilling. To evaluate the steep, glaciated terrain, technical climbers from Dihedral Exploration were employed.

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970; Cobb, 1972 (MF 385); Reed and Lanphere,1972; MacKevett and Holloway, 1977; Reed and Nelson,1980; USBM, 1985; Green and others,1989; Crowe and Millholland, 1990; Crowe and others, 1991; Millholland, 1995; Foley and others,1997.

Primary reference: Millholland, 1995; Reed and Elliott, 1970

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Stoney Vein

Site Type: Prospects

ARDF no.: TY020

Latitude: 61.91 **Quadrangle:** TY D-8

Longitude: 152.92

Location description and accuracy:
Alaska Department of Natural Resources claim records show this property located approximately one mile north of Mount Stoney in Section 15, T 21 N., R 20 W. Location is accurate to 500 feet.

Commodities:

Main: Ag, Au, Cu, Pb

Other: As, Sb

Ore minerals:
Arsenopyrite, chalcopyrite, native copper, galena, gold, pyrite, pyrrhotite, sphalerite, stibnite

Gangue minerals:
Calcite, dolomite, epidote, graphite, siderite, tourmaline, quartz

Geologic description:
Part of the Yentna trend of Late Cretaceous/early Tertiary composite plutons (Tcp) described by Reed and Nelson (1980), the Mount Estelle pluton (Tme, Reed and Elliott, 1970) extends from Timber Creek on the south to the Portage Creek area in the north. At this site in the central part of the pluton, a biotite-hornblende-quartz monzonite intrudes Mesozoic marine sedimentary rocks (KJs) of the Kahiltna terrane.

Two veins follow dilatational zones within the pluton along its west side (Cominco American Incorporated, unpublished reports, 1986-1987). The Main Stoney vein is steeply dipping structure that is mapped as more than 3 miles long, varies in measured width from 14 feet to 60 feet and has a vertical relief of at least 1000 feet. The mineralogy consists of alternating sulfide-quartz -carbonate vein material and altered intrusive material. The mineralogy consists of quartz-calcite-dolomite-siderite-tourmaline-pyrrhotite-chalcopyrite- arsenopyrite-pyrite-stibnite +/- graphite, sphalerite and galena. The North Stoney vein is a sub-parallel feature just west of the northern end of the Main Stoney vein. This vein is 35 feet at it's widest and has similar mineralogy to the Main Stoney vein. A third vein is located one mile to the west.

Alteration:
Calcite, epidote, sericite, tourmaline, quartz

Age of mineralization:
Possibly related to the Tertiary/Cretaneous pluton that is the host rock

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status None

Site Status: Inactive

Workings/exploration:
Exploration included prospecting, rock chip geochemical sampling, and mapping. Technical climbers were employed to map and sample the steep terrain.

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970; Reed and Nelson, 1980.

Primary reference: Reed and Elliott, 1970

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): 1:30

Site Type: Prospect

ARDF no.: TY021

Latitude: 61.96 **Quadrangle:** TY D-8

Longitude: 152.76

Location description and accuracy:
Alaska Department of Natural Resources claim records show this prospect area two miles up a southern tributary to Portage Creek in the southeast quarter of Section 28, T. 22 N., R. 19 W. Exposed on mountain slopes on the northwest side of the creek. Approximately 7 miles west-southwest of the confluence of Portage Creek and the Skwentna River.

Commodities:

Main: Ag, Au, Cu, Mo, Zn

Other: As, Sb

Ore minerals: Arsenopyrite, chalcopyrite, molybdenite, pyrite

Gangue minerals: Quartz

Geologic description:
Fine- to medium-grained, equigranular biotite-hornblende diorite intrudes and hornfels Mesozoic marine sedimentary rocks (KJs) of the Kahlitna terrane (Reed and Elliott, 1970). The hornfels is pyritic and locally sheared. Float from inaccessible portions of the diorite have thin (less than 1 inch) veins of quartz-arsenopyrite-pyrite and quartz-molybdenite-sphalerite. Samples of vein material from the diorite contained up to 4400 ppb gold and 1380 ppm silver. A 15 foot chip samples across pyritic, sheared hornfels ran 3800 ppb gold. (Cominco American Incorporated, unpublished reports, 1987-1988). The diorite is probably part of the Late Cretaceous/Early Tertiary Mount Estelle plutonic suite (Tme) (Reed and Elliott, 1970; Reed and Nelson, 1980); veins may be genetically related to the host rocks.

Alteration:
Limonite, quartz

Age of mineralization:
Host rocks are late Cretaceous or Early Tertiary (?) (by Reed and Elliott, 1970 and Reed and Nelson, 1980); the veins may be genetically related to the host rocks.

Deposit model:
Polymetallic vein(s); copper-moly porphyry?

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

Production Status No

Site Status: Inactive

Workings/exploration:
Exploration work included silt and rock chip geochemical sampling and mapping. (Cominco American Incorporated, unpublished report, 1987).

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970; Reed and Nelson, 1980.

Primary reference: Reed and Elliott, 1970

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Whistler

Site Type: Prospect

ARDF no.: TY022

Latitude: 61.97 **Quadrangle:** TY D-8

Longitude: 152.64

Location description and accuracy:
Alaska Department of Natural Resources claim records show this prospect area located on a low ridge approximately 3 miles west-northwest of the confluence of Protage Creek and the Skwentna River in Sections 19 and 30, T. 22 N., R 18 W. Location is accurate to within 500 feet.

Commodities:

Main: Au, Ba, Cu, Pb, Zn

Other: Fe

Ore minerals: Barite, chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals: Carbonate, chlorite, magnetite,quartz

Geologic description:
At this locality fine-grained feldspar-hornblende porphyritic hypabyssal andesite intrudes undifferentiated sedimentary rocks of the Mesozoic Kahiltna terrane and/or the Tertiary Matanuska Formation. Mineralization, contained within the intrusive rocks, includes stockwork chalcopyrite-quartz-magnetite with elevated gold values; vein and joint controlled sulfide-barite-silica mineralization; and chalcopyrite with minor sphalerite in silcified andesite. The prospect is defined by a 500 foot by 800 foot, circular magnetic high (Cominco American Incorporated, unpublished reports, 1987-1990). Bundtzen and others (1989) reported a large, low-grade gold and base metal resource with a 300 foot drill intercept of 0.22% copper and 0.033 oz/ton gold. Unknown age. Tertiary(?) or possibly Cretaceous.

Alteration:
Carbonate, sericite, clay and silica. Zonation from propylitic to sericitic to silicic observed in one area.

Age of mineralization:
Unknown age but cut Tertiary(?) or possibly Cretaceous host rocks.

Deposit model:
Gold-copper porphyry system(?) or feeder to a volcanogenic system(?)

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

Production Status No

Site Status: Inactive

Workings/exploration:
Exploration work included: silt sampling, mapping, rock chip geochemical sampling, grid soil sampling, grid VLF, magnetic and IP geophysical surveys, and diamond drilling (Cominco American Incorporated, unpublished reports, 1987-1990).

Production notes:

Reserves:

Additional comments:
Volcanic lithologies may be same age as the volcanic rocks mapped by Reed and Nelson (1980) in the Long Lake Hills to the northeast.

References:
Reed and Elliott, 1970; Reed and Nelson, 1980; Bundtzen and others, 1989.

Primary reference: Reed and Elliott, 1970; Bundtzen and others, 1989

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Shirley Lake

Site Type: Prospect

ARDF no.: TY023

Latitude: 61.99 **Quadrangle:** TY D-7

Longitude: 152.42

Location description and accuracy:
The prospect is located on the north side of Shirley Lake in the southeast quarter of Section 16, T. 22 N., R. 17 W. The location of this prospect is approximated from U.S. Bureau of Mines, 1998 (MAS # 0020840013); Cobb, 1972 (MF 385, locality 4); and Reed and others, 1978 (locality 37).

Commodities:

Main: U

Other:

Ore minerals: Unidentified secondary uranium minerals

Gangue minerals:

Geologic description:
Secondary uranium minerals sporadically localized along joints in Tertiary tuff and tuff-breccia (Cobb, 1979, OFR 80-86, p. 22; Reed and others,1978; and Reed and Nelson,1980). Radioactive rock probably formed by deposition of small amounts of uranium that migrated with subsurface water moving along joints. Exploration did not disclose any extension of radioactive rock below surface or away from joints. Maximum amount of radioactivity in USGS samples was 0.021% uranium; prospector reported assay of 0.29% uranium in one sample (Freeman,1963, p. 29-30). The area prspected in the Long Lake Hills around Shirley Lake, extends into the Talkeetna Quadrangle to the north.

Alteration:

Age of mineralization:

Deposit model:

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

Production Status No

Site Status: Probably inactive

Workings/exploration:
Shallow pits were excavated and scintillometer surveys conducted.

Production notes:

Reserves:
All deposits appear to be small and low grade (Cobb, 1979, OF 80-86, p. 22).

Additional comments:
The area prospected in the Long Lake Hills around Shirley Lake extends into the Talkeetna Quadrangle to the north.

References:
Freeman, 1963; Cobb, 1972 (MF385); MacKevett and Holloway, 1977; Reed and others, 1978; Cobb, 1979 (OFr 80-86); Reed and Nelson, 1980; U.S. Bureau of Mines, 1998.

Primary reference: Freeman, 1963

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Unnamed (near Skwentna River)

Site Type: Occurrence

ARDF no.: TY024

Latitude: 61.96 **Quadrangle:** TY D-7

Longitude: 152.3

Location description and accuracy:
The location of this occurrence is approximated from Spurr (1900, p. 110-112, June 24 campsite; U.S. Bureau of Mines, 1998, MAS # 0020840014; MacKevett and Holloway, 1977, p. 76, locality 4; and Cobb, 1972, MF 385, locality 5) in Section 25, T. 22 N., R. 17 W. One of the reporters (Millholland) was unable to located the occurrence in the field using the localites cited above.

Commodities:

Main: Ag, Au, Cu, Pb

Other:

Ore minerals: Chalcopyrite, galena, native gold?, pyrite

Gangue minerals: Quartz

Geologic description:
Folded volcanic rocks are cut by granitic dioritic and syenitic dikes. Rock along contacts between dikes and volcanics are decomposed and iron stained (Spurr,1900, p. 110-112). Narrow quartz veins up to several inches wide are rich in pyrite, chalcopyrite and galena. Other zones near, but not at, contacts generally follow stratification, are similarly mineralized and contain gold and silver. Upstream, black slate is cut by granitic dikes; quartz veins carry pyrite, chalcopyrite and galena. Assay of sample with pyrite and chalcopyrite assayed 0.05 oz/ton gold and 0.15 oz/ton silver. Assay of a quartz vein sample returned 0.1 oz/ton gold and 0.25 oz/ton silver (Spurr, 1900, p.259). The basic reference was published in 1900; no more recent information is available.

Alteration:

Age of mineralization:

Deposit model:
Hydrothermal/contact metamorphic?, polymetallic vein?, disseminated?(MacKevett and Holloway, 1977)

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

Production Status No

Site Status: Inactive

Workings/exploration:
Prospecting, rock sample assayed.

Production notes:

Reserves:

Additional comments:
The basic reference was published in 1900; no more recent information is available.

References:
Spurr, 1900; Berg and Cobb, 1967; Cobb, 1972 (MF 385); MacKevett and Holloway, 1977; U.S. Bureau of Mines, 1998.

Primary reference: Spurr, 1900

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 06/01/98

Site name(s): Old Man Breccia

Site Type: Prospect

ARDF no.: TY025

Latitude: 61.94 **Quadrangle:** TY D-7

Longitude: 152.32

Location description and accuracy:
Alaska Department of Natural Resources claim records show the prospect in a stream bed of a northern tributary to Old Man Creek, four to five miles up stream from the confluence of Old Man Creek with the Skwentna River in Sections 1 and 2, T. 21 N., R. 17 W.

Commodities:

Main: Au, Cu

Other: Fe

Ore minerals: Chalcopyrite, gold, pyrite, pyrrhotite

Gangue minerals: Carbonate, quartz

Geologic description:
A float sample of pyrrhotite-chalcopyrite-quartz-pyrite, that contained several ounces of gold, lead to the discovery of a breccia in siltstone, part of Upper Jurassic and Lower Cretaceous flysch (KJs) of the Kahiltna terrane. The breccia is exposed over an area approximately 105 feet x 90 feet. Within the breccia angular clasts of argillite from less than one inch up to a few inches long occur in a matrix of well-healed milky quartz and lesser carbonate. The quartz-argillite breccia forms sinuous, sub-vertical zones around large argillite blocks. Sulfides in breccia are sparse (generally less than 1% total) and consist of pyrrhotite pods +/- pyrite and chalcopyrite, and rare coarse-grained arsenopyrite. Veins of quartz-pyrrhotite-pyrite-chalcopyrite crosscut the breccia zone and vary from a few inches to 2 feet in thickness and contain occasional specks of visible gold. No obvious alteration occurs in the hanging wall (Cominco American Incorporated, unpublished reports,1986-1988).

Alteration:
Iron-oxide

Age of mineralization:

Deposit model:

Gold-bearing, sulfide breccia

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

Production Status None

Site Status: Inactive

Workings/exploration:
Exploration work included mapping, rock chip geochemistry, grid soil sampling, grid magnetic and VLF geophysical surveys, and diamond drilling.

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970.

Primary reference: Reed and Elliott, 1970

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Old Man Diorite

Site Type: Prospect

ARDF no.: TY026

Latitude: 61.91 **Quadrangle:** TY D-7

Longitude: 152.32

Location description and accuracy:
Alaska Department of Natural Resources claim records show the prospect located approximately 3000 to 3500 feet in elevation on the south side of Old Man Creek, about five miles up stream from the confluence of Old Man Creek and the Skwentna River in Section 13, T. 21 N., R. 17 W.

Commodities:

Main: Ag, Au, Mo

Other: As, Ba

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

Gangue minerals: Carbonate, chlorite, quartz

Geologic description:
At this locality a Late Cretaceous/Early Tertiary(?) diorite is cut by shallow (10-30 degree) veins less than 1 foot to 5 foot thick, and poorly developed stockwork veins. Mineralization consists of varying amounts of quartz, chlorite, arsenopyrite, pyrite, pyrrhotite, molybdenite, and carbonate. The best gold grades are associated with zones of subparallel veins. Gold ranges from ten's of ppb to 0.122 oz/ton (Cominco American Incorporated, unpublished reports, 1986-1987). The diorite is probably one of the late Cretaceous/Early Tertiary Kichatna plutons (TKk) described by Reed and Nelson (1980) in the Talkeetna quadrangle to the north. A K-Ar age of 67.4 +/-2 m.y. suggests that these plutons may be slightly older than the 65-km belt of composite plutons to the west. The veins may be related to the diorite intrusion.

Alteration:
Carbonate, pyrite, sericite, quartz

Age of mineralization:
The host rock is late Cretaceous/Early Tertiary(?)diorite; the veins may be related to the diorite intrusion.

Deposit model:
Polymetallic veins

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

Production Status None

Site Status: Inactive

Workings/exploration:
Exploration work included silt and rock chip geochemical sampling, mapping, and diamond drilling. The property is steep and technical climbers with Dihedral Exploration were employed to conduct geologic and geochemical surveys.

Production notes:

Reserves:

Additional comments:

References:
Reed and Elliott, 1970.

Primary reference: Reed and Elliott, 1970

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 06/01/98

Site name(s): Kahiltna River

Site Type: Mine

ARDF no.: TY027

Latitude: 61.99 **Quadrangle:** TY D-2

Longitude: 150.75

Location description and accuracy:
Carnes (1976, locality 4) defines this placer prospect as covering approximately a four and one-half mile stretch along the Kahiltna River centered at about the middle of the boundary between Sections 21 and 16 in T. 22., R. 18 W. (Cobb, 1972, MF 385, locality 7 and U.S. Bureau of Mines 1973, localities 22, 39, and 59). This site is on upstream extention of the placer site along the same river described in ARDF TY028.

Commodities:

Main: Au

Other: Pt, REE, Sn, Th, Ti, U, W, Zr

Ore minerals:
Cassiterite, gold, monazite, platinum, rutile, scheelite, uranothorianite

Gangue minerals:
Garnet, hematite, ilmenite, magnetite, quartz, sphene, tourmaline, zircon

Geologic description:
Quaternary gravels reconcentrated from Tertiary continental rock, glacial deposits or older bedrock to the north in the Talkeetna quadrangle. Samples are reported to contain up to 0.08% uranium and 0.03% thorium (Cobb,1979, OFR 80-86. p. 17). Probably some small production prior to 1919. Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Alteration:

Age of mineralization:
Quaternary

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

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

39a

Production Status Yes; small

Site Status: Inactive

Workings/exploration:
Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Production notes:

Reserves:

Additional comments:
See other Kahiltna River occurrences in the Tyonek Quadrangle (ARDF numbers TY028 and TY029) and to the north in the Talkeetna Quadrangle.

References:
Mertie, 1919; Smith, P. S., 1930; Joesting, 1942; Bates and Wedow, 1953; Overstreet, 1967; Cobb, 1972 (MF 385); U.S. Bureau of Mines, 1973; Carnes, 1976; MacKevett and Holloway, 1977; Cobb, 1979 (OFR 80-86).

Primary reference: Cobb, 1979 (OFR 80-86)

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 6/01/98

Site name(s): Kahiltna River

Site Type: Mine

ARDF no.: TY028

Latitude: 61.93 **Quadrangle:** TY D-2

Longitude: 150.69

Location description and accuracy:
MacKevett and Holloway (1977, locality 6) locate this placer prospect as covering approximately four miles along the Kahlitna River centered at about the middle of Section 11 in T. 22 N, R. 18 W. (U.S. Bureau of Mines, 1998, MAS # 0020840001; Cobb, 1979, MF 385, locality 6; U.S. Bureau of Mines, 1973, localites 58, 68, and 70; and Carnes, 1976, localities 1, 2 and 3). This site is a continuation of the placers upstream described at ARDF TY027 and downstream of ARDF TY029.

Commodities:

Main: Au

Other: Pt, REE, Sn, Th, Ti, U, W, Zr

Ore minerals:
Cassiterite, monazite, native gold, platinum, rutile, scheelite, uranothorianite

Gangue minerals:
Garnet, hematite, ilmenite, magnetite, quartz, sphene, tourmaline, zircon

Geologic description:
Quaternary gravels reconcentrated from Tertiary continental rock, glacial deposits or older bedrock to the north in the Talkeetna Quad. Samples are reported to contain up to 0.08% uranium and 0.03% thorium (Cobb, 1979, OFR 80-86, p. 17). Probably some small production prior to 1919. Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Yes; small

Site Status: Probably inactive

Workings/exploration:
Probably some small production prior to 1919. Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Production notes:

Reserves:

Additional comments:
See Kahiltna River occurrences in the Tyonek Quadrangle (ARDF numbers TY027 and TY029) and to the north in the Talkeetna Quadrangle.

References:
Mertie, 1919; Smith, P. S., 1930; Joesting, 1942; Bates and Wedow, 1953; Overstreet, 1967; Cobb, 1972 (MF 385); Carnes, 1976; MacKevett and Holloway, 1977; Cobb, 1979 (OFR 80-86); U.S. Bureau of Mines (1998).

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 6/01/98

Site name(s): Kahiltna River

Site Type: Mine

ARDF no.: TY029

Latitude: 61.89 **Quadrangle:** TY D-2

Longitude: 150.69

Location description and accuracy:
MacKevett and Holloway (1977, locality 7) locate this placer prospect upstream about three and a half miles from the confluence of the Kahiltna and Yentna Rivers. The prospect area cover an approximate three mile stretch along the Kahlitna River centered at about the middle of the boundary between Sections 23 and 26, T. 22 N., R. 8 W. (U.S. Bureau of Mines , 1973, locality 71). This is a continuation of the placers along the same river described in ARDF TY028 and ARDF TY027.

Commodities:

Main: Au

Other: Pt, REE, Sn, Th, Ti, U, W, Zr

Ore minerals:
Cassiterite, monazite, native gold, platinum, rutile, scheelite, uranothorianite

Gangue minerals:
Garnet, hematite, ilmenite, magnetite, quartz, sphene, tourmaline, zircon

Geologic description:
Quaternary gravels reconcentrated from Tertiary continental rock, glacial deposits or older bedrock to the north in the Talkeetna quadrangle. Samples are reported to contain up to 0.08% uranium and 0.03% thorium (Cobb, 1979, OFR 80-86, p. 17). Probably some minor production prior to 1919. Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Alteration:

Age of mineralization:
Quaternary

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

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

Production Status Yes; small

Site Status: Probably inactive

Workings/exploration:
Probably some minor production prior to 1919. Drilling for possible dredging was done in the early 1900's. Limited prospecting may have been done more recently.

Production notes:

Reserves:

Additional comments:
This placer occurrence is the southern most mine along the Kahiltna River; two other localities, know as Kahiltna River, are upstream in the Tyonek Quadrangle. Placer occurrences extend to the north along the Kahiltna River in the Talkeetna Quadrangle.

References:
Mertie, 1919; Smith, P. S., 1930; Joesting, 1942; Bates and Wedow, 1953; Overstreet, 1967; Cobb, 1972 (MF 385); U.S. Bureau of Mines , 1973; MacKevett and Holloway, 1977; Cobb, 1979 (OFR 80-86).

Primary reference: MacKevett and Holloway, 1977

Reporter(s): Madelyn A. Millholland (Anchorage), James Riehle (USGS)

Last report date: 6/01/98

Site name(s): Unnamed

Site Type: Prospect

ARDF no.: TY030

Latitude: 61.93 **Quadrangle:** TY D-1

Longitude: 150.36

Location description and accuracy:
Placer prospect is located approximately one-eighth of a mile southeast of Neil Lake in Section 10, T. 21N., R. 6 W. (U.S. Bureau of Mines, 1998, MAS # 20840019).

Commodities:

Main: Au

Other:

Ore minerals: Native gold?

Gangue minerals:

Geologic description:
No geologic description ihas been published for this site.

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status Undetermined.

Site Status: Probably inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines (1998).

Primary reference: U.S. Bureau of Mines (1998)

Reporter(s): Madelyn A. Millholland (Anchorage)

Last report date: 6/01/98

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