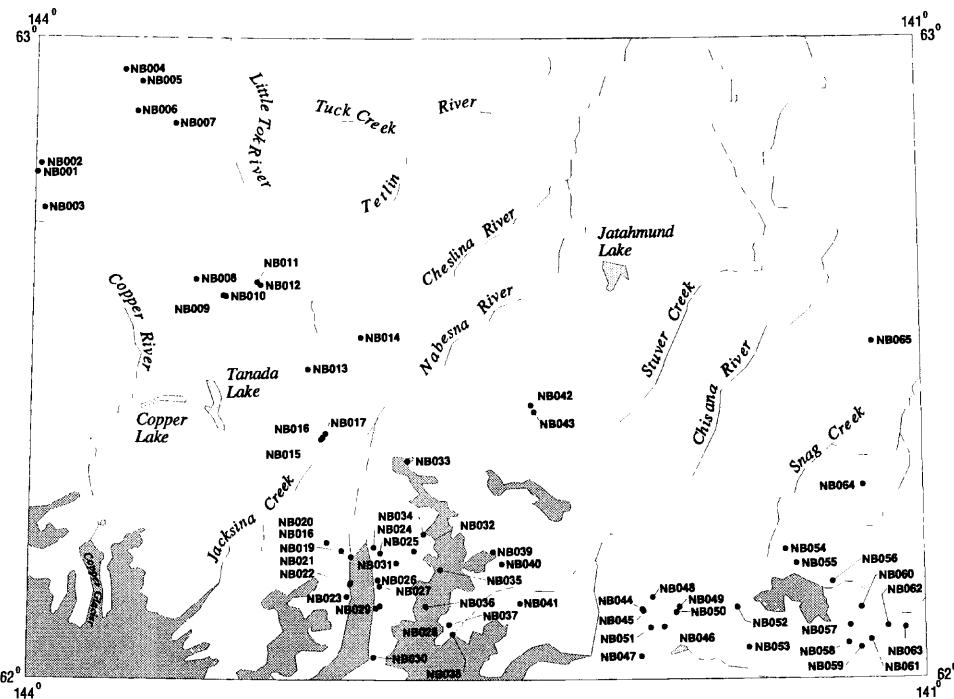


# Alaska Resource Data File

## Nabesna quadrangle

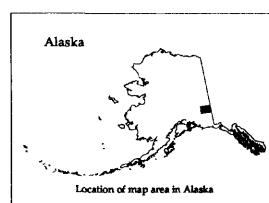
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



*Distribution of mineral occurrences in the Nabesna  
1:250,000-scale quadrangle, eastern 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 Frederic H. Wilson, USGS, 4200 University Dr., Anchorage, AK 99508-4667, email [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): Slope Creek**

**Site type:** Mine

**ARDF no.:** NB001

**Latitude:** 62.789

**Quadrangle:** NB D-6

**Longitude:** 143.994

**Location description and accuracy:**

Best location: Richter, 1966, ADGGS GR 21, fig.5, loc. 11; Tributary to Porcupine Creek a tributary to Slana River. Accurate within 500 ft radius

**Commodities:**

**Main:** Au

**Other:** Ag, Cu, Bi

**Ore minerals:** Gold, silver, (copper, unknown Bi mineral)

**Gangue minerals:** In concentrates: magnetite, ilmenite, pyrite

**Geologic description:**

No data on size or grade of deposit, but it was probably very small; placer deposits probably associated with mafic diorite-quartz diorite complex

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer

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

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

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

Some confusion exists in the literature in distinguishing between Slope Cr. and Boulder Cr. It is likely that most data probably refers to both. The mine symbol for Boulder Cr. on fig. 5 of ADGGS GR 21 is in the Gulkana quad.

**References:**

Moffit, 1938, USGS B 904, p. 50-51; Moffit, 1944, USGS B 943-B, p. 43-44; Moffit, 1954, USGS B 989-D, p. 195; Richter and Matson, 1968, USGS Circ. 593, p. 2-3; Richter, 1964, ADGGS GR 6, p. 10; Richter, 1966, ADGGS GR 21, p. 28, 34, loc. 11; Cobb, 1973, USGS B 1374, p. 29; Richter and others, 1975, USGS MF-655K, loc. 58

**Primary reference:** Moffit, 1944, USGS B 943-B

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s): Indian Pass Lake**

**Site type:** Occurrence

**ARDF no.:** NB002

**Latitude:** 62.803

**Quadrangle:** NB D-6

**Longitude:** 143.982

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655-K, loc. 1. Accurate within 1000 ft radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Pyrite?

**Gangue minerals:** Quartz

**Geologic description:**

Disseminated pyrite and small quartz-pyrite veins in small hornblende diorite stock of Jurassic/Triassic age in an area of anomalous gold and copper in stream sediments

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: disseminated, vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Sample of hornblende diorite containing disseminated pyrite contained 0.3 ppm Au (sample R60, USGS Circ. 593, p. 11). Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

More detailed sampling in the Slana area may reveal low grade lodes in the diorite complex with grades of at least 0.01 oz/ton Au

**References:**

Richter and Matson, 1968, USGS Circ. 593, p. 3-4, 11; Richter and others, 1975, USGS MF-655-K, loc.1.

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Ahtell Cr

**Site type:** Prospect

**ARDF no.:** NB003

**Latitude:** 62.733

**Quadrangle:** NB C-6

**Longitude:** 143.967

**Location description and accuracy:**

Best location: Richter, 1966, ADGGS GR21, Fig. 5: mine symbol on lower Ahtell Cr with no number; 2 miles above confluence with Slana River. Accurate within radius of 1000 ft

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Auriferous gravel at lower end of canyon. Only small amount of gravel present

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

Total production probably very small. Also evidence of placer operation on Willow Creek, tributary to Ahtell Creek.

**References:**

Mendenhall and Schrader, 1903, USGS PP 15, p. 47; Moffit, 1938, USGS B 904, p. 48; Smith, 1941, USGS B 926-A, p.34; Richter, 1966, ADGGS GR21, p.34

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Corky (aka. Roseie, Ram's Horn, Verde)

**Site type:** Occurrence

**ARDF no.:** NB004

**Latitude:** 62.95

**Quadrangle:** NB D-6

**Longitude:** 143.7

**Location description and accuracy:**

**Commodities:**

**Main:** Asbestos

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

**Alteration:**

**Age of mineralization:**

**Deposit model:**

serpentine-hosted asbestos

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

8d

**Production Status:**

**Site Status:**

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

Data from Alaska Cardex files, Fairbanks, AK. Insufficient data to accurately locate deposit.

**References:**

**Primary reference:** MILS #0020780090

**Reporter(s):** D. Singer

**Last report date:** 7/18/96

**Site name(s):** Patten

**Site type:** Prospect

**ARDF no.:** NB005

**Latitude:** 62.932

**Quadrangle:** NB D-6

**Longitude:** 143.642

**Location description and accuracy:**

Best location: Richter, 1967, ADGGS GR30, Plate 2, loc. 7. Accurate within 100 ft radius

**Commodities:**

**Main:** Gem (jade)

**Other:**

**Ore minerals:** Nephrite

**Gangue minerals:** Tremolite, serpentine, chlorite

**Geologic description:**

Nephrite associated with tremolite in 100 to 200 ft wide band of alpine-type ultramafic complex consisting of serpentine-chlorite schist and massive serpentinite containing abundant rodingite inclusions. Site is near Mentasta Pass just north of Denali fault.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

lode, metamorphic

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

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

Deposit has yielded a number of pounds of semiprecious stone over the past 10 years (USGS MF-655K). Other deposits of jade in the ultramafic rocks of the quadrangle appear likely.

**References:**

Richter, 1967, ADGGS GR30, p. 5, 14, 18-19, 24 (loc. 7); Richter and others, 1975, USGS MF-655K, loc. 2.

**Primary reference:** Richter, 1967, ADGGS GR30

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/5/97

**Site name(s): Unnamed**

**Site type:** Occurrence

**ARDF no.:** NB006

**Latitude:** 62.886

**Quadrangle:** NB D-6

**Longitude:** 143.656

**Location description and accuracy:**

Best location: Richter, 1967, ADGGS GR-30, loc. 3, fig. 2. 0.7 mi SE of Mentasta Lodge on the Glenn Hwy. Accurate within 100 ft radius.

**Commodities:**

**Main:** Cu, Ag

**Other:**

**Ore minerals:** Bornite, chalcopyrite ?

**Gangue minerals:** Calcite, epidote

**Geologic description:**

Bornite and minor chalcopyrite in vesicle fillings and irregular segregations disseminated in 400 ft zone in epidotized basalt flows of the Triassic Nikolai Greenstone.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Grab sample of bornite-bearing epidotized basalt assayed: 0.02 Oz/ton Au, 0.02 oz/ton Ag, 1.1% Cu, (ADGGS GR30, P. 17). Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1967, ADGGS GR 30, p. 17-18, 23, loc. 3; Richter and others, 1975, USGS MF-655K, loc. 3

**Primary reference:** Richter, 1967, ADGGS GR 30

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB007

**Latitude:** 62.867

**Quadrangle:** NB D-6

**Longitude:** 143.525

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655K, loc. 4. Accurate within 500 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite, azurite

**Gangue minerals:**

**Geologic description:**

Zone of strong malachite and azurite stain in amygdaloidal basalt flows of Triassic Nikolai Greenstone

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See other volcanogenic deposits in Nikolai Greenstone: (NB033, 054, 055).

**References:**

Richter and others, 1975, USGS MF-655K, loc. 4

**Primary reference:** Richter and others, 1975, USGS MF-655K

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Prospect

**ARDF no.:** NB008

**Latitude:** 62.6233

**Quadrangle:** NB C-5

**Longitude:** 143.449

**Location description and accuracy:**

Best location: Richter and Schmoll, 1973, USGS GQ 1062 loc. 1. Accurate within 100 ft radius

**Commodities:**

**Main:** Au, Pb, Zn

**Other:**

**Ore minerals:** Gold, galena, sphalerite

**Gangue minerals:** Quartz, calcite, pyrite

**Geologic description:**

Stringers, 1/4 to 2 in thick, of quartz, calcite, pyrite, galena, and sphalerite in a zone 6 to 12 in wide cutting hornfelsed and dioritized volcanics of Pennsylvanian-Permian age.

Deposit is in diorite gneiss which is cut by 8 ft thick trachyte dike that strikes N 55 W and dips 45 NE.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Adit driven N 65 E to crosscut vein, caved by early 1950,s (USGS B 989-D); tenor not

known. Type of workings: underground

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Moffit, 1954, USGS B 989-D, p. 203; Berg and Cobb, 1967, USGS B 1246, p. 47; Matson and Richter, 1971, USGS OF 473, p. 10; Richter and Schmoll, 1973, USGS GQ-1062, loc. 1; Richter and others, 1975, USGS MF-655K, loc. 5

**Primary reference:** Moffit, 1954, USGS B 989-D

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Rock Creek Molybdenum

**Site type:** Prospect

**ARDF no.:** NB009

**Latitude:** 62.5981

**Quadrangle:** NB C-5

**Longitude:** 143.357

**Location description and accuracy:**

Best location: Richter and Schmoll, 1973, USGS GQ-1062, loc. 4. Accurate within 100 ft radius

**Commodities:**

**Main:** Mo

**Other:**

**Ore minerals:** Molybdenite

**Gangue minerals:** Quartz, feldspar, biotite, hornblende

**Geologic description:**

Books of molybdenite up to 1.5 in in diameter in alkali pegmatite dike; dike ranges from a few in to 2 ft in width and can be traced for 70 ft on surface; dike strikes N 20 W and dips 60 SW; pegmatite dike cuts gneissic rocks of a Jurassic-Triassic diorite complex.

**Alteration:**

**Age of mineralization:**

Triassic?

**Deposit model:**

Lode: pegmatite

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Explored by open cuts and tunnel. Assays 4.6% Mo, average assay about 3% Mo (USGS

B 910, p. 105); No visible Mo in workings in 1985; Type of workings: surface and underground

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

Minor Mo deposit; prospect inactive since late 1930's. See also: Rock Creek corundum prospect (NB010).

**References:**

Moffit, 1941, USGS B 917, p. 150-153; Moffit, 1954, USGS B 989-D, p. 190, 201, 209-210; Nelson and others, 1952, USGS Circ 348, p. 3; Richter, 1970, USGS PP 700-C, p. C98-C102; Matson and Richter, 1971, USGS OF 473, p. 10; Richter and Schmoll, 1973, USGS GQ-1062, loc. 4; Richter and others, 1975, USGS MF-655K, loc. 6.

**Primary reference:** Moffit, 1941, USGS B 917

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/5/97

**Site name(s):** Rock Creek Corundum

**Site type:** Prospect

**ARDF no.:** NB010

**Latitude:** 62.5969

**Quadrangle:** NB C-5

**Longitude:** 143.348

**Location description and accuracy:**

Best location: Richter and Schmoll, 1973, USGS GQ-1062, loc. 5. Accurate within 100 ft radius.

**Commodities:**

**Main:** Gem (sapphire)

**Other:**

**Ore minerals:** Corundum

**Gangue minerals:** Orthoclase, microperthite, soda feldspar, muscovite

**Geologic description:**

Sporadic aggregates of corundum associated with books of muscovite in small, discontinuous alkali pegmatite dikes; dikes generally less than 3 ft wide; host rock for pegmatite dikes is peraluminous syenite-monzonite gneiss unit in a metaigneous complex composed of diorite gneiss and diorite with minor amphibolite, gabbro and cataclasite

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: pegmatite

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

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

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

Badly fractured habit, abundant feldspar inclusions, poor color and general scarcity of gem quality crystals have precluded economic development of this resource. See also: Rock Creek molybdenum prospect (NB009)

**References:**

Richter, 1970, USGS PP 700-C, p. C98-C102; Matson and Richter, 1971, USGS OF 473, p. 10; Richter and Schmoll, 1973, USGS GQ-1062, loc.5; Richter and others, 1975, USGS MF-655K, loc. 7

**Primary reference:** Richter, 1970, USGS PP 700-C

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/5/97

**Site name(s): Trail Creek**

**Site type:** Prospect

**ARDF no.:** NB011

**Latitude:** 62.619

**Quadrangle:** NB C-5

**Longitude:** 143.243

**Location description and accuracy:**

Best location: Richter and Schmoll, 1973, USGS GQ-1062, loc. 3. Accurate within 500 ft radius

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Evidence of placer operations or exploration. No other data

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

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

Very little data available

**References:**

Moffit, 1941, USGS B 917-B, p. 155; Matson and Richter, 1971, USGS OF 473, p. 10; Richter and Schmoll, 1973, USGS GQ-1062, loc.3; Richter and others, 1975, USGS MF-655K, loc. 61

**Primary reference:** Moffit, 1941, USGS B 917-B

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB012

**Latitude:** 62.6144

**Quadrangle:** NB C-5

**Longitude:** 143.231

**Location description and accuracy:**

Best location: Richter and Schmoll, 1973, USGS GQ 1062, loc. 2. Accurate within 100 ft radius

**Commodities:**

**Main:** Pb; Ag; Zn

**Other:**

**Ore minerals:** Galena, tetrahedrite, sphalerite

**Gangue minerals:** Quartz, carbonate minerals

**Geologic description:**

Small quartz carbonate veins containing galena, sphalerite, and tetrahedrite in border zone of small diorite porphyry stock of Cretaceous-Tertiary age that intrudes thin-bedded Triassic limestone.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Schmoll, 1973, USGS GQ-1062, loc. 2; Richter and others, 1975, USGS MF-655K, loc. 8

**Primary reference:** Richter and Schmoll, 1973, USGS GQ-1062

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB013

**Latitude:** 62.4833

**Quadrangle:** NB B-5

**Longitude:** 143.067

**Location description and accuracy:**

Best location: Lowe and others, 1982, USGS GQ-1566, loc. M1. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

Quartz vein containing pyrite and chalcopyrite in fault-shear zone in Pennsylvanian-Permian volcaniclastic rocks.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic, shear zone

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Matson, 1972, USGS MF-422, loc. 6; Richter and others, 1975, USGS MF-655K, loc. 9; Lowe and others, 1982, USGS GQ-1566, loc. M1.

**Primary reference:** Richter and others, 1975, USGS MF-655K

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB014

**Latitude:** 62.5331

**Quadrangle:** NB C-4

**Longitude:** 142.889

**Location description and accuracy:**

Best location: Richter and others, 1976, USGS GQ-1303. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Native copper

**Gangue minerals:**

**Geologic description:**

Native copper in fractures in amygdaloidal basalt flows of Triassic Nikolai Greenstone

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

The Nikolai Greenstone itself is significant in that it may constitute a future low grade copper resource. It is widespread south of the Denali fault, has an overall thickness of 2000 m and an average copper content of 150 ppm. Locally it contains small deposits of native copper, bornite, chalcocite, and chalcopyrite in amygdules, flow tops and bottoms, fractures and veins. USGS MF-655K, USGS OF 365 and USGS OF 366 contain maps showing several known occurrences of copper minerals in the Nikolai Greenstone.

**References:**

Richter and others, 1975, USGS MF-655K, loc. 10: Richter and others, 1976, USGS GQ-1303

**Primary reference:** Richter and others, 1975, USGS MF-655K

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s): Royal Development Co.**

**Site type:** Prospect

**ARDF no.:** NB015

**Latitude:** 62.374

**Quadrangle:** NB B-5

**Longitude:** 143.021

**Location description and accuracy:**

Best location: Lowe and others, 1982, USGS GQ-1566, loc. M4. Accurate within 500 ft radius.

**Commodities:**

**Main:** Au; Ag

**Other:** Pb; Cu; Fe

**Ore minerals:** Native gold, pyrite, chalcopyrite, cerussite, anglesite.

**Gangue minerals:** Quartz, magnetite, garnet

**Geologic description:**

Disseminated pyrite and quartz-pyrite veins in small diorite/granodiorite stock and in associated contact metamorphic aureole. The surface ore milled in 1907 was apparently derived from gossan overlying the contact between a Cretaceous diorite stock and host Triassic limestone. Gossan along intrusive contacts reported to pan free gold. See also: Nabisna mine (NB016)..

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: disseminated, skarn, gossan?

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Surface and underground. Two tunnels driven between 1907 and 1914 totaled 130 ft in length. Mining was in surface cut where a 12 in to 4 ft width was mined along contact deposit. Sample taken over 16 in width across contact deposit assayed 0.06 oz/ton Au and 0.20 oz/ton Ag (Pilgrim, E.R., 1931). Ore containing almost 1.5 oz/ton Au milled in 1907 was probably not representative of deposit (USGS MF-655K, loc. 14). Extensive diamond drilling in 1980's.

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

See also: Nabesna mine (NB016)

**References:**

Wayland, 1943, USGS B 933B, p. 176; Pilgrim, E.R., 1931, Nabesna Mining Corp., Whitham Group in Stewart, B.D., Report on cooperation between the Territory of Alaska and the U.S. for the biennium ending March 31, 1931, pp. 60-61; Richter and others, 1975, USGS MF-655K, loc. 14; Lowe and others, 1982, USGS GQ-1566, loc. M4.

**Primary reference:** Wayland, 1943, USGS B 933B

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/6/97

**Site name(s): Nabesna; Nabesna Mining Corporation**

**Site type:** Mine

**ARDF no.:** NB016

**Latitude:** 62.377

**Quadrangle:** NB B-5

**Longitude:** 143.016

**Location description and accuracy:**

Best location: Lowe and others, 1982, USGS GQ-1566, loc. M3; on southeast flank of White Mtn. Accurate within 200 ft. radius

**Commodities:**

**Main:** Au

**Other:** Ag; Cu; Pb; Fe; Zn

**Ore minerals:** Gold, pyrite, cerussite, anglesite, chalcopyrite, galena, magnetite, sphalerite

**Gangue minerals:** Calcite, quartz, andradite, vesuvianite, diopside hedenbergite, magnetite, epidote, chlorite, serpentine, Wollastonite, Specularite, Brookite, Spinel, Sphene, Apatite, Gypsum

**Geologic description:**

Three types of mineral deposits: (1) principal ore: auriferous pyrite-calcite veins carrying chalcopyrite, sphalerite and galena in ore shoots ranging from a few in to 35 ft in width; average width 5 to 7 ft; quartz replaces calcite as gangue in upper portions of veins; (2) bodies of massive magnetite on the order of 50 ft by 100 ft carrying pyrite, calcite and some gold; (3) veins and masses of pyrrhotite containing disseminated pyrite, chalcopyrite and some gold; mine is at contact of Upper Triassic limestone and a small irregular Cretaceous quartz diorite stock associated with numerous satellite dikes of quartz diorite and minor quartz monzonite. Ore bodies and tactite formed in limestone along east contact of stock, large area of minor intrusive rock and extensive tactite lies just south of the principal ore bodies. Massive oxide-sulfide bodies chiefly pyrite and magnetite with minor chalcopyrite, galena, sphalerite, arsenopyrite, stibnite, and gold. Pyrite veins formed by replacement of limestone along pre-existing fractures; and contain disseminated to small masses of chalcopyrite, galena, sphalerite, magnetite, pyrrhotite, arsenopyrite, stibnite, and gold. Principal mining at Nabesna from about 1930 to 1941. Several hundred meters of workings. Several episodes of exploration since 1960.

**Alteration:**

Oxidation effective to depth of several tens of ft; locally extends to more than 350 ft in

depth.

**Age of mineralization:**

Cretaceous

**Deposit model:**

Fe skarn

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

18d Fe skarn

**Production Status:** Yes; medium

**Site Status:** Inactive

**Workings/exploration:**

Several adits, 368 ft of surface cuts, 9224 ft of drifts, 6209 ft of raises (reported inaccessible in 1952), and 9,999 ft of drill holes by 1940. Apparently mined out and the mill and aerial tramway mostly destroyed by 1997. Five-foot sample across Bear vein assayed 10.39 oz./t Au, 12.70 oz./t Ag, 1.67% Pb, 0.15% Cu and five-foot sample along limestone/diorite contact assayed 0.10 oz./t Au, 1.8 oz./t Ag, 4.2% Cu. More assay data are available in Pilgrim, E. R., 1931. Surface and underground workings.

**Production notes:**

Nabesna Mine produced about 1.66 million grams Au, minor Ag and Cu.

**Reserves:**

**Additional comments:**

Site of recent exploration. No recorded production from any other lode deposit in the district. USGS Bull. 1374, p. 115. See also: Golden Eagle claims, Royal Development Company.

**References:**

Lowe and others, 1982, USGS GQ-1566, loc. M3; Richter and others, 1975, USGS MF-655-K, loc. 13; Smith, 1942, USGS B 933-A, p. 24, 76-77; Wayland, 1943, USGS B 933-B 168, 175-199; Berg and Cobb, 1967, USGS B 1246, p. 205, 208-209; Pilgrim, E. R., 1931, Nabesna Mining Corporation, Whitham Group, in Stewart, B.D., Report on co-operation between the territory of Alaska and the United States in making mining investigations and in inspection of mines for the Biennium ending March 31, 1931, p. 60-62; Cobb, 1973, USGS B 1374, p. 114-115; Moffit, 1954, USGS B 989-D, p. 66, 189-190, 201-203; Smith and others, 1933, USGS B 844, p. 21; Moffit, 1938, USGS B 844-C 159-162; Moffit and Knopf, 1909, USGS B 379-D, p. 176-177

**Primary reference:** Wayland, 1943, USGS B 933B, p. 175-199

**Reporter(s):** Leonard, K.R.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/24/97

**Site name(s):** Rambler; Golden Eagle Group; Cliff vein

**Site type:** Prospect

**ARDF no.:** NB017

**Latitude:** 62.3831

**Quadrangle:** NB B-5

**Longitude:** 143.006

**Location description and accuracy:**

Best location: Lowe and others, 1982, USGS GQ-1566, loc. M2; 1/2 mi. N. of Nabesna mine, on N. side of Swede Gulch. Accurate within 100 ft. radius

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Pyrrhotite, pyrite; chalcopyrite and marcasite in thin section

**Gangue minerals:**

**Geologic description:**

Massive gold-bearing pyrrhotite and pyrite in recrystallized Triassic limestone near contact with small granodiorite stock of Cretaceous age. Sulfide body is 52 ft by 19 ft by 34 ft and consists of about 75% pyrrhotite in coarse crystals up to 2 in in diameter.

**Alteration:**

Pyrrhotite alters to marcasite along limonite-stained fractures

**Age of mineralization:**

Cretaceous

**Deposit model:**

Lode: massive sulfide, contact metasomatic

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

18d Fe skarn

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Average Au value of 14 samples was about 0.91 oz./t (reported as 32.00 dollars in Au); high value was 2.42 oz./t (reported as 85.00 dollars in Au, Au at 35.00/fine oz.) in USGS Bull. 933, p. 185. Surface and underground workings.

**Production notes:**

Possibly some minor production

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

See Nabesna mine, NB016

**References:**

Lowe and others, 1982, USGS GQ-1566, loc. M2; Wayland, 1943, USGS B 933B, P. 184-185; Richter and others, 1975, USGS MF-655K, loc. 12

**Primary reference:** Wayland, 1943, USGS B 933B, p. 184-185

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/24/97

**Site name(s): Monte Cristo Creek; Marie Nabesna**

**Site type:** Prospect

**ARDF no.:** NB018

**Latitude:** 62.2136

**Quadrangle:** NB A-4

**Longitude:** 142.999

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc.1. Accurate within 100 ft radius

**Commodities:**

**Main:** Mo

**Other:**

**Ore minerals:** Molybdenite

**Gangue minerals:** Quartz, pyrite, gypsum

**Geologic description:**

Disseminated molybdenite and quartz-pyrite-molybdenite veins in hydrothermally altered Chisana Formation volcanic rocks of Cretaceous age near Cretaceous granodiorite pluton.

**Alteration:**

Argillic, propylitic

**Age of mineralization:**

**Deposit model:**

Lode: porphyry, stockwork

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Orange Hill, Bond Creek.

**References:**

Mendenhall and Schrader, 1903, USGS PP15, p.43-45; Richter and Matson, 1970, USGS OF 398, loc. 1; Richter, 1973, USGS I-789, loc.1; Richter and others, 1975, USGS MF-655K, loc. 16.

**Primary reference:**

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Unnamed

**Site type:** Prospect

**ARDF no.:** NB019

**Latitude:** 62.2

**Quadrangle:** NB A-4

**Longitude:** 142.95

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 5. Accurate within 100 ft radius

**Commodities:**

**Main:** Pb, Zn, Au, Ag, Cu

**Other:**

**Ore minerals:** Galena, sphalerite, chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

Quartz veins, up to 1 ft thick, containing sphalerite, galena and minor chalcopyrite in recrystallized Triassic limestone near contact with Cretaceous granodiorite stock.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

lode, contact metasomatic

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Small prospect pits dug on veins. Chip sample across veins assayed 2.4 ppm Au, 200 ppm Ag, >20,000 ppm Pb, > 10,000 ppm Zn, >20,000 ppm Cu (USGS OF 398, sample 587). Type of workings: surface.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Matson, 1970, USGS OF 398, loc. 5; Richter, 1973, USGS I-789, loc. 5;  
Richter and others, 1975, USGS MF-655K, loc. 17

**Primary reference:**

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Nabesna River

**Site type:** Prospect

**ARDF no.:** NB020

**Latitude:** 62.1908

**Quadrangle:** NB A-4

**Longitude:** 142.918

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 6. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:** Ag; Zn

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Stockwork of quartz-pyrite veins and veinlets, containing minor chalcopyrite, cuts altered Tertiary hornblende dacite dike and Triassic Nikolai Greenstone country rock.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: stockwork

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Some drilling in this deposit indicates grades as high as 0.3% Cu with minor Ag and Zn values (USGS MF-655K); Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Nabesna Glacier prospect (NB029)

**References:**

Richter, 1973, USGS I-789, loc. 6; Richter and others, 1975, USGS MF-655K, loc. 18.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/5/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB021

**Latitude:** 62.1513

**Quadrangle:** NB A-4

**Longitude:** 142.919

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 9. Accurate within 100 ft radius

**Commodities:**

**Main:** Fe; Cu

**Other:**

**Ore minerals:** Magnetite, chalcopyrite

**Gangue minerals:**

**Geologic description:**

Massive magnetite containing pyrite and minor chalcopyrite in amphibolitized Triassic Nikolai Greenstone near Tertiary porphyry intrusive.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: contact metasomatic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1973, USGS I-789, loc. 9; Richter and others, 1975, USGS MF-655K, loc. 19.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB022

**Latitude:** 62.149

**Quadrangle:** NB A-4

**Longitude:** 142.921

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 10. Accurate within 500 ft radius

**Commodities:**

**Main:** Au; Co

**Other:**

**Ore minerals:** Gold, cobaltite

**Gangue minerals:** Calcite

**Geologic description:**

10 to 20 cm calcite vein containing gold and cobaltite in Triassic Nikolai Greenstone near Tertiary porphyry intrusion.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Up to 10 oz/ton Au reported (USGS MF-655K). Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

Only known gold-bearing vein in district that may be economically significant

**References:**

Richter, 1973, USGS I-789, loc. 10; Richter and others, 1975, USGS MF-655K, loc. 20.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB023

**Latitude:** 62.1303

**Quadrangle:** NB A-4

**Longitude:** 142.931

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 11. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

Small irregular masses of pyrite and minor chalcopyrite in Triassic Nikolai Greenstone probably near buried pluton.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: contact metasomatic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1973, USGS I-789, loc. 11; Richter and others, USGS MF-655K, loc. 21

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/6/97

**Site name(s):** Orange Hill

**Site type:** Prospect

**ARDF no.:** NB024

**Latitude:** 62.2058

**Quadrangle:** NB A-4

**Longitude:** 142.842

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 2; on California Gulch. Accurate within 200 feet radius.

**Commodities:**

**Main:** Cu, Mo, Au, Ag

**Other:**

**Ore minerals:** Pyrite, chalcopyrite, molybdenite

**Gangue minerals:** Quartz, calcite, gypsum

**Geologic description:**

Pyrite, chalcopyrite, and molybdenite occur in quartz veinlets and as disseminations in large Cretaceous quartz diorite/granodiorite pluton. Pluton intrudes volcanic and sedimentary rocks of Permian and Triassic age. Associated skarn mineralization in metamorphosed limestone country rock (see Lemon deposit) contains Cu and Zn sulfide minerals. Plutonic rocks intruded by alaskite dikes which are crosscut by dikes of andesite, dacite, and basaltic porphyry. Other similar deposits (Bond Creek) in the pluton exhibit same mineralogy. Abundant biotite-quartz, quartz-sericite, and chlorite-sericite-epidote alteration. Late anhydrite veins common. Altered areas about 1,000 by 3,000 m. Associated skarns contain pyrite, chalcopyrite, bornite, and magnetite.

**Alteration:**

Central altered zone 400 m by 2000 m contain abundant biotite, quartz veinlets, minor k-feldspar, chlorite, and sericite cut by late stage anhydrite veins. Outer altered zones contain chlorite, minor sericite and anhydrite.

**Age of mineralization:**

Early Cretaceous

**Deposit model:**

Porphyry, stockwork, skarn

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**  
21a Porphyry Cu-Mo

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Developed by open cuts, shafts and 14 adits totaling between 250 and 300 ft, of which most reportedly were caved in 1944 (USGS OFR 76). 3187 ft of drilling done in 1927 and 1928: 2021 ft in quartz diorite, 1166 ft in metamorphosed limestone.

**Production notes:**

**Reserves:**

Average grades from surface sampling: 0.25% Cu; all samples were below 0.4%; 0.01% to 0.8% Mo; Au values from trace to 0.04 oz/ton, average Au grade estimated at 0.005 oz/ton; average Ag grade estimated at 0.01 oz/ton. Estimated 320 million tonnes of 0.35% Cu and 0.02% Mo.

**Additional comments:**

This record contains data which apply to both the porphyry Cu and the associated contact metamorphic (skarn) deposits at Orange Hill; for data specific to contact metamorphic deposits, see Lemon prospect (NB025).

**References:**

Wayland, 1943, USGS B 933-B, p. 166-168; Van Alstine and Black, 1944, USGS OF 76; Moffit, 1954, USGS B 989-D, p. 189, 201, 203, 205-207, 209; Richter and Matson, 1970, USGS OF 398, loc. 2; Richter, 1973, USGS I-789, loc. 2; Richter and others, 1975, USGS MF -655K, loc. 22; Hollister and others, 1975, CIM B v. 68, no. 756, p. 108; Pilgrim, E.R., 1931, Alaska Nabesna Orange Hill copper claims, in Stewart, B.D., Report on cooperation between the territory of Alaska and the United States in making mining investigations and in inspection of mines for the Biennium ending March 31, 1931, p. 69-74.

**Primary reference:**

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/27/97

**Site name(s):** Lemon claims; Copper King

**Site type:** Prospect

**ARDF no.:** NB025

**Latitude:** 62.197

**Quadrangle:** NB A-4

**Longitude:** 142.82

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655K, loc. 23. Accurate to within 1000 ft. radius

**Commodities:**

**Main:** Cu; Au Ag; Zn; Fe

**Other:**

**Ore minerals:** Pyrrhotite, pyrite, chalcopyrite, sphalerite, magnetite, bornite

**Gangue minerals:** Garnet, wollastonite, epidote, diopside, magnetite, hematite, sphalerite, molybdenite, tetrahedrite, gypsum, powellite

**Geologic description:**

Disseminated pyrrhotite, pyrite, and chalcopyrite in magnetite-rich skarn and veins of pyrite, chalcopyrite, and sphalerite in magnetite bodies and cutting skarn; some stringers of bornite and magnetite. Skarn developed in Permian limestone adjacent to Cretaceous quartz diorite intrusive and to porphyry Cu-Mo deposit at Orange Hill. Skarn grades outward into hornfels.

**Alteration:**

Secondary minerals: molybdenite, chrysocolla, malachite, azurite, covellite.

**Age of mineralization:**

Early Cretaceous

**Deposit model:**

Contact metasomatic, skarn

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

18b Cu skarn

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Explored by short adits and diamond drilling. 188-foot core sample (Lemon Extension #2, Pilgrim, E.R., 1931) contained 0.3 TO 3.8 % Cu, average 0.95% Cu. Weighted averages from channel samples, Lemon Claim #2 (USGS OFR 76, p. 16) contained 0.71% Cu, 0.024 oz./t Au, 0.66 oz./t Ag. 8-foot channel sample from massive sulfide body 30 ft. long and 3 to 8 ft. thick (USGS OFR 76, p. 10, 11, table 2 no. 27) contained 0.32% Cu, 0.08 oz./t Au, 6.12% Zn, 38.84% Fe. Surface and underground workings.

**Production notes:**

**Reserves:**

**Additional comments:**

Considered as part of Orange Hill porphyry copper deposit. This listing contains data specific to contact metasomatic deposits associated with the quartz diorite at Orange Hill. See Orange Hill deposits (NB024).

**References:**

Van Alstine and Black, 1944, USGS OF 76; Richter and Matson, 1970, USGS OF 398, loc. 2; Richter, 1973, USGS I-789, loc. 2; Richter and others, 1975, USGS MF-655K, loc. 23; Pilgrim, E.R., 1931, Alaska Nabesna Orange Hill Copper Claims, in Stewart, B. D., Report on cooperation between the territory of Alaska and the United States in making mining investigations and in inspection of mines for the Biennium ending March 31, 1931, p. 69-74

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB026

**Latitude:** 62.1556

**Quadrangle:** NB A-4

**Longitude:** 142.828

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc.7. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

Disseminated chalcopyrite and pyrite in stockwork veins in altered quartz porphyry believed to be shallow silicic intrusives, tuffs or domes in Upper Paleozoic Tetelna Volcanics.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein, disseminated

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: unnamed deposit NB027

**References:**

Richter and Matson, 1970, USGS OF 398, Area 6; Richter, 1973, USGS I-789, loc.7;  
Richter and others, 1975, USGS MF-655K, loc.24.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB027

**Latitude:** 62.1461

**Quadrangle:** NB A-4

**Longitude:** 142.822

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 8. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz-pyrite veins and veinlets containing minor chalcopyrite in a quartz porphyry of the Upper Paleozoic Tetelna Volcanics. Porphyry may represent a shallow intrusive, tuff, or dome.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: stockwork

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also unnamed deposit NB026

**References:**

Richter and Matson, 1970, USGS OF 398, Area 6; Richter, 1973, USGS I-789, loc. 8;  
Richter and others, 1975, USGS MF-655K, loc. 25.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB028

**Latitude:** 62.1158

**Quadrangle:** NB A-4

**Longitude:** 142.82

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 13. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Zn

**Other:**

**Ore minerals:** Chalcopyrite, sphalerite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz-pyrite vein containing chalcopyrite and sphalerite in quartz porphyry. Porphyry is altered silicic tuff or shallow intrusive in Upper Paleozoic Tetelna Volcanics.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode;, vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Channel sample across 1 ft qtz vein assayed: 0.06 ppm Au, 15 ppm Ag, >20,000 ppm Cu, 15 ppm Mo, 700 ppm Pb, >10,000 ppm Zn (USGS OF 398, no. 226). Type of workings: surface.

**Production notes:**

**Reserves:**

**Additional comments:**

See also unnamed deposits NB026, NB027.

**References:**

Richter and Matson, 1970, USGS OF 398, sample 226; Richter, 1973, USGS I-789, loc.13; Richter and others, 1975, USGS MF-655K, loc. 26.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Nabesna Glacier

**Site type:** Prospect

**ARDF no.:** NB029

**Latitude:** 62.1125

**Quadrangle:** NB A-4

**Longitude:** 142.833

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 12; on eastern margin of Nabesna Glacier.  
Accurate within 100 ft. radius.

**Commodities:**

**Main:** Cu; Zn; Au

**Other:**

**Ore minerals:** Chalcopyrite, galena, sphalerite, gold

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz-pyrite veins and veinlets in 300 ft by 100 ft altered zone; locally Au-bearing and copper stained; veins carry minor sphalerite and chalcopyrite. Host rock is a buff to gray-green massive volcanic rock, locally brecciated and mineralized, containing quartz eyes up to 1/2 in diameter in fine grained matrix of quartz, feldspar, and white mica. Deposits occur in late Paleozoic metavolcanic porphyry and metabasalt flows of the Tetelna Volcanics; may be related to nearby Cretaceous and Tertiary granitic plutons and dikes.

**Alteration:**

Strong hydrothermal limonitic staining.

**Age of mineralization:**

Cretaceous and Early Tertiary

**Deposit model:**

Gold sulfide alterations and veins

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

22c Polymetallic vein

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Random chip sample across 300 ft of copper-stained rock (Richter and Matson, 1970, USGS OF 398 sample no. 227) contained 2 ppm Ag, 300 ppm Cu, 70 ppm Pb. Channel sample across 2-foot quartz-pyrite vein (sample no. 228) contained 0.02 ppm Au, 50 ppm Ag, more than 20,000 ppm Cu, 200 ppm Mo, 1500 ppm Pb, more than 10,000 ppm Zn. Analyses: gold by atomic absorption, all others semi-quantitative spectrographic method. Type of workings: surface.

**Production notes:**

**Reserves:**

**Additional comments:**

Altered rocks have been interpreted as volcanic flow or shallow intrusive. Earliest report describes altered quartz porphyry and diorite as host rock.

**References:**

Richter and Matson, 1970, USGS OF 398, area 7, samples 227, 228; Richter, 1973, USGS I-789, loc. 12; Richter and others, 1975, USGS MF-655K, loc. 27.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB030

**Latitude:** 62.0353

**Quadrangle:** NB A-4

**Longitude:** 142.841

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 18. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite, azurite

**Gangue minerals:**

**Geologic description:**

Zone of malachite- and azurite-stained amygdaloidal basalt 200 ft long and 30 ft wide.  
Basalt is part of the Triassic Nikolai Greenstone.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic, supergene

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Chip sample across 50 ft of Cu-stained basalt ran: >20,000 ppm Cu and 1.5 ppm Ag  
(USGS OF 398, sample 231). Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Matson, 1970, USGS OF 398, area 9; Richter, 1973, USGS I-789, loc. 18;  
Richter and others, 1975, USGS MF-655K, loc. 28.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB031

**Latitude:** 62.1819

**Quadrangle:** NB A-4

**Longitude:** 142.766

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc.4. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Pb

**Other:**

**Ore minerals:** Chalcopyrite, galena

**Gangue minerals:** Quartz

**Geologic description:**

Hydrothermally altered and brecciated upper Paleozoic Tetelna Volcanics cemented by quartz containing minor chalcopyrite, pyrite and galena.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: breccia pipe ?

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1973, USGS I-789, loc. 4; Richter and others, 1975, USGS MF-655K, loc. 29.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/7/97

**Site name(s): Bond Creek**

**Site type:** Prospect

**ARDF no.:** NB032

**Latitude:** 62.2

**Quadrangle:** NB A-4

**Longitude:** 142.706

**Location description and accuracy:**

Richter, 1973, USGS I-789 loc. 3. 4 mi. E. of Orange Hill deposit. Accurate within 200 ft.

**Commodities:**

**Main:** Cu, Mo, Au, Ag

**Other:**

**Ore minerals:** Chalcopyrite, molybdenite, gold

**Gangue minerals:** Pyrite, quartz

**Geologic description:**

Pyrite, chalcopyrite, and minor molybdenite in quartz veinlets and as disseminations in highly altered Permian volcanic rocks adjacent to Cretaceous granodiorite/quartz monzonite/quartz diorite pluton.

**Alteration:**

Central altered zone (about 600 x 2000 m) contains abundant chlorite, minor biotite and k-feldspar, spotty sericite. Outer zones (about 2000 x 3000 m) contain minor chlorite, epidote, and anhydrite.

**Age of mineralization:**

Early Cretaceous

**Deposit model:**

Porphyry; vein; stockwork

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

21a Porphyry Cu-Mo

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Surface workings.

**Production notes:**

**Reserves:**

500 million tonnes of 0.30% Cu and 0.02% Mo (USGS MF-655K).

**Additional comments:**

Largest porphyry copper deposit known in the Nabesna quadrangle. See also: Orange Hill deposit (NB024).

**References:**

Richter and others, 1975, USGS MF-655K, loc. 30; Cobb and Richter, 1980, USGS OF 80-927, p. 11; Richter and Matson, 1970, USGS OF 398, loc. 3; Richter, 1973, USGS I-789, loc. 3; Hollister and others, 1975, CIM Bull., v. 68, no. 756, p. 108.

**Primary reference:**

**Reporter(s):** Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/27/97

**Site name(s):** Camp Creek

**Site type:** Occurrence

**ARDF no.:** NB033

**Latitude:** 62.34

**Quadrangle:** NB B-4

**Longitude:** 142.73

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655-K, loc. 15. Accurate within 1/2 mi radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcocite

**Gangue minerals:**

**Geologic description:**

Chalcocite vein, 6 in to 2 ft in width, in amygdaloidal basalt flows of Triassic Nikolai Greenstone.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Small sample assayed 61% Cu (USGS PP15, p. 39). Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Mendenhall and Schrader, 1903, USGS PP 15, p. 39; Richter and others, 1975, USGS MF-655-K, loc. 15.

**Primary reference:** Mendenhall and Schrader, 1903, USGS PP 15, p.39

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/31/97

**Site name(s):** East Fork Porphyry Molybdenum

**Site type:** Prospect

**ARDF no.:** NB034

**Latitude:** 62.2258

**Quadrangle:** NB A-4

**Longitude:** 142.675

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 19; vicinity of Bond Cr.-Orange Hill deposits. Accurate within 100 ft radius

**Commodities:**

**Main:** Mo

**Other:**

**Ore minerals:** Molybdenite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz-pyrite-molybdenite veins and veinlets in strongly altered and brecciated trondhjemite of Cretaceous age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: porphyry

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

No data available, probably low grade. Type of workings: surface

**Production notes:**

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

Deposit is of interest mainly due to its proximity to two large tonnage, low grade porphyry copper deposits at Bond Creek and Orange Hill. See also: Monte Cristo Creek (NB018)

**References:**

Richter, 1973, USGS I-789, loc. 19; Richter and others, 1975, USGS MF-655K, loc. 31.

**Primary reference:** Richter, 1973, USGS I-789, loc. 19

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB035

**Latitude:** 62.1714

**Quadrangle:** NB A-4

**Longitude:** 142.619

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 15. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Brecciated and altered volcanic rocks of the upper Paleozoic Tetelna Volcanics cemented by quartz, pyrite and chalcopyrite. Volcanic rocks intruded by small Tertiary porphyry stock.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: breccia pipe?

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1973, USGS I-789, loc. 15: Richter and others, 1975, USGS MF-655K, loc. 32.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB036

**Latitude:** 62.115

**Quadrangle:** NB A-4

**Longitude:** 142.667

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 14. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Pb, Zn

**Other:**

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

**Gangue minerals:** Quartz

**Geologic description:**

Quartz vein containing minor chalcopyrite, galena and sphalerite; country rock is upper Paleozoic Tetelna Volcanics.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter, 1973, USGS I-789, loc. 14; Richter and others, 1975, USGS MF-655K, loc. 33.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Cross Creek

**Site type:** Prospect

**ARDF no.:** NB037

**Latitude:** 62.0867

**Quadrangle:** NB A-4

**Longitude:** 142.588

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 16. Accurate within 100 ft radius

**Commodities:**

**Main:** Ag; Pb; Zn; Cu

**Other:**

**Ore minerals:** Galena, sphalerite, chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

Zone of intense hydrothermal alteration containing fragments of volcanic rock cemented by quartz carrying pyrite, galena, sphalerite and chalcopyrite. Country rock is mapped as Tertiary porphyry complex, but may include argillite and limestone of Permian age, gabbro dikes and sills of Triassic age, and rocks of the Pennsylvanian-Permian Tetelna Volcanics

**Alteration:**

Deuterian, hydrothermal

**Age of mineralization:**

**Deposit model:**

Lode: breccia pipe

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Grab sample of limonite-stained material (USGS OF 398, sample 848) contained 50 ppm Ag, 100 ppm Cu, more than 10,000 ppm Pb, more than 10,000 ppm Zn. Type of workings: surface

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

Moffit, 1943, USGS B 933-B, p. 174; USGS BULL 1246, P. 209; Richter and Matson, 1970, USGS OF 398, loc. 8; Richter, 1973, USGS I-789, loc. 16; Richter and others, 1975, USGS MF-655K, loc. 34.

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/31/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB038

**Latitude:** 62.0717

**Quadrangle:** NB A-4

**Longitude:** 142.576

**Location description and accuracy:**

Best location: Richter, 1973, USGS I-789, loc. 17. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Pb, Zn

**Other:**

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

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz vein containing minor pyrite, chalcopyrite, galena and sphalerite in hornfelsed volcanic country rock containing disseminated galena and sphalerite. Country rock is upper Paleozoic Tetelna Volcanics near Tertiary hornblende porphyry.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein, disseminated

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Sample of volcanic hornfels with disseminated sulfides ran: 0.9 ppm Au, 300 ppm Cu, 5 ppm Mo, 3000 ppm Pb, >10,000 ppm Zn (USGS OF 398, sample 834); Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Cross Creek prospect (NB037)

**References:**

Richter and Matson, 1970, USGS OF 398, sample 834; Richter, 1973, USGS I-789, loc. 17; Richter and others, 1975, USGS MF-655K, loc. 35.

**Primary reference:** Richter, 1973, USGS I-789

**Reporter(s):** Leonard, K.R., Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB039

**Latitude:** 62.1989

**Quadrangle:** NB A-3

**Longitude:** 142.44

**Location description and accuracy:**

Best location: Richter and Matson, 1969, USGS OF 365, loc. 329. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Secondary Cu minerals

**Gangue minerals:**

**Geologic description:**

Copper-stained breccia at contact between Cretaceous granodiorite and Triassic limestone

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: contact metamorphic?

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Chip sample across 1.5 ft of Cu-stained breccia assayed: 2.0 ppm Au, 3 ppm Ag, 700 ppm B, 7000 ppm Cu, 700 ppm Zn (USGS OF 365, sample 329). Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

Possibly related to several skarn occurrences about 2 mi SW in SW 1/4, sec. 29, T. 5 N, R. 16 E., Nabesna A-3 quadrangle; see USGS OF 365

**References:**

Richter and Matson, 1969, USGS OF 365, loc. 329; Richter, 1971, USGS I-655

**Primary reference:** Richter and Matson, 1971, USGS OF 365

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB040

**Latitude:** 62.18

**Quadrangle:** NB A-3

**Longitude:** 142.41

**Location description and accuracy:**

Best location: Richter and Matson, 1969, USGS OF 365. Accurate within 1000 ft radius

**Commodities:**

**Main:** Gypsum, var. alabas

**Other:**

**Ore minerals:** Gypsum

**Gangue minerals:**

**Geologic description:**

Pods of massive gypsum (variety: alabaster) up to 5 ft thick in amphibolitized amygdaloidal basalt of Triassic age (Nikolai Greenstone).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: podiform

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

Possibly source of material for sculpting.

**References:**

Richter and Matson, 1969, USGS OF 365; Richter, 1971, USGS I-655

**Primary reference:** Richter and Matson, 1969, USGS OF 365

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB041

**Latitude:** 62.12

**Quadrangle:** NB A-3

**Longitude:** 142.35

**Location description and accuracy:**

Best location: Richter and Matson, 1969, USGS OF 365. Accurate within 1000 ft radius

**Commodities:**

**Main:** Ba

**Other:**

**Ore minerals:** Barite

**Gangue minerals:**

**Geologic description:**

Massive dark gray barite float nearly in place; area underlain by clastic rocks of Permian Eagle Creek Formation intruded by Triassic gabbro dikes and sills which locally comprise 70% of the section

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: massive

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Matson, 1969, USGS OF 365; Richter, 1971, USGS I-655

**Primary reference:** Richter and Matson, 1969, USGS OF 365

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB042

**Latitude:** 62.4269

**Quadrangle:** NB B-3

**Longitude:** 142.312

**Location description and accuracy:**

Best location: Richter, 1975, USGS I-904. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, bornite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Quartz veinlets containing minor chalcopyrite, pyrite and bornite in hornblende syenodiorite pluton of Cretaceous age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: unnamed occurrence no. NB043

**References:**

Richter, 1975, USGS I-904; Richter and others, 1975, MF-655K, loc. 36.

**Primary reference:** Richter, 1975, USGS I-904

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB043

**Latitude:** 62.4164

**Quadrangle:** NB B-3

**Longitude:** 142.302

**Location description and accuracy:**

Best location: Richter, 1975, USGS I-904. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:**

**Geologic description:**

Segregations of pyrite and chalcopyrite in hornblendite border zone of large hornblende syenodiorite (Antler Creek) pluton of Cretaceous age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein?

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: none

**Production notes:**

**Reserves:**

**Additional comments:**

See also: unnamed occurrence no. NB042

**References:**

Richter, 1975, USGS I-904; Richter and others, 1975, USGS MF-655K, loc. 37.

**Primary reference:** Richter, 1975, USGS I-904

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Big Eldorado Creek

**Site type:** Mine

**ARDF no.:** NB044

**Latitude:** 62.11

**Quadrangle:** NB A-2

**Longitude:** 141.94

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; tributary to Chavolda Cr. Accurate within 1000 ft radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Two placers described in USGS Bull. 622 had dimensions of 600 ft by 12 ft with 6 ft of gravel, and 250 ft by 30 ft with 2 ft of gravel. Gravels up to 10 ft deep reported. Top 2 to 4 ft of diorite bedrock was also mined. This placer is unique to the district in that it is probably a primary concentration of placer gold. All other placers in the district are derived from reworked Tertiary gravels.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer, stream

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

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

Some of the ground that was mined was frozen. Type of workings: surface

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

See also: Big Eldorado lode prospect (NB045)

**References:**

Brooks, 1915, USGS B 622, p. 204-205, 211, 220-221; Brooks, 1916, USGS B 642, p. 62; Smith, 1941, USGS B 926-A, p. 53; Moffit, 1954, USGS B 989-D, p. 199, Cobb, USGS B 1374, P. 115; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 64

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 3/7/94

**Site name(s):** Big Eldorado

**Site type:** Prospect

**ARDF no.:** NB045

**Latitude:** 62.1075

**Quadrangle:** NB A-2

**Longitude:** 141.937

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749 (marked Cu on Big Eldorado Cr). Accurate within 100 ft radius.

**Commodities:**

**Main:** Cu; Au

**Other:**

**Ore minerals:** Pyrite, chalcopyrite, gold

**Gangue minerals:** Quartz

**Geologic description:**

Quartz vein containing pyrite, chalcopyrite and gold in syenodiorite of Cretaceous age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

22C Polymetallic vein

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

No data available. Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655-K, loc. 31.

**Primary reference:** Richter and others, 1975, USGS MF-655-K, loc.31.

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Erie

**Site type:** Prospect

**ARDF no.:** NB046

**Latitude:** 62.0822

**Quadrangle:** NB A-2

**Longitude:** 141.867

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; prospects at mouth of Bonanza Creek, tributary to Chathenda Creek. Accurate within 1000 ft radius

**Commodities:**

**Main:** Au; Ag; Pb

**Other:**

**Ore minerals:** Native gold, argentiferous galena

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Small pyrite and quartz veins in dike that strikes N20W with 75N dip. Dike reportedly is auriferous but see additional comments. Dike cuts Cretaceous lavas and pyroclastics of Chisana Formation

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein, disseminated

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

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Several short adits, present condition unknown. Galena containing 22 oz/ton Ag reported by Moffit, 1943, USGS B 933-B, p. 165. Type of workings: surface and underground

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

Richter and Matson (1970, USGS OF 397) reported that samples collected from this prospect area contained no gold. See also: Chathenda Creek (NB051)

**References:**

Capps, 1916, USGS B 630, p. 90, 118-119; Moffit, 1943, USGS B 933-B, p. 164-165; Richter and Matson, 1970, USGS OF 397; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 42.

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Bryan Creek

**Site type:** Prospect

**ARDF no.:** NB047

**Latitude:** 62.0363

**Quadrangle:** NB A-2

**Longitude:** 141.943

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; tributary to Chisana River just south of Chathenda Cr. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu; Au

**Other:**

**Ore minerals:** Native copper, gold

**Gangue minerals:**

**Geologic description:**

Abundant copper nuggets and some gold in stream gravels, especially on false clay bed-rock

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer: stream

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

39a

**Production Status:** Undet.

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

Cu nuggets also found in Bonanza and Chathenda Creeks

**References:**

Brooks, 1915, USGS B 622, p. 223; Moffit, 1954, USGS B 989-D, p. 200; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 68; MILS #0020780067

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; D.Singer; Richter, D.H.

**Last report date:** 1/30/97

**Site name(s):** Gold Run Creek area; includes Discovery Pup, Poorman Creek.

**Site type:** Mine

**ARDF no.:** NB048

**Latitude:** 62.1283

**Quadrangle:** NB A-2

**Longitude:** 141.906

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; location given is confluence of Glacier Creek and Gold Run Creek. Accurate within 1000 ft radius

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Deposits consist of auriferous gravels containing subrounded shale and graywacke clasts and some well-rounded lava and diorite clasts. Two placer deposits described in USGS B 622: one is 150 ft by 15 ft with 4.5-to 5-ft-deep gravel and one is a 500 ft by 40 ft section of frozen gravels running 11 to 15 ft deep. Top 1 to 4 ft of rippable bedrock was also sluiced. The lava and diorite clasts in the stream gravels appear to have been derived from Tertiary gravels capping Gold Hill to southeast of placer area.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer: stream, bench

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

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

Type of workings: surface. Intermittent mining since discovery in 1913.

**Production notes:**

Production included in Chisana district; see Bonanza Creek area (NB050)

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

Contributor to Chisana district production of placer gold. Gold has also been noted downstream from Gold Run, on Glacier and Chavolda Creeks, though not in significant amounts

**References:**

Brooks, 1914, USGS B 592, p.309-320; Brooks, 1915, USGS B 622, p. 218-219; Brooks, 1916, USGS B 642, p. 62; Smith and others, 1930, USGS B 836, p. 41; Smith and others, 1942, USGS B 926-A, p. 53; Moffit, 1954, USGS B 989-D, p. 199; Cobb, 1973, USGS B 1374, p. 115; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 63; Richter and Matson, 1972, USGS MF-422, locs. 56, 57 58, 59

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB049

**Latitude:** 62.113

**Quadrangle:** NB A-2

**Longitude:** 141.817

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655K, loc. 43. Accurate within 500 ft radius.

**Commodities:**

**Main:** Zn, Pb, Cu, Ag

**Other:**

**Ore minerals:** Sphalerite, galena, chalcopyrite

**Gangue minerals:**

**Geologic description:**

Quartz carbonate veins containing sphalerite, galena, and minor chalcopyrite in Jurassic-Cretaceous argillite; silver present in unknown amount.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode; vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

Little data available on this site

**References:**

Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 43.

**Primary reference:** Richter and others, 1975, USGS MF-655K

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s): Bonanza Creek area; includes Bonanza Cr., Little Eldorado Cr., Skookum Cr., Coarse Money Cr., Snow Gulch**

**Site type:** Mine

**ARDF no.:** NB050

**Latitude:** 62.105

**Quadrangle:** NB A-2

**Longitude:** 141.827

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749. Area contains productive placers at the headwaters of Bonanza Cr. draining the northeast side of Gold Hill. Accurate within 1000 ft radius.

**Commodities:**

**Main:** Au, Ag

**Other:**

**Ore minerals:** Native gold, native silver

**Gangue minerals:** Concentrates contain native copper, galena, cinnabar, molybdenite

**Geologic description:**

Host material is auriferous gravel. Stream, bench, and old channel gravels range from 2 to 12 ft in depth, ave. 4 to 5.5 ft. Gold in stream placers was on and in top 1 to 2.5 ft of ripppable bedrock. Gravels are thin, heterogeneous, and angular with locally abundant boulders.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Placer: stream, bench, buried channel

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

39a

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

Attempt was made at drift mining on upper Bonanza Creek. Report of 85 ft shaft with 25 ft drift dug into old channel without discovering paying ground. Many of the gravels were frozen locally. Current condition unknown. Fineness values between 791 and 818, (reported in USGS B 989, p. 200 as assay value of 16.35 to 16.90 dollars/oz, with Au at 20.67 dollars/oz). Type of workings: chiefly surface. Intermittent mining since discovery in 1913.

**Production notes:**

Au: est. 50,000 oz 1913-1959. Production in the district was dominated by Bonanza and Little Eldorado Creeks. Production data are for entire Chisana District. Most mining was between 1913 and 1915, when about half of the district's total production took place; production since 1940 has been minor.

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

Small-scale placer mining and prospecting has also taken place on Chathenda Creek and its tributaries, including an attempt at drift mining on Dry Gulch (now called Salt Creek). Production, if any, was probably not significant

**References:**

Richter and Matson, 1972, USGS MF-422, locs.60, 61, 62, 63, 64; Richter and others, 1975, USGS MF-655K, loc. 65; Richter and Jones, 1973, USGS I-749; Moffit, 1954, USGS B 989-D, p.196-200,203; Moffit, 1943, USGS B 933, p.50, 170-174; Brooks, 1921, USGS B 714, p.84; Brooks, 1915, USGS B 622, p. 202-204, 208-216, 222; Richter and Matson, 1970, USGS OF 397; Capps, 1916, USGS B 630, p.92-94, 115, 119.

**Primary reference:** Moffit, 1954, USGS B 989-D, p.196-200, 203

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/30/97

**Site name(s):** Chathenda Creek; Johnson Creek

**Site type:** Prospect

**ARDF no.:** NB051

**Latitude:** 62.081

**Quadrangle:** NB A-2

**Longitude:** 141.912

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; prospect is shown near fault in SW 1/4 of sec. 34, T. 4 N., R. 19E. Same site as USGS MF-655K, loc. 39. On Chathenda Creek about 1 1/2 mi below mouth of Bonanza Creek. Accurate within 500 ft radius

**Commodities:**

**Main:** Au; Cu

**Other:**

**Ore minerals:** Pyrite, chalcopyrite, marcasite

**Gangue minerals:** Quartz

**Geologic description:**

Locally gold-bearing quartz-pyrite veins in a zone of mineralized volcanic and diorite country rocks up to 10 ft wide; zone strikes N 65 W, dips 78 SW.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Several open cuts and two short tunnels. 0.01 oz/ton Au, 0.10 oz/ton Ag, reported by Pilgrim, 1931B. Type of workings: surface and underground

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

A number of small gold-bearing quartz-pyrite lodes occur in mineralized volcanic country rock (Chisana Formation of Cretaceous age) on the n side of Chathenda Creek. By 1940 a large group of claims had been staked but apparently none were successful in locating ore quality material

**References:**

Capps, 1916, USGS B 630, p. 92-94, 114-115, 119; Moffit, 1943, USGS B 933-B, p. 164-165; Richter and Matson, 1970, USGS OF 397, loc. 2; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, locs. 39, 40, 41; Pilgrim, 1931, Report on cooperation between the Territory of Alaska and the United States in making mining investigations and in inspection of mines for the biennium ending March 31, 1931, p. 66-68

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 1/31/97

**Site name(s):** Johnson Creek

**Site type:** Prospect

**ARDF no.:** NB052

**Latitude:** 62.112

**Quadrangle:** NB A-2

**Longitude:** 141.625

**Location description and accuracy:**

Best location: Richter and Jones, 1973, USGS I-749; N 1/2 of SW 1/4, Sec. 19, T.4 N., R.21 E. Accurate within 1000 ft radius

**Commodities:**

**Main:** Cu; Mo

**Other:** Au

**Ore minerals:** Pyrite, chalcopyrite

**Gangue minerals:**

**Geologic description:**

Disseminated pyrite and chalcopyrite in small diorite/granodiorite stock of Cretaceous age and surrounding metamorphosed country rock. Stock intrudes Upper Jurassic to Lower Cretaceous hornfelsed argillite. /

**Alteration:**

Hornfels

**Age of mineralization:**

Cretaceous

**Deposit model:**

Lode: porphyry

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Assays show 0.15% Cu and less than 0.01% Mo (USGS MF-655K, loc. 44). Type of workings: surface

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

See also: Carl Creek (NB053)

**References:**

Richter and Matson, 1970, USGS OF 397, loc. 3, samples 434, 435; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 44; Hollister and others, 1975, CIM BULL, V.68, No. 756, p. 108

**Primary reference:** Richter and Matson, 1970, USGS OF 397, loc 3.

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Carl Creek

**Site type:** Prospect

**ARDF no.:** NB053

**Latitude:** 62.049

**Quadrangle:** NB A-2

**Longitude:** 141.586

**Location description and accuracy:**

Two altered areas of about 100 m by 200 m each lie within 1 mi radius of lat-long coordinates. Best location: Richter and Jones, 1973, USGS I-749; N of Carl Creek; within 500 ft radius

**Commodities:**

**Main:** Cu

**Other:** Mo; Au; Ag

**Ore minerals:** Pyrite, chalcopyrite

**Gangue minerals:**

**Geologic description:**

Pyrite and chalcopyrite in quartz veinlets and in disseminations in 111 m.y.-old biotite-hornblende granodiorite and biotite-quartz monzonite that intrude volcanic rocks of the Upper Cretaceous Chisana Formation.

**Alteration:**

Sericite

**Age of mineralization:**

Cretaceous

**Deposit model:**

Stockwork, porphyry

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

17 Porphyry Cu

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Average grade from surface sampling: 0.10% Cu, all samples below 1.5% Cu, and less than 0.01% Mo (Richter and others, 1975, USGS MF-655-K, loc. 45 and 46).

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

One of 8 porphyry copper deposits which together make up the known principal mineral resource potential of the Nabesna quadrangle; see also Horsfeld (NB059), Bond Creek (NB032), Orange Hill NB024), and Baultoff (NB060) deposits.

**References:**

Richter and Matson, 1970, USGS OF 397, Area 4, 5; Richter and Jones, 1973, USGS I-749; Richter and others, 1975, USGS MF-655K, loc. 45, 46; Hollister and others, 1975, CIM B, v. 68, no. 756, p. 108

**Primary reference:**

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s): Sulzer; Cosmopolitan Group; O'hara Property**

**Site type:** Prospect

**ARDF no.:** NB054

**Latitude:** 62.2006

**Quadrangle:** NB A-1

**Longitude:** 141.461

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 1; ridge between forks of the Snag River. Accurate within 100 ft. radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, bornite, malachite.

**Gangue minerals:**

**Geologic description:**

Malachite in fractures, amygdules, and volcanic breccias in amygdaloidal basalt flows of the Triassic Nikolai Greenstone. Tunnel was driven in a northwest- trending fracture zone at the contact between a flow breccia and an overlying amygdaloidal basalt flow.

**Alteration:**

**Age of mineralization:**

Late Triassic

**Deposit model:**

Massive sulfide

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

24b Besshi massive sulfide

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Explored by open cuts and 2 adits, one of which was 87 ft long; reported caved in 1940. Surface and underground workings.

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

Nikolai Greenstone hostrock is known for its anomalous Cu content.

**References:**

Moffit, 1954, USGS Bull. 989-D, p. 204-205; Matson and Richter, 1971, USGS OFR 471, p. 10, loc. 1; Richter and others, 1973, USGS I-807, loc. 1; Richter and others, 1975, USGS MF-655K, loc. 47; Pilgrim, E.R., 1931, White River Precinct, Snag River area in Stewart, B.C., Report on cooperation between the territory of Alaska and the United States in making mining investigations and in inspection of mines for the Bicentennial ending March 31, 1931, p. 74-76

**Primary reference:** Moffit, 1954, USGS B 989-D, p. 204-205

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Reynolds; Butte Creek Copper Group

**Site type:** Prospect

**ARDF no.:** NB055

**Latitude:** 62.1789

**Quadrangle:** NB A-1

**Longitude:** 141.426

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 2. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Bornite, chalcocite, malachite

**Gangue minerals:** Specularite, calcite

**Geologic description:**

Small veins of bornite, chalcocite, specularite, malachite, and calcite in amygdaloidal basalt flows of the Triassic Nikolai Greenstone; near contact between Greenstone and interbedded limestone and shale.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: volcanogenic

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Chip sample across 5 ft of Fe-stained basalt (USGS OF 471, sample 131) assayed 50 ppm B, 150 ppm Cr, 150 ppm Cu, 70 ppm Ni, 200 ppm V and traces of Au, Ag, Mo and Zn.

Type of workings: surface.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Sulzer (NB054)

**References:**

Moffit, 1954, USGS B 989-D, p. 204-205; Matson and Richter, 1971, USGS OF 471, p. 10, loc. 2; Richter and others, 1973, USGS I-807, loc. 2; Richter and others, 1975, USGS MF-655K, loc. 48; Pilgrim, E.R., 1931, White River Precinct, Snag River area in Stewart, B.D., Report on cooperation between the Territory of Alaska and the United States in making mining investigations and in the inspection of mines for the biennium ending March 31, 1931, p 75

**Primary reference:** Moffit, 1954, USGS B 989-D

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/5/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB056

**Latitude:** 62.1506

**Quadrangle:** NB A-1

**Longitude:** 141.306

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 3. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz, pyrite

**Geologic description:**

Massive quartz vein containing minor pyrite and chalcopyrite in marine volcaniclastic rocks of Permian age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode; vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and others, 1973, USGS I-807, loc. 3; Richter and others, 1975, USGS MF-655K, loc. 49.

**Primary reference:** Richter and others, 1973, USGS I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Unnamed

**Site type:** Prospect

**ARDF no.:** NB057

**Latitude:** 62.0828

**Quadrangle:** NB A-1

**Longitude:** 141.25

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 5. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Pyrite

**Geologic description:**

Disseminated pyrite and minor chalcopyrite in small diorite stock that intrudes Cretaceous or Jurassic hornfelsed argillite

**Alteration:**

Altered area 100 m by 300 m, principally of limonite staining from oxidation of sulfides

**Age of mineralization:**

**Deposit model:**

Lode: porphyry

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Bauloff (NB060), Horsfeld (NB059)

**References:**

Richter and Matson, 1972, USGS MF-422, loc. 40; Richter and others, 1973, USGS I-807, loc. 5; Richter and others, 1975, USGS MF-655K, loc. 50.

**Primary reference:** Richter and others, 1973, USGS I-807, loc. 5.

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/4/97

**Site name(s):** Unnamed

**Site type:** Prospect

**ARDF no.:** NB058

**Latitude:** 62.0561

**Quadrangle:** NB A-1

**Longitude:** 141.256

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 6. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

2-ft-wide quartz vein containing chalcopyrite in volcanic breccia of the Chisana Formation of Cretaceous age.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Grab sample of quartz vein assayed: 30 ppm Ag, 0.04 ppm Au, 10,000 ppm Cu, 7000 ppm Pb, 700 ppm Zn (USGS OF 471, sample 153). Type of workings: surface

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

Matson and Richter, 1971, USGS OF 471, sample 153; Richter and others, 1973, USGS I-807, loc. 6; Richter and others, 1975, USGS MF-655K, loc. 51

**Primary reference:** Richter and others, 1973, USGS I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/7/97

**Site name(s):** Horsfeld

**Site type:** Prospect

**ARDF no.:** NB059

**Latitude:** 62.0481

**Quadrangle:** NB A-1

**Longitude:** 141.214

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc.7. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu

**Other:** Mo; Au; Ag

**Ore minerals:** Pyrite, chalcopyrite

**Gangue minerals:** Quartz

**Geologic description:**

Pyrite and chalcopyrite in quartz veinlets and disseminations in monzonite and monzonite porphyry of the Cretaceous Klein Creek batholith, which intrudes Cretaceous and Jurassic marine sedimentary rocks

**Alteration:**

Argillic, propylitic. Central altered zone 200 m by 700 m characterized by K-feldspar, actinolite and magnetite.

**Age of mineralization:**

Cretaceous

**Deposit model:**

Porphyry

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

17 Porphyry Cu

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Average grade from surface sampling: 0.10% Cu (all samples were below 0.5% Cu) and less than 0.10% Mo (Richter and others, 1975, USGS MF-655K, loc. 52). Au and Ag detected in analysis (Matson and Richter, 1971, USGS OF 471, samples 148, 149). Type of workings: surface

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

One of 8 porphyry copper deposits which make up the known principal potential mineral resource of the Nabesna quadrangle.

**References:**

Matson and Richter, 1971, USGS OF 471, loc. 5, samples 148, 149; Richter and others, 1975, USGS MF-655K, loc. 52; Richter and others, 1973, USGS I-807, loc. 7; Hollister and others, 1975, CIM B v. 68 No. 756, p. 108

**Primary reference:** Richter and others, 1973, USGS I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/28/97

**Site name(s):** Baultoff

**Site type:** Prospect

**ARDF no.:** NB060

**Latitude:** 62.1106

**Quadrangle:** NB A-1

**Longitude:** 141.212

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 4. Accurate within 100 ft. radius

**Commodities:**

**Main:** Cu

**Other:** Mo, Ag, Au

**Ore minerals:** Pyrite, chalcopyrite

**Gangue minerals:** Quartz, sericite, albite, actinolite

**Geologic description:**

Disseminated pyrite and chalcopyrite in mafic hornblende diorite of Cretaceous age. Altered area up to 1,000 by 2,000 m containing gypsum, chlorite, sericite, albite, and pyrite. Local actinolite veins and disseminations. Host rocks part of the Cretaceous Klein Creek batholith and associated granitic rocks which intrude Upper Jurassic and Lower Cretaceous flysch of Gravina-Nutzotin belt. NW-trending fault brings mineralized rock in contact with barren volcanics to east of prospect.

**Alteration:**

Potassic, propylitic; extensive. Locally gypsiferous alteration composed of central altered zone 400 m by 1000 m with chlorite, sericite, and albite cut by late stage anhydrite veins. Outer altered zones characterized by intense sericitization and pyritization.

**Age of mineralization:**

Cretaceous

**Deposit model:**

Stockwork, porphyry

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

17 Porphyry Cu

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Average grades from surface sampling: 0.10% Cu, with all samples below 0.25% Cu and less than 0.01% Mo, Au and Ag also present (Richter and others, 1975, USGS MF-655K, loc. 53). Surface workings.

**Production notes:**

**Reserves:**

Estimated 240 million tonnes of 0.2% Cu and <0.01% Mo; trace Au.

**Additional comments:**

One of 8 known porphyry copper deposits which make up the principal mineral resource potential of Nabesna quadrangle. See also: Orange Hill(NB024), Bond Creek(NB032), Carl Creek(NB053), Horsfeld(NB059).

**References:**

Matson and Richter, 1971, USGS OF 471, p. 10, loc. 4, samples 138, 139; Richter and others, 1973, USGS I-807, loc. 4; Richter and others, 1975, USGS MF-655K, loc. 53; Hollister and others, 1975, CIM B, v. 68, no. 756, p. 110;

**Primary reference:** Richter and others, 1973, USGS I-807

**Reporter(s):** Leonard, K.R. (Elliott, R.L.); Nokleberg, W.J.; Richter, D.H.

**Last report date:** 1/27/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB061

**Latitude:** 62.0603

**Quadrangle:** NB A-1

**Longitude:** 141.181

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 8. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Mo, Au

**Other:**

**Ore minerals:** Chalcopyrite, pyrite

**Gangue minerals:**

**Geologic description:**

Disseminated pyrite and chalcopyrite in small stock of diorite porphyry of Cretaceous-Tertiary age that intrudes Jurassic-Cretaceous marine sedimentary rocks.

**Alteration:**

Limonite-stained altered area covers area 50 by 100 meters.

**Age of mineralization:**

**Deposit model:**

Lode: porphyry

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Average grade from surface sampling: <0.10% Cu and <0.01% Mo, gold reported present, but no assay data given (USGS MF-655K, loc. 54). Type of workings: surface.

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

The small stock at this location may be a marginal facies of the Klein Creek batholith

**References:**

Matson and Richter, 1971, USGS OF 471, sample 145; Richter and others, 1975, USGS MF-655K, loc. 54; Richter and others, 1973, USGS I-807, loc. 8

**Primary reference:** Richter and others, 1973, USGS I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB062

**Latitude:** 62.0811

**Quadrangle:** NB A-1

**Longitude:** 141.125

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 10. Accurate within 100 ft radius

**Commodities:**

**Main:** Pb, Ag, Au, Cu

**Other:**

**Ore minerals:** Galena, chalcopyrite, tetrahedrite

**Gangue minerals:** Quartz, barite

**Geologic description:**

Quartz-barite veins, in Upper Paleozoic marine argillite, carrying galena, chalcopyrite, tetrahedrite; gold and silver reported in assay.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Sample of quartz-barite vein assayed: 5 ppm Ag, 0.4 ppm Au, 300 ppm Cu, 7000 ppm Pb, 7000 ppm Zn (USGS OF 471, sample 141). Type of workings: surface.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Matson and Richter, 1971, USGS OF 471, sample 141; Richter and others, 1973, USGS I-807, loc. 10; Richter and others, 1975, USGS MF-655K, loc. 55

**Primary reference:** Richter and others, 1973, USGS, I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Unnamed

**Site type:** Occurrence

**ARDF no.:** NB063

**Latitude:** 62.0783

**Quadrangle:** NB A-1

**Longitude:** 141.067

**Location description and accuracy:**

Best location: Richter and others, 1973, USGS I-807, loc. 9. Accurate within 100 ft radius

**Commodities:**

**Main:** Cu, Ag

**Other:**

**Ore minerals:** Chalcopyrite

**Gangue minerals:** Quartz, calcite

**Geologic description:**

Quartz-calcite veins containing minor chalcopyrite in small quartz monzonite stock of Cretaceous age that intrudes Permian volcanic country rock.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Lode: vein

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

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

Grab sample of quartz-calcite vein assayed: 15000 ppm Cu, 700 ppm Cr, 150 ppm Ni, 200 ppm Zn, 300 ppm V, 15 ppm B, 7 ppm Ag (USGS OF 471, sample 143). Type of workings: surface

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Matson and Richter, 1971, USGS OF 471, samples 142, 143); Richter and others, USGS I-807, loc. 9; Richter and others, 1975, USGS MF-655K, loc. 56

**Primary reference:** Richter and others, 1973, USGS, I-807

**Reporter(s):** Leonard, K.R.; Elliott, R.L.; Richter, D.H.

**Last report date:** 2/10/97

**Site name(s):** Carden Hills

**Site type:** Prospect

**ARDF no.:** NB064

**Latitude:** 62.3

**Quadrangle:** NB B-1

**Longitude:** 141.2

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655K. Accuracy unknown.

**Commodities:**

**Main:** Cr

**Other:** Pt group

**Ore minerals:** Chromite

**Gangue minerals:**

**Geologic description:**

Disseminated chromite in serpentinized peridotite.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Podiform chromite

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

8a

**Production Status:**

**Site Status:**

**Workings/exploration:**

None

**Production notes:**

**Reserves:**

**Additional comments:**

Discovered 1984

**References:**

MILS #0020780128; Foley and others, 1985, USBM OFR 97-85, p. 23.

**Primary reference:** Foley and others, 1985, USBM OFR 97-85

**Reporter(s):** D. Singer; Richter, D.H.

**Last report date:** 2/19/97

**Site name(s):** Mirror Creek

**Site type:** Occurrence

**ARDF no.:** NB065

**Latitude:** 62.524

**Quadrangle:** NB B-1

**Longitude:** 141.163

**Location description and accuracy:**

Best location: Richter and others, 1975, USGS MF-655K, loc. 57. Accurate within 500 ft radius

**Commodities:**

**Main:** Cr

**Other:**

**Ore minerals:** Chromite

**Gangue minerals:**

**Geologic description:**

Pods of massive chromite in alpine-type ultramafic body.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Podiform chromite

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

8a

**Production Status:** No

**Site Status:** Inactive

**Workings/exploration:**

No workings

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Richter and others, 1975, USGS MF-655K, loc. 57; MILS 0020780126

**Primary reference:** Richter and others, 1975, USGS MF-655K

**Reporter(s):** D. Singer; Richter, D.H.

**Last report date:** 2/12/97

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